

SITE INFORMATION												
REPORT TYPE: Closure Report 2RP-251												
General Site Information:												
Site:	Tuesday Federal #1											
Company:	SM Energy Company											
Section, Township and Range	34	Township 19S	Range 29E									
Unit Letter:	M											
API No.	30-015-25123											
County:	Eddy County											
GPS:	N 32.61543° W 104.06412°											
Surface Owner:	BLM											
Mineral Owner:	BLM											
Directions:	From the intersectio of HWY 360 & US 62/180 travel west on 62/180 for 1.3 mi, turn north on Burton Flats Rd & continue for 6.2 mi, turn west on lease road for 0.2 mi to location.											
Release Data:												
Date Released:	9/16/2008											
Type Release:	Produced water & oil											
Source of Contamination:	3" poly line											
Fluid Released:	30 bbls oil / 80 bbls produced water											
Fluids Recovered:	0 bbls											
Official Communication:												
Name:	Zachary Luikens		Ike Tavaréz									
Company:	SM Energy		Tetra Tech									
Address:	6301 Holiday Hill Rd. Bldg 1		4000 N. Big Spring St., Ste 401									
P.O. Box												
City:	Midland, Texas 79707		Midland, Texas									
Phone number:	(432) 688-3138		(432) 682- 4559									
Email:	zluikens@sm-energy.com		ike.tavarez@tetrattech.com									
Ranking Criteria												
Depth to Groundwater:		Ranking Score	Site Data									
<50 ft		20										
50-99 ft		10										
>100 ft.		0	Average Depth >110									
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:		10										
<table border="1"> <thead> <tr> <th colspan="3">Acceptable Soil RRAL (mg/kg)</th> </tr> <tr> <th>Benzene</th> <th>Total BTEX</th> <th>TPH</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>50</td> <td>1,000</td> </tr> </tbody> </table>				Acceptable Soil RRAL (mg/kg)			Benzene	Total BTEX	TPH	10	50	1,000
Acceptable Soil RRAL (mg/kg)												
Benzene	Total BTEX	TPH										
10	50	1,000										



TETRA TECH

August 19, 2016

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

Re: Closure Report for the SM Energy Company, Tuesday Federal #1, Flowline Leak, Unit M, Section 34, Township 19 South, Range 29 East, Eddy County, New Mexico. (2RP- #251)

Mr. Bratcher:

Tetra Tech Inc. (Tetra Tech) was contacted by SM Energy Company (SM Energy) to assess a flowline spill at the Tuesday Federal #1 located in Unit M, Section 34, Township 19 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.61543°, W 104.06412°. 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 17, 2008. Approximately 3 barrels of oil and 80 barrels of produced water were released from a 3-inch poly line. No free fluids were recovered. The 3-inch poly line was repaired with new connections. The initial C-141 is enclosed in Appendix A.

Hydrology

The New Mexico State Engineers Well Report listed one well in Section 34 with an average depth of 60' and wells in Sections 35 and 36, with reported depths of 110' and 115', respectively. The Geology and Groundwater Resources of Eddy County New Mexico (Report 3) showed one well Section 3 of Township 20 South and Range 29 East, with a reported depth to water of 91' bgs. The groundwater data is included in Appendix B.

According to the Geology and Groundwater Resources of Eddy County, New Mexico (Report 3), the Rustler and Castile formations (Ochoa Series) are present west and east of the Pecos River. The Rustler and Castile formations consist of anhydrite, gypsum, interbedded sandy clay and beds of dolomite. Groundwater from the Castile

Tetra Tech

1910 North Big Spring, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



and Rustler formations west of the Pecos River is historically high in chloride and sulfate concentrations which increase towards the river. The site is located on the east edge of the Rustler formation.

On March 11, 2009, Tetra Tech personnel supervised the installation of a temporary well (TMW-1) to establish groundwater quality and depth at the Site. The well construction log is shown in Appendix C. During the installation, the well drilled dry. The well was drilled through gray limestone and gypsum layers to a total depth of 72', to the top of a dense, gray and red clay formation. The well was measured two days later and showed a depth of 62' below surface. During the development of the well, the well purged dry and showed a slow recovery rate. On March 16, 2009, the well was purged dry and allowed to recover, prior to sampling. The groundwater quality showed a chloride of 280 mg/L and sulfate of 1,800 mg/L.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Results

On October 30, 2008, Tetra Tech personnel supervised the installation of five (5) boreholes (BH-1 through BH-5) to assess the spill area. The main spill area measured approximately 20' x 150' south of the release, then migrated down a two track road (6" to 1.0' wide) to a plugged and abandoned well location, which measured approximately 30' x 140'. A total of five (5) boreholes were installed in the spill area to a total depth of 40' to 50' below surface. One borehole was installed for background soil concentrations. The borehole locations are shown on Figure 3. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0.

Referring to Table 1, all of the samples analyzed were below the RRAL for both BTEX and TPH, except for the samples at boreholes (BH-4 and BH-5). These samples exceeded the TPH at 0-1' and declined below the RRAL at 2-3' below surface. Analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extending to 10' (BH-4), 20' (BH-3 and BH-5) and 30' (BH-1). Borehole (BH-2) showed a chloride of 1,250 mg/kg at 50-51' bgs. All samples had chloride concentrations that decreased with depth. The samples collected at the Background borehole all showed chloride concentrations below the laboratory reporting limits.



TETRA TECH

Borehole logs are shown in Appendix C. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The results of the sampling are summarized in Table 1. The borehole locations are shown on Figure 3.

Conclusion

On July 27, 2009, Tetra Tech personnel met with the NMOCD in Artesia to discuss the corrective action for the site. As discussed and submitted in the Work Plan, the proposed excavation depths are shown in Table 1 and Figure 4.

The areas of boreholes (BH-1 and BH-2) were excavated to a depth of approximately 20' below surface. This area was then backfilled with clean soil to a depth of 4.0' below surface, where the 40 mil liner will be placed. The remaining areas of boreholes (BH-3, BH-4 and BH-5) were excavated down to approximately 10' bgs. Once excavated to the appropriate depths, the excavation was backfilled with clean soil to surface grade.

Based upon the results of the investigation and the remediation work performed at the site, SM Energy requests closure of this site. A copy of the C-141 (Final) is included in Appendix A. If you require any additional information or have any questions or comments please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, P.G.
Senior Project Manager

cc: Zach Luikens – SM Energy

Figures

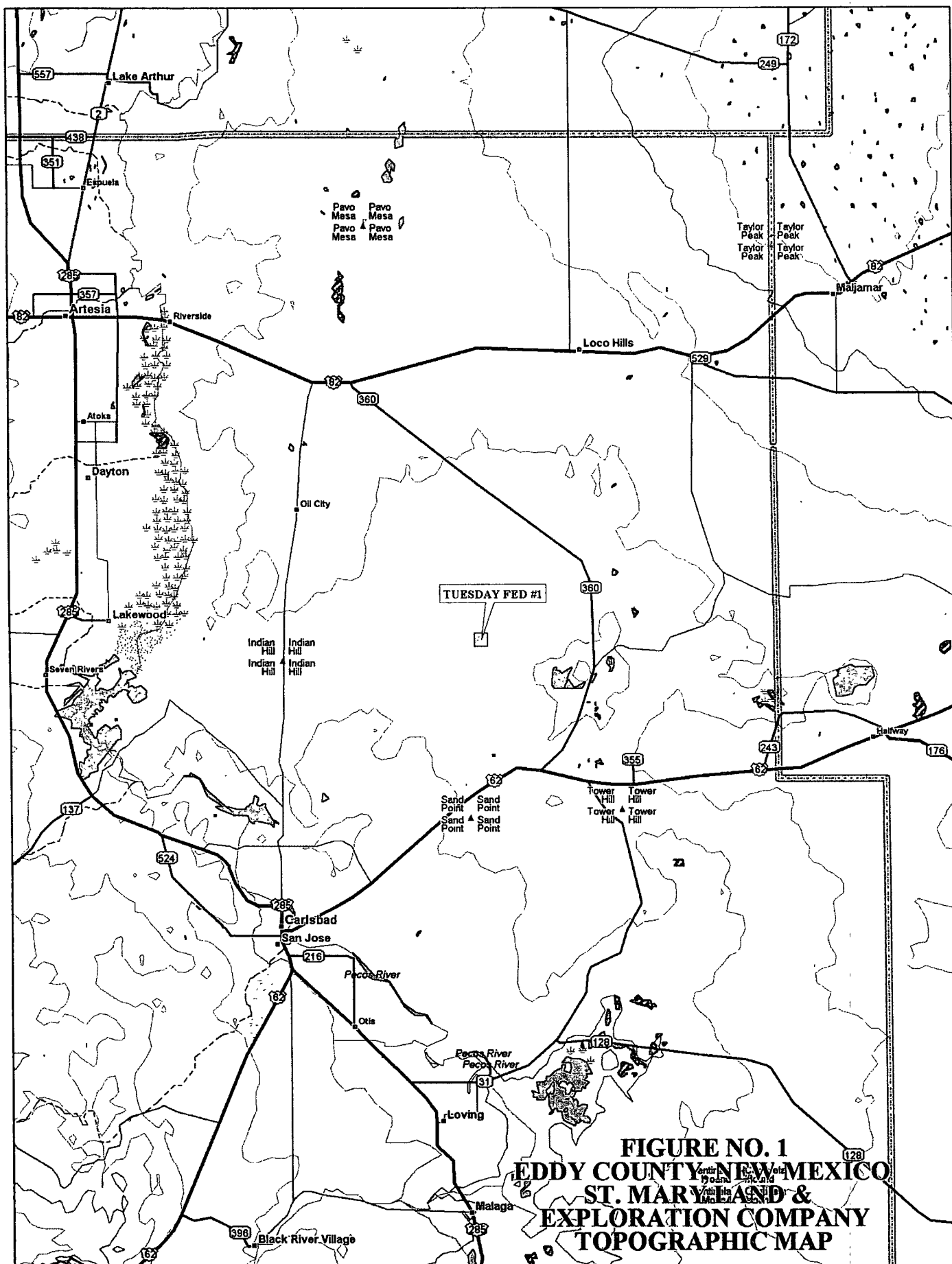
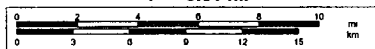
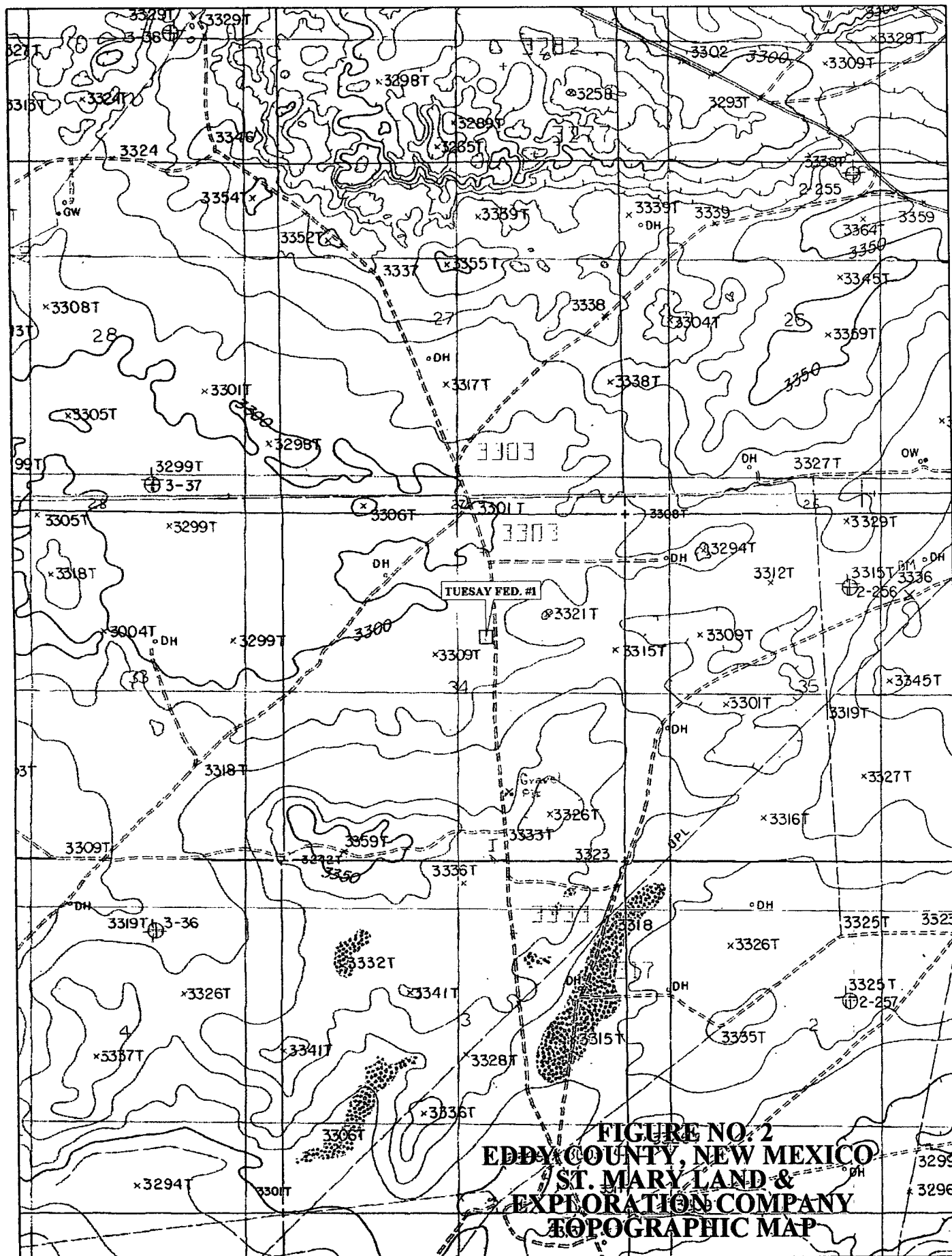


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
ST. MARYLAND &
EXPLORATION COMPANY
TOPOGRAPHIC MAP

Scale 1 : 400,000
 1" = 6.31 mi



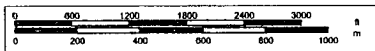
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 www.delorme.com

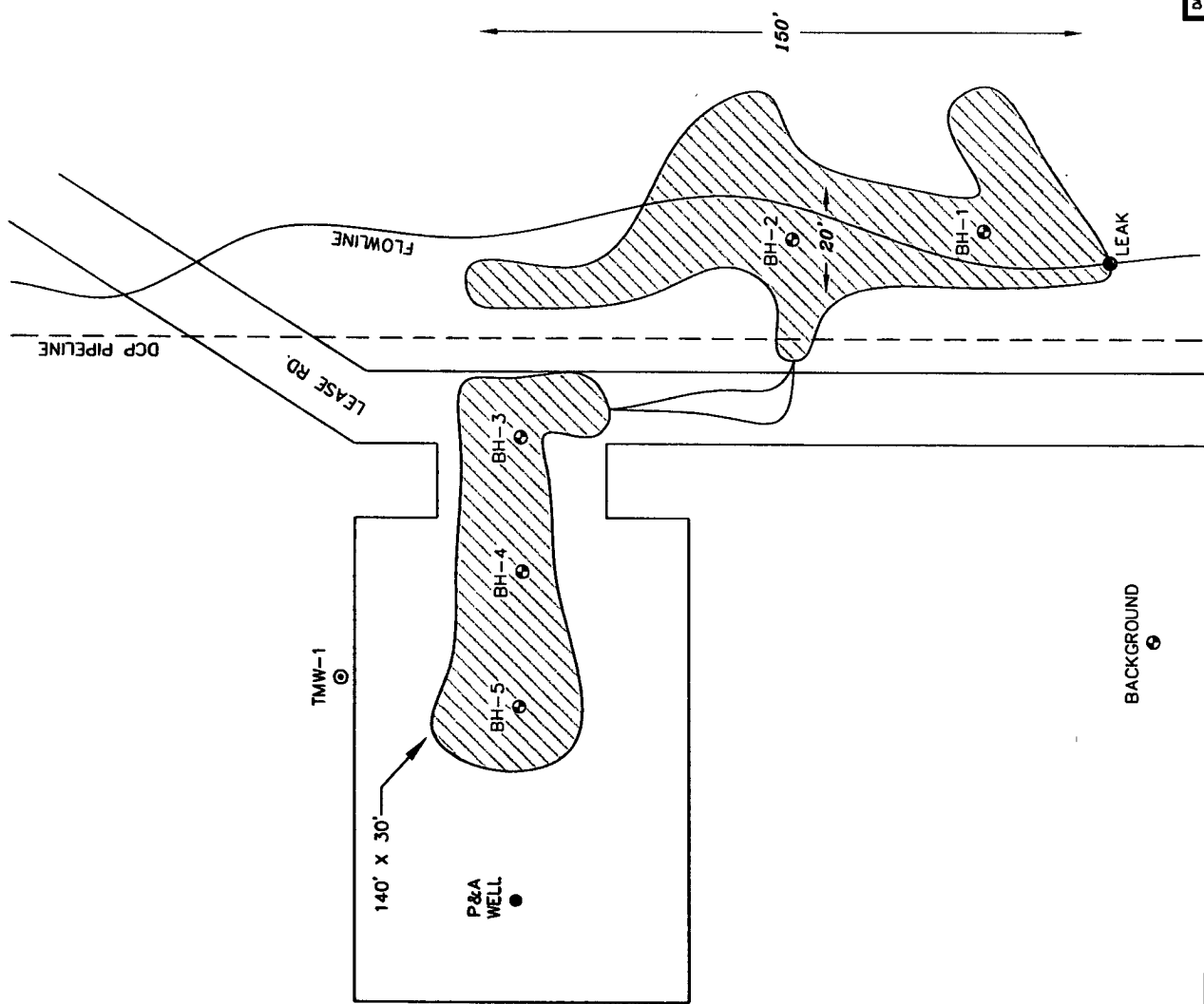


DELORME

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www.delorme.com

Scale 1 : 24,000
 1" = 2000 ft





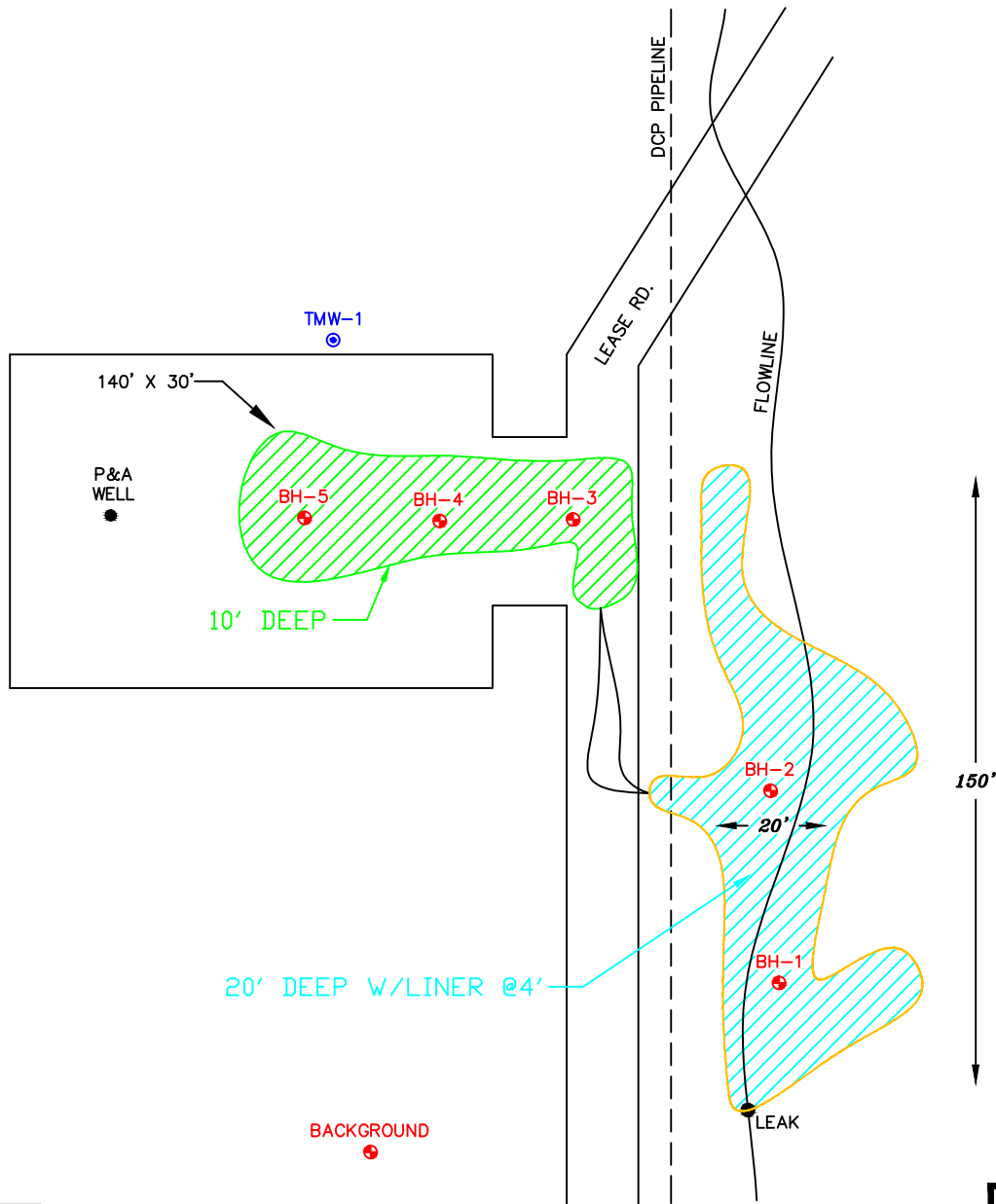
- SPILL AREA
- BORE HOLE LOCATIONS
- TEMPORARY MONITOR WELL

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO
ST. MARY LAND & EXPLORATION COMPANY
TUESDAY FED. #1
TETRA TECH, INC. MIDLAND, TEXAS

DATE: 12/18/08	DWN. BY: JJ	FILE: H:\ST. MARY\3813 TUESDAY FED. #1
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NOT TO SCALE



	SPILL AREA
	BORE HOLE LOCATIONS
	TEMPORARY MONITOR WELL

NOT TO SCALE

DATE:	12/18/08
DWN. BY:	JJ
FILE:	H:\ST. MARY\3613 TUESDAY FED. #1

FIGURE NO. 4
EDDY COUNTY, NEW MEXICO
ST. MARY LAND & EXPLORATION COMPANY
TUESDAY FED. #1
TETRA TECH, INC. MIDLAND, TEXAS

Tables

Table 1
St. Mary Land & Exploration
Tuesday Federal #1 Flowline
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					
BH-1	10/30/08	0-1		X	<50.0	8.41	8.41	-	-	-	-	19,500
	10/30/08	2-3		X	-	-	-	-	-	-	-	13,000
	10/30/08	4-5		X	-	-	-	-	-	-	-	10,100
	10/30/08	6-7		X	-	-	-	-	-	-	-	11,600
	10/30/08	8-9		X	-	-	-	-	-	-	-	11,100
	10/30/08	10-11		X	-	-	-	-	-	-	-	7,590
	10/30/08	20-21		X	-	-	-	-	-	-	-	13,300
	10/30/08	30-31	X		-	-	-	-	-	-	-	2,580
	10/30/08	40-41	X		-	-	-	-	-	-	-	903
	10/30/08	50-51	X		-	-	-	-	-	-	-	806
BH-2	10/30/08	0-1		X	51.2	4.49	55.69	<0.0100	<0.0100	<0.0100	0.0302	10,500
	10/30/08	2-3		X	-	-	-	-	-	-	-	8,420
	10/30/08	4-5		X	-	-	-	-	-	-	-	6,130
	10/30/08	6-7		X	-	-	-	-	-	-	-	8,200
	10/30/08	8-9		X	-	-	-	-	-	-	-	8,120
	10/30/08	10-11		X	-	-	-	-	-	-	-	12,800
	10/30/08	20-21		X	-	-	-	-	-	-	-	9,390
	10/30/08	30-31	X		-	-	-	-	-	-	-	3,230
	10/30/08	40-41	X		-	-	-	-	-	-	-	2,040
	10/30/08	50-51	X		-	-	-	-	-	-	-	1,250
BH-3	11/3/08	0-1		X	<50.0	2.04	2.04	-	-	-	-	2,470
	11/3/08	2-3		X	-	-	-	-	-	-	-	8,410
	11/3/08	4-5		X	-	-	-	-	-	-	-	8,320
	11/3/08	6-7		X	-	-	-	-	-	-	-	12,100
	11/3/08	8-9		X	-	-	-	-	-	-	-	8,660
	11/3/08	10-11		X	-	-	-	-	-	-	-	6,780
	11/3/08	20-21	X		-	-	-	-	-	-	-	6,170
	11/3/08	30-31	X		-	-	-	-	-	-	-	974
	11/3/08	40-41	X		-	-	-	-	-	-	-	545

(-) Not Analyzed


Liner Installation (4.0' below surface)

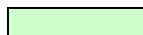
Excavation Depths

Table 1
St. Mary Land & Exploration
Tuesday Federal #1 Flowline
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					
BH-4	11/3/08	0-1		X	1,340	73.5	1,413.5	<0.0500	<0.0500	<0.0500	<0.0500	9,300
	11/3/08	2-3		X	168	13.2	181.2	-	-	-	-	9,820
	11/3/08	4-5		X	-	-	-	-	-	-	-	6,550
	11/3/08	6-7		X	-	-	-	-	-	-	-	8,980
	11/3/08	10-11		X	-	-	-	-	-	-	-	7,380
	11/3/08	20-21	X		-	-	-	-	-	-	-	156
	11/3/08	30-31	X		-	-	-	-	-	-	-	914
	11/3/08	40-41	X		-	-	-	-	-	-	-	326
BH-5	11/4/08	0-1		X	2,400	69.4	2,469.4	<0.0200	<0.0200	<0.0200	<0.0200	9,360
	11/4/08	2-3		X	<50.0	6.98	6.98	-	-	-	-	12,100
	11/4/08	4-5		X	<50.0	4.97	4.97	-	-	-	-	12,700
	11/4/08	6-7		X	-	-	-	-	-	-	-	12,400
	11/4/08	8-9		X	-	-	-	-	-	-	-	16,200
	11/4/08	10-11		X	-	-	-	-	-	-	-	9,680
	11/4/08	20-21	X		-	-	-	-	-	-	-	1,100
	11/4/08	30-31	X		-	-	-	-	-	-	-	176
Background	11/4/08	0-1	X		-	-	-	-	-	-	-	<100
	11/4/08	5-6	X		-	-	-	-	-	-	-	<100
	11/4/08	10-11	X		-	-	-	-	-	-	-	<100
	11/4/08	15-16	X		-	-	-	-	-	-	-	<100
	11/4/08	20-21	X		-	-	-	-	-	-	-	<100
	11/4/08	30-31	X		-	-	-	-	-	-	-	<100
	11/4/08	40-41	X		-	-	-	-	-	-	-	<100

(-) Not Analyzed

 Liner Installation (4.0' below surface)

 Excavation Depths

Appendix A

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

SEP 19 2008

Form C-141
Revised October 10, 2003

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

OCD-ARTESIA

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

Release Notification and Corrective Action

154903

OPERATOR

X Initial Report ☐ Final Report

Name of Company	ST. Mary Land & Exploration Company	Contact	Tom Morrow
Address	3300 N A Street Bldg 7, Ste 200, Midland, TX 79705	Telephone No.	(432) 688-1773
Facility Name	Tuesday Federal #1	Facility Type	

Surface Owner	BLM	Mineral Owner	BLM	Lease No.	
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3001525123

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	34	19S	29E					Eddy

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Oil/Produced Wtr	Volume of Release	3BO/80BW	Volume Recovered	-0-
Source of Release	3" Poly Transition	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	7:00 PM 9/16/08
Was Immediate Notice Given?	X Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Jim Amos w/ BLM & Mike Bratcher w/ OCD		
By Whom?	Bill Hearne	Date and Hour	9/17/08 9:58 AM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes X No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Cause: 3" poly transition line was old and found to be split causing leaking of fluids.

Action Taken: This line is used to transport water from wells operated by Westall to St. Mary's Parkway Delaware Unit Injection station.

Immediate action was taken by putting a clamp on the transition and contacting Westall to inform them that the line would be out of service pending repairs.

Describe Area Affected and Cleanup Action Taken.*

Affected Area: Pasture land on DCP Pipeline right of way. Spill area is 20' wide X 400' Long.

Cleanup Action: Contacted Tetra Tech Environmental Services for evaluation and recommendation for cleanup of affected area.

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: <i>Donna Huddleston</i>	OIL CONSERVATION DIVISION	
Printed Name: Donna Huddleston	Approved by District Supervisor: <i>Tommy SB</i>	Remediation Actions to be completed and Final C-141 submitted with confirmation, analyses/documentation on or before the Expiration Date.
Title: Production Tech	Approval Date: 10-15-08	Expiration Date: 12-15-08
E-mail Address: dhuddleston@stmaryland.com	Conditions of Approval:	
Date: 09/17/08 Phone: (432) 688-1789	Within 30 days, on or before 11-17-08, completion of a remediation work plan based on delineation should be finalized and submitted for approval to the Division summarizing all actions taken and/or to be taken to mitigate environmental damage.	

Attached ☒

2RP - 251

Notify OCD 48 hours prior to
obtaining samples where analyses
are to be presented to OCD

* Attach Additional Sheets If Necessary



New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



CERTIFIED MAIL—RETURN RECEIPT REQUESTED
7007 2560 0002 2222 8209

October 15, 2008

St. Mary Land & Exploration Co.
3300 N A Street, Bldg #7 Suite 200
Midland, TX 79705

RE: Tuesday Federal 001 30 015 25123
M-34-19S-29E Eddy County, New Mexico
2RP-251

Dear Operator:

This office is in receipt of your C-141 regarding the oil and produced water release at this facility.

NMOCD Rule 19.15.3.116 states in part, "...The responsible person must complete **division approved corrective action** for releases which endanger public health or the environment. Releases will be addressed in accordance with a **remediation plan** submitted to and approved by the division or with an abatement plan submitted in accordance with Section 19 of 19.15.1 NMAC."

Information and tools for proper corrective action may be found in the Environmental Handbook on our web site at the following link:
http://www.emnrd.state.nm.us/oed/documents/7C_spill1.pdf

The following actions are **required** to be addressed in the **remediation plan**:

- Determine the horizontal and vertical delineation of the spill by sampling.
- Prepare a sketch of the site indicating where and at what depths the samples were taken.
- Submit laboratory results of sampling as well as the proposed remediation with the plan.



October 15, 2008

Page 2

Notify the OCD 48 hours prior to obtaining samples where analyses of samples obtained are to be submitted to the OCD. Notification is to include date and time of sample event.

Remediation requirements may be subject to other federal, state, and local laws or regulations.

Within 30 days, **on or before November 17, 2008**, completion of a remediation work plan should be finalized and submitted to the Division summarizing all actions taken or to be taken to mitigate environmental damage related to the leak, spill or release for approval.

In the event that a satisfactory response is not received to this letter, further enforcement may occur. Such enforcement may include this office applying to the Division for an order summoning you to a hearing before a Division Examiner in Santa Fe. Such a hearing may result in imposition of civil penalties for your violation of OCD rules.

Please be advised that NMOCD acceptance and/or approval of documents or work plans 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 and/or approval of documents or work plans do not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If I may be of further assistance with this matter or should you have any questions, please feel free to contact me.

Sincerely,



Sherry Bonham
NMOCD District II, Artesia
(505) 748-1283 ext 109
E-mail: sherry.bonham@state.nm.us

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
SM Energy - Tuesday Federal #1

18 South			28 East		
6	5	4	3	2	1
		108		55	
7	8	81	9	10	11
49	69				12
18	17	16	15	80	14
					13
19	20	21	22	23	24
		226			
30	137	29	28	27	26
					25
31	32	33	34	35	36
				65	

18 South			29 East		
6	5	4	3	2	1
7	8	9	10	95	11
					12
18	17	16	15	14	13
19	20	21	22	23	24
					158
30	29	28	27	26	25
31	32	33	34	35	36

18 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	44
					24
30	29	28	27	26	25
31	32	33	34	35	36

19 South			28 East		
6	5	4	3	2	1
7	8	9	246	10	11
		265			12
18	17	16	15	14	13
91					
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					75

19 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
					123
19	20	21	22	23	24
	62.9				101
30	29	28	27	26	25
31	32	33	34	62'	121
			60	SITE	115

19 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
90					
31	32	33	34	35	36
115					

20 South			28 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
		30	35		
31	32	33	25	34	35
115		29			19

20 South			29 East		
6	5	4	3	2	1
			91		
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
	62				
30	29	28	27	26	25
52					
31	32	33	34	35	36

20 South			30 East		
6	5	3.5	4	3	2
			6		1
7	8	9	10	11	12
18	17	16	15	14	13
		29			
19	20	21	22	23	24
	29	150			
30	29	28	27	26	25
31	32	33	34	35	36
170		191			

- 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
- 121 Abandoned Waterwell (recently measured)



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00626 POD1	CP	ED		2	3	1	03	19S	29E	587360	3617575*	286	247	39
CP 00626 POD2	CP	ED		3	2	1	03	19S	29E	587559	3617779*	240	195	45
CP 00646		ED		1	1	4	07	19S	29E	583155	3615551	199	150	49
CP 00681		ED		1	1	3	34	19S	29E	587230	3609127*			
CP 00703		ED		4	1	36		19S	29E	590945	3609441	225	115	110
CP 00739		ED		3	4	4	35	19S	29E	590068	3608622	200	110	90
CP 00741		ED		1	3	2	34	19S	29E	588030	3609533*	230	60	170
CP 00820		LE		2	4	13		19S	29E	591713	3613870*	120		
CP 00821		LE		4	4	25		19S	29E	591743	3610248*	120		

Average Depth to Water: **146 feet**

Minimum Depth: **60 feet**

Maximum Depth: **247 feet**

Record Count: 9

PLSS Search:

Township: 19S

Range: 29E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

Appendix C

SOIL BORING LOG

Boring/Well: BH-1

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 61'

Date Installed: 10/30/08

DEPTH	SAMPLE DESCRIPTION
(in feet)	
0-1	Light tan sand with some caliche, Staining on top with odor
2-3	Light tan caliche, with no stain or odor
4-5	Light tan caliche
6-9	Tan sandy clay
10-16	Light tan caliche
20-26	Tan sand and caliche
30-31	Light Tan Sandstone
35-36	Yellowish Tan Sandstone
40-41	Tan Sandstone
45-61	White to tan gypsum some dense
TD - 61 BGS	

SOIL BORING LOG

Boring/Well: BH-2

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 61'

Date Installed: 10/30/08

DEPTH (in feet)	SAMPLE DESCRIPTION
0-1	Light tan sand with some caliche, stained on top with odor
2-3	Light tan sand, with no stain or odor
4-5	Light tan sand and caliche
6-9	Tan sandy clay
10-16	Light tan sandstone
20-26	Tan sandy clay and caliche
30-40	Light tan sandstone
41-50	Tan sandstone with clay
51-61	White to tan gypsum some dense
TD - 61 BGS	

SOIL BORING LOG

Boring/Well: BH-3

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 51'

Date Installed: 11/3/08

DEPTH (in feet)	SAMPLE DESCRIPTION
0-1	Light tan sand with some caliche, stained on top with odor
2-5	Light tan sand and caliche
6-15	Light tan cementd sandstone
16-20	Light tan silt with some clay
21-30	Redish tan clay with some gypsum
30-50	White to tan gypsum some dense
50-51	Silicated sandstone
TD - 51 BGS	

SOIL BORING LOG

Boring/Well: BH-4

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 51'

Date Installed: 11/3/08

DEPTH (in feet)	SAMPLE DESCRIPTION
0-1	Brown silty clay with staining and odor
2-3	Tan silt
4-25	Tan silt with some clay
25-40	Redish tan silty clay with some gypsum
41-50	Tan silty clay with mixed with gypsum
50-51	Silicated sandstone
TD - 51 BGS	

SOIL BORING LOG

Boring/Well: BH-5

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 31'

Date Installed: 11/4/08

DEPTH	SAMPLE DESCRIPTION
(in feet)	
0-1	Brown silty clay with staining and odor
2-8	Brown silty clay
9-20	Tan silty clay
20-25	Light tan gypsum
25-31	White to tan gypsum
TD - 31 BGS	

SOIL BORING LOG

Boring/Well: Background

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 41'

Date Installed: 11/3/08

DEPTH (in feet)	SAMPLE DESCRIPTION
0-5	Light tan fine grain sand
5-15	Tan sand with caliche
16-30	Light tan fine grain sand and silt
31-40	Tan sandy clay with some sandstone
40-41	Light tan cemented sandstone
TD - 41 BGS	

SOIL BORING LOG

Boring/Well: TW-1

Project Number: 3613

Client: St.Mary Land & Exploration

Site Location: Tuesday Federal #1 Flowline Leak

Location: Eddy County, New Mexico

Total Depth - 72'

Date Installed: 3/11/09

DEPTH (ft)	SAMPLE DESCRIPTION
0-1	Tan, fine grain sand and gypsum
5-6	White gypsum and tan silty sand, clean, loose
10-11	White gypsum and tan silty sand, clean, loose
15-16	Lt. brown fine grain sand, trace of clay
20-21	White, gypsum, clean, friable
25-26	White, gypsum, clean, friable
30-31	White, gypsum, clean, friable
35-38	Yellow and greenish shale and fine grain sand
38-40	Red and yellow shale, sandy clay @ 39'-40'
40-43	Brown, sandy clay, clean
43-50	Gray, limestone, dense layer
50-55	Gray, limestone, dense layer, streaks of shale layers
55-60	Gray, limestone, dense layer, streaks of gypsum layers
60-65	Gray, limestone, dense layer, streaks of gypsum layers
65-70	Gray, limestone, dense layer, streaks of gypsum layers
70-72	Gray and red clay, dense

Appendix D

Report Date: November 20, 2008
115-6403613

Work Order: 8111117
St. Mary/Tuesday Federal #1

Page Number: 1 of 1
Eddy County, NM

Summary Report

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

Report Date: November 20, 2008

Work Order: 8111117



Project Location: Eddy County, NM
Project Name: St. Mary/Tuesday Federal #1
Project Number: 115-6403613

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
178962	WW-1 Sec. 34, T19SR29E	water	2008-11-10	14:00	2008-11-11

Sample: 178962 - WW-1 Sec. 34, T19SR29E

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		70.0	mg/L as CaCo3	4.00
Total Alkalinity		70.0	mg/L as CaCo3	4.00
Dissolved Calcium		782	mg/L	1.00
Chloride		17500	mg/L	0.500
Hardness (by ICP)		8380	mg eq CaCO3/L	0.00
Dissolved Potassium		492	mg/L	1.00
Dissolved Magnesium		1560	mg/L	1.00
Dissolved Sodium		11000	mg/L	1.00
pH		6.70	s.u.	0.00
Sulfate		8190	mg/L	0.500
Total Dissolved Solids		36700	mg/L	10.0

Report Date: November 14, 2008
115-6403613

Work Order: 8110630
St. Mary/Tuesday Federal #1

Page Number: 1 of 9
Eddy County, NM

Summary Report

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

Report Date: November 14, 2008

Work Order: 8110630



Project Location: Eddy County, NM
Project Name: St. Mary/Tuesday Federal #1
Project Number: 115-6403613

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
178542	BH-1 0-1'	soil	2008-10-30	00:00	2008-11-06
178543	BH-1 2-3'	soil	2008-10-30	00:00	2008-11-06
178544	BH-1 4-5'	soil	2008-10-30	00:00	2008-11-06
178545	BH-1 6-7'	soil	2008-10-30	00:00	2008-11-06
178546	BH-1 8-9'	soil	2008-10-30	00:00	2008-11-06
178547	BH-1 10-11'	soil	2008-10-30	00:00	2008-11-06
178549	BH-1 20-21'	soil	2008-10-30	00:00	2008-11-06
178551	BH-1 30-31'	soil	2008-10-30	00:00	2008-11-06
178553	BH-1 40-41'	soil	2008-10-30	00:00	2008-11-06
178555	BH-1 50-51'	soil	2008-10-30	00:00	2008-11-06
178558	BH-2 0-1'	soil	2008-10-30	00:00	2008-11-06
178559	BH-2 2-3'	soil	2008-10-30	00:00	2008-11-06
178560	BH-2 4-5'	soil	2008-10-30	00:00	2008-11-06
178561	BH-2 6-7'	soil	2008-10-30	00:00	2008-11-06
178562	BH-2 8-9'	soil	2008-10-30	00:00	2008-11-06
178563	BH-2 10-11'	soil	2008-10-30	00:00	2008-11-06
178565	BH-2 20-21'	soil	2008-10-30	00:00	2008-11-06
178567	BH-2 30-31'	soil	2008-10-30	00:00	2008-11-06
178568	BH-2 40-41'	soil	2008-10-30	00:00	2008-11-06
178569	BH-2 50-51'	soil	2008-10-30	00:00	2008-11-06
178571	BH-3 0-1'	soil	2008-11-03	00:00	2008-11-06
178572	BH-3 2-3'	soil	2008-11-03	00:00	2008-11-06
178573	BH-3 4-5'	soil	2008-11-03	00:00	2008-11-06
178574	BH-3 6-7'	soil	2008-11-03	00:00	2008-11-06
178575	BH-3 8-9'	soil	2008-11-03	00:00	2008-11-06
178576	BH-3 10-11'	soil	2008-11-03	00:00	2008-11-06
178578	BH-3 20-21'	soil	2008-11-03	00:00	2008-11-06
178580	BH-3 30-31'	soil	2008-11-03	00:00	2008-11-06
178582	BH-3 40-41'	soil	2008-11-03	00:00	2008-11-06
178584	BH-4 0-1'	soil	2008-11-03	00:00	2008-11-06

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

This is only a summary. Please, refer to the complete report package for quality control data.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
178585	BH-4 2-3'	soil	2008-11-03	00:00	2008-11-06
178586	BH-4 4-5'	soil	2008-11-03	00:00	2008-11-06
178587	BH-4 6-7'	soil	2008-11-03	00:00	2008-11-06
178588	BH-4 10-11'	soil	2008-11-03	00:00	2008-11-06
178590	BH-4 20-21'	soil	2008-11-03	00:00	2008-11-06
178592	BH-4 30-31'	soil	2008-11-03	00:00	2008-11-06
178594	BH-4 40-41'	soil	2008-11-03	00:00	2008-11-06
178596	BH-5 0-1'	soil	2008-11-04	00:00	2008-11-06
178597	BH-5 2-3'	soil	2008-11-04	00:00	2008-11-06
178598	BH-5 4-5'	soil	2008-11-04	00:00	2008-11-06
178599	BH-5 6-7'	soil	2008-11-04	00:00	2008-11-06
178600	BH-5 8-9'	soil	2008-11-04	00:00	2008-11-06
178601	BH-5 10-11'	soil	2008-11-04	00:00	2008-11-06
178603	BH-5 20-21'	soil	2008-11-04	00:00	2008-11-06
178605	BH-5 30-31'	soil	2008-11-04	00:00	2008-11-06
178606	Background 0-1'	soil	2008-11-03	00:00	2008-11-06
178607	Background 5-6'	soil	2008-11-03	00:00	2008-11-06
178608	Background 10-11'	soil	2008-11-03	00:00	2008-11-06
178609	Background 15-16'	soil	2008-11-03	00:00	2008-11-06
178610	Background 20-21'	soil	2008-11-03	00:00	2008-11-06
178611	Background 30-31'	soil	2008-11-03	00:00	2008-11-06
178612	Background 40-41'	soil	2008-11-03	00:00	2008-11-06

Sample - Field Code	BTEX				TPH DRO	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
178542 - BH-1 0-1'					<50.0	8.41
178558 - BH-2 0-1'	<0.0100	<0.0100	<0.0100	0.0302	51.2	4.49
178571 - BH-3 0-1'					<50.0	2.04
178584 - BH-4 0-1'	<0.0500	<0.0500	<0.0500	<0.0500	1340	73.5
178585 - BH-4 2-3'					168	13.2
178596 - BH-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	2400	69.4
178597 - BH-5 2-3'					<50.0	6.98
178598 - BH-5 4-5'					<50.0	4.97

Sample: 178542 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		19500	mg/Kg	2.00

Sample: 178543 - BH-1 2-3'

Param	Flag	Result	Units	RL
Chloride		13000	mg/Kg	2.00

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Sample: 178544 - BH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		10100	mg/Kg	2.00

Sample: 178545 - BH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	2.00

Sample: 178546 - BH-1 8-9'

Param	Flag	Result	Units	RL
Chloride		11100	mg/Kg	2.00

Sample: 178547 - BH-1 10-11'

Param	Flag	Result	Units	RL
Chloride		7590	mg/Kg	2.00

Sample: 178549 - BH-1 20-21'

Param	Flag	Result	Units	RL
Chloride		13300	mg/Kg	2.00

Sample: 178551 - BH-1 30-31'

Param	Flag	Result	Units	RL
Chloride		2580	mg/Kg	2.00

Sample: 178553 - BH-1 40-41'

Param	Flag	Result	Units	RL
Chloride		903	mg/Kg	2.00

Sample: 178555 - BH-1 50-51'

Param	Flag	Result	Units	RL
Chloride		806	mg/Kg	2.00

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Sample: 178558 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		10500	mg/Kg	2.00

Sample: 178559 - BH-2 2-3'

Param	Flag	Result	Units	RL
Chloride		8420	mg/Kg	2.00

Sample: 178560 - BH-2 4-5'

Param	Flag	Result	Units	RL
Chloride		6130	mg/Kg	2.00

Sample: 178561 - BH-2 6-7'

Param	Flag	Result	Units	RL
Chloride		8200	mg/Kg	2.00

Sample: 178562 - BH-2 8-9'

Param	Flag	Result	Units	RL
Chloride		8120	mg/Kg	2.00

Sample: 178563 - BH-2 10-11'

Param	Flag	Result	Units	RL
Chloride		12800	mg/Kg	2.00

Sample: 178565 - BH-2 20-21'

Param	Flag	Result	Units	RL
Chloride		9390	mg/Kg	2.00

Sample: 178567 - BH-2 30-31'

Param	Flag	Result	Units	RL
Chloride		3230	mg/Kg	2.00

Sample: 178568 - BH-2 40-41'

Param	Flag	Result	Units	RL
Chloride		2040	mg/Kg	2.00

Sample: 178569 - BH-2 50-51'

Param	Flag	Result	Units	RL
Chloride		1250	mg/Kg	2.00

Sample: 178571 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		2470	mg/Kg	2.00

Sample: 178572 - BH-3 2-3'

Param	Flag	Result	Units	RL
Chloride		8410	mg/Kg	2.00

Sample: 178573 - BH-3 4-5'

Param	Flag	Result	Units	RL
Chloride		8320	mg/Kg	2.00

Sample: 178574 - BH-3 6-7'

Param	Flag	Result	Units	RL
Chloride		12100	mg/Kg	2.00

Sample: 178575 - BH-3 8-9'

Param	Flag	Result	Units	RL
Chloride		8660	mg/Kg	2.00

Sample: 178576 - BH-3 10-11'

Param	Flag	Result	Units	RL
Chloride		6780	mg/Kg	2.00

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Sample: 178578 - BH-3 20-21'

Param	Flag	Result	Units	RL
Chloride		6170	mg/Kg	2.00

Sample: 178580 - BH-3 30-31'

Param	Flag	Result	Units	RL
Chloride		974	mg/Kg	2.00

Sample: 178582 - BH-3 40-41'

Param	Flag	Result	Units	RL
Chloride		545	mg/Kg	2.00

Sample: 178584 - BH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		9300	mg/Kg	2.00

Sample: 178585 - BH-4 2-3'

Param	Flag	Result	Units	RL
Chloride		9820	mg/Kg	2.00

Sample: 178586 - BH-4 4-5'

Param	Flag	Result	Units	RL
Chloride		6550	mg/Kg	2.00

Sample: 178587 - BH-4 6-7'

Param	Flag	Result	Units	RL
Chloride		8980	mg/Kg	2.00

Sample: 178588 - BH-4 10-11'

Param	Flag	Result	Units	RL
Chloride		7380	mg/Kg	2.00

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Sample: 178590 - BH-4 20-21'

Param	Flag	Result	Units	RL
Chloride		156	mg/Kg	2.00

Sample: 178592 - BH-4 30-31'

Param	Flag	Result	Units	RL
Chloride		914	mg/Kg	2.00

Sample: 178594 - BH-4 40-41'

Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	2.00

Sample: 178596 - BH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		9360	mg/Kg	2.00

Sample: 178597 - BH-5 2-3'

Param	Flag	Result	Units	RL
Chloride		12100	mg/Kg	2.00

Sample: 178598 - BH-5 4-5'

Param	Flag	Result	Units	RL
Chloride		12700	mg/Kg	2.00

Sample: 178599 - BH-5 6-7'

Param	Flag	Result	Units	RL
Chloride		12400	mg/Kg	2.00

Sample: 178600 - BH-5 8-9'

Param	Flag	Result	Units	RL
Chloride		16200	mg/Kg	2.00

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Sample: 178601 - BH-5 10-11'

Param	Flag	Result	Units	RL
Chloride		9680	mg/Kg	2.00

Sample: 178603 - BH-5 20-21'

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	2.00

Sample: 178605 - BH-5 30-31'

Param	Flag	Result	Units	RL
Chloride		176	mg/Kg	2.00

Sample: 178606 - Background 0-1'

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

Sample: 178607 - Background 5-6'

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

Sample: 178608 - Background 10-11'

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

Sample: 178609 - Background 15-16'

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

Sample: 178610 - Background 20-21'

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

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Sample: 178611 - Background 30-31'

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

Sample: 178612 - Background 40-41'

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

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: <i>St Mary Land & Exploration</i>		SITE MANAGER: <i>Ike Tavares</i>	
PROJECT NO.: <i>115-640 3613</i>	PROJECT NAME: <i>SHAWY / Tuesday Federal #1</i>	SAMPLE IDENTIFICATION <i>Eddy County, NM</i>	
LAB I.D. NUMBER	DATE	TIME	

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD			
								HCL	HNO3	ICE	NONE
178542	10/30/08		S	X	X	1				X	
543			S	X	X	1				X	
544			S	X	X	1				X	
545			S	X	X	1				X	
546			S	X	X	1				X	
547			S	X	X	1				X	
548			S	X	X	1				X	
549			S	X	X	1				X	
550			S	X	X	1				X	
551			S	X	X	1				X	

RELINQUISHED BY: (Signature)	Date: <i>10/30/08</i>	Time: <i>15:30</i>	RECEIVED BY: (Signature)	Date: <i>10/30/08</i>	Time: <i>15:30</i>
RELINQUISHED BY: (Signature)	Date: _____	Time: _____	RECEIVED BY: (Signature)	Date: _____	Time: _____
RELINQUISHED BY: (Signature)	Date: _____	Time: _____	RECEIVED BY: (Signature)	Date: _____	Time: _____
RECEIVING LABORATORY:	Tetra Tech				
CITY: <i>Midland</i>	STATE: <i>TX</i>	ZIP: _____	DATE: _____	TIME: _____	
CONTACT: _____	_____				

SAMPLE CONDITION WHEN RECEIVED: *3.2*

REMARKS: *If TPH Exceeds 1,000 (mg/kg) run deep interval. Also run 3 BTX on the highest TPH's*

ANALYSIS REQUEST (Circle or Specify Method No.)													
PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Volatiles	TCRP 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
<i>TPH 8015 MOD TX1005 (Ext. to C35)</i>													
<i>BTX 8021B</i>													

SAMPLED BY: (Print & Initial)	Date: <i>10/30/08</i>	Time: <i>15:30</i>
SAMPLE SHIPPED BY: (Circle)	AIRBILL #:	OTHER:
FEDEX	BUS	UPS
<i>HAND DELIVERED</i>		
TETRA TECH CONTACT PERSON:	<i>Ike Tavares</i>	
Results by:		
RUSH Charges Authorized:	Yes	No

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:		SITE MANAGER:		PROJECT NAME:		PRESERVATIVE METHOD		NUMBER OF CONTAINERS		SAMPLE IDENTIFICATION		ANALYSIS REQUEST (Circle or Specify Method No.)																	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	DATE	TIME	DATE	TIME	HCL	HNO3	ICE	NONE	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCBs 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Alr)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
118581	11/3/68		S		X	BH - 3	35' - 36'	1				X																	
582			S		X	BH - 3	40' - 41'	1				X																	
583			S		X	BH - 3	50' - 51'	1				X																	
584			S		X	BH - 4	0 - 1'	1				X																	
585			S		X	BH - 4	2' - 3'	1				X																	
586			S		X	BH - 4	4' - 5'	1				X																	
587			S		X	BH - 4	6' - 7'	1				X																	
588			S		X	BH - 4	10' - 11'	1				X																	
589			S		X	BH - 4	15' - 16'	1				X																	
590			S		X	BH - 4	20' - 21'	1				X																	

RELINQUISHED BY: (Signature) <i>[Signature]</i> Date: <i>11/3/68</i> Time: <i>15:30</i>		RECEIVED BY: (Signature) <i>[Signature]</i> Date: <i>11/3/68</i> Time: <i>15:30</i>	
RELINQUISHED BY: (Signature) <i>[Signature]</i> Date: <i>11/3/68</i> Time: <i>15:30</i>		RECEIVED BY: (Signature) <i>[Signature]</i> Date: <i>11/3/68</i> Time: <i>15:30</i>	
RELINQUISHED BY: (Signature) <i>[Signature]</i> Date: <i>11/3/68</i> Time: <i>15:30</i>		RECEIVED BY: (Signature) <i>[Signature]</i> Date: <i>11/3/68</i> Time: <i>15:30</i>	
RECEIVING LABORATORY: <i>Tetra Tech</i>		REMARKS: <i>32</i>	
ADDRESS: <i>Midland</i> STATE: <i>TX</i> ZIP: <i></i>		DATE: <i></i> TIME: <i></i>	
CONTACT: <i></i> PHONE: <i></i>		TETRA TECH CONTACT PERSON: <i>Ike Tavares</i>	
SAMPLE CONDITION WHEN RECEIVED: <i>32</i>		RUSH CHARGES AUTHORIZED: Yes <input type="checkbox"/> No <input type="checkbox"/>	

8110630

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: <i>St Mary Land & Exploration</i>				SITE MANAGER: <i>Ike Tavaraz</i>			
PROJECT NO.: <i>115-640 3613</i>				PROJECT NAME: <i>St Mary Tuesday Federal #1</i>			
				Eddy County, NM			
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	
178591	11/13/08		S	X	BH-4	25'-26'	
592			S	X	BH-4	30'-31'	
593			S	X	BH-4	35'-36'	
594			S	X	BH-4	40'-41'	
595			S	X	BH-4	50'-51'	
596	11/14/08		S	X	BH-5	0-1'	
597			S	X	BH-5	2'-3'	
598			S	X	BH-5	4'-5'	
599			S	X	BH-5	6'-7'	
600			S	X	BH-5	8'-9'	

RELINQUISHED BY: (Signature) <i>[Signature]</i>	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE: <i>11/13/08</i>	TIME: <i>15:30</i>
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE:	TIME:
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE:	TIME:

RECEIVING LABORATORY: ADDRESS: <i>Midland</i> STATE: <i>TX</i> ZIP: <i></i>	
CONTACT: <i>[Signature]</i>	PHONE: <i></i> DATE: <i></i> TIME: <i></i>

TETRA TECH CONTACT PERSON: <i>Ike Tavaraz</i>	
RESULTS BY:	RESULTS BY:
RUSH CHARGES AUTHORIZED:	Yes No

SAMPLE SHIPPED BY: (Circle) FEDEX <input checked="" type="checkbox"/> BUS <input type="checkbox"/> UPS <input type="checkbox"/>	AIRBILL #:
OTHER:	

MAJOR ANIONS/CATIONS, pH, TDS	
PLM (Asbestos)	
Alpha Beta (Air)	
Gamma Spec.	
Chloride	
Pest. 808/608	
PCB's 8080/608	
GC/MS Seml. Vol. 8270/625	
GC/MS Vol. 8240/8260/624	
RCI	
TCLP Semi Volatiles	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
PAH 8270	
TPH 8015 MOD (Ext. to C35)	

SAMPLED BY: (Print & Initial) <i>Mike Tavaraz</i>	DATE: <i>11-13-08</i>
TIME: <i>15:30</i>	

REMARKS: <i>3.6</i>

PAGE: <i>6</i> OF: <i>8</i>

ANALYSIS REQUEST (Circle or Specify Method No.)
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8110630

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

Report Date: March 31, 2009
115-6403613

Work Order: 9031723
St. Mary/Tuesday Federal #1

Page Number: 1 of 1
Eddy County, NM

Summary Report

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

Report Date: March 31, 2009

Work Order: 9031723



Project Location: Eddy County, NM
Project Name: St. Mary/Tuesday Federal #1
Project Number: 115-6403613

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
190477	TMW-1	water	2009-03-16	15:15	2009-03-17

Sample: 190477 - TMW-1

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		84.0	mg/L as CaCo3	4.00
Total Alkalinity		84.0	mg/L as CaCo3	4.00
Dissolved Calcium		520	mg/L	1.00
Chloride		280	mg/L	0.500
Hardness (by ICP)		1780	mg eq CaCO3/L	0.00
Dissolved Potassium		9.57	mg/L	1.00
Dissolved Magnesium		116	mg/L	1.00
Dissolved Sodium		147	mg/L	1.00
pH		7.78	s.u.	0.00
Sulfate		1800	mg/L	0.500
Total Dissolved Solids		2530	mg/L	10.0

