

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	PDU Tract 1 Tank Battery				
Company:	SM Energy Company				
Section, Township and Range	Unit H	Sec 35	T19S	R29E	
Lease Number:	API No. 3001530026				
County:	Eddy County				
GPS:	32.61545° N			104.04343° W	
Surface Owner:	Federal				
Mineral Owner:					
Directions:	Northeast of Carlsbad, from the intersection of 360 and CR238, head N on CR238 for 6.8 miles and turn west. Travel the lease road for 1.0 miles and turn North arriving at the Injection Station.				

Release Data:

Date Released:	2/25/2014	RECEIVED
Type Release:	Crude and Produced Water	
Source of Contamination:	Melted polylines from DCP gas line fire	APR 24 2014
Fluid Released:	Unk	
Fluids Recovered:	Unk	NMOCD ARTESIA

Official Communication:

Name:	Vickie Martinez	Tom Elliott
Company:	SM Energy Company	Tetra Tech
Address:	3300 N A St. Suite 200	4000 North Big Spring Suite 401
P.O. Box		
City:	Midland Texas, 79705	Midland, Texas
Phone number:	(432) 688-1709	(432) 682-4559
Fax:	(432) 688-1701	
Email:	vmartinez@sm-energy.com	Tom.elliott@tetrattech.com

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
10	50	5,000



TETRA TECH

March 13, 2014

Mr. Doug Hoag
Civil Engineering Tech
Bureau of Land Management, Carlsbad Field Office
620 E. Greene Street
Carlsbad, New Mexico 88220-6292

**Re: Closure Report for SM Energy Company
PDU Tract 1 Tank Battery
Section 35, Township 19S, Range 29E
Eddy County, New Mexico**

Mr. Hoag:

Tetra Tech, Inc. (Tetra Tech) was contacted by SM Energy Company (SM Energy) to assess a spill from PDU Tract 1 Tank Battery fire, located in Section 35, Township 19 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.62154°, W -104.04598°. The site location is shown on Figures 1 and 2.

Background

According to the SM Energy, on February 25, 2014 a 4" DCP steel line developed a pinhole leak releasing gas which caused a fire at the battery. The resulting fire burned poly flow lines to the battery. To alleviate the problem, SM Energy shut in the wells and repaired the poly lines. The spill impacted an area in the pasture measuring approximately 50' x 150'. SM Energy did not file a C-141 due to DCP taking responsibility for the fire. The spill areas are shown on Figure 3.

Groundwater

The New Mexico State Engineers Office listed one well with a depth to water of 110' in Section 35. According to the NMOCD groundwater map the depth to groundwater is approximately 100' below surface. The groundwater data is shown in Appendix A.



Regulatory

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

Remediation

On February 26, 2014, Tetra Tech personnel inspected the spill area and removed the visually stained soil to approximately 0.5'-1.0' bgs. Confirmation samples (CS-1 through CS-3) were collected within the spill area after the impacted soil was removed. The samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The sampling results are summarized in Table 1. The sampling locations are shown on Figure 3.

On February 26, 2014, the BLM was on site to inspect the remediated spill area review the filed sample results. The BLM approved the remediation of the site and instructed SM Energy to leave the excavated area without backfill, which left a natural contour across the site. Approximately 160 cubic yards were removed and transported for proper disposal.

Analytical Results

Referring to Table 1, confirmation samples (CS-1, CS-2 and CS-3) were below the RRAL for TPH and BTEX. The samples also did not show any significant chloride concentrations. The laboratory reports and the chain of custody documentation are included in Appendix B.

Conclusion

Based on the remediation activities performed at this location, SM Energy requests closure for this site. If you have any questions or comments concerning the remediation activities performed at the site, please call me at (432) 682-4559.



TETRA TECH

Respectfully submitted,
TETRA TECH, Inc.

Tom Elliott
Project Manager

cc: Richard Choate – SM Energy

FIGURES

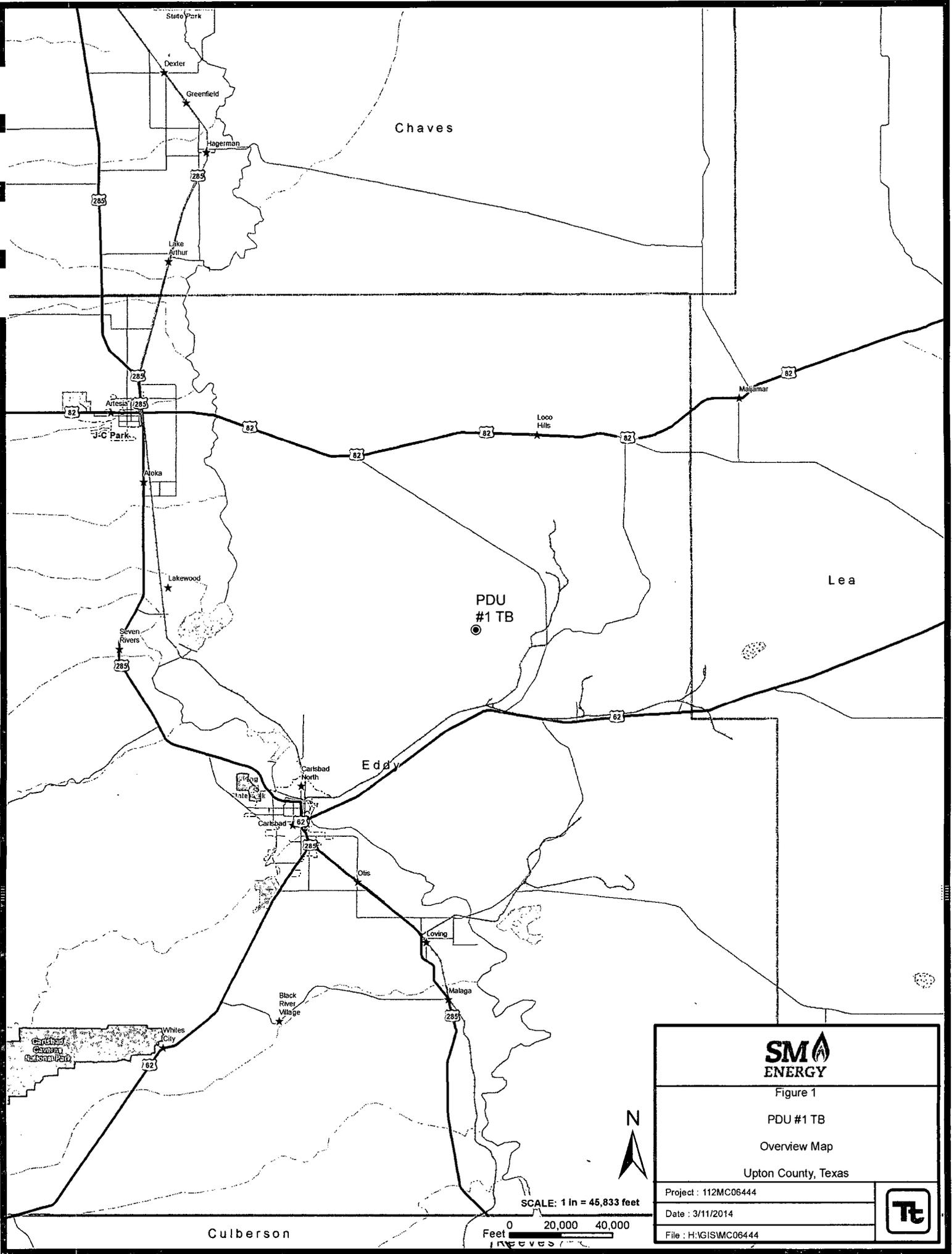
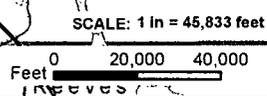


	
Figure 1 PDU #1 TB Overview Map Upton County, Texas	
Project : 112MC06444	
Date : 3/11/2014	
File : H:\GIS\MC06444	
	



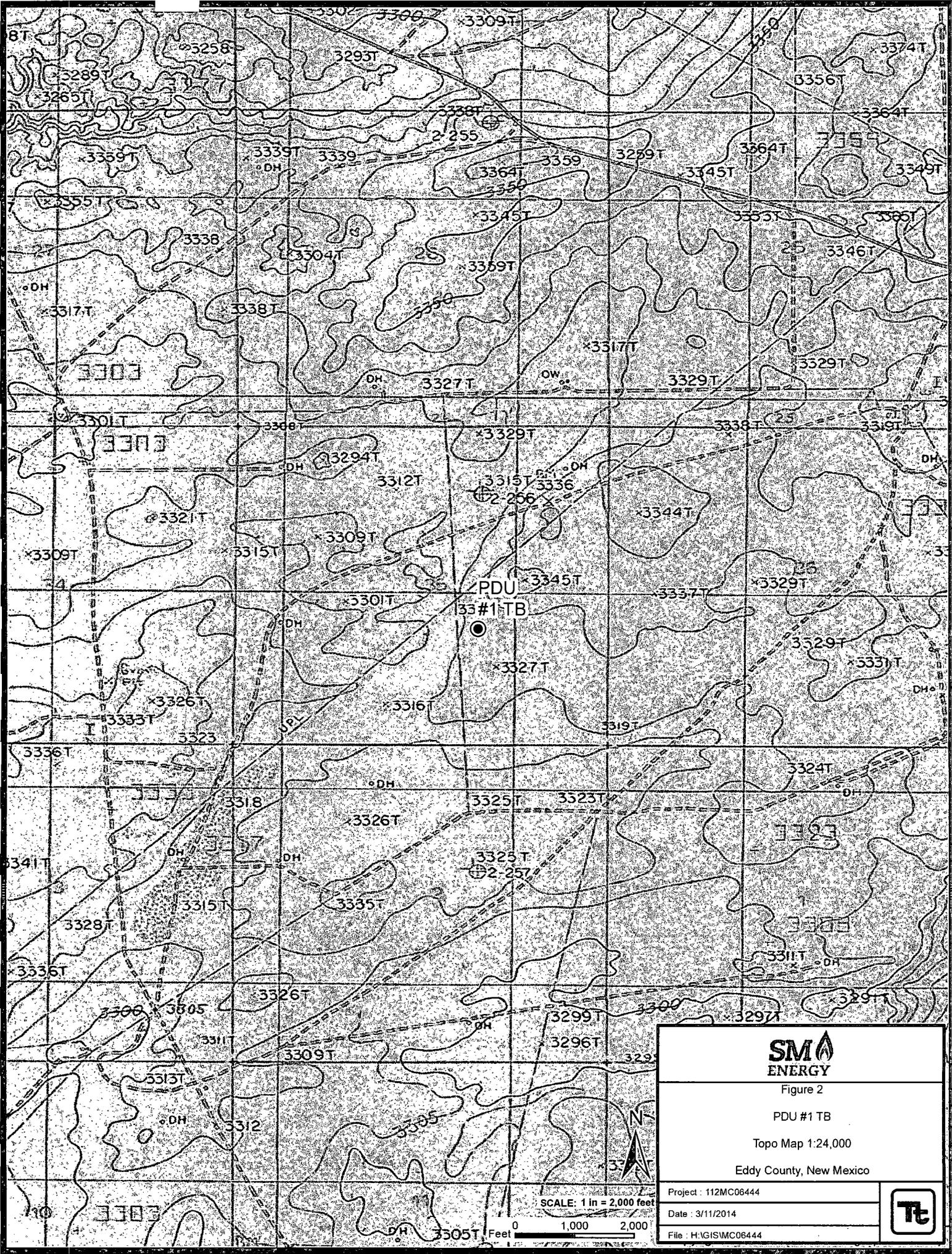


Figure 2

PDU #1 TB

Topo Map 1:24,000

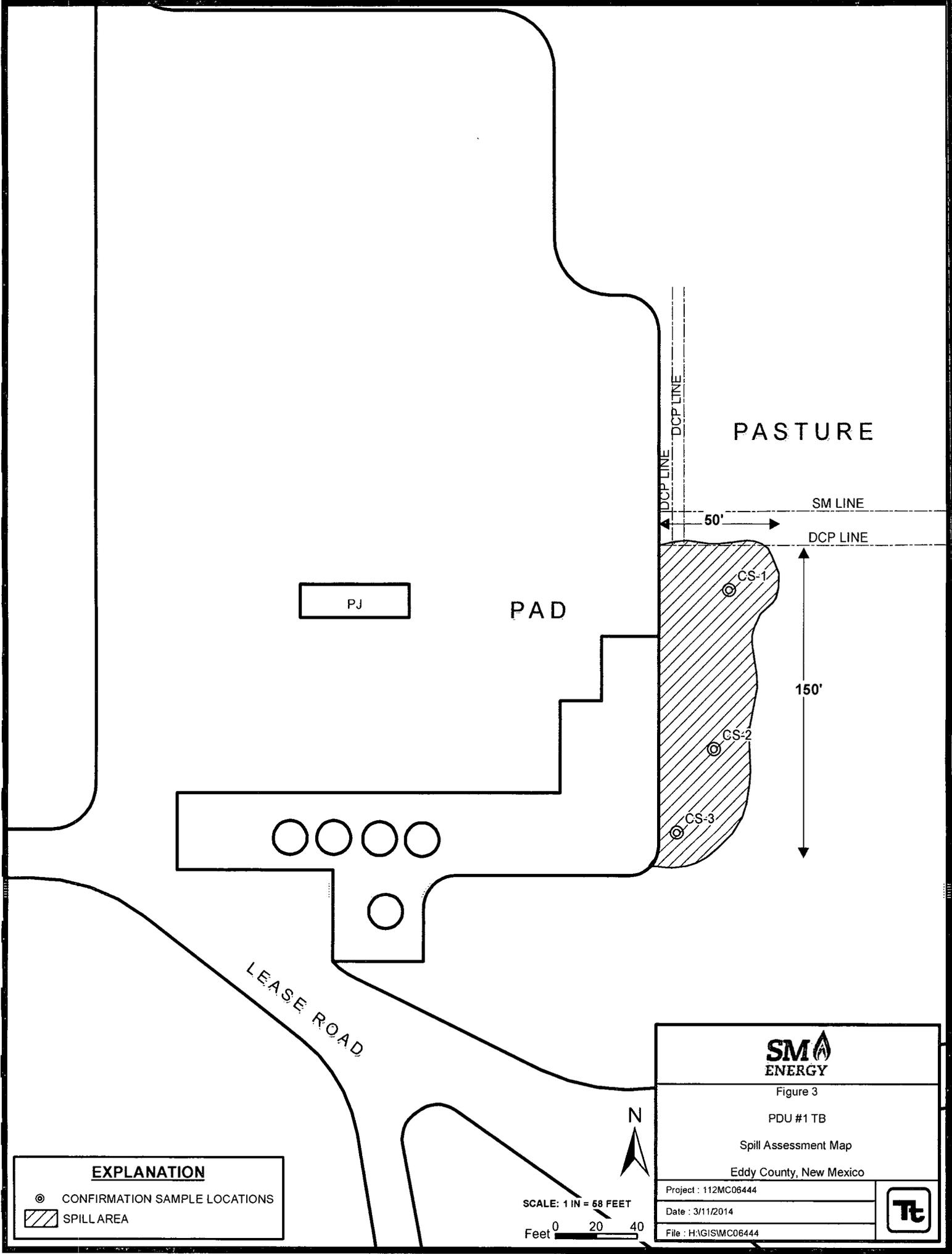
Eddy County, New Mexico

Project : 112MC06444

Date : 3/11/2014

File : H:\GIS\MC06444





EXPLANATION

- ⊙ CONFIRMATION SAMPLE LOCATIONS
- ▨ SPILL AREA

N

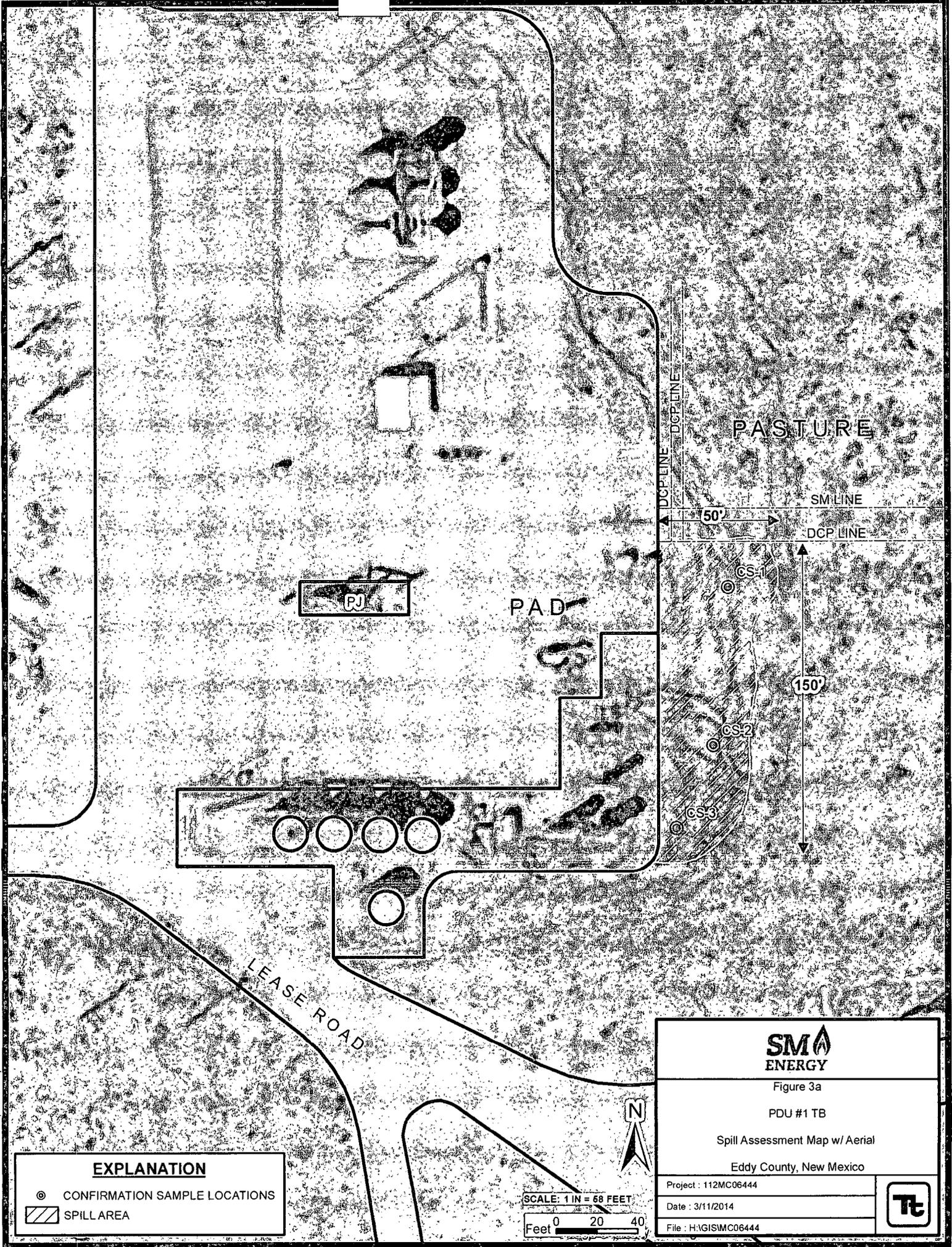
SCALE: 1 IN = 68 FEET

Feet 0 20 40

SM ENERGY

Figure 3
 PDU #1 TB
 Spill Assessment Map
 Eddy County, New Mexico

Project : 112MC06444	
Date : 3/11/2014	
File : H:\GIS\MC06444	



PASTURE

PAD

LEASE ROAD

DCP LINE

SM LINE

DCP LINE

50'

150'

CS-1

CS-2

CS-3



SCALE: 1 IN = 68 FEET
 Feet 0 20 40

EXPLANATION

- ⊙ CONFIRMATION SAMPLE LOCATIONS
- ▨ SPILL AREA



Figure 3a

PDU #1 TB

Spill Assessment Map w/ Aerial

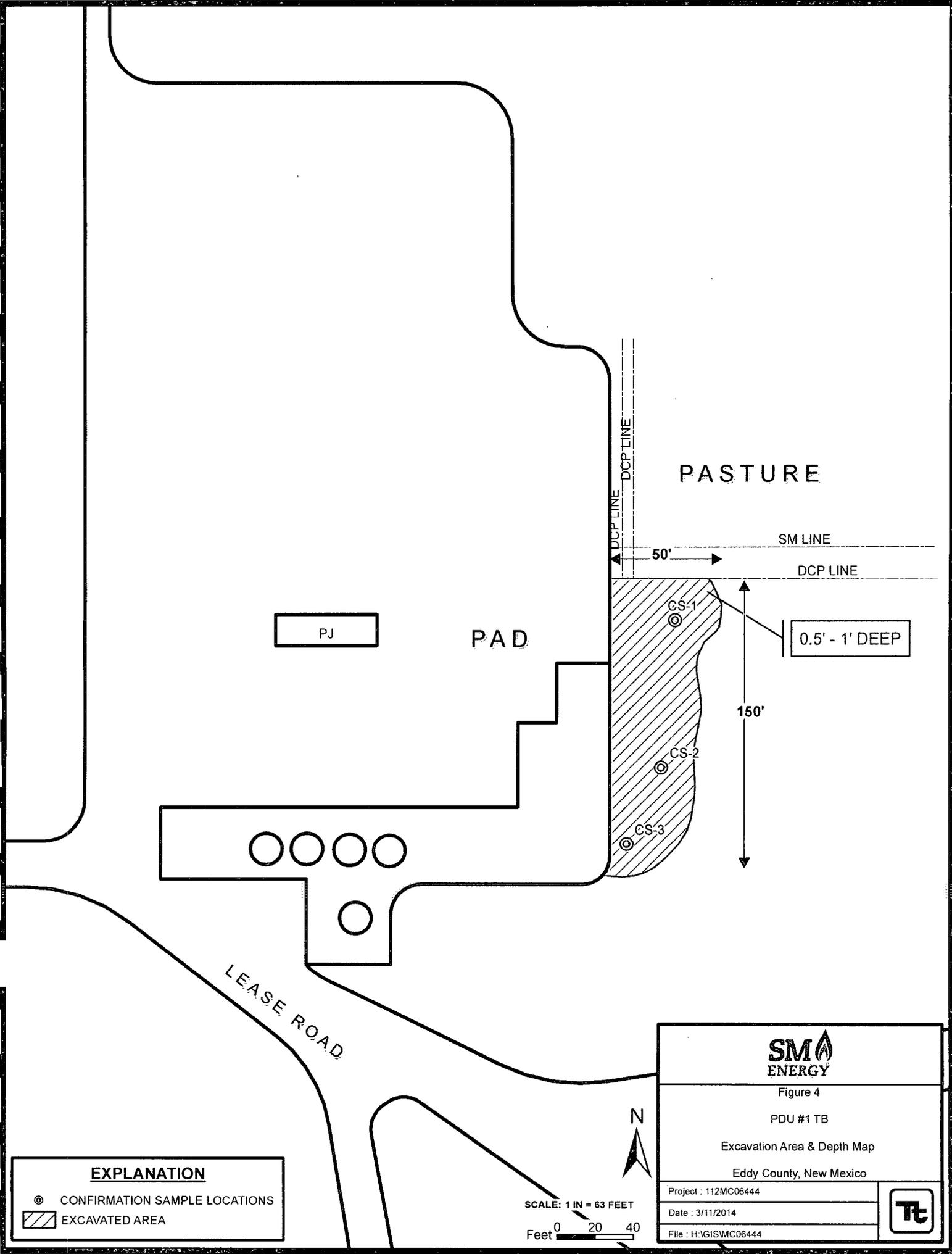
Eddy County, New Mexico

Project : 112MC06444

Date : 3/11/2014

File : H:\GIS\MC06444





EXPLANATION

⊙ CONFIRMATION SAMPLE LOCATIONS

▨ EXCAVATED AREA

N

SCALE: 1 IN = 63 FEET

Feet 0 20 40

	
Figure 4 PDU #1 TB Excavation Area & Depth Map Eddy County, New Mexico	
Project : 112MC06444	
Date : 3/11/2014	
File : H:\GIS\MC06444	

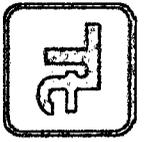
TABLES

Table 1
SM Energy
Parkway Delaware Unit #1 Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
CS-1 0.5' Bottom Hole	2/27/2014	0.5'	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48
CS-2 0.5' Bottom Hole	2/27/2014	0.5'	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	128
CS-3 1.0' Bottom Hole	2/27/2014	1.0'	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	256

PHOTOGRAPHS

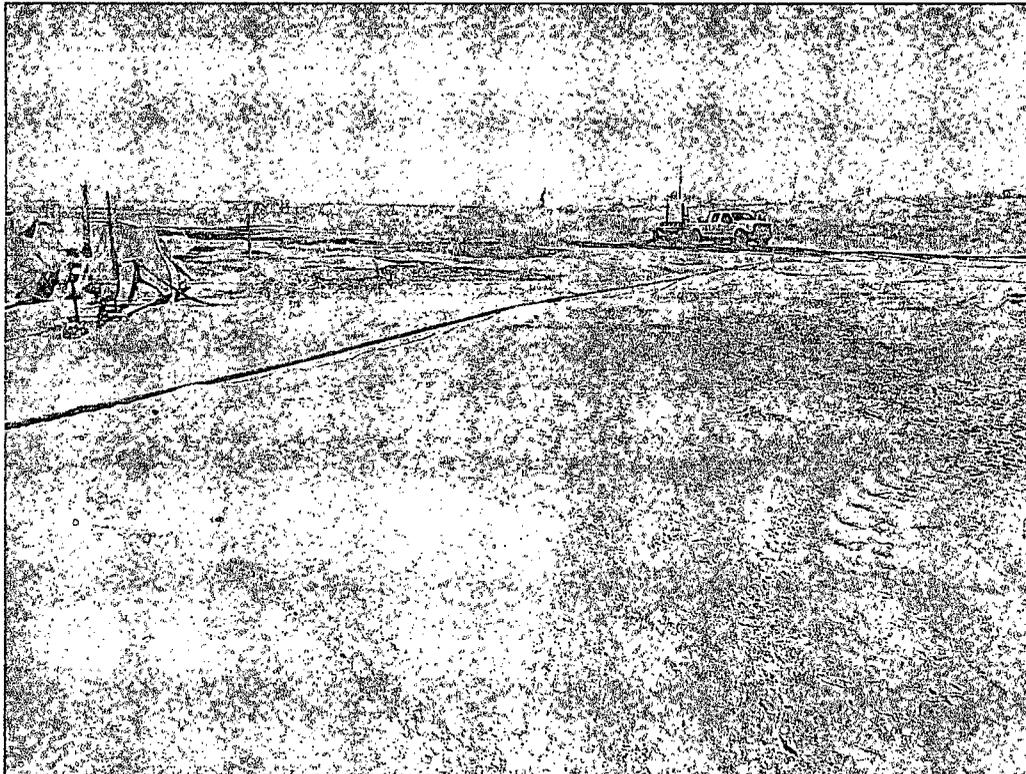
SM Energy Company
PDU Tract #1 TB
Eddy County, New Mexico



TETRA TECH



View North– DCP line cause of fire.

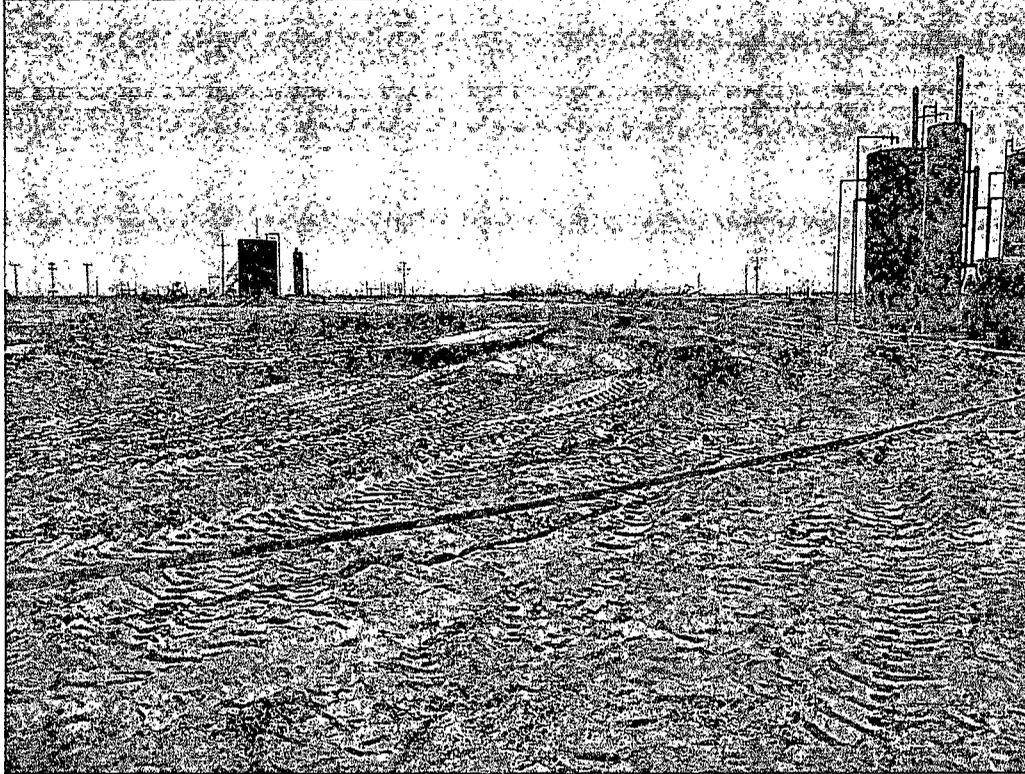


View North – Area of CS-1.

SM Energy Company
PDU Tract #1 TB
Eddy County, New Mexico



TETRA TECH



View south – Area of CS-2 and CS-3.

APPENDIX A

Water Well Data
Average Depth to Groundwater (ft)
SM ENERGY - PDU Tract 1 Tank Battery
Eddy County, New Mexico

18 South 28 East

6	5	4	3	2	1
		108			
7	8	9	10	11	12
	69				
18	17	16	15	14	13
19	20	21	22	23	24
		226			
49	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
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
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

19 South 28 East

6	5	4	3	2	1
7	8	9	246	10	11
		265			
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

19 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
				123	101
19	20	21	22	23	24
	62.9				
30	29	28	27	26	25
31	32	33	34	35	36
			62'	121	110
			60	116	

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
116					

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		
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			

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data
-  Field water level
-  New Mexico Water and Infrastructure Data System
-  Tetra Tech Temporary well (TD 180' - Dry Well)

APPENDIX B

February 28, 2014

TOM ELLIOT

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: PDU #1 TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 02/27/14 15:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 TETRA TECH
 TOM ELLIOT
 1910 N. BIG SPRING STREET
 MIDLAND TX, 79705
 Fax To: (432) 682-3946

Received:	02/27/2014	Sampling Date:	02/26/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	PDU #1 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: CS-1 0.5' BOTTOM HOLE (H400597-01)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/28/2014	ND	1.95	97.7	2.00	2.03		
Toluene*	<0.050	0.050	02/28/2014	ND	1.98	99.0	2.00	3.42		
Ethylbenzene*	<0.050	0.050	02/28/2014	ND	1.85	92.7	2.00	3.29		
Total Xylenes*	<0.150	0.150	02/28/2014	ND	5.60	93.4	6.00	2.69		
Total BTEX	<0.300	0.300	02/28/2014	ND						

Surrogate: Dibromofluoromethane 92.0 % 61.3-142

Surrogate: Toluene-d8 99.8 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.8 % 65.7-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/28/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/27/2014	ND	220	110	200	0.572		
DRO >C10-C28	<10.0	10.0	02/27/2014	ND	215	108	200	0.216		
EXT:DRO:>C28:C35	<10.0	10.0	02/27/2014	ND						

Surrogate: 1-Chlorooctane 91.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.6 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TETRA TECH
 TOM ELLIOT
 1910 N. BIG SPRING STREET
 MIDLAND TX, 79705
 Fax To: (432) 682-3946

Received:	02/27/2014	Sampling Date:	02/27/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	PDU #1 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: CS-2 0.5' BOTTOM HOLE (H400597-02)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/28/2014	ND	1.95	97.7	2.00	2.03		
Toluene*	<0.050	0.050	02/28/2014	ND	1.98	99.0	2.00	3.42		
Ethylbenzene*	<0.050	0.050	02/28/2014	ND	1.85	92.7	2.00	3.29		
Total Xylenes*	<0.150	0.150	02/28/2014	ND	5.60	93.4	6.00	2.69		
Total BTEX	<0.300	0.300	02/28/2014	ND						

Surrogate: Dibromofluoromethane 96.2 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	02/28/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/27/2014	ND	220	110	200	0.572		
DRO >C10-C28	<10.0	10.0	02/27/2014	ND	215	108	200	0.216		
EXT:DRO:>C28-C35	<10.0	10.0	02/27/2014	ND						

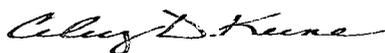
Surrogate: 1-Chlorooctane 94.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.9 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TETRA TECH
 TOM ELLIOT
 1910 N. BIG SPRING STREET
 MIDLAND TX, 79705
 Fax To: (432) 682-3946

Received:	02/27/2014	Sampling Date:	02/27/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	PDU #1 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: CS-3 1.0' BOTTOM HOLE (H400597-03)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/28/2014	ND	1.95	97.7	2.00	2.03		
Toluene*	<0.050	0.050	02/28/2014	ND	1.98	99.0	2.00	3.42		
Ethylbenzene*	<0.050	0.050	02/28/2014	ND	1.85	92.7	2.00	3.29		
Total Xylenes*	<0.150	0.150	02/28/2014	ND	5.60	93.4	6.00	2.69		
Total BTEX	<0.300	0.300	02/28/2014	ND						

Surrogate: Dibromofluoromethane 95.5 % 61.3-142

Surrogate: Toluene-d8 105 % 71.3-129

Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	02/28/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/27/2014	ND	220	110	200	0.572		
DRO >C10-C28	<10.0	10.0	02/27/2014	ND	215	108	200	0.216		
EXT:DRO:>C28:C35	<10.0	10.0	02/27/2014	ND						

Surrogate: 1-Chlorooctane 94.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.9 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

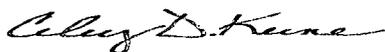
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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report



Celey D. Keene, Lab Director/Quality Manager

