

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Mobil 22 Federal #6 Well Site					
Company:	Stephens & Johnson Operating Co.					
Section, Township and Range	Unit K	Sec 22	T 26S	R 29E		
Lease Number:	API-30-015-25333					
County:	Eddy County					
GPS:	32.02664° N			103.97332° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 285 and Whitehorn Rd, travel on Whitehorn Rd for 7.8 miles, turn south onto location.					

Release Data:

Date Released:	Unknown
Type Release:	Produced Water
Source of Contamination:	Illegal Dumping
Fluid Released:	Unknown
Fluids Recovered:	None

Official Communication:

Name:	William M. Kincaid	Ike Tavaréz
Company:	Stephens & Johnson Operating	Tetra Tech
Address:	P.O. Box 2249	4000 N. Big Spring
		Suite 401
City:	Wichita Falls, TX 76307	Midland, Texas
Phone number:	(940) 723-2166	(432) 682-4559
Fax:		
Email:	mkincaid@sjoc.net	ike.tavarez@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	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:	10	

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	1,000



July 16, 2014

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

**Re: Work Plan for the Stephens & Johnson Operating Co., Mobil 22
Federal #6, Unit K, Section 22, Township 26 South, Range 29
East, Eddy County, New Mexico.**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Stephens & Johnson Operating Co. S&J to assess an illegal dump located in Unit K, Section 22, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.02664°, W 103.97332°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the illegal dump was discovered on February 18, 2014, and the amount released is unknown. The illegal dumping occurred on the south end of the pad affecting an area approximately 30' X 35'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 22. According to the NMOCD groundwater map, the average depth to groundwater in this area is between 50' – 75' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705

Tel 432.682.4559 **Fax** 432.682.3946 www.tetrattech.com



Regulatory

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

Soil Assessment and Analytical Results

On March 20, 2014, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL's for TPH or BTEX. Elevated chloride concentrations were detected in the areas of AH-1 and AH-2 at 0'-1', with bottom auger hole concentrations of 1,040 mg/kg and 15,500 mg/kg, respectively. Deeper samples were not collected due to the dense formation and the chloride impact was not vertically defined.

On June 5, 2014, Tetra Tech personnel returned to the site to install two (2) boreholes (BH-1 and BH-2) to vertically define chloride impacts in the areas of auger holes (AH-1 and AH-2.) The area of BH-1 (AH-1) showed a chloride impact of 8,060 mg/kg at 0'-1' below surface, which declined with depth to 146 mg/kg at 6'-7' below surface. The results showed a chloride spike of 1,550 mg/kg at 9'-10', which then declined with depth to 971 mg/kg at 19'-20' below surface. Field analysis on the samples showed a minimal impact in the deeper soils and was defined; however the laboratory results showed a bottom borehole result of 971 mg/kg and appeared to be influenced by the gypsum in the soils.

The area of BH-2 (AH-2) showed a chloride high of 6,600 mg/kg at 0'-1', which declined with depth to 861 mg/kg at 9'-10' below surface. The chlorides then spiked to 1,150 mg/kg at 14'-15' below surface before again declining to 622 mg/kg at 19'-20' below surface. The area was vertically defined.



Work Plan

Stephens & Johnson proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4; the areas of auger holes (AH-1 and AH-2) will be excavated to an approximate depth of 4.0' below surface. Once excavated to the appropriate depths, the area of auger hole (AH-2) will be capped with a 40 mil liner and the excavation area will be backfilled with clean soil.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

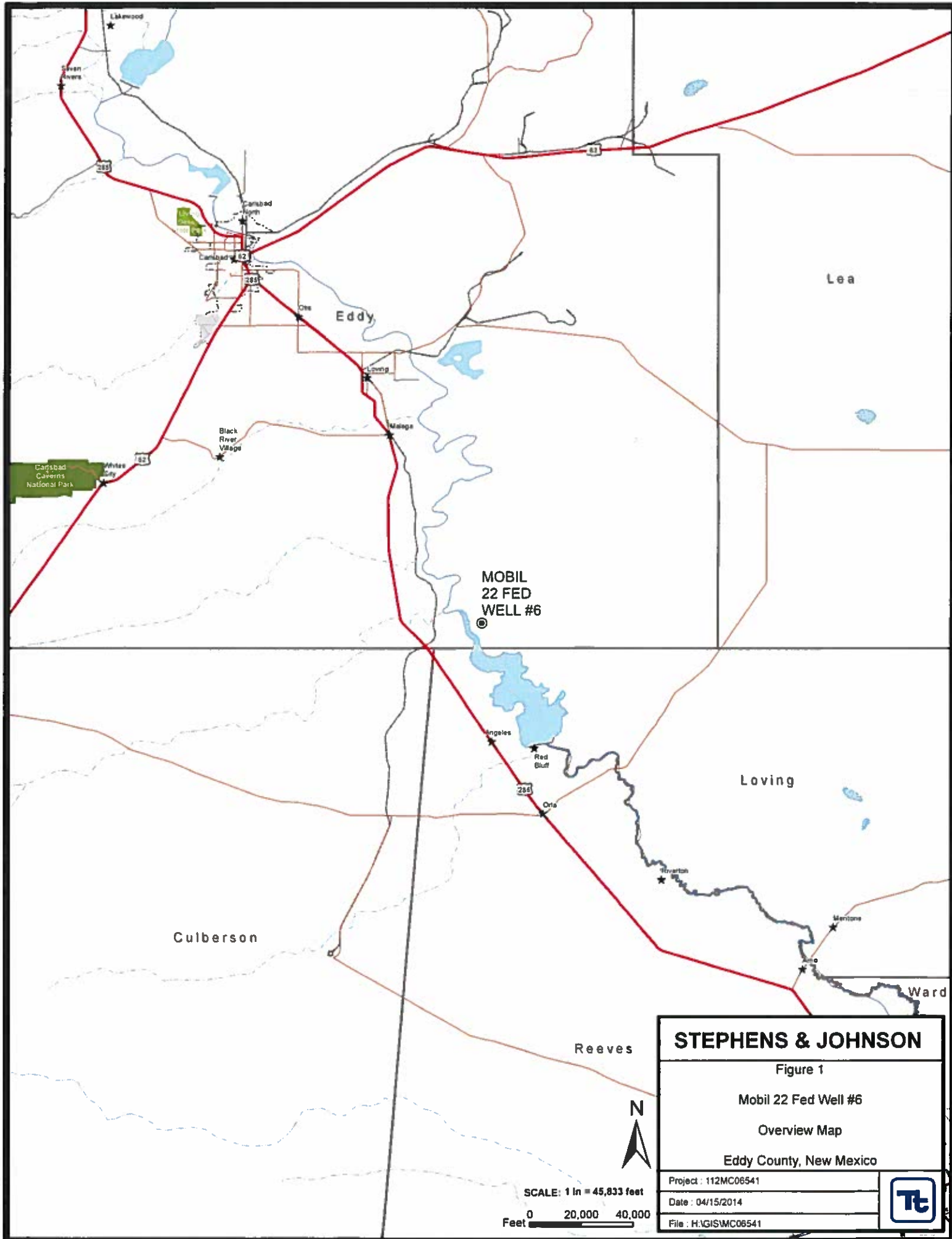
Upon completion, a final report will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist

cc: William M. Kincaid – S&J
cc: Jennifer Van Curen – BLM

Figures



STEPHENS & JOHNSON

Figure 1

Mobil 22 Fed Well #6

Overview Map

Eddy County, New Mexico

Project : 112MC06541

Date : 04/15/2014

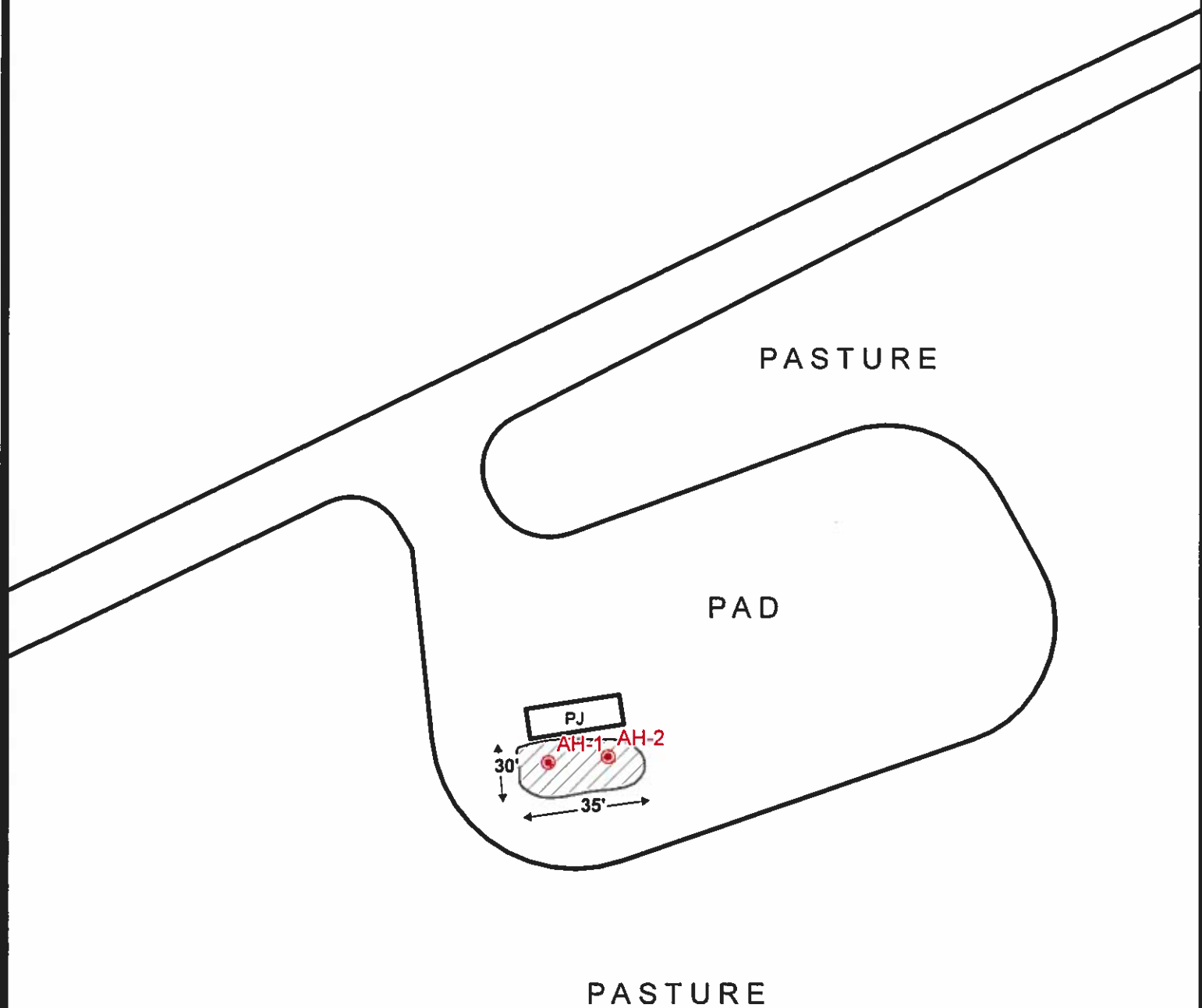
File : H:\GIS\MC06541



SCALE: 1 in = 45,833 feet

0 20,000 40,000
Feet





EXPLANATION

-  AUGER HOLE SAMPLE LOCATIONS
-  SPILL AREA

SCALE: 1 IN = 79 FEET

Feet 0 25 50



STEPHENS & JOHNSON

Figure 3

Mobil 22 Fed Well #6

Spill Assessment Map

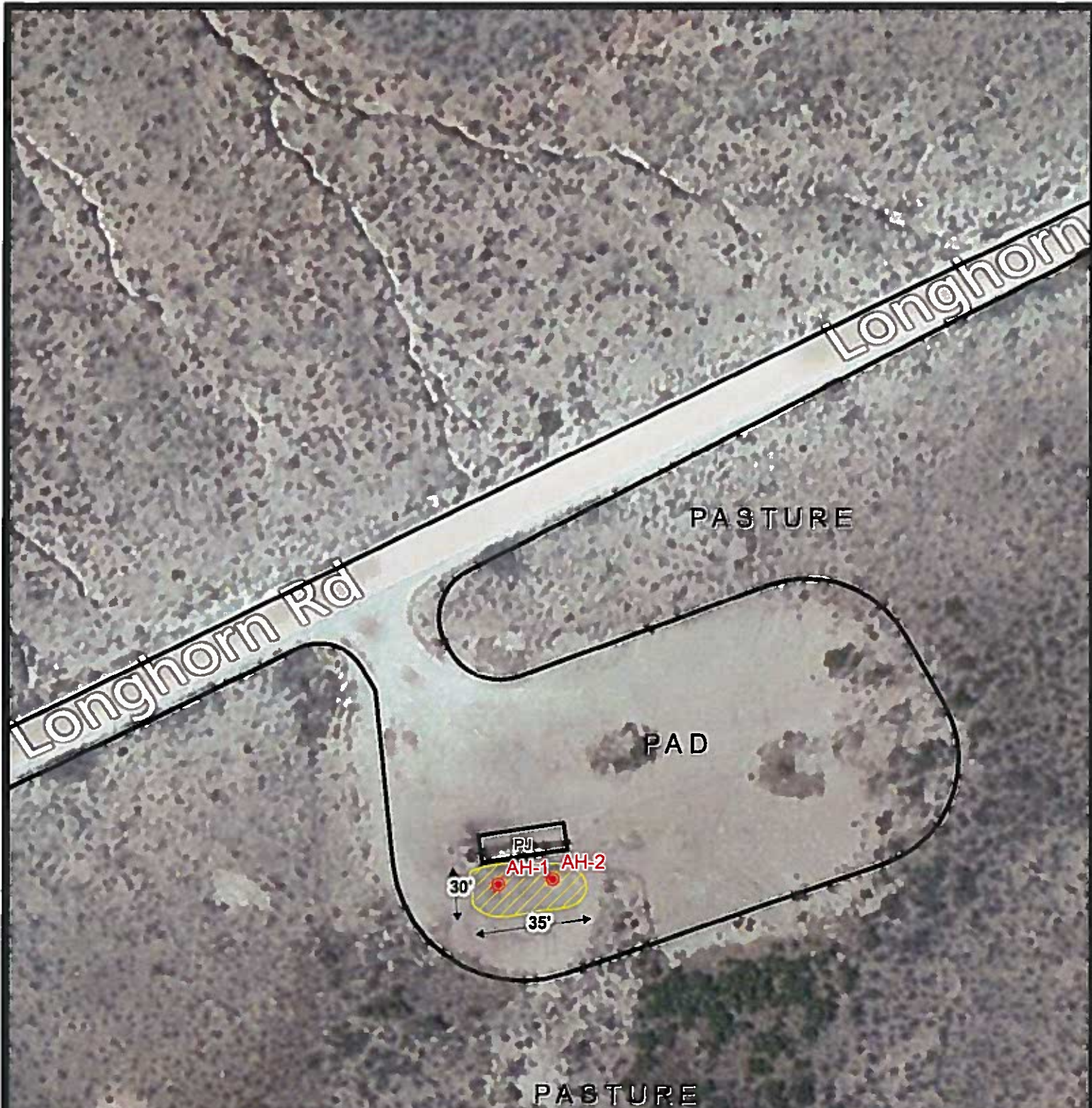
Eddy County, New Mexico

Project: 112MC06541

Date: 04/15/2014

File: H:\GIS\WC06541





EXPLANATION

-  AUGER HOLE SAMPLE LOCATIONS
-  SPILL AREA



SCALE: 1 IN = 75 FEET

Image © AND
Feet 0 25 50

STEPHENS & JOHNSON

Figure 3a

Mobil 22 Fed Well #6

Spill Assessment Map w/ Aerial

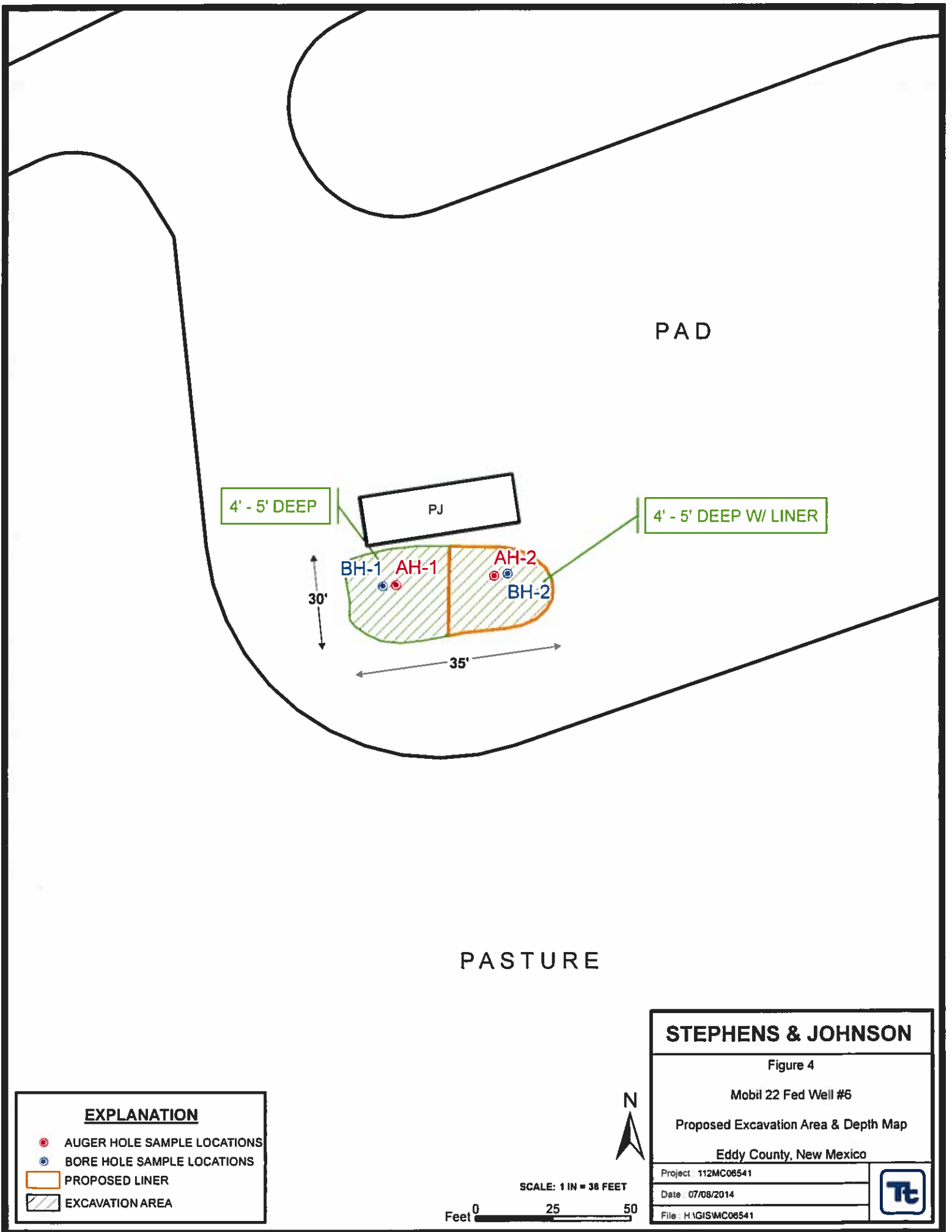
Eddy County, New Mexico

Project: 112MC06541

Date: 04/15/2014

File: H:\GIS\MC06541





Tables

Table 1
Stephens & Johnson Operating
Mobil 22 Federal #6
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Excavation Bottom 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						
AH-1	3/20/2014	0-1	0	X		113.0	796	909	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	2,570
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	1,040
BH-1	6/5/2014	0-1	0	X		-	-	-	-	-	-	-	-	8,060
	"	2-3	0	X		-	-	-	-	-	-	-	-	6,460
	"	4-5	0	X		-	-	-	-	-	-	-	-	340
	"	6-7	0	X		-	-	-	-	-	-	-	-	146
	"	9-10	0	X		-	-	-	-	-	-	-	-	1,550
	"	14-15	0	X		-	-	-	-	-	-	-	-	583
AH-2	3/20/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	12,600
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	15,500
BH-2	6/5/2014	0-1	0	X		-	-	-	-	-	-	-	-	6,600
	"	2-3	0	X		-	-	-	-	-	-	-	-	1,940
	"	4-5	0	X		-	-	-	-	-	-	-	-	1,360
	"	6-7	0	X		-	-	-	-	-	-	-	-	2,100
	"	9-10	0	X		-	-	-	-	-	-	-	-	861
	"	14-15	0	X		-	-	-	-	-	-	-	-	1,150
	"	19-20	0	X		-	-	-	-	-	-	-	-	622

(-) Not Analyzed
 Proposed Excavation Depth
 Proposed Liner Depth

Photos



View West – Area of AH-1



View East – Area of AH-2



View West – Area of AH-1 and AH-2



View West – Area of BH-1

Stephens & Johnson
Mobil 22 Federal #6
Eddy County, New Mexico



TETRA TECH



View West – Area of BH-2

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
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	Stephens & Johnson Operating Co.	Contact	William M. Kincaid
Address	P.O. Box 2249, Wichita Falls, TX 76307	Telephone No.	(940) 723-2166
Facility Name	Mobil 22 Federal #6	Facility Type	Well

Surface Owner:	Federal	Mineral Owner:	Federal	Lease No.	30-015-25333
----------------	---------	----------------	---------	-----------	--------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	22	26S	29E	2260	South	2310	West	Eddy

Latitude N 32.65456° Longitude W 104.15868°

NATURE OF RELEASE

Type of Release:	Produced water	Volume of Release:	Unknown	Volume Recovered:	None
Source of Release:	illegal dumping from water truck	Date and Hour of Occurrence:	Unknown	Date and Hour of Discovery:	02-18-2014
Was Immediate Notice Given?	☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	N/A		
By Whom?		Date and Hour			
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	N/A		

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

Possibly an illegal dump by a water transporter. All of the fluids remained on the well pad.

Describe Area Affected and Cleanup Action Taken.*

The produced water spill will be assessed to define extents. Tetra Tech will collect soil samples for the site evaluation. Once defined, a work plan will be submitted to the NMOCD for review and approval.

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: William M. Kincaid	Approved by District Supervisor:		
Title: Petroleum Engineer	Approval Date:	Expiration Date:	
E-mail Address: mkincaid@sjoc.net	Conditions of Approval:		Attached ☐
Date: 02-28-2014	Phone: 940-723-2166		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Stephens & Johnson - Mobile 22 Federal #6, Eddy County, New Mexico

24 South			28 East		
6	70	5	30	4	30
7		8	60	9	
18	17	16	15	14	13
19	42	29	18	62	34
30	48	20	21	22	23
31	32	33	34	35	36

24 South			29 East		
6	5	4	3	2	1
7		8	9	10	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

24 South			30 East		
6	5	4	3	2	1
7		8	9	10	11
18	17	16	15	14	13
19	231	20	21	22	23
30	29	28	27	26	25
31	32	33	34	35	36

25 South			28 East		
6	5	4	36	3	2
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

25 South			29 East		
6	5	4	3	2	1
7		8	9	10	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

25 South			30 East		
6	5	4	3	2	1
7	264	8	9	296	10
18	17	16	15	14	13
19	20	21	266	22	23
30	29	28	27	26	25
31	32	33	34	35	36

26 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
31	32	33	34	35	36

26 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	2257	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South			30 East		
6	5	179	4	3	2
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
- Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD - Groundwater Data

Appendix C

Summary Report

Ike Tavaréz
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: April 8, 2014

Work Order: 14032031



Project Location: Eddy Co, NM
Project Name: Stephens & Johnson Oper/Mobil 22 Federal #6
Project Number: 112MC06541

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
358498	AH-1 0-1'	soil	2014-03-20	00:00	2014-03-20
358499	AH-1 1-1.5'	soil	2014-03-20	00:00	2014-03-20
358500	AH-2 0-1'	soil	2014-03-20	00:00	2014-03-20
358501	AH-2 1-1.5'	soil	2014-03-20	00:00	2014-03-20

Sample - Field Code	BTEX				TPH DRO - NEW DRO	TPH GRO GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	(mg/Kg)	(mg/Kg)
358498 - AH-1 0-1'	<0.0400 ¹	<0.0400	<0.0400	<0.0400	796 Q#	113
358500 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Q#	<4.00

Sample: 358498 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		2570	mg/Kg	5

Sample: 358499 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1040	mg/Kg	5

Sample: 358500 - AH-2 0-1'

¹ Dilution due to hydrocarbons.

Report Date: April 8, 2014

Work Order: 14032031

Page Number: 2 of 2

Param	Flag	Result	Units	RL
Chloride		12600	mg/Kg	5

Sample: 358501 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		15500	mg/Kg	5

Summary Report

Ike Tavaréz
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: June 13, 2014

Work Order: 14060629



Project Location: Eddy Co, NM
Project Name: Stephens & Johnson Oper/Mobil 22 Federal #6
Project Number: 112MC06541

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
364979	BH-1 0-1'	soil	2014-06-05	00:00	2014-06-06
364980	BH-1 2-3'	soil	2014-06-05	00:00	2014-06-06
364981	BH-1 4-5'	soil	2014-06-05	00:00	2014-06-06
364982	BH-1 6-7'	soil	2014-06-05	00:00	2014-06-06
364983	BH-1 9-10'	soil	2014-06-05	00:00	2014-06-06
364984	BH-1 14-15'	soil	2014-06-05	00:00	2014-06-06
364985	BH-1 19-20'	soil	2014-06-05	00:00	2014-06-06
364986	BH-2 0-1'	soil	2014-06-05	00:00	2014-06-06
364987	BH-2 2-3'	soil	2014-06-05	00:00	2014-06-06
364988	BH-2 4-5'	soil	2014-06-05	00:00	2014-06-06
364989	BH-2 6-7'	soil	2014-06-05	00:00	2014-06-06
364990	BH-2 9-10'	soil	2014-06-05	00:00	2014-06-06
364991	BH-2 14-15'	soil	2014-06-05	00:00	2014-06-06
364992	BH-2 19-20'	soil	2014-06-05	00:00	2014-06-06

Sample: 364979 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		8060	mg/Kg	4

Sample: 364980 - BH-1 2-3'

Param	Flag	Result	Units	RL
Chloride		6460	mg/Kg	4

Sample: 364981 - BH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		340	mg/Kg	4

Sample: 364982 - BH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		146	mg/Kg	4

Sample: 364983 - BH-1 9-10'

Param	Flag	Result	Units	RL
Chloride		1550	mg/Kg	4

Sample: 364984 - BH-1 14-15'

Param	Flag	Result	Units	RL
Chloride		583	mg/Kg	4

Sample: 364985 - BH-1 19-20'

Param	Flag	Result	Units	RL
Chloride		971	mg/Kg	4

Sample: 364986 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		6600	mg/Kg	4

Sample: 364987 - BH-2 2-3'

Param	Flag	Result	Units	RL
Chloride		1940	mg/Kg	4

Sample: 364988 - BH-24-5'

Param	Flag	Result	Units	RL
Chloride		1360	mg/Kg	4

Report Date: June 13, 2014

Work Order: 14060629

Page Number: 3 of 3

Sample: 364989 - BH-2 6-7'

Param	Flag	Result	Units	RL
Chloride	Q*	2100	mg/Kg	4

Sample: 364990 - BH-2 9-10'

Param	Flag	Result	Units	RL
Chloride	Q*	861	mg/Kg	4

Sample: 364991 - BH-2 14-15'

Param	Flag	Result	Units	RL
Chloride	Q*	1150	mg/Kg	4

Sample: 364992 - BH-2 19-20'

Param	Flag	Result	Units	RL
Chloride	Q*	622	mg/Kg	4