SITE INFORMATION

Report Type: Work Plan

General Site Information:						
Site:	Jenkins B Federal Water Flood (Northwest Central)					
Company:	COG Operating LLC					
Section, Township and Range	Unit C	Sec 20	T17S	R30E		
Lease Number:	(API#) 30-015-21945					
County:	Eddy County					
GPS:	32.83021° N			103.99532° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 82 and CR 217, turn right and travel North for approximatly 0.6 miles. Then turn left and travel West for 0.5 miles. The location will be on the right to the north.					

Release Data:	1st Spill	2nd Spill
Date Released:	3/23/2012 2RP-1044	6/26/2012 2RP-1217
Type Release:	Produced Water and Oil	Oil
Source of Contamination:	Skim Tank	Gun Barrel
Fluid Released:	3 bbls Oil 17 bbls Produced Water	75 bbls Oil
Fluids Recovered:	3 bbls Oil 15 bbls Produced Water	70 bbls Oil

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

Ranking Criteria

Depth to Groundwater:	*Ranking Score*	*Site Data*
<50 ft	20	
50-99 ft	10	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

October 8, 2013

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

Re: Work Plan for the COG Operating LLC., Jenkins B Federal Water Flood, Unit N, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Jenkins B Federal Water Flood, located in Unit N, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83021°, W 103.99532°. The site location is shown on Figures 1 and 2.

Background

1st Spill

According to the State of New Mexico C-141 Initial Report, the leak was discovered on March 23, 2012 and released approximately three (3) barrels of oil and seventeen (17) barrels of produced water from a Skim Tank. Three (3) barrels of oil and fifteen (15) barrels of produced water were recovered. All the fluids remained inside the facility firewalls measuring approximately 35' x 30'. Due to the rush of fluid from a new well and a plugged strainer the skim tank overflowed. The strainer has been cleaned out. The initial C-141 form is enclosed in Appendix A.

2nd Spill

According to the State of New Mexico C-141 Initial Report, the leak was discovered on June 27, 2012 and released approximately seventy five (75) barrels of oil from the skim tank. Seventy (70) barrels of oil were recovered. The motor valves failed to open and the gun barrel overflowed. Electricians were called out to ensure the problem was resolved. The initial C-141 form is enclosed in Appendix A.

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

TETRA TECH

On June 26, 2012, the second spill occurred overlapping the first spill area. After discussing the drilling issue with the NMOCD, Mr. Bratcher recommended the installation of a hollow stem auger to define the vertical extents.

On June 12, 2013, Tetra Tech supervised the installation of one (1) soil bore using a hollow stem auger drilling rig to further delineate the impacted soils. Referring to Table 1, SB-1 exceeded the RRAL for Total TPH and Total BTEX at 0-1', but was vertically defined at a depth of 2.0' below surface. Elevated chloride concentrations were detected at depths down to 90' below surface. However, the chloride concentrations declined with depth showing a chloride of 2,000 mg/kg at 90' and declining to 1,060 mg/kg at 100' and 92.5 mg/kg at 105' below surface.

Work Plan

COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. Due to the location and limited area, the impacted soil inside the firewalls will be excavated to a depth of 3.0' to 4.0' below surface. Once excavated to the appropriate depth, a clay material will be installed in order to cap the remaining impact and prevent further migration of chlorides. All of the impacted material will be transported offsite for proper disposal. The excavated areas will be backfilled with clean soil to surface grade.

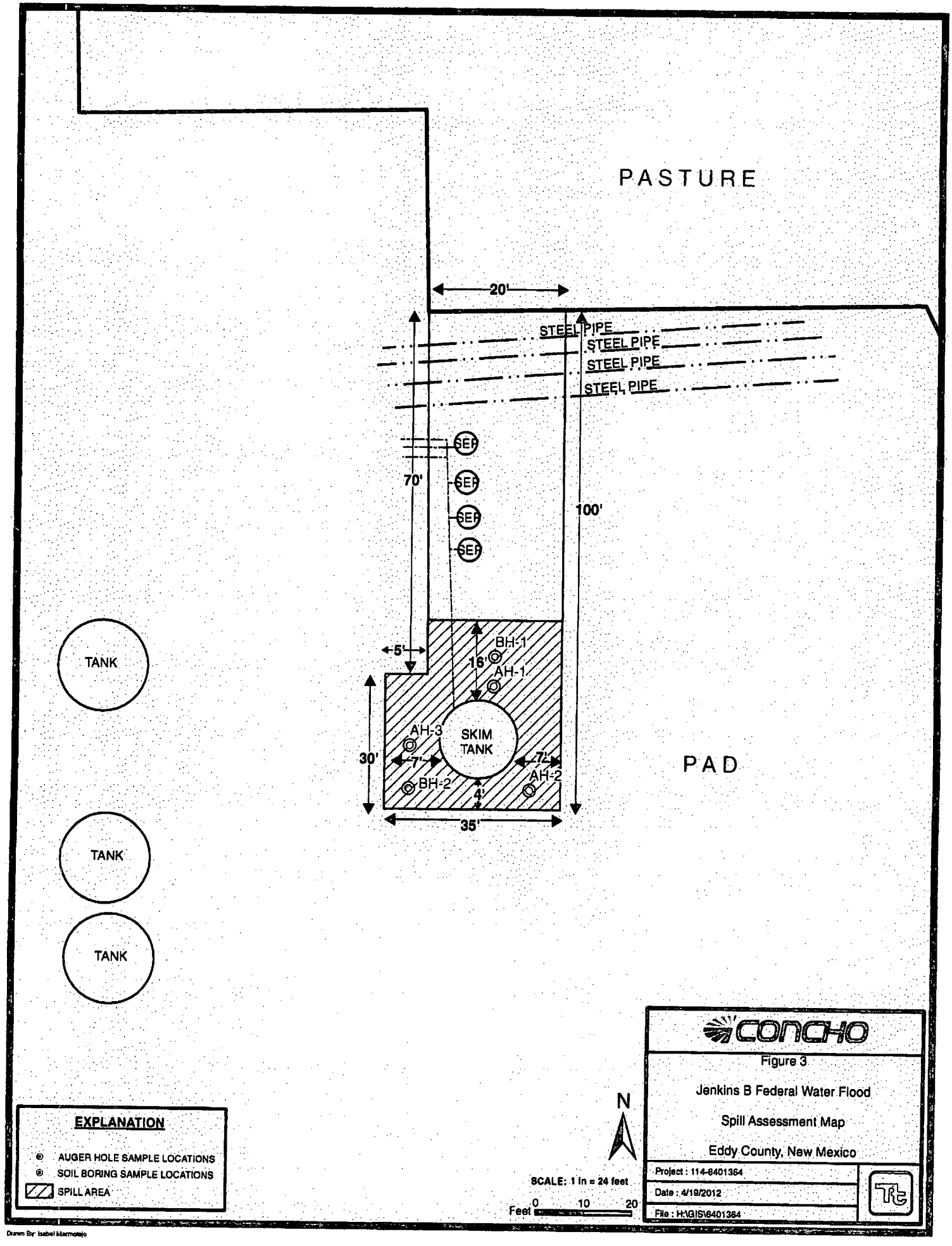
The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practical to be removed due to safely concerns. As such, Tetra Tech will excavate the soils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

Ike Tavarez, PG
Senior Project Manager

cc: Robert McNeill – COG
Jim Amos - BLM


PASTURE
20'
STEEL PIPE
STEEL PIPE
STEEL PIPE
STEEL PIPE
SEP
SEP
SEP
SEP
70'
100'
5'
BH-1
16'
AH-1
AH-3
SKIM TANK
30'
7'
7'
BH-2
AH-2
4'
35'
PAD
TANK
TANK
TANK
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SOIL BORING SAMPLE LOCATIONS
SPILL AREA
N
SCALE: 1 In = 24 feet
0 10 20
Feet
CONCHO
Figure 3
Jenkins B Federal Water Flood
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401364
Date : 4/19/2012
File : H:\GIS\6401364
Drawn By: Isabel Marmolejo

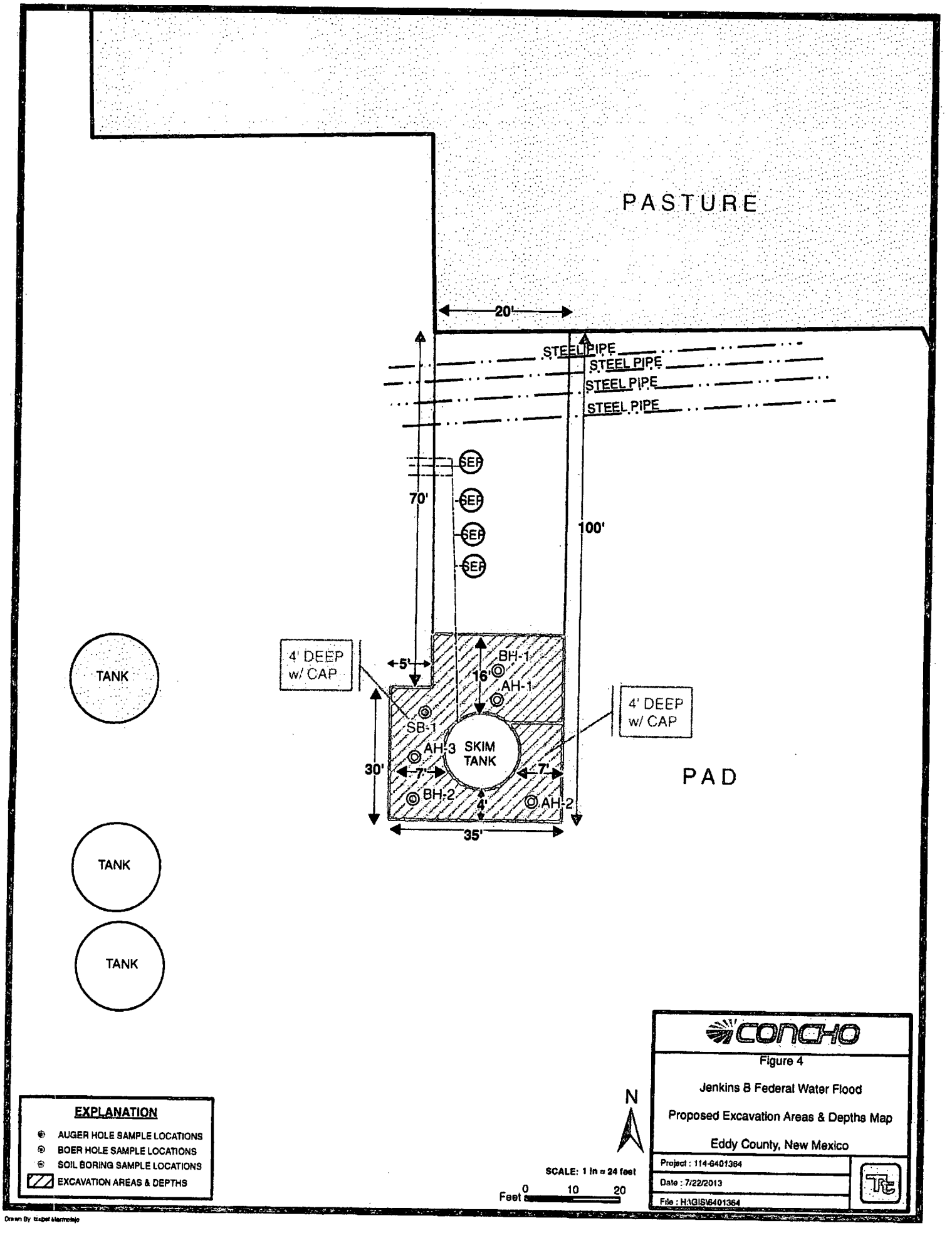

PASTURE
20'
STEEL PIPE
STEEL PIPE
STEEL PIPE
STEEL PIPE
SEP
SEP
SEP
SEP
70'
100'
4' DEEP w/ CAP
5'
BH-1
16'
AH-1
SB-1
AH-3
SKIM TANK
30'
7'
7'
BH-2
4'
AH-2
35'
4' DEEP w/ CAP
PAD
TANK
TANK
TANK
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BOER HOLE SAMPLE LOCATIONS
SOIL BORING SAMPLE LOCATIONS
EXCAVATION AREAS & DEPTHS
N
SCALE: 1 In = 24 feet
Feet 0 10 20
CONCHO
Figure 4
Jenkins B Federal Water Flood
Proposed Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 114-6401364
Date : 7/22/2013
File : H:\GIS\6401364
Drawn By: Miguel Marmolejo

Table 1
COG Operating LLC.
Jenkins B Federal Water Flood
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	4/20/2012	0-1	0.5	X		166	378	544	<0.0200	0.0941	0.782	1.62	2.50	6,670
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	1,080
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	159
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	606
	"	4-4.5	0.5	X		-	-	-	-	-	-	-	-	987
	"	5-5.5	0.5	X		-	-	-	-	-	-	-	-	1,790
	"	6-6.5	0.5	X		-	-	-	-	-	-	-	-	2,910
	"	7-7.5	0.5	X		-	-	-	-	-	-	-	-	2,980
	"	8-8.5	0.5	X		-	-	-	-	-	-	-	-	4,590
	"	9-9.5	0.5	X		-	-	-	-	-	-	-	-	6,480
BH-1	6/6/2012	0-1	0.5	X		-	-	-	-	-	-	-	-	1,740
	"	2-3	0.5	X		-	-	-	-	-	-	-	-	3,190
Air Rotary	"	4-5	0.5	X		-	-	-	-	-	-	-	-	780
	"	6-7	0.5	X		-	-	-	-	-	-	-	-	1,440
	"	9-10	0.5	X		-	-	-	-	-	-	-	-	2,570
	"	14-15	0.5	X		-	-	-	-	-	-	-	-	5,890
	"	19-20	0.5	X		-	-	-	-	-	-	-	-	8,650
	"	24-25	0.5	X		-	-	-	-	-	-	-	-	7,640
	"	29-30	0.5	X		-	-	-	-	-	-	-	-	7,190
	"	39-40	0.5	X		-	-	-	-	-	-	-	-	14,700
	"	49-50	0.5	X		-	-	-	-	-	-	-	-	9,100
	"	59-60	0.5	X		-	-	-	-	-	-	-	-	12,000
	"	69-70	0.5	X		-	-	-	-	-	-	-	-	3,800
	"	79-80	0.5	X		-	-	-	-	-	-	-	-	5,550

Table 1
COG Operating LLC.
Jenkins B Federal Water Flood
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-2	4/20/2012	0-1	0.5	X		4,150	5,970	10,120	4.74	61.1	73.4	95.2	234	6,540
	"	1-1.5	0.5	X		4.90	<50.0	4.90	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	5,560
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	166
AH-3	4/20/2012	0-1	0.5	X		33.6	50.3	83.9	<0.0200	0.106	0.105	0.362	0.573	6,130
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	4,090
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	900
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	885
	"	4-4.5	0.5	X		-	-	-	-	-	-	-	-	1,810
BH-2	6/6/2012	0-1	0.5	X		-	-	-	-	-	-	-	-	1,730
	"	2-3	0.5	X		-	-	-	-	-	-	-	-	1,180
Air Rotary	"	4-5	0.5	X		-	-	-	-	-	-	-	-	2,830
	"	6-7	0.5	X		-	-	-	-	-	-	-	-	3,290
	"	9-10	0.5	X		-	-	-	-	-	-	-	-	6,230
	"	14-15	0.5	X		-	-	-	-	-	-	-	-	6,350
	"	19-20	0.5	X		-	-	-	-	-	-	-	-	6,890
	"	24-25	0.5	X		-	-	-	-	-	-	-	-	4,830
	"	29-30	0.5	X		-	-	-	-	-	-	-	-	6,870
	"	39-40	0.5	X		-	-	-	-	-	-	-	-	7,860
	"	49-50	0.5	X		-	-	-	-	-	-	-	-	5,840
	"	59-60	0.5	X		-	-	-	-	-	-	-	-	8,290
	"	69-70	0.5	X		-	-	-	-	-	-	-	-	4,680
	"	79-80	0.5	X		-	-	-	-	-	-	-	-	4,420

Table 1
COG Operating LLC.
Jenkins B Federal Water Flood
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
SB-1	6/12/2013	0-1	0	X		4,900	8,530	13,430	<1.00	59.8	94.8	165	320	2,240
	"	2-3	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	11,700
Hollow Stem Auger	"	4-5	0	X		-	-	-	-	-	-	-	-	5,130
	"	6-7	0	X		-	-	-	-	-	-	-	-	1,220
	"	9-10	0	X		-	-	-	-	-	-	-	-	7,920
	"	19-20	0	X		-	-	-	-	-	-	-	-	9,460
	"	39-40	0	X		-	-	-	-	-	-	-	-	12,000
	"	59-60	0	X		-	-	-	-	-	-	-	-	2,440
	"	79-80	0	X		-	-	-	-	-	-	-	-	6,150
	"	89-90	0	X		-	-	-	-	-	-	-	-	2,000
	"	99-100	0	X		-	-	-	-	-	-	-	-	1,060
	"	104-105	0	X		-	-	-	-	-	-	-	-	92.5

BEB Below Excavation Bottom

(-) Not Analyzed

Proposed Excavation Depths

Proposed Clay Cap

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Jenkins Water Flood	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-20972

LOCATION OF RELEASE

Closest well location McIntyre DK Fed #6

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32 49.817 **Longitude** 103 59.765

NATURE OF RELEASE

Type of Release Oil	Volume of Release 75bbls	Volume Recovered 70bbls
Source of Release Gun barrel	Date and Hour of Occurrence 06/26/2012	Date and Hour of Discovery 06/26/2012 9:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD	
By Whom? Michelle Mullins	Date and Hour 06/27/2012 9:27 a.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.*

The gun barrel at the Jenkins Water Flood & Tank Battery overflowed due to motor valves that did not open. Electricians have been called out to ensure that the problem with the motor valves has been resolved.

Describe Area Affected and Cleanup Action Taken.*

Initially 75bbls of oil were released from the gun barrel at the facility and we were able to recover 70bbls with a vacuum truck. The entire release was contained inside the diked walls of the facility. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for approval prior to any significant remediation work.

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: Josh Russo	Approved by District Supervisor:
Title: HSE Coordinator	Approval Date: / Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 06/26/2012 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

Bratcher, Mike, EMNRD

From: Tavarez, Ike <Ike.Tavarez@tetratech.com>
Sent: Thursday, October 17, 2013 1:37 PM
To: Bratcher, Mike, EMNRD; Mike Burton (mburton@blm.gov)
Cc: Robert McNeill; Robert Grubbs; Michelle Mullins (MMullins@concho.com); James_Amos@blm.gov
Subject: COG Operating - Jenkins B Federal Water Flood - Work Plan Approval Request
Attachments: COG-Work Plan - JENKINS_B_FED_WATER_FLOOD_(NC).pdf

Gentleman,

Please find the enclosed Work Plan for the above reference spill site located in Eddy County, New Mexico. The spill have been assessed and the remedial recommendations are included in the work plan. I will mail you a hard copy of the work plan for your files. Once approved, Tetra Tech will schedule the soil remediation and notify you prior to implementing the work plan. Please let me know if you need additional information or call me if you have any questions

Ike Tavarez, PG | Senior Project Manager

Main: 432.682.4559 | Fax: 432.682.3946 | Cell: 432.425.3878

Ike.Tavarez@tetratech.com

Tetra Tech | Complex World, Clear Solutions™

1910 North Big Spring | Midland, TX 79705 | www.tetratech.com