

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Jenkins B Fed #1 Well Site					
Company:	COG Operating LLC					
Section, Township and Range	Unit E	Section 20	T 17S	R 30E		
Lease Number:	API-30-015-04214					
County:	Eddy County					
GPS:	32.82288° N			104.00168° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	In Loco Hills, from the intersection of Haggerman Cutoff and 82, travel west on 82 (.91 miles), turn north onto lease road (.22 miles), bare right at the Y and go straight ahead (150 feet) to location					

Release Data:

Date Released:	8/5/2013
Type Release:	Oil and Produced Water
Source of Contamination:	Stuffing Box failure
Fluid Released:	2 bbls of Oil and 6 bbls of Produced Water
Fluids Recovered:	1 bbl of Oil and 4 bbls of Produced Water

Official Communication:

Name:	Robert McNeill	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	One Concho Center	4000 N Big Spring St.
	600 W. Illinois Ave.	Suite 401
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 682-4559
Fax:	(432) 684-7137	
Email:	rmcneill@conchoresources.com	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:		0

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000



TETRA TECH

November 06, 2013

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

Re: Work Plan for the COG Operating LLC., Jenkins B Fed #1, Unit E, Section 20, Township 17 South, Range 30 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 Fed #1 located in Unit E, Section 20, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.82288°, W 104.00168°. 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 August 05, 2013, and released approximately two (2) barrels of oil and six (6) barrels of produced water from a stuffing box leak. To alleviate the problem, COG personnel repacked the stuffing box. One (1) barrel of oil and four (4) barrels of produced water were recovered. The spill initiated at the wellhead and ran west on the pad affecting an area 130' X 40'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 20. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 250' below surface. The groundwater data is shown in Figure B.

Tetra Tech

1910 North Big Spring, 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, ethyl benzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On September 4, 2013, Tetra Tech personnel inspected and sampled the spill area. Four (4) auger holes (AH-1 and AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Selected 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 sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger holes did not exceed the RRAL for TPH and BTEX, with the exception of AH-4. Auger hole (AH-4) showed a shallow impact at 0-1', with concentrations above the RRAL for TPH of 20,183 mg/kg and total BTEX of 59.4 mg/kg, which declined below the RRAL at 1-1.5'.

Auger holes (AH-1, AH-2 and AH-3) did show a chloride impact to the soils. The area of AH-1 was not vertically defined. The areas of AH-2 and AH-3 showed a shallow chloride impact, which declined with depth to 422 mg/kg at 1-1.5' and 498 mg/kg at 2-2.5', respectively. The area of AH-4 did not a significant chloride to the soils.

Work Plan

COG proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4. The areas of AH-2 and AH-3 will be excavated to approximately 1.0' and 2.0' to remove the elevated chlorides. The area of AH-4 will be excavated to approximately 1.0' to remove the hydrocarbon impacted soil above the RRAL's.

Prior to excavating the area of AH-1, a backhoe trench will be installed to assess and attempt to define the chloride impact. Once assessed, the area will be excavated to the appropriate depth to properly remove the impacted soil. If the area is not defined, a borehole will be installed to define extents. Once the areas are excavated to the appropriate depths, the excavation will be backfilled with clean soil. Upon completion, a final report will be submitted to the NMOCD.



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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.

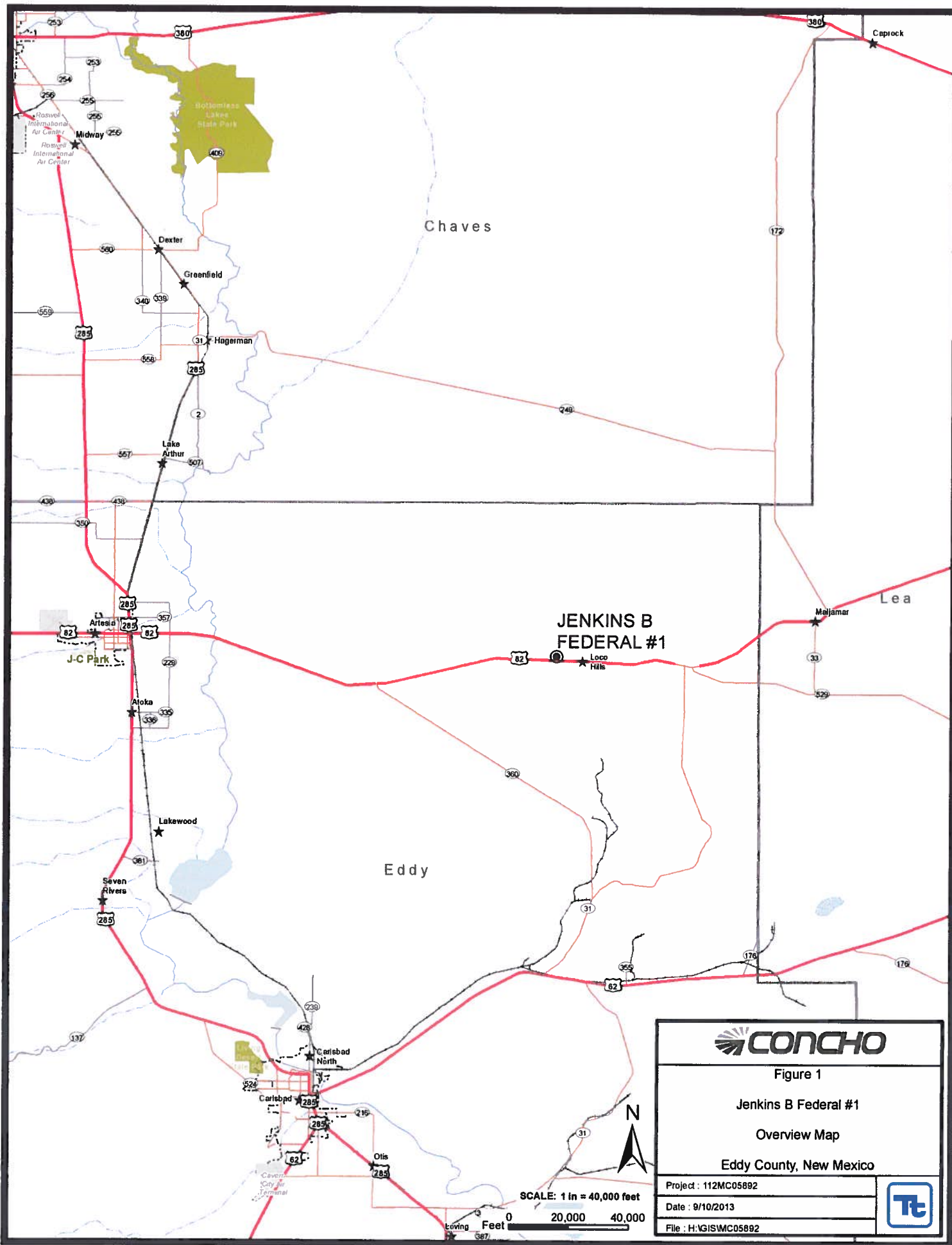
If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

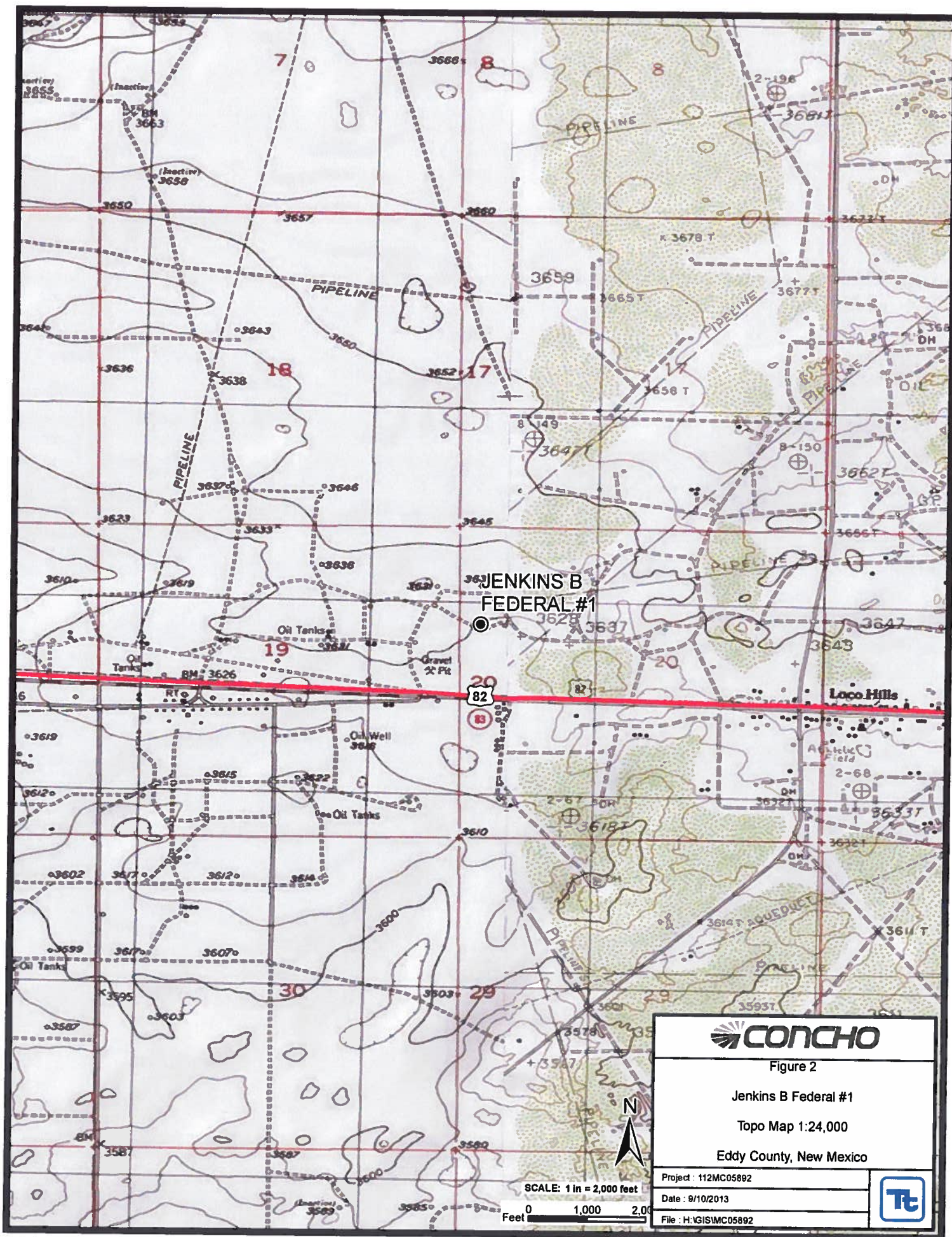
Respectfully submitted,
TETRA TECH

Ike Tavaréz, P.G.
Project Manager

cc: Robert McNeill – COG
cc: Mike Burton – BLM

Figures





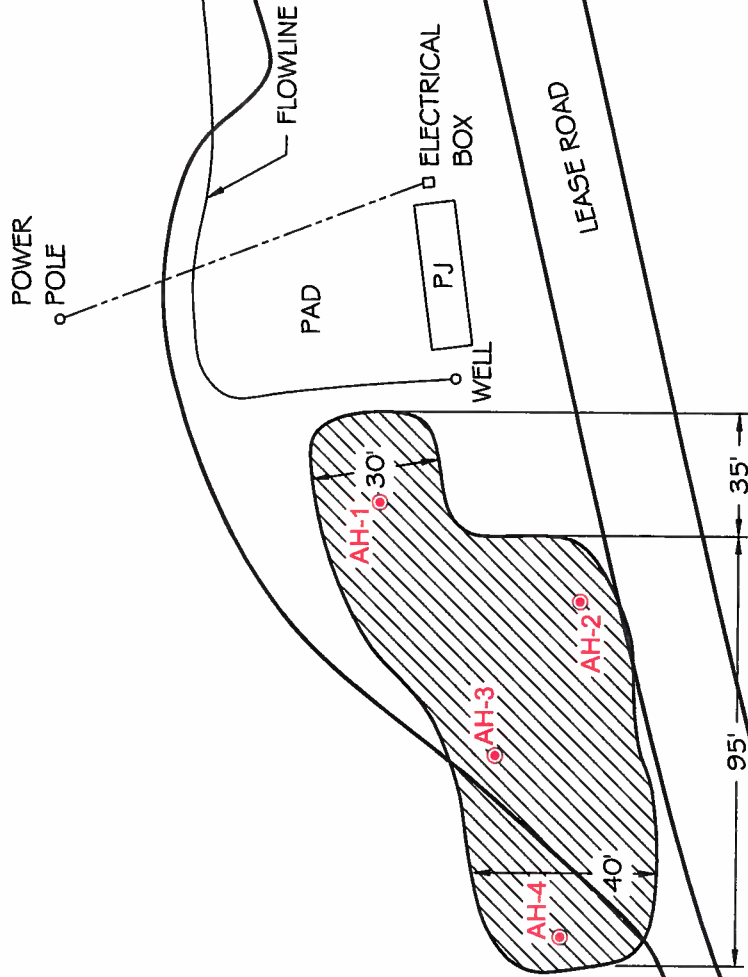


Figure 3

Jenkins B Federal #1

Spill Assessment Map

Eddy County, New Mexico

Project: 112MC05892

Date: 9/9/2013

File: H:\COG112MC05892\Jenkins B Federal #1



LEGEND

-  AUGER HOLE SAMPLE LOCATIONS
-  SPILL AREA



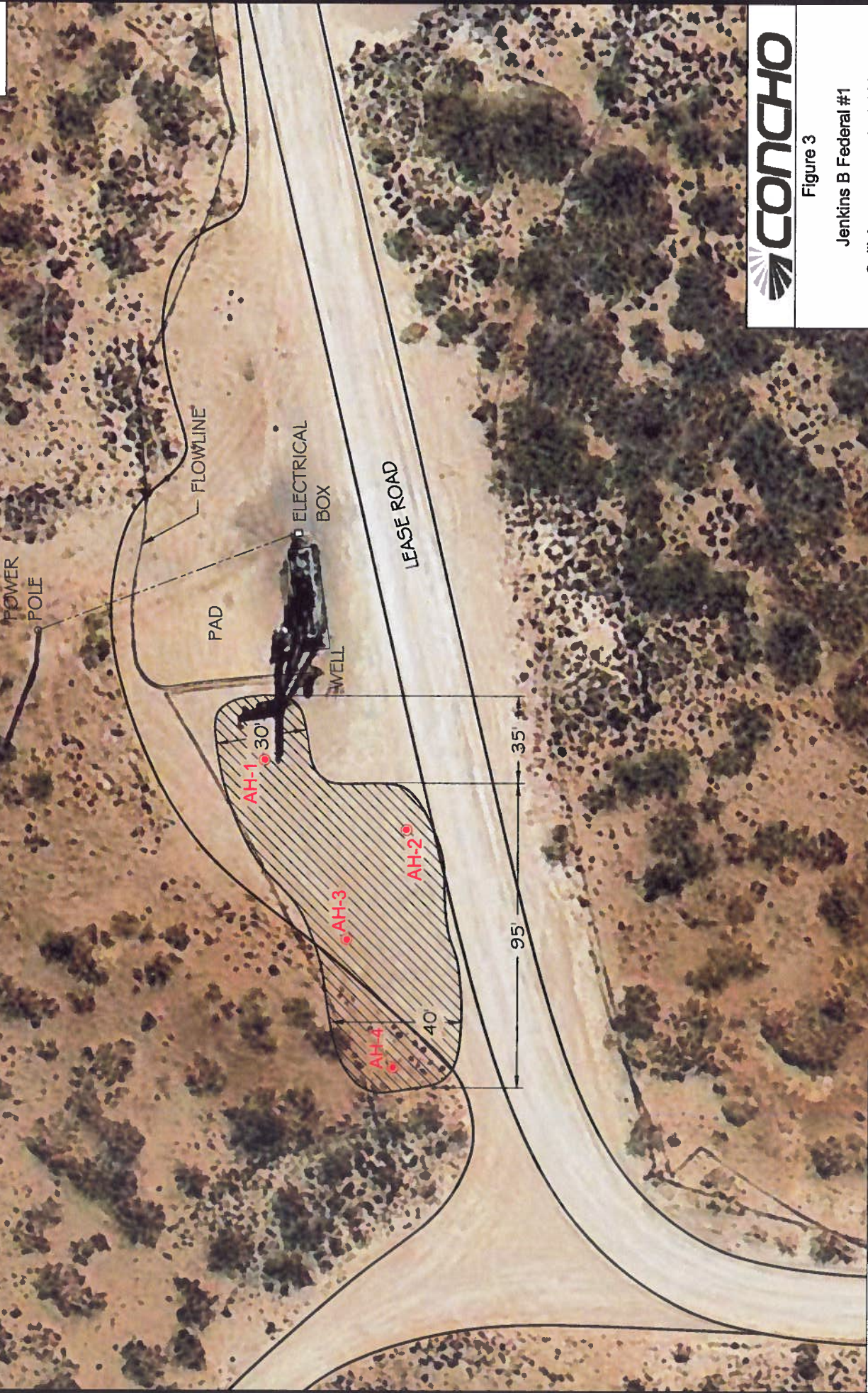




Figure 3

Jenkins B Federal #1

Spill Assessment Aerial Map

Eddy County, New Mexico

Project: 112MCO5892

Date: 9/9/2013

File: H:\COG112MCO5892\Jenkins B Federal #1

LEGEND

 AUGER HOLE SAMPLE LOCATIONS

 SPILL AREA



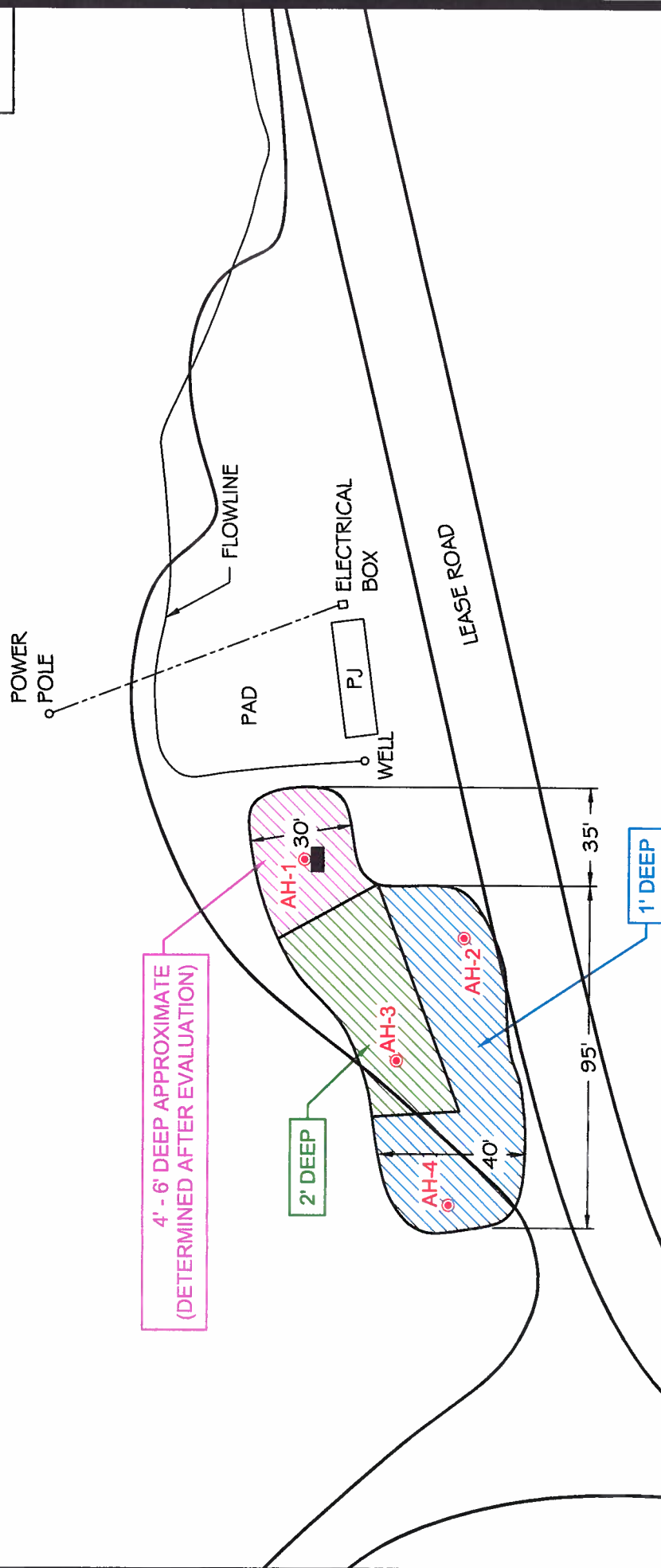


Figure 4

Jenkins B Federal #1

Excavation Areas & Depths Map

Eddy County, New Mexico

Project: 112MC05892

Date: 11/7/2013

File: H:\COG\112MC05892\Jenkins B Federal #1



LEGEND

- AUGER HOLE SAMPLE LOCATIONS
- TRENCH LOCATIONS
- EXCAVATION AREAS & DEPTHS



Tables

Table 1
COG Operating LLC.
Jenkins B Fed #1
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)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1 <i>Trench</i>	9/4/2013	0-1	-	X		175	4,330	4,505	< 400	0.809	4.94	5.41	11.2	3,470
	"	1-1.5	-	X			-	-	-	-	-	-	-	4,730
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	4,350
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	4,910
AH-2	9/4/2013	0-1	-	X		<4.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,820
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	422
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	589
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	594
AH-3	9/4/2013	0-1	-	X		<4.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,550
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	3,070
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	498
AH-4	9/4/2013	0-1	-	X		783	19,400	20,183	< 400	4.27	26.0	29.1	59.4	286
	"	1-1.5	-	X		35.8	227	263	<0400	<0400	0.370	0.719	1.09	73.9
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	138

Proposed Excavated Depths

(-) Not Analyzed

(BEB) Below Excavation Bottom

Trench Proposed Trench

Photos

COG Operating LLC
Jenkins B Fed #1
Eddy County, New Mexico



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View West – AH-1, AH-2, AH-3, and AH-4



View East – AH-1, AH-2, AH-3, and AH-4

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	COG OPERATING LLC	Contact	Pat Ellis
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Jenkins B Federal #001	Facility Type	Well Pad
Surface Owner	Federal	Mineral Owner	
		Lease No. (API#) 30-015-04214	

LOCATION OF RELEASE

Unit Letter E	Section 20	Township 17S	Range 30E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude 32.82288

Longitude 104.00168

NATURE OF RELEASE

Type of Release	Oil and produced water	Volume of Release	2bbls of oil 6bbls of produced water	Volume Recovered	1bbls of oil 4bbls of produced water
Source of Release	Wellhead	Date and Hour of Occurrence	08-05-2013	Date and Hour of Discovery	08-05-2013 11:00am
Was Immediate Notice Given?	☐ Yes ☒ No ☐ Not Required	If YES, To Whom?			
By Whom?		Date and Hour			
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.*

Stuffing box leak on the well head due to back pressure. We have repacked the stuffing box.

Describe Area Affected and Cleanup Action Taken.*

Initially 2bbls of oil and 6bbls of produced water were released due a packing leak on the stuffing box. We were able to recover 1bbls of oil and 4bbls of produced water with a vacuum truck. The spill was contained on the location. All free fluid has been recovered. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a 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: Robert Grubbs Jr.		Approved by District Supervisor:	
Title: Senior Environmental Coordinator		Approval Date:	Expiration Date:
E-mail Address: rgrubbs@concho.com		Conditions of Approval:	
Date: 8-13-2013	Phone: 432-661-6601	Attached ☐	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Jenkins B Fed #1
Eddy County, New Mexico

16 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 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

16 South			31 East		
6	5	4	3	2 290	1
7	8	9	10	11	12
18	17	16	15	14 113	13 288
19	20	21	22	23 314	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 76	23	24
30	29 210	28	27	26	25
31	32	33	34	35	36

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

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

18 South			29 East		
6	5	4	3	2	1
7	8	9	10 98	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

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

18 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15 98	14	13
19	20	21	22	23 317	24
30	29	28	27	26	25
31	32	33	34	35	36

- 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

Appendix C

Summary Report

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

Report Date: September 18, 2013

Work Order: 13090534

Project Location: NM
Project Name: COG/Jenkins B #2
Project Number: TBD

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
341179	AH-1 0-1'	soil	2013-09-04	00:00	2013-09-05
341180	AH-1 1-1.5'	soil	2013-09-04	00:00	2013-09-05
341181	AH-1 2-2.5'	soil	2013-09-04	00:00	2013-09-05
341182	AH-1 3-3.5'	soil	2013-09-04	00:00	2013-09-05
341183	AH-2 0-1'	soil	2013-09-04	00:00	2013-09-05
341184	AH-2 1-1.5'	soil	2013-09-04	00:00	2013-09-05
341185	AH-2 2-2.5'	soil	2013-09-04	00:00	2013-09-05
341186	AH-2 3-3.5'	soil	2013-09-04	00:00	2013-09-05
341187	AH-3 0-1'	soil	2013-09-04	00:00	2013-09-05
341188	AH-3 1-1.5'	soil	2013-09-04	00:00	2013-09-05
341189	AH-3 2-2.5'	soil	2013-09-04	00:00	2013-09-05
341190	AH-4 0-1'	soil	2013-09-04	00:00	2013-09-05
341191	AH-4 1-1.5'	soil	2013-09-04	00:00	2013-09-05
341192	AH-4 2-2.5'	soil	2013-09-04	00:00	2013-09-05

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
341179 - AH-1 0-1'	<0.400 ¹	0.809	4.94	5.41	4330	175 Q ^u
341183 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
341187 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Q ^u
341190 - AH-4 0-1'	<0.400 ²	4.27	26.0	29.1	19400	783
341191 - AH-4 1-1.5'	<0.0400	<0.0400	0.370	0.719	227 Q ^u	35.8

Sample: 341179 - AH-1 0-1'

¹Dilution due to surfactants.

²Dilution due to surfactants.

Param	Flag	Result	Units	RL
Chloride		3470	mg/Kg	4

Sample: 341180 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		4730	mg/Kg	4

Sample: 341181 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		4350	mg/Kg	4

Sample: 341182 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		4910	mg/Kg	4

Sample: 341183 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		2820	mg/Kg	4

Sample: 341184 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		422	mg/Kg	4

Sample: 341185 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		589	mg/Kg	4

Sample: 341186 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		594	mg/Kg	4

Sample: 341187 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		4550	mg/Kg	4

Sample: 341188 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3070	mg/Kg	4

Sample: 341189 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		498	mg/Kg	4

Sample: 341190 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		286	mg/Kg	4

Sample: 341191 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		73.9	mg/Kg	4

Sample: 341192 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		138	mg/Kg	4