

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

HOBBS OCD

APR 23 2013

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Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
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Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

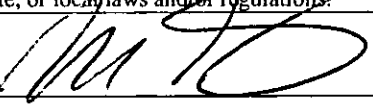
Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	JC Federal #2 Tank Battery	Facility Type	Tank Battery
Surface Owner: Federal	Mineral Owner	Lease No. NMLC-029509B API-30-025-34772	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E					Lea

Latitude N 32 49.251° Longitude W 104 45.328°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 25 bbls	Volume Recovered 20 bbls
Source of Release: Water Tank	Date and Hour of Occurrence 05/16/2010	Date and Hour of Discovery 05/16/2010 6:00 pm.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Larry Johnson -OCD Geoffrey Leking - OCD	
By Whom? Josh Russo	Date and Hour 05/17/2010 5:53 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* The cause of the problem was due to a power failure. The issue with the power has been corrected.		
Describe Area Affected and Cleanup Action Taken.* Tetra Tech personnel inspected and collected samples to define the spill extents. Soil that exceeded RRAL and the elevated chlorides were removed and transported to proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report for the NMOCD for review.		
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: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Senior Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 3-12-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

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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	JC Federal Tank Battery	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	NMLC-02509-B

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E					Lea

Latitude 32 49.251 Longitude 103 45.328

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	25bbls	Volume Recovered	20bbls
Source of Release	Water Tank	Date and Hour of Occurrence	05/16/2010	Date and Hour of Discovery	05/16/2010 6:00 p.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson - OCD Geoffrey Leking - OCD		
By Whom?	Josh Russo	Date and Hour	05/17/2010	5:53 p.m.	
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

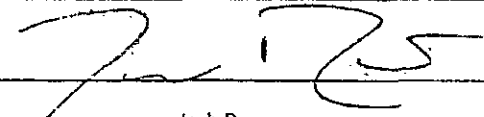
The cause of the problem was due to a power failure. The issue with the power has been corrected.

Describe Area Affected and Cleanup Action Taken.*

Initially 25bbls was release from a water tank and we were able to recover 20bbls with a vacuum truck. The spill was completely contained inside the tank battery firewall and the dimensions of the release were 3' x 10'. (The closest well location to the release is the JC FEDERAL #2, F-22-17S-32E, 2310 FNL 2310 FWL, 32.82096 - 103.75533; API# 30-025-34772) Terra Tech will sample the spill site area to delineate any possible contamination from the release and we will submit a remediation work plan to the BLM/NMOCD 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.

OIL CONSERVATION DIVISION

Signature:			
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 <input type="checkbox"/>
Date:	05/19/2010	Phone:	432-212-2399

* Attach Additional Sheets If Necessary

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Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	JC Federal #2 Tank Battery	Facility Type	Tank Battery
Surface Owner: Federal	Mineral Owner	Lease No. NMLC-029509B API-30-025-34772	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E					Lea

Latitude N 32 49.251° Longitude W 104 45.328°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 15 bbls	Volume Recovered 14 bbls
Source of Release: Water Tank	Date and Hour of Occurrence 06/10/2010	Date and Hour of Discovery 06/10/2010 12:30 pm.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Larry Johnson -OCD Geoffrey Leking - OCD	
By Whom? Josh Russo	Date and Hour 06/10/2010 5:33 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

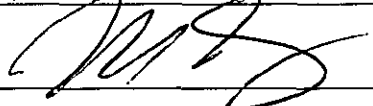
Describe Cause of Problem and Remedial Action Taken.*

The water tank at the JC Federal #2 Tank Battery overflowed. This occurred because the water trucks did not arrive in time to haul off the water from inside the tank.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected and collected samples to define the spill extents. Soil that exceeded RRAL and the elevated chlorides were removed and transported to proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report for the NMOCD for review.

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: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Senior Project Manager	Approval Date:	Expiration Date:
E-mail Address: <u>Ike.Tavarez@TetraTech.com</u>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>3-12-13</u> Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

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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	JC FEDERAL #2 TANK BATTERY	Facility Type	Tank Battery

Surface Owner	Federal	Mineral Owner		Lease No.	NMLC029509B
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E					Lea

Latitude 32 49.249 Longitude 103 45.304

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	15bbls	Volume Recovered	14bbls
Source of Release	Water Tank	Date and Hour of Occurrence	06/10/2010	Date and Hour of Discovery	06/10/2010 12:30 p.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson—OCD Geoffrey Leking—OCD		
By Whom?	Josh Russo	Date and Hour	06/10/2010 5:33 p.m.		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

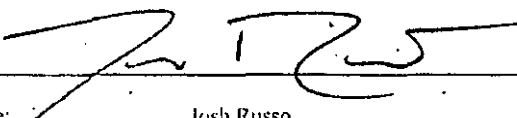
The water tank at the JC Federal #2 Tank Battery overflowed. This occurred because the water trucks did not arrive in time to haul off the water from inside the tank.

Describe Area Affected and Cleanup Action Taken.*

Initially 15bbls of produced water was released, and contained, inside the dike walls of the tank battery. We were able to recover 14bbls with a vacuum truck. The produced water in this area has an estimated chloride concentration of 135,500 mg/l. (The closest well location to this tank battery in the JC FEDERAL #2, UNIT F, SEC. 22-T17S-R32E, 2310 FNL 2310 FWL, API# 30-025-34772, 32.8209659 -103.755331) 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 BLM/NMOCD 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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo	Approved by District Supervisor:	
Title:	HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	
Date: 06/16/2010	Phone: 432-212-2399	Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

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Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	JC Federal #2 Tank Battery	Facility Type	Tank Battery
Surface Owner: Federal	Mineral Owner	Lease No. NMLC-029509B API-30-025-34772	

LOCATION OF RELEASE

Unit Letter F	Section 22	Township 17S	Range 32E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
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Latitude N 32 49.251° Longitude W 104 45.328°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 70 bbls	Volume Recovered 65 bbls
Source of Release: Discharge piping (4" poly transition in poly neck)	Date and Hour of Occurrence 06/12/2010	Date and Hour of Discovery 06/12/2010 11:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Larry Johnson -OCD Geoffrey Leking - OCD	
By Whom? Josh Russo	Date and Hour 06/14/2010 9:33 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* We had a failure at a 4 inch poly discharge piping. The poly pipe has been repaired and put back into services.		
Describe Area Affected and Cleanup Action Taken.* Tetra Tech personnel inspected and collected samples to define the spill extents. Soil that exceeded RRAL and the elevated chlorides were removed and transported to proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report for the NMOCD for review.		
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: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Senior Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 3-12-13 Phone: (432) 682-4559		

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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	JC FEDERAL #2 TANK BATTERY	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	NMLC029509B
		API#	30-025-34772

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E	2310	North	2310	West	Lea

Latitude 32 49.247 Longitude 103 45.325

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	70bbls	Volume Recovered	65bbls
Source of Release	Discharge piping (4" poly transition in poly neck)	Date and Hour of Occurrence	06/12/2010	Date and Hour of Discovery	06/12/2010 11:30 a.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson---OCD Geoffrey Leking---OCD		
By Whom?	Josh Russo	Date and Hour	06/14/2010	9:22 a.m.	
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*


We had a failure at a 4 inch poly discharge piping. The poly pipe has been repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 70bbls of produced water was release from the discharge piping on the 4 inch poly transition in the poly neck and we were able to recover 65bbls of produced water with a vacuum truck. The release caused a light 80' x 80' skim area on the pad location which then flowed to a 3' x 120' channel off into the pasture to a 10' x 15' area where the fluid collected. The chloride content of the produced water released is 135,500 mg/l. Terra 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 BLM / NMOCD 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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo	Approved by District Supervisor:	
Title:	HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	
Date:	06/21/2010	Phone:	432-212-2399
		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

SITE INFORMATION

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Report Type: Work Plan

FEB 17 2011

General Site Information:

Site:	JC Federal #2 Tank Battery		
Company:	COG Operating LLC		
Location:	Unit F	Sec 22	T 17S R 32E
Lease Number:	NMLC-02509		
County:	Lea County		
Spill GPS	32 49.251	103 45.328	
Surface Owner:	Federal		
Mineral Owner:			
Directions:	From Intersection of Hwy 529 and SR33/CR126A, go 2.2 miles north on SR33/CR126A and turn right (east), go 0.4 miles to location on right (south) of lease road.		

HOBBSOCD

Release Data:	Spill #1	Spill #2	Spill #3
Date Released:	05/16/10	06/10/10	06/12/10
Type Release:	Produced Fluid	Produced Fluid	Produced Fluid
Source of Contamination:	Water Tank	Water Tank	Poly Line
Fluid Released:	25 bbls	15 bbls	70 bbls
Fluids Recovered:	20 bbls	14 bbls	65 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 661-9826
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:		10

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

Approved
Jeffrey Leung
ENV ENGR
NM OGD-HOBBS
02/24/11



TETRA TECH

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FEB 17 2011

HOBBSOCD

February 4, 2011

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

**Re: Assessment and Work Plan for the COG Operating LLC., JC
Federal #2 Tank Battery located in Unit F, Section 22, Township
17 South, Range 32 East, Lea County, New Mexico.**

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess the spills that occurred at the JC Federal #2 Tank Battery, located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.820864°, W 103.755378°. The site location is shown on Figures 1 and 2. Three (3) separate spills occurred at the site and were assessed by Tetra Tech. This report details the finding of the investigations.

Background and Chronology

The JC Federal #2 Tank Battery had three (3) separate reportable releases with three individual initial C-141 forms. The initial C-141's are show in Appendix C. The releases and assessment summaries are show below.

5/16/10 Spill #1 – A water tank overflowed releasing approximately 25 barrels of produced water and 20 barrels of fluid were recovered. The spill was contained within the facility berm impacting an area approximately 3' x 10'.

Tetra Tech

1910 North Rg Spring, Midland TX 79705

Tel 432.682.4559 Fax 432.682.3246 www.tetratech.com



TETRA TECH

- 6/10/10 Spill #2 – A water tank overflowed releasing approximately 15 barrels of produced water and 14 barrels of fluid were recovered. The spill was contained within the facility berm and the spill encompassed the spill #1 foot print.
- 6/12/10 Spill #3 - A 4" poly line failed releasing approximately 70 barrels of produced water and 65 barrels of fluid were recovered. The spill migrated off the facility pad and flowed into the pasture.
- 6/15/10 Tetra Tech installed three (3) auger holes to assess spills #1 and #2 inside the facility berm and installed (7) auger holes on the pad and pasture for spill #3.
- 10/19/10 Tetra Tech installed one (1) soil boring inside the facility berm and two (2) soil borings on the pad.

Groundwater

No water wells are shown in Section 22, Township 17 South, Range 32 East. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be less than 100' below surface. The depth groundwater map is shown in Appendix A.

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 5,000 mg/kg. 1000mg/kg CL5 - 500 (IF PRACTICAL)
- DELIN 250

Soil Assessment and Analytical Results

Spill #1 and #2

On June 15, 2010, Tetra Tech personnel inspected and sampled the spills inside the facility dike. Three (3) auger holes (AH-1, AH-2 and AH-3) 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 B. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger hole (AH-3) exceeded the total BTEX RRAL at 0-1' and declined below the RRAL at 1-1.5' below surface. The TPH also exceeded the RRAL at 0-1' below surface, with a concentration of 1,623 mg/kg. Elevated chloride concentrations were detected in AH-1 and AH-2, but declined with depth below 1,000 mg/kg at 5.0' and 4.0', respectively. Auger holes (AH-1) did show a slight chloride increase of 459 mg/kg at 7.5-8.0' below surface.

On October 19, 2010, Tetra Tech personnel supervised the installation of a boreholes (BH-1) utilizing an air rotary drilling rig to collect deeper samples in the area of AH-1. Soil samples were collected to a depth of 10'. Referring to Table 1, the borehole samples did not show a chloride impact to the area. Based on the data, the area appears to have some chloride hot spots in the soils.

Spill #3

On June 15, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) 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 B. The sampling results are summarized in Table 2. The auger hole locations are shown on Figure 3..

Referring to Table 2, the selected samples for BTEX and TPH were below the RRAL, with the exception of AH-5. The area of AH-5 showed TPH concentrations of 6,051 mg/kg (0-1') and 2,086 mg/kg (1-1.5').

The chloride impact in the vicinity of auger holes (AH-1 and AH-2) were vertically defined and declined to <200 mg/kg at depths of 2.0' and 3.0', respectively. Auger holes (AH-3 and AH-4) were installed at depths of 8.0' to 9.0' below surface and were not vertically defined. The bottom auger hole samples showed a chloride of 1,050 mg/kg at AH-3 and 4,010 mg/kg at AH-4.



The remaining auger holes (AH-5, AH-6, and AH-7) are located near or on a closed reserve pit located east of the facility pad. The location of the closed reserve pit is shown on Figure 4. The area did show a shallow chloride impact to the soils ranging from 3,360 mg/kg to 7,520 mg/kg at 0-1' and significantly declined with depth. The bottom auger hole samples increased with depth at AH-5 (1,100 mg/kg at 4.0'), AH-6 (1,050 mg/kg at 7.0') and AH-7 (2,100 mg/kg at 6.0'). The chlorides present in the deeper soils appear to be affected by the closed reserve pit.

On October 19, 2010, Tetra Tech personnel supervised the installation of boreholes (BH-1 and BH-2) utilizing an air rotary drilling rig to collect deeper samples and define the areas of AH-3 and AH-4. Referring to Table 2, chloride concentrations declined with depth at BH-1 to <200 mg/kg at 7.0' and slightly increased to 626 mg/kg at 10.0' and declined back down to <200 mg/kg at 15.0' below surface. Boreholes (BH-2) declined to <200 mg/kg at 7.0' below surface.

Work Plan

In order to remediate the site, COG proposes to excavate the impacted soils. The goal of the remediation is to establish surface growth and to reduce the environmental liabilities for the protection of the groundwater. For growth, a minimum of 4.0' of impacted soil will be removed from the spill area, if necessary. Concerns exist regarding a deep excavation plan. Since the impacted area may be in the native sand dunes, 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 the deeper excavation depths are not reached, a 40 mil liner will be installed at depth of 4' to 5' below surface to cap the impacted area.

COG proposes to remove the impacted soil at depths shown in Table 1 (highlighted in green) and on Figure 5. The area inside the dike will be excavated approximately 3.0' to 4.0' below surface. On the pad area, AH-1, AH-2, AH-5, AH-6 and AH-7 will be excavated approximately 1.0' to 2.0' below surface. The deepest excavation will be performed on the pad in the areas of AH-3 (BH-1) and AH-4 (BH-2) to a depth of approximately 10' below surface. For proper removal, Tetra Tech will run field chlorides and collected confirmation samples for the laboratory analysis. The excavated soil will be transported to proper disposal. Once the areas are excavated to the appropriate depths, the excavations will be backfilled with clean soil.



TETRA TECH

Upon completion, a final report will be submitted to the NMOCD and BLM. If you have any questions or comments concerning the assessment or the work plan, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavaréz
Project Manager

cc: Pat Ellis – COG
cc: Terry Gregston – BLM
cc: Jim Amos – BLM

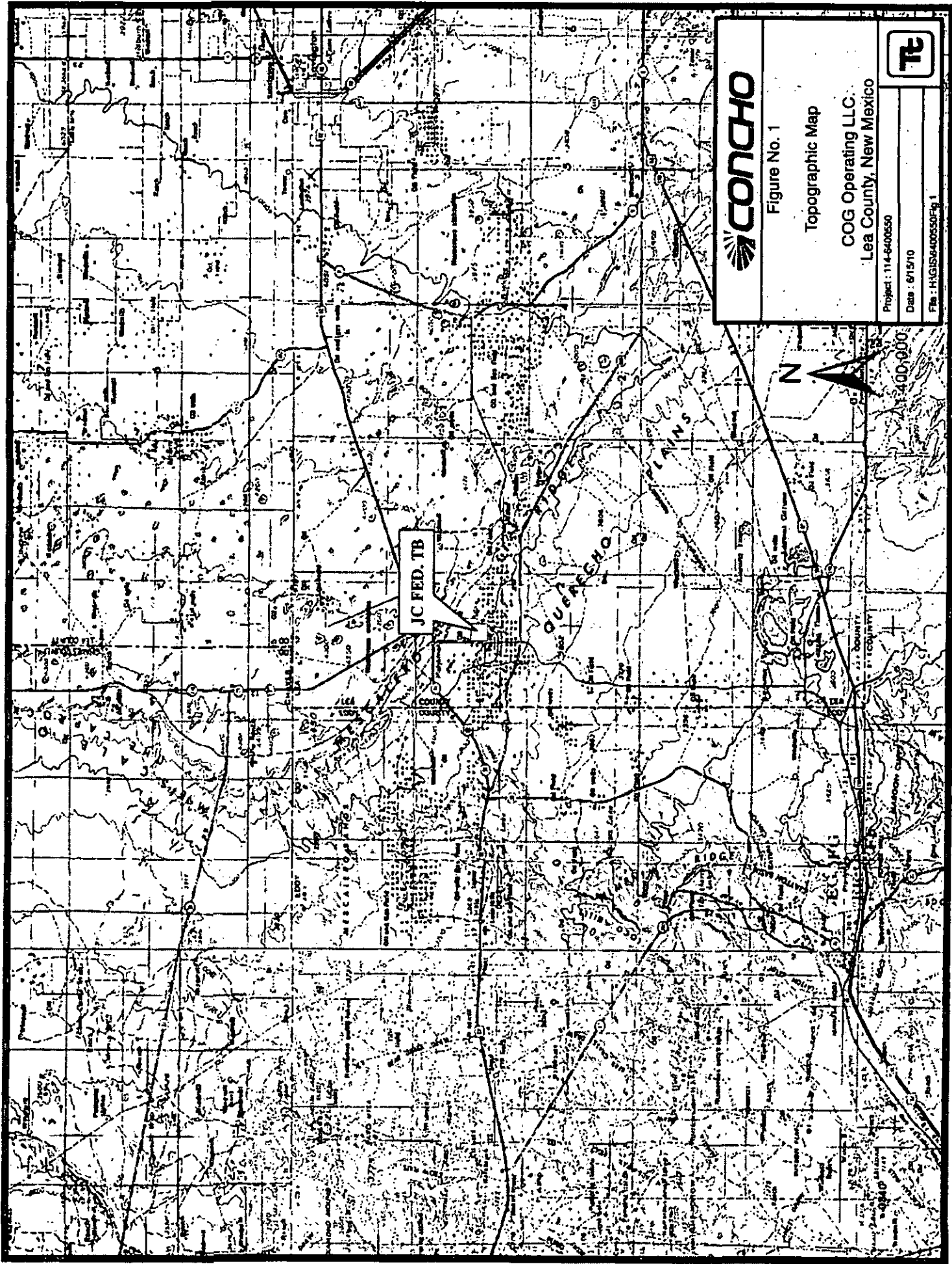


Figure No. 1

Topographic Map

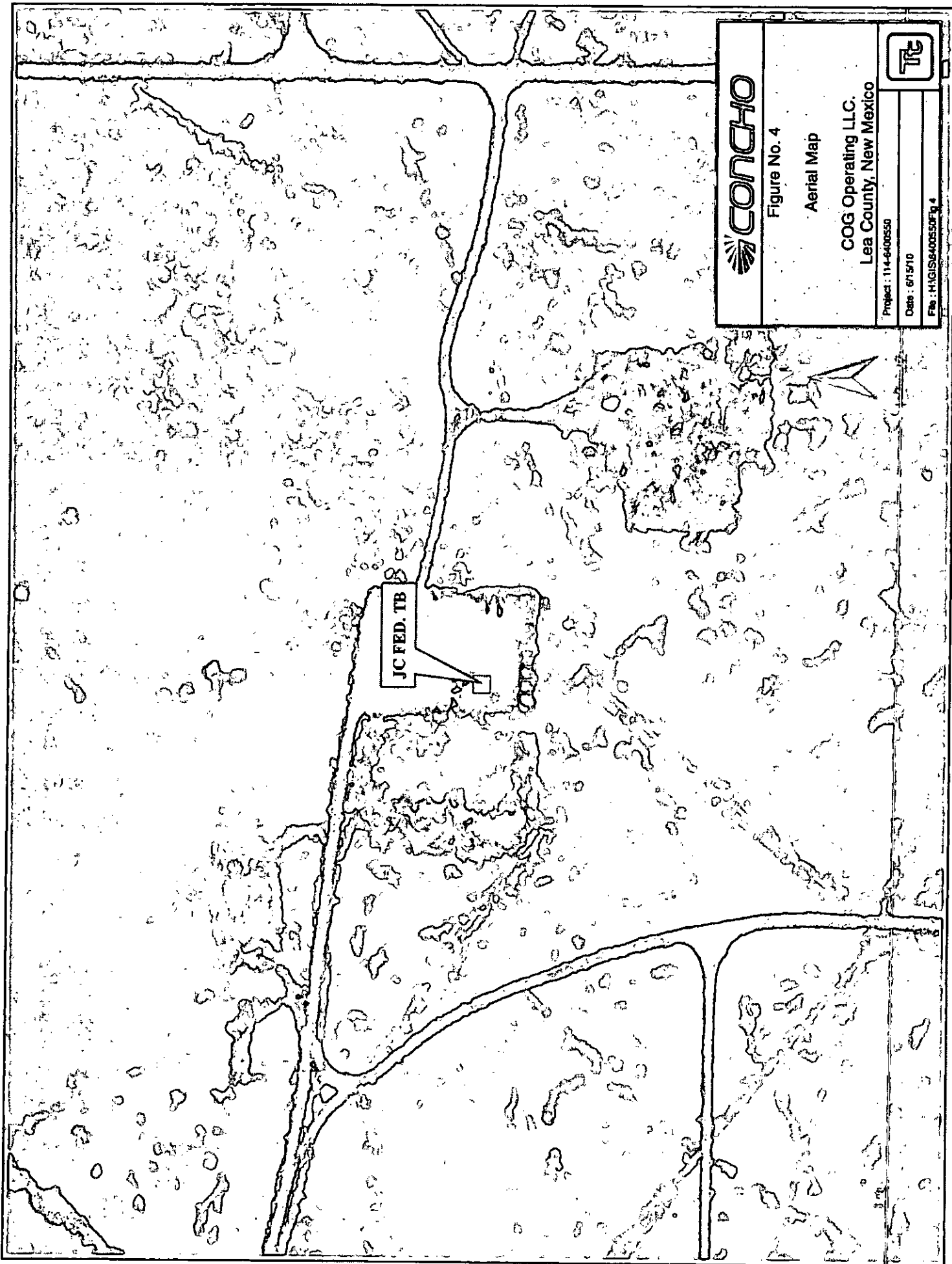
COG Operating LLC
Lea County, New Mexico


Project : 114-8400550

Date : 6/15/10

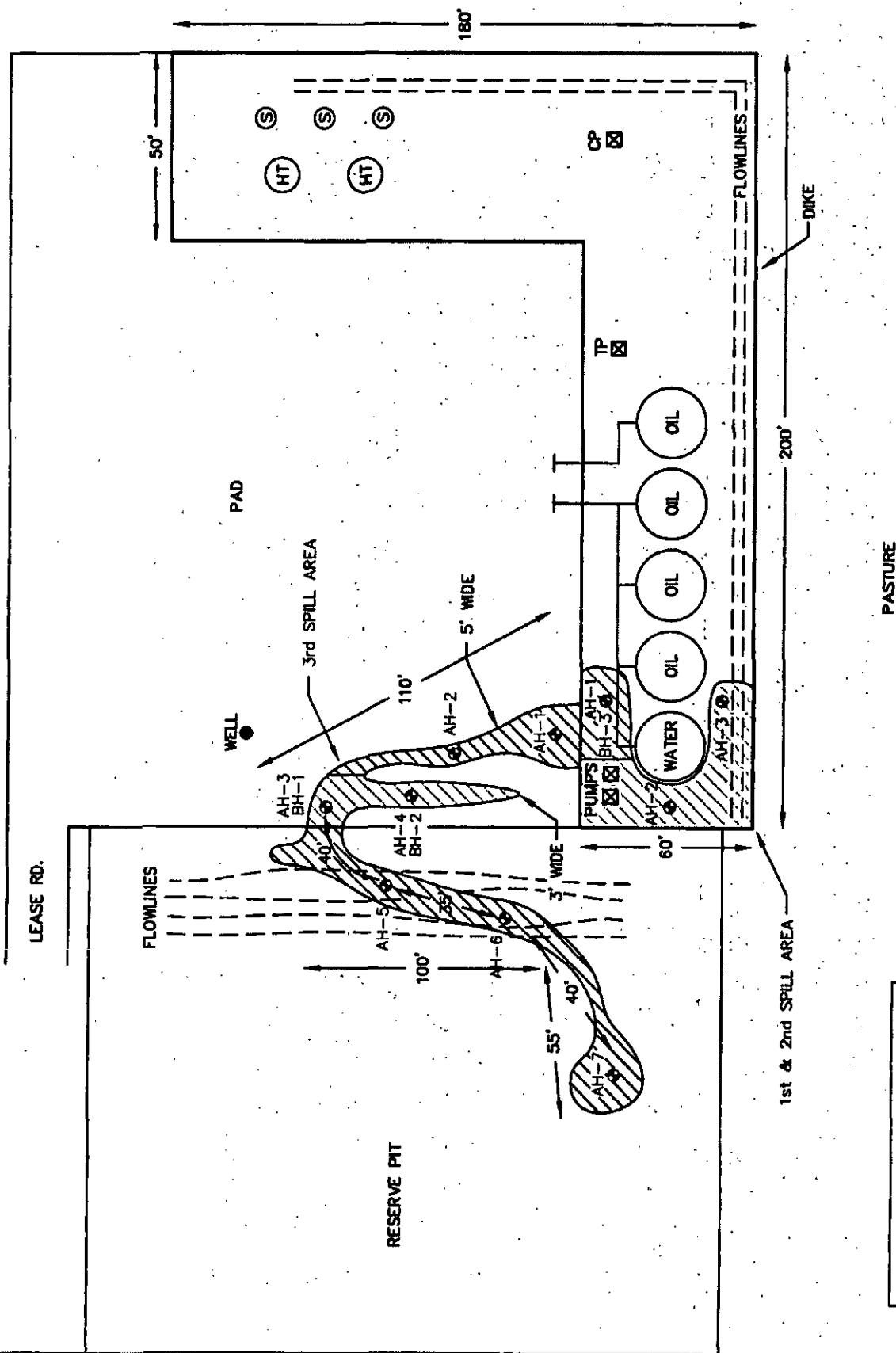
File : HGISB-400550-Fig 1





	Figure No. 4	
	Aerial Map	
COG Operating LLC. Lea County, New Mexico		
Project : 114-6400550		
Date : 6/15/10		
File : HGIS\6400550\Fig 4		





- SPILL AREA
- EXCAVATED AREA 1' TO 2' DEEP
- EXCAVATED AREA 4' DEEP
- EXCAVATED AREA 10' DEEP
- 1st SPILL SAMPLE LOCATIONS
- 2nd SPILL SAMPLE LOCATIONS
- BORE HOLE LOCATIONS

FIGURE NO. 5

UPTON COUNTY, TEXAS
COG OPERATING LLC
JC FED. TB
TETRA TECH, INC. HOUSTON, TEXAS

DATE	8/15/10
DRAWN BY	JJ
CHECKED BY	JJ
DATE	8/15/10

NOT TO SCALE

COG Operating LLC.

JC Federal Tank Battery

Spill #1 and #2

LEA COUNTY, NEW MEXICO

[illegible]

Table 1
COG Operating LLC.
JC Federal Tank Battery
Spill #1 and #2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-2	6/15/2010	0-1'		X		90.9	67.9	159	<0.0200	0.0944	0.12	0.286	10,400
		1-1.5'		X		-	-	-	-	-	-	-	1,500
		2-2.5'		X		-	-	-	-	-	-	-	1,100
		3-3.5'		X		-	-	-	-	-	-	-	2,020
		4-4.5'		X		-	-	-	-	-	-	-	970
		5-5.5'		X		-	-	-	-	-	-	-	851
		6-6.5'		X		-	-	-	-	-	-	-	252
		7-7.5'		X		-	-	-	-	-	-	-	<200
		8-8.5'		X		-	-	-	-	-	-	-	<200
		9-9.5'		X		-	-	-	-	-	-	-	<200
AH-3	6/15/2010	0-1'		X		1,300	323	1,623	2.29	33.00	24.5	33.6	232
		1-1.5'		X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<200
		2-2.5'		X		-	-	-	-	-	-	-	<200
		3-3.5'		X		-	-	-	-	-	-	-	<200
		4-4.5'		X		-	-	-	-	-	-	-	<200
		5-5.5'		X		-	-	-	-	-	-	-	<200
		6-6.5'		X		-	-	-	-	-	-	-	<200
		7-7.5'		X		-	-	-	-	-	-	-	<200
		8-8.5'		X		-	-	-	-	-	-	-	<200
		9-9.5'		X		-	-	-	-	-	-	-	<200

BEB Below Excavation Bottom
 (-) Not Analyzed
☐ Proposed excavation depth

Table 2
COG Operating LLC.
JC Federal TB
Spill #3
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-3	6/15/2010	0-1'		X		680	192	872	0.54	4.17	6.97	10.7	11,100
		1-1.5'		X		-	-	-	-	-	-	-	3,410
		2-2.5'		X		-	-	-	-	-	-	-	421
		3-3.5'		X		-	-	-	-	-	-	-	1,130
		4-4.5'		X		-	-	-	-	-	-	-	1,090
		5-5.5'		X		-	-	-	-	-	-	-	1,840
		6-6.5'		X		-	-	-	-	-	-	-	1,980
		7-7.5'		X		-	-	-	-	-	-	-	1,900
		8-8.5'		X		-	-	-	-	-	-	-	1,420
		8.5-9'		X		-	-	-	-	-	-	-	1,050
BH-1	10/19/2010	0-1'		X		-	-	-	-	-	-	-	11,600
		3'		X		-	-	-	-	-	-	-	1,130
		5'		X		-	-	-	-	-	-	-	1,390
		7'		X		-	-	-	-	-	-	-	<200
		10'		X		-	-	-	-	-	-	-	626
		15'		X		-	-	-	-	-	-	-	<200
		20'		X		-	-	-	-	-	-	-	343

LEA COUNTY, NEW MEXICO

[illegible]

Table 2
COG Operating LLC.
JC Federal TB
Spill #3
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-5*	6/15/2010	0-1'		X		231	5,920	6,051	<0.200	0.496	0.335	0.88	3,380
		1-1.5'		X		96.2	1,990	2,086	-	-	-	-	984
		2-2.5'		X		-	-	-	-	-	-	-	791
		3-3.5'		X		-	-	-	-	-	-	-	939
		4-4.5'		X		-	-	-	-	-	-	-	1,100
AH-6*	6/15/2010	0-1'		X		<2.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	7,500
		1-1.5'		X		-	-	-	-	-	-	-	<200
		2-2.5'		X		-	-	-	-	-	-	-	208
		3-3.5'		X		-	-	-	-	-	-	-	548
		4-4.5'		X		-	-	-	-	-	-	-	632
		5-5.5'		X		-	-	-	-	-	-	-	781
		6-6.5'		X		-	-	-	-	-	-	-	791
		7-7.5'		X		-	-	-	-	-	-	-	1,050
AH-7*	6/15/2010	0-1'		X		42.4	64	106	<0.0200	0.146	0.165	0.47	7,520
		1-1.5'		X		-	-	-	-	-	-	-	<200
		2-2.5'		X		-	-	-	-	-	-	-	<200
		3-3.5'		X		-	-	-	-	-	-	-	282
		4-4.5'		X		-	-	-	-	-	-	-	949
		5-5.5'		X		-	-	-	-	-	-	-	1,810
		5.5-6'		X		-	-	-	-	-	-	-	2,100

BEB Below Excavation Bottom
(--) Not Analyzed
Proposed excavation depth
* Installed near or on closed reserve pit

Water Well Data
Average Depth to Groundwater (ft)
COG - JC Federal #2 Tank Battery, Lea County, New Mexico

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

16 South 32 East					
6	5	4	3	2	1
			65	265	265
7	8	9	10	11	12
					215
18	17	16	15	14	13
		221			215
19	20	21	22	23	24
220		210		210	
30	29	28	27	26	25
				243	
31	32	33	34	35	36
					260

16 South 33 East					
6	5	180	4	3	130
			150		148
7	8	9	10	11	12
	200		182		142
18	17	16	15	14	13
	182	180	175	143	110
19	20	21	22	23	24
				120	
30	29	28	27	26	25
191		190	130	143	120
31	32	33	34	35	36
190	168		160		

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
			271		

17 South 32 East					
6	5	4	82	3	2
			Maljamar	75	1
7	8	9	10	11	70
				88	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
180					
31	32	33	34	35	36

17 South 33 East					
6	90	5	4	3	155
				2	158
7	167	8	9	10	11
	173		161		12
18	17	16	15	14	13
188	180				165
19	20	21	22	23	24
	190			115	
30	29	28	27	26	25
31	32	33	34	35	36
				155	

18 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
					400
18	17	16	15	14	13
					317
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				261	

18 South 32 East					
6	5	4	65	3	2
7	460	8	9	10	11
82					12
18	17	16	15	14	13
		84			
19	20	21	22	23	24
	164		428		
30	29	28	27	26	25
31	32	33	34	35	36
			117		

18 South 33 East					
6	5	4	3	2	1
7	8	100	9	10	11
					12
18	17	16	15	14	13
	85			36	60
19	20	21	22	23	24
>140					195
30	29	28	27	26	25
35					
31	32	33	34	35	36
			177		

- 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
- 180 Recently installed temporary monitor well.

Summary Report

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

Report Date: July 2, 2010

Work Order: 10061721



Project Location: Lea County, NM
Project Name: COG/JC Federal TB Spill #1 Well #2
Project Number: 114-6400550

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234897	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234898	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234899	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234900	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234901	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234902	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234903	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234904	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234905	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234906	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234907	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234908	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234910	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234911	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234912	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234913	AH-2 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234914	AH-2 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234915	AH-2 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234916	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234917	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234918	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234919	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234920	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234921	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234922	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234923	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234924	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234925	AH-3 9-9.5'	soil	2010-06-15	00:00	2010-06-17
235017	AH-1 7.5-8'	soil	2010-06-15	00:00	2010-06-17

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)
234897 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234905 - AH-2 0-1'	<0.0200	0.0944	0.120	0.286	67.9	90.9
234916 - AH-3 0-1'	2.29	33.0	24.5	33.6	323	1300
234917 - AH-3 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200		

Sample: 234897 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		12200	mg/Kg	4.00

Sample: 234898 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1590	mg/Kg	4.00

Sample: 234899 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1230	mg/Kg	4.00

Sample: 234900 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1280	mg/Kg	4.00

Sample: 234901 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4.00

Sample: 234902 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00

Sample: 234903 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		297	mg/Kg	4.00

Sample: 234904 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		901	mg/Kg	4.00

Sample: 234905 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00

Sample: 234906 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1500	mg/Kg	4.00

Sample: 234907 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4.00

Sample: 234908 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		2020	mg/Kg	4.00

Sample: 234910 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		970	mg/Kg	4.00

Sample: 234911 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		851	mg/Kg	4.00

Sample: 234912 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		252	mg/Kg	4.00

Sample: 234913 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234914 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234915 - AH-2 9-9.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234916 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00

Sample: 234917 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234918 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234919 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234920 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234921 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234922 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234923 - AH-3 7-7.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234924 - AH-3 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234925 - AH-3 9-9.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 235017 - AH-1 7.5-8'

Param	Flag	Result	Units	RL
Chloride		459	mg/Kg	4.00

Summary Report

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

Report Date: July 2, 2010

Work Order: 10061722



Project Location: Lea County, NM
Project Name: COG/JC Federal TB Spill #2 4 in. Line
Project Number: 114-6400550

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234926	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234927	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234928	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234929	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234930	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234931	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234932	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234933	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234934	AH-1 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234935	AH-1 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234936	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234937	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234938	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234939	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234940	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234941	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234942	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234943	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234944	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234945	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234946	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234947	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234948	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234949	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234950	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234951	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234952	AH-3 8.5-9'	soil	2010-06-15	00:00	2010-06-17
234953	AH-4 0-1'	soil	2010-06-15	00:00	2010-06-17
234954	AH-4 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234955	AH-4 2-2.5'	soil	2010-06-15	00:00	2010-06-17

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234956	AH-4 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234957	AH-4 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234958	AH-4 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234959	AH-4 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234960	AH-4 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234961	AH-4 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234962	AH-4 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234963	AH-5 0-1'	soil	2010-06-15	00:00	2010-06-17
234964	AH-5 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234965	AH-5 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234966	AH-5 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234967	AH-5 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234968	AH-6 0-1'	soil	2010-06-15	00:00	2010-06-17
234969	AH-6 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234970	AH-6 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234971	AH-6 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234972	AH-6 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234973	AH-6 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234974	AH-6 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234975	AH-6 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234976	AH-7 0-1'	soil	2010-06-15	00:00	2010-06-17
234977	AH-7 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234978	AH-7 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234979	AH-7 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234980	AH-7 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234981	AH-7 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234982	AH-7 5.5-6'	soil	2010-06-15	00:00	2010-06-17

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)
234926 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234936 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	0.216	141	23.0
234943 - AH-3 0-1'	0.540	4.17	6.97	10.7	192	680
234953 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234963 - AH-5 0-1'	<0.200	0.496	0.335	0.880	5820	231
234964 - AH-5 1-1.5'					1990	96.2
234968 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234976 - AH-7 0-1'	<0.0200	0.146	0.165	0.470	64.0	42.4

Sample: 234926 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		4710	mg/Kg	4.00

Sample: 234927 - AH-1 1-1.5'

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.

Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00

Sample: 234928 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234929 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234930 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234931 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234932 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234933 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234934 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234935 - AH-1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234936 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		1570	mg/Kg	4.00

Sample: 234937 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1240	mg/Kg	4.00

Sample: 234938 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		883	mg/Kg	4.00

Sample: 234939 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234940 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		247	mg/Kg	4.00

Sample: 234941 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234942 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234943 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		11100	mg/Kg	4.00

Sample: 234944 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3410	mg/Kg	4.00

Sample: 234945 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		421	mg/Kg	4.00

Sample: 234946 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1130	mg/Kg	4.00

Sample: 234947 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1090	mg/Kg	4.00

Sample: 234948 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1840	mg/Kg	4.00

Sample: 234949 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		1980	mg/Kg	4.00

Sample: 234950 - AH-3 7-7.5'

Param	Flag	Result	Units	RL
Chloride		1900	mg/Kg	4.00

Sample: 234951 - AH-3 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1420	mg/Kg	4.00

Sample: 234952 - AH-3 8.5-9'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4.00

Sample: 234953 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		4890	mg/Kg	4.00

Sample: 234954 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1480	mg/Kg	4.00

Sample: 234955 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1800	mg/Kg	4.00

Sample: 234956 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		5820	mg/Kg	4.00

Sample: 234957 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		2210	mg/Kg	4.00

Sample: 234958 - AH-4 5-5.5'

Param	Flag	Result	Units	RL
Chloride		2220	mg/Kg	4.00

Sample: 234959 - AH-4 6-6.5'

Param	Flag	Result	Units	RL
Chloride		2760	mg/Kg	4.00

Sample: 234960 - AH-4 7-7.5'

Param	Flag	Result	Units	RL
Chloride		2270	mg/Kg	4.00

Sample: 234961 - AH-4 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1970	mg/Kg	4.00

Sample: 234962 - AH-4 9-9.5'

Param	Flag	Result	Units	RL
Chloride		4010	mg/Kg	4.00

Sample: 234963 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		3380	mg/Kg	4.00

Sample: 234964 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		984	mg/Kg	4.00

Sample: 234965 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		791	mg/Kg	4.00

Sample: 234966 - AH-5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		939	mg/Kg	4.00

Sample: 234967 - AH-5 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4.00

Sample: 234968 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		7500	mg/Kg	4.00

Sample: 234969 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234970 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		208	mg/Kg	4.00

Sample: 234971 - AH-6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		548	mg/Kg	4.00

Sample: 234972 - AH-6 4-4.5'

Param	Flag	Result	Units	RL
Chloride		632	mg/Kg	4.00

Sample: 234973 - AH-6 5-5.5'

Param	Flag	Result	Units	RL
Chloride		781	mg/Kg	4.00

Sample: 234974 - AH-6 6-6.5'

Param	Flag	Result	Units	RL
Chloride		791	mg/Kg	4.00

Sample: 234975 - AH-6 7-7.5'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4.00

Sample: 234976 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		7520	mg/Kg	4.00

Sample: 234977 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234978 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234979 - AH-7 3-3.5'

Param	Flag	Result	Units	RL
Chloride		282	mg/Kg	4.00

Sample: 234980 - AH-7 4-4.5'

Param	Flag	Result	Units	RL
Chloride		949	mg/Kg	4.00

Sample: 234981 - AH-7 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1810	mg/Kg	4.00

Sample: 234982 - AH-7 5.5-6'

Param	Flag	Result	Units	RL
Chloride		2100	mg/Kg	4.00

Summary Report

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

Report Date: October 25, 2010

Work Order: 10102018



Project Location: Lea County, NM
Project Name: COG/JC Federal TB Spill #1 Well #2
Project Number: 114-6400550

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
247985	BH-1 0-1'	soil	2010-10-19	00:00	2010-10-20
247986	BH-1 3'	soil	2010-10-19	00:00	2010-10-20
247987	BH-1 5'	soil	2010-10-19	00:00	2010-10-20
247988	BH-1 7'	soil	2010-10-19	00:00	2010-10-20
247989	BH-1 10'	soil	2010-10-19	00:00	2010-10-20
247990	BH-1 15'	soil	2010-10-19	00:00	2010-10-20
247991	BH-1 20'	soil	2010-10-19	00:00	2010-10-20
247992	BH-2 0-1'	soil	2010-10-19	00:00	2010-10-20
247993	BH-2 3'	soil	2010-10-19	00:00	2010-10-20
247994	BH-2 5'	soil	2010-10-19	00:00	2010-10-20
247995	BH-2 7'	soil	2010-10-19	00:00	2010-10-20
247996	BH-2 10'	soil	2010-10-19	00:00	2010-10-20
247997	BH-3 0-1'	soil	2010-10-19	00:00	2010-10-20
247998	BH-3 3'	soil	2010-10-19	00:00	2010-10-20
247999	BH-3 5'	soil	2010-10-19	00:00	2010-10-20
248000	BH-3 7'	soil	2010-10-19	00:00	2010-10-20
248001	BH-3 10'	soil	2010-10-19	00:00	2010-10-20

Sample: 247985 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 247986 - BH-1 3'

Sample: 247994 - BH-2 5'

Param	Flag	Result	Units	RL
Chloride		489	mg/Kg	4.00

Sample: 247995 - BH-2 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 247996 - BH-2 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 247997 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		300	mg/Kg	4.00

Sample: 247998 - BH-3 3'

Param	Flag	Result	Units	RL
Chloride		320	mg/Kg	4.00

Sample: 247999 - BH-3 5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 248000 - BH-3 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 248001 - BH-3 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

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	JC Federal Tank Battery	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	NMLC-02509-B

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E					Lea

Latitude 32 49.251 Longitude 103 45.328

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	25bbls	Volume Recovered	20bbls
Source of Release	Water Tank	Date and Hour of Occurrence	05/16/2010	Date and Hour of Discovery	05/16/2010 6:00 p.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson - OCD Geoffrey Leking - OCD		
By Whom?	Josh Russo	Date and Hour	05/17/2010	5:53 p.m.	
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

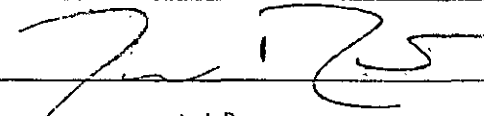
The cause of the problem was due to a power failure. The issue with the power has been corrected.

Describe Area Affected and Cleanup Action Taken.*

Initially 25bbls was release from a water tank and we were able to recover 20bbls with a vacuum truck. The spill was completely contained inside the tank battery firewall and the dimensions of the release were 3' x 10'. (The closest well location to the release is the JC FEDERAL #2, F-22-17S-32E, 2310 FNL 2310 FWL, 32.82096 - 103.75533, API# 30-025-34772) Terra Tech will sample the spill site area to delineate any possible contamination from the release and we will submit a remediation work plan to the BLM/NMOCD 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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo	Approved by District Supervisor:	
Title:	IIE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date:	05/19/2010	Phone:	432-212-2399

* Attach Additional Sheets If Necessary

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	JC FEDERAL #2 TANK BATTERY	Facility Type	Tank Battery

Surface Owner	Federal	Mineral Owner		Lease No.	NMLC029509B
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E					Lea

Latitude 32 49.249 Longitude 103 45.304

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	15bbls	Volume Recovered	14bbls
Source of Release	Water Tank	Date and Hour of Occurrence	06/10/2010	Date and Hour of Discovery	06/10/2010 12:30 p.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson—OCD Geoffrey Leking—OCD		
By Whom?	Josh Russo	Date and Hour	06/10/2010 5:33 p.m.		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

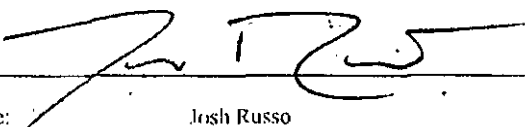
The water tank at the JC Federal #2 Tank Battery overflowed. This occurred because the water trucks did not arrive in time to haul off the water from inside the tank.

Describe Area Affected and Cleanup Action Taken.*

Initially 15bbls of produced water was released, and contained, inside the dike walls of the tank battery. We were able to recover 14bbls with a vacuum truck. The produced water in this area has an estimated chloride concentration of 135,500 mg/l. (The closest well location to this tank battery in the JC FEDERAL #2, UNIT F, SEC. 22-T17S-R32E, 2310 FNL 2310 FWL, API# 30-025-34772, 32.8209659 - 103.755331) 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 BLM/NMOCD 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.

OIL CONSERVATION DIVISION

Signature: 	Approved by District Supervisor:		
Printed Name: Josh Russo			
Title: HSE Coordinator	Approval Date:	Expiration Date:	
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 06/16/2010 Phone: 432-212-2399			

* Attach Additional Sheets If Necessary

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	IC FEDERAL #2 TANK BATTERY	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	NMLC029509B API# 30-025-34772

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	22	17S	32E	2310	North	2310	West	Lea

Latitude 32 49.247 Longitude 103 45.325

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	70bbls	Volume Recovered	65bbls
Source of Release	Discharge piping (4" poly transition in poly neck)	Date and Hour of Occurrence	06/12/2010	Date and Hour of Discovery	06/12/2010 11:30 a.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Larry Johnson—OCD Geoffrey Leking—OCD			
By Whom?	Josh Russo	Date and Hour	06/14/2010 9:22 a.m.		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*


We had a failure at a 4 inch poly discharge piping. The poly pipe has been repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 70bbls of produced water was release from the discharge piping on the 4 inch poly transition in the poly neck and we were able to recover 65bbls of produced water with a vacuum truck. The release caused a light 80' x 80' skim area on the pad location which then flowed to a 3' x 120' channel off into the pasture to a 10' x 15' area where the fluid collected. The chloride content of the produced water released is 135,500 mg/l. Terra 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 BLM/NMOCD 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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo	Approved by District Supervisor:	
Title:	HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	
Date:	06/21/2010	Phone:	432-212-2399
		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

SITE INFORMATION**Report Type: Closure****General Site Information:**

Site:	JC Federal #2 Tank Battery					
Company:	COG Operating LLC					
Location:	Unit F	Sec 22	T 17S	R 32E		
Lease Number:	NMLC-02509					
County:	Lea County					
Spill GPS	32.820864			103.755378		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of Hwy 529 and SR33/CR126A, go 2.2 miles north on SR33/CR126A and turn right (east), go 0.4 miles to location on right (south) of lease road.					

Release Data:	Spill #1	Spill #2	Spill #3
Date Released:	05/16/10	06/10/10	06/12/10
Type Release:	Produced Fluid	Produced Fluid	Produced Fluid
Source of Contamination:	Water Tank	Water Tank	Poly Line
Fluid Released:	25 bbls	15 bbls	70 bbls
Fluids Recovered:	20 bbls	14 bbls	65 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	One Concho Center	1910 N. Big Spring
P.O. Box	600 W. Illinois	
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 661-9826
Fax:	(432) 684-7137	
Email:	pellis@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	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

HOBBS OCD

APR 23 2013

RECEIVED



TETRA TECH

March 12, 2013

HOBBS OCD

APR 23 2013

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

RECEIVED

Re: Closure Report for the COG Operating LLC., JC Federal #2 Tank Battery located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess the spills that occurred at the JC Federal #2 Tank Battery, located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.820864°, W 103.755378°. The site location is shown on Figures 1 and 2. Three (3) separate spills occurred at the site and were assessed by Tetra Tech. This report details the finding of the investigations.

Background and Chronology

The JC Federal #2 Tank Battery had three (3) separate reportable releases with three individual initial C-141 forms. The initial C-141's are show in Appendix A. The releases and assessment summaries are show below.

- | | |
|---------|---|
| 5/16/10 | Spill #1 – A water tank overflowed releasing approximately 25 barrels of produced water and 20 barrels of fluid were recovered. The spill was contained within the facility berm impacting an area approximately 3' x 10'. |
| 6/10/10 | Spill #2 – A water tank overflowed releasing approximately 15 barrels of produced water and 14 barrels of fluid were recovered. The spill was contained within the facility berm and the spill encompassed the spill #1 foot print. |

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



TETRA TECH

- 6/12/10 Spill #3 - A 4" poly line failed releasing approximately 70 barrels of produced water and 65 barrels of fluid were recovered. The spill migrated off the facility pad and flowed into the pasture.
- 6/15/10 Tetra Tech installed three (3) auger holes to assess spills #1 and #2 inside the facility berm and installed (7) auger holes on the pad and pasture for spill #3.
- 10/19/10 Tetra Tech installed one (1) soil boring inside the facility berm and two (2) soil borings on the pad.

Groundwater

No water wells are shown in Section 22, Township 17 South, Range 32 East. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be less than 100' below surface. The depth groundwater map is shown in Appendix B.

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

Spill #1 and #2

On June 15, 2010, Tetra Tech personnel inspected and sampled the spills inside the facility dike. Three (3) auger holes (AH-1, AH-2 and AH-3) 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 sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger hole (AH-3) exceeded the total BTEX RRAL at 0-1' and declined below the RRAL at 1-1.5' below surface. The TPH also exceeded the RRAL at 0-1' below surface, with a concentration of 1,623 mg/kg. Elevated chloride concentrations were detected in AH-1 and AH-2, but declined



with depth below 1,000 mg/kg at 5.0' and 4.0', respectively. Auger holes (AH-1) did show a slight chloride increase of 459 mg/kg at 7.5-8.0' below surface.

On October 19, 2010, Tetra Tech personnel supervised the installation of a boreholes (BH-1) utilizing an air rotary drilling rig to collect deeper samples in the area of AH-1. Soil samples were collected to a depth of 10'. Referring to Table 1, the borehole samples did not show a chloride impact to the area. Based on the data, the area appears to have some chloride hot spots in the soils.

Spill #3

On June 15, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) 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 B. The sampling results are summarized in Table 2. The auger hole locations are shown on Figure 3.

Referring to Table 2, the selected samples for BTEX and TPH were below the RRAL, with the exception of AH-5. The area of AH-5 showed TPH concentrations of 6,051 mg/kg (0-1') and 2,086 mg/kg (1-1.5').

The chloride impact in the vicinity of auger holes (AH-1 and AH-2) were vertically defined and declined to <200 mg/kg at depths of 2.0' and 3.0', respectively. Auger holes (AH-3 and AH-4) were installed at depths of 8.0' to 9.0' below surface and were not vertically defined. The bottom auger hole samples showed a chloride of 1,050 mg/kg at AH-3 and 4,010 mg/kg at AH-4.

The remaining auger holes (AH-5, AH-6, and AH-7) are located near or on a closed reserve pit located east of the facility pad. The location of the closed reserve pit is shown on Figure 4. The area did show a shallow chloride impact to the soils ranging from 3,360 mg/kg to 7,520 mg/kg at 0-1' and significantly declined with depth. The bottom auger hole samples increased with depth at AH-5 (1,100 mg/kg at 4.0'), AH-6 (1,050 mg/kg at 7.0') and AH-7 (2,100 mg/kg at 6.0'). The chlorides present in the deeper soils appear to be affected by the closed reserve pit.

On October 19, 2010, Tetra Tech personnel supervised the installation of boreholes (BH-1 and BH-2) utilizing an air rotary drilling rig to collect deeper samples and define the areas of AH-3 and AH-4. Referring to Table 2, chloride concentrations declined with depth at BH-1 to <200 mg/kg at 7.0' and slightly increased to 626 mg/kg at 10.0' and declined back down to <200 mg/kg at 15.0' below surface. Borehole (BH-2) declined to <200 mg/kg at 7.0' below surface.



TETRA TECH

Closure Activities

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site on March 31, 2011. The excavated areas and depths are highlighted in Table 1 and shown on Figure 5. The final excavation depths of the soil remediation were met as stated in the approved work plan.

The impacted areas inside the tank battery were excavated to a depth of 1.0' to 2.0' below surface. Due to safety concerns, deeper excavation could not perform due to the lines and tanks in the area. The impacted areas on the pad were excavated to depths of 2.0' and 10.0 below surface. The remaining areas (AH-5, AH-6 and AH-7) in the pasture (top of the closed reserve pit) were not accessible to excavated due to the multiple flow lines and lines in the area. Approximately 600 cubic yards of soil were excavated and transported to proper disposal.

Based on the remedial activities performed, COG request closure of the site. A copies of the C-141 (Final's) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavaréz
Senior Project Manager

cc: Pat Ellis – COG
cc: Jim Amos – BLM

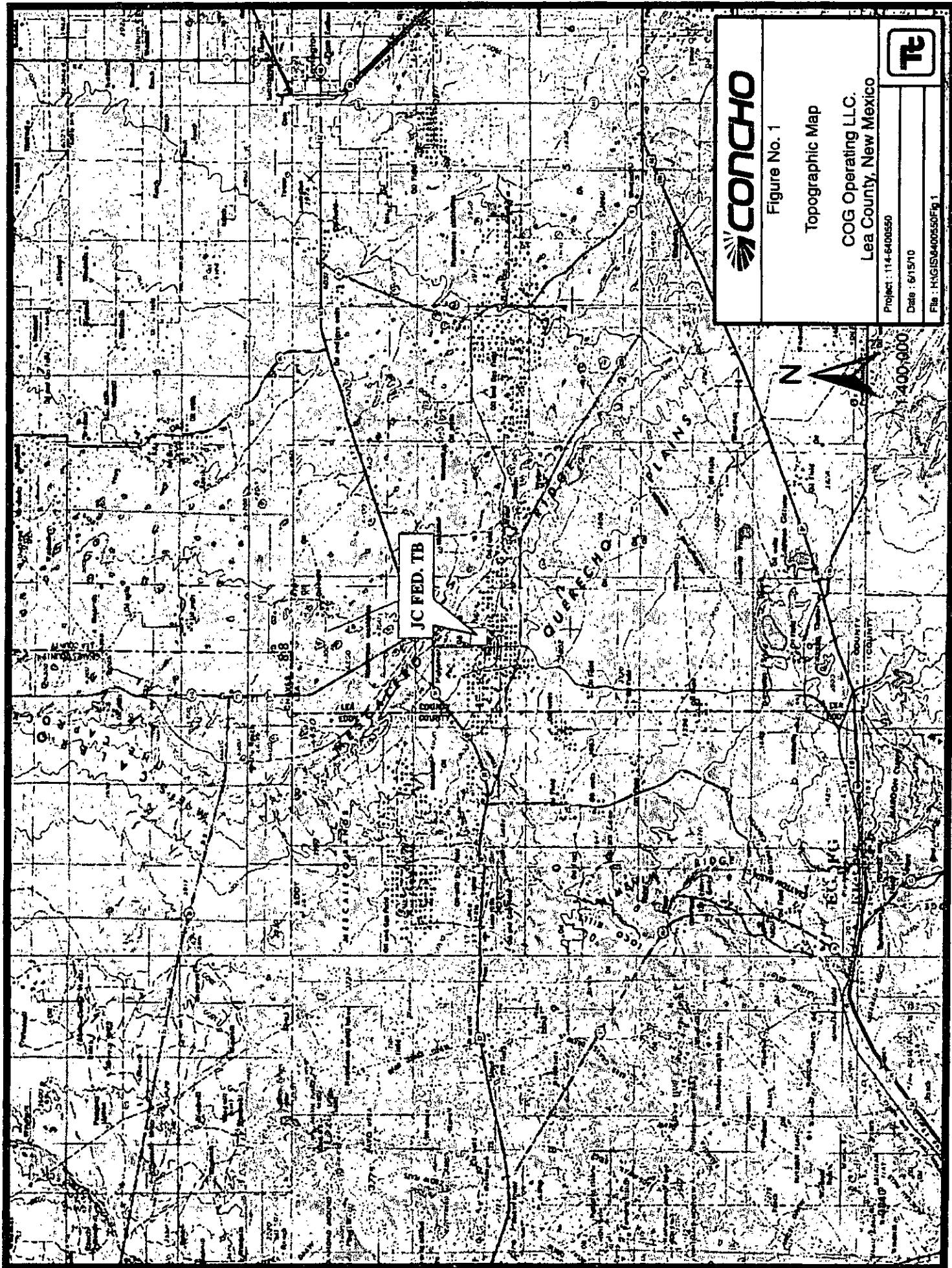


Figure No. 1

Topographic Map

COG Operating LLC.
Lea County, New Mexico

Project : 114-6400550

Date : 6/15/10

File : HGIS6400550Fig 1



1:400,000



Figure No. 2

Topographic Map

COG Operating LLC.
Lea County, New Mexico

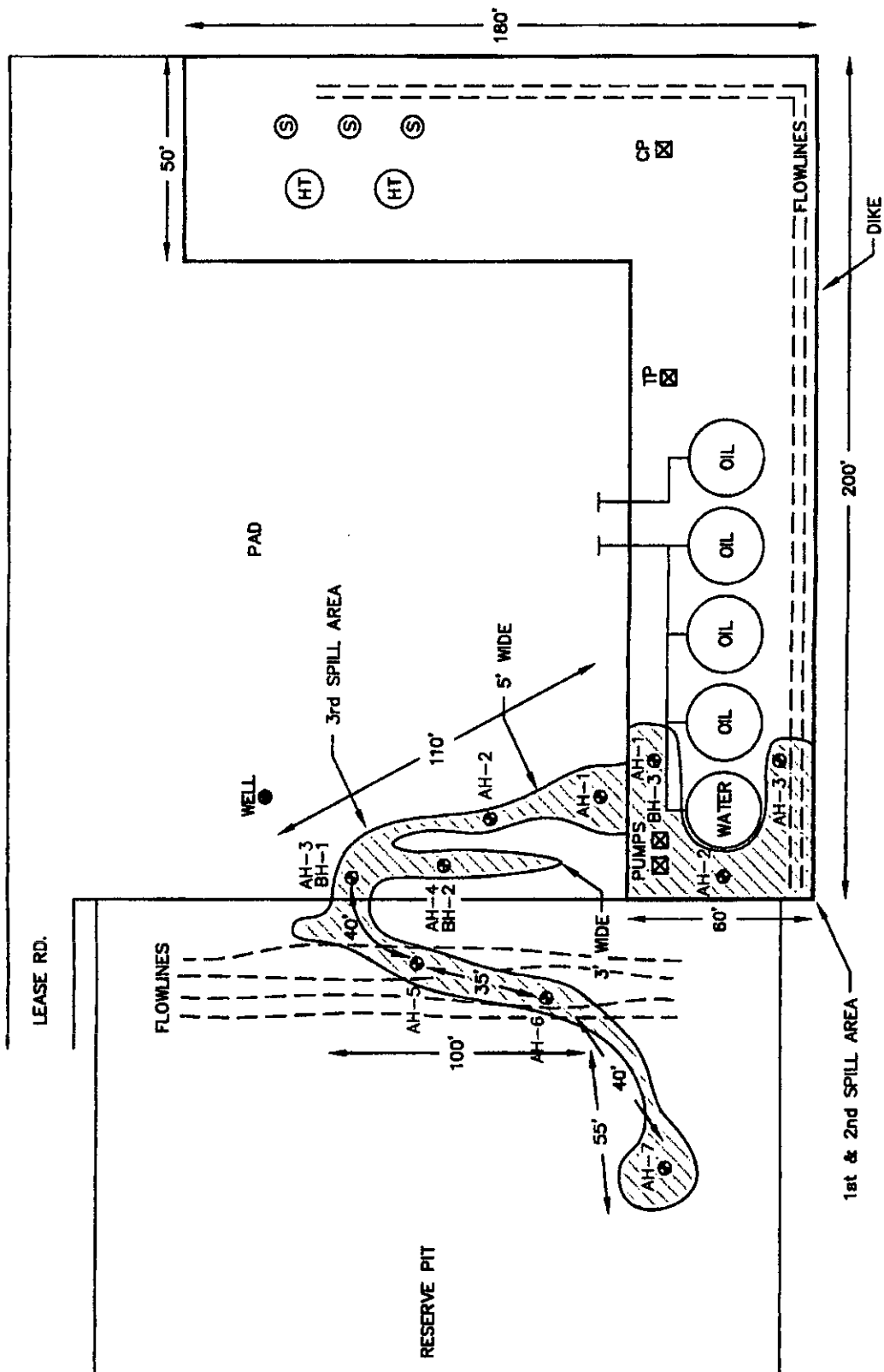
Project : 114-6400550

Date : 6/15/10

File : H:\GIS\6400550\Fig 2



1:24,000



PASTURE

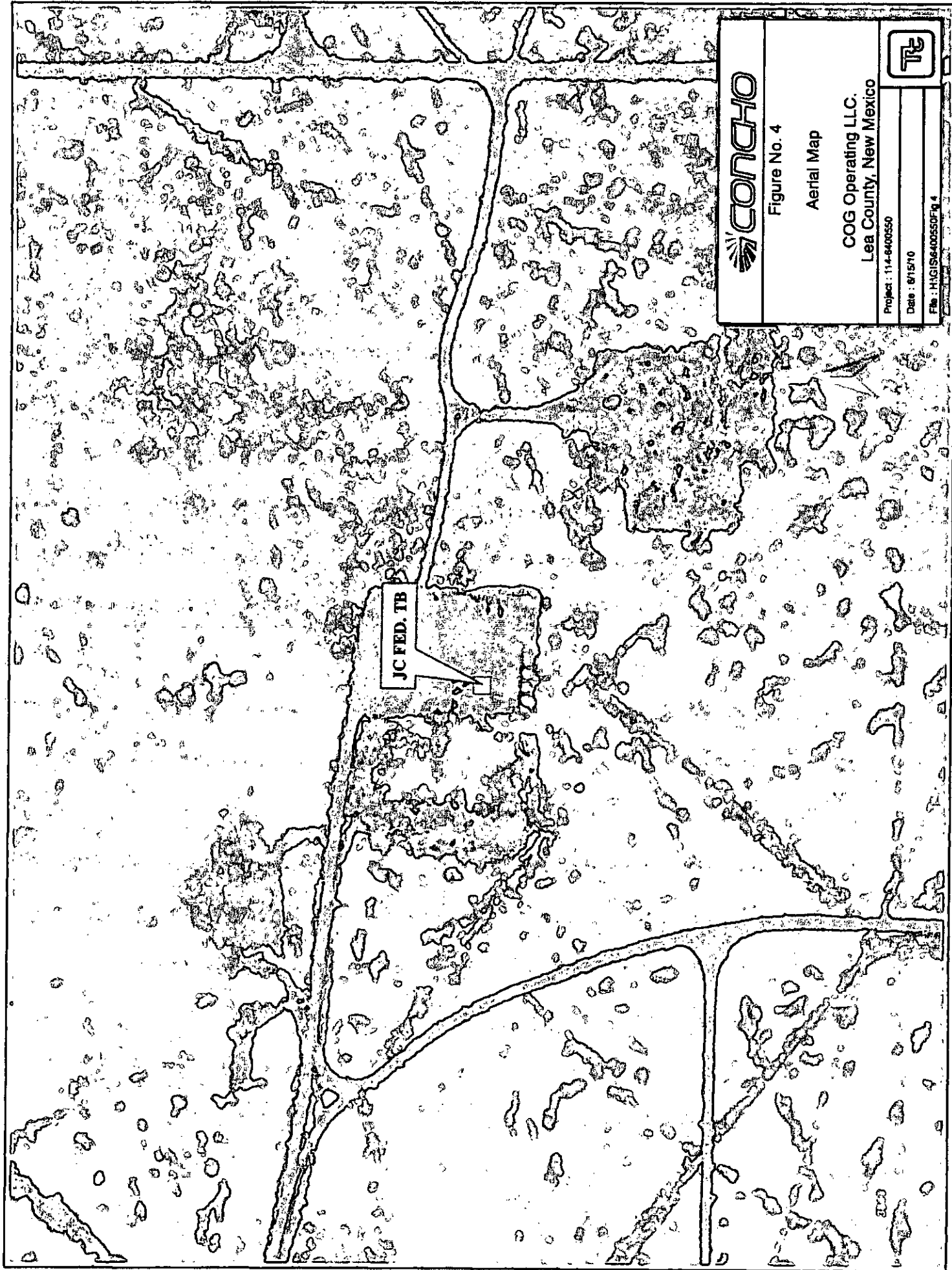
FIGURE NO. 3


UPTON COUNTY, TEXAS
COG OPERATING LLC
JC FED. TB
TETRA TECH, INC. MIDLAND, TEXAS

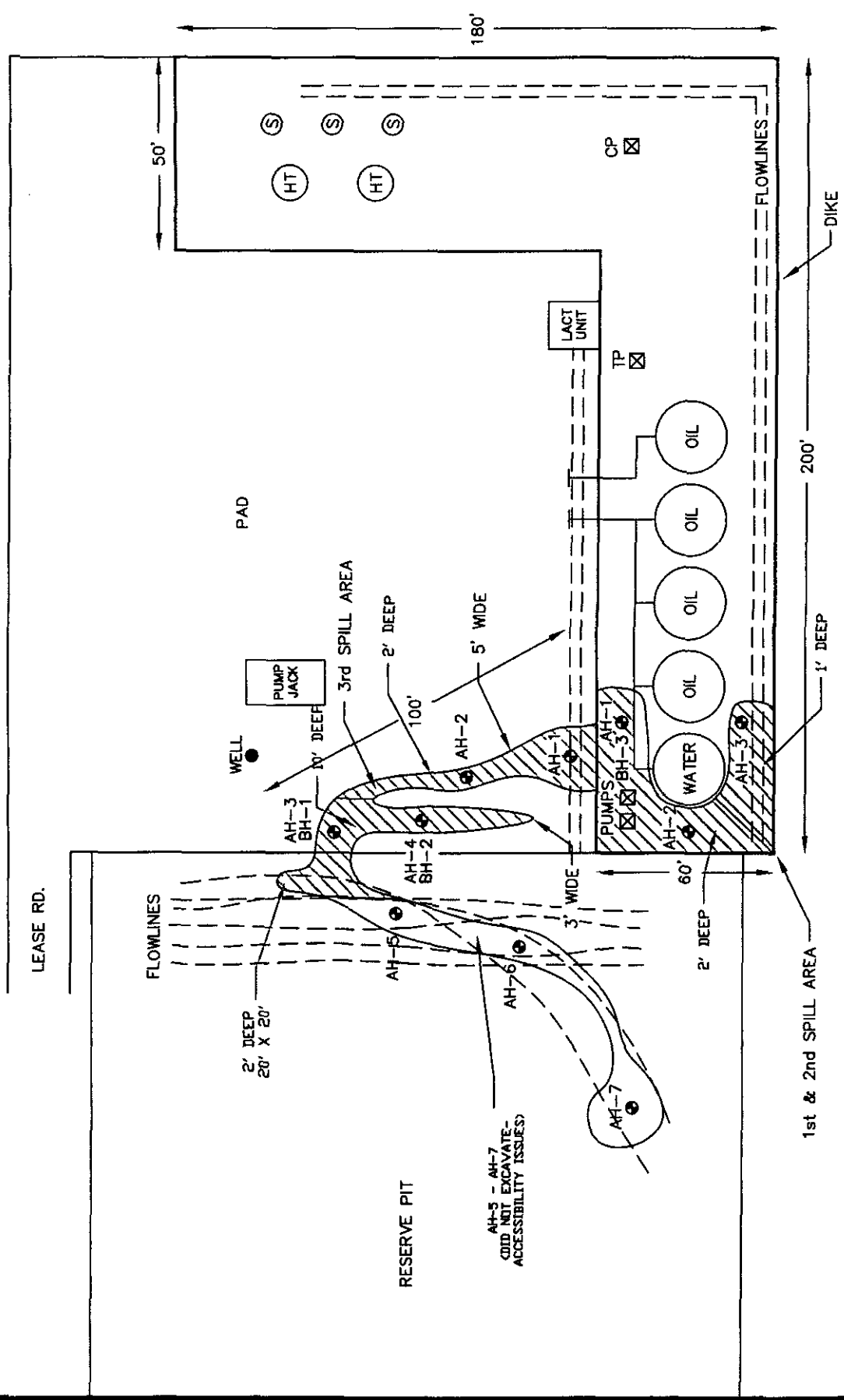
DATE	6/15/10
DRAWN BY	JJ
FILE	10-10-10
DATE	6/15/10

NOT TO SCALE

- ☒ SPILL AREA
- ☒ 1st & 2nd SPILL SAMPLE LOCATIONS
- ☒ 3rd SPILL SAMPLE LOCATIONS
- ☒ BORE HOLE LOCATIONS



 CONCHO	Figure No. 4
	Aerial Map
COG Operating LLC. Lea County, New Mexico	
Project : 114-8400550	Date : 8/15/10
File : HGIS6400550Fig 4	



PASTURE

FIGURE NO. 5

UPTON COUNTY, TEXAS
COG OPERATING LLC
IC FED. TB
EXCAVATED AREAS & DEPTHS MAP
TETRA TECH, INC. MIDLAND, TEXAS

DATE: 3/12/2013
DRAWN BY: IM
FILE: 2013/04/01

NOT TO SCALE

Table 1

COG Operating LLC.
JC Federal Tank Battery
Spill #1 and #2 (Inside Tank Battery)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-2	6/15/2010	0-1'			X	90.9	67.9	159	<0.0200	0.0944	0.12	0.286	10,400
		1-1.5'			X								1,500
		2-2.5'			X								1,100
		3-3.5'		X									2,020
		4-4.5'		X									970
		5-5.5'		X									851
		6-6.5'		X									252
		7-7.5'		X									<200
		8-8.5'		X									<200
		9-9.5'		X									<200
AH-3	6/15/2010	0-1'			X	1,300	323	1,623	2.29	33.00	24.5	33.6	232
		1-1.5'		X					<0.0200	<0.0200	<0.0200	<0.0200	<200
		2-2.5'		X									<200
		3-3.5'		X									<200
		4-4.5'		X									<200
		5-5.5'		X									<200
		6-6.5'		X									<200
		7-7.5'		X									<200
		8-8.5'		X									<200
		9-9.5'		X									<200

BEB Below Excavation Bottom

(-) Not Analyzed

 Excavation depth

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
Tank Battery Pad Area													
AH-1	6/15/2010	0-1'			X	<2.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	4,710
		1-1.5'			X								1,390
		2-2.5'		X									<200
		3-3.5'		X									<200
		4-4.5'		X									<200
		5-5.5'		X									<200
		6-6.5'		X									<200
		7-7.5'		X									<200
		8-8.5'		X									<200
		9-9.5'		X								<200	
AH-2	6/15/2010	0-1'			X	23	141	164	<0.0200	<0.0200	<0.0200	0.216	1,570
		1-1.5'			X								1,240
		2-2.5'		X									883
		3-3.5'		X									<200
		4-4.5'		X									247
		5-5.5'		X									<200
		6-6.5'		X									<200

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-3	6/15/2010	0-1'			X	680	192	872	0.54	4.17	6.97	10.7	11,100
		1-1.5'			X	-	-	-	-	-	-	-	3,410
		2-2.5'			X	-	-	-	-	-	-	-	421
		3-3.5'			X	-	-	-	-	-	-	-	1,130
		4-4.5'			X	-	-	-	-	-	-	-	1,090
		5-5.5'			X	-	-	-	-	-	-	-	1,840
		6-6.5'			X	-	-	-	-	-	-	-	1,980
		7-7.5'			X	-	-	-	-	-	-	-	1,900
		8-8.5'			X	-	-	-	-	-	-	-	1,420
		8.5-9'			X	-	-	-	-	-	-	-	1,050
BH-1	10/19/2010	0-1'			X	-	-	-	-	-	-	-	11,600
		3'			X	-	-	-	-	-	-	-	1,130
		5'			X	-	-	-	-	-	-	-	1,390
		7'			X	-	-	-	-	-	-	-	<200
		10'			X	-	-	-	-	-	-	-	626
		15'		X		-	-	-	-	-	-	-	<200
		20'		X		-	-	-	-	-	-	-	343

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-5*	6/15/2010	0-1'		X		231	5,820	6,051	<0.200	0.496	0.335	0.88	3,380
		1-1.5'		X		96.2	1,990	2,086	-	-	-	-	984
		2-2.5'		X		-	-	-	-	-	-	-	791
		3-3.5'		X		-	-	-	-	-	-	-	939
		4-4.5'		X		-	-	-	-	-	-	-	1,100
AH-6*	6/15/2010	0-1'		X		<2.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	7,500
		1-1.5'		X		-	-	-	-	-	-	-	<200
		2-2.5'		X		-	-	-	-	-	-	-	208
		3-3.5'		X		-	-	-	-	-	-	-	548
		4-4.5'		X		-	-	-	-	-	-	-	632
		5-5.5'		X		-	-	-	-	-	-	-	781
		6-6.5'		X		-	-	-	-	-	-	-	791
		7-7.5'		X		-	-	-	-	-	-	-	1,050
AH-7*	6/15/2010	0-1'		X		42.4	64	106	<0.0200	0.146	0.165	0.47	7,520
		1-1.5'		X		-	-	-	-	-	-	-	<200
		2-2.5'		X		-	-	-	-	-	-	-	<200
		3-3.5'		X		-	-	-	-	-	-	-	282
		4-4.5'		X		-	-	-	-	-	-	-	949
		5-5.5'		X		-	-	-	-	-	-	-	1,810
		5.5-6'		X		-	-	-	-	-	-	-	2,100

BEB Below Excavation Bottom
 (--) Not Analyzed
 [] Excavation depth
 * Installed near or on closed reserve pit

Water Well Data
Average Depth to Groundwater (ft)
COG - JC Federal #2 Tank Battery, Lea County, New Mexico

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

16 South 32 East					
6	5	4	3	2	1
			65	265	265
7	8	9	10	11	12
					215
18	17	16	15	14	13
		221			215
19	20	21	22	23	24
220		210		210	
30	29	28	27	26	25
				243	
31	32	33	34	35	36
					260

16 South 33 East					
6	5	180	4	3	130
		150			148
7	8	9	10	11	12
	200			182	142
18	17	16	15	14	13
	182	180	175	143	110
19	20	21	22	23	24
				120	
30	29	28	27	26	25
191		190	130	143	120
31	32	33	34	35	36
190	168		160		

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
			271		

17 South 32 East					
6	5	4	82	3	2
			Maljama	75	60
7	8	9	10	11	70
				88	
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
180'					
31	32	33	34	35	36

17 South 33 East					
6	90	5	4	3	155
				2	158
7	187	8	9	10	11
	173		161		
18	17	16	15	14	13
188	180				165
19	20	21	22	23	24
	190			118	
30	29	28	27	26	25
31	32	33	34	35	36
				155	

18 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
					400
18	17	16	15	14	13
					317
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				261	

18 South 32 East					
6	5	4	65	3	2
7	460	8	9	10	11
82					
18	17	16	15	14	13
		84			
19	20	21	22	23	24
	164		429		
30	29	28	27	26	25
31	32	33	34	35	36
			117		

18 South 33 East					
6	5	4	3	2	1
7	8	100	9	10	11
					12
18	17	16	15	14	13
	85			38	60
19	20	21	22	23	24
>140					195
30	29	28	27	26	25
35					
31	32	33	34	35	36
			177		

- 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
- 180 Recently installed temporary monitor well.

Summary Report

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

Report Date: July 2, 2010

Work Order: 10061721



Project Location: Lea County, NM
Project Name: COG/JC Federal TB Spill #1 Well #2
Project Number: 114-6400550

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234897	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234898	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234899	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234900	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234901	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234902	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234903	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234904	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234905	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234906	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234907	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234908	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234910	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234911	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234912	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234913	AH-2 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234914	AH-2 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234915	AH-2 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234916	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234917	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234918	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234919	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234920	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234921	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234922	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234923	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234924	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234925	AH-3 9-9.5'	soil	2010-06-15	00:00	2010-06-17
235017	AH-1 7.5-8'	soil	2010-06-15	00:00	2010-06-17

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)
234897 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234905 - AH-2 0-1'	<0.0200	0.0944	0.120	0.286	67.9	90.9
234916 - AH-3 0-1'	2.29	33.0	24.5	33.6	323	1300
234917 - AH-3 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200		

Sample: 234897 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		12200	mg/Kg	4.00

Sample: 234898 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1590	mg/Kg	4.00

Sample: 234899 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1230	mg/Kg	4.00

Sample: 234900 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1280	mg/Kg	4.00

Sample: 234901 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4.00

Sample: 234902 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00

Sample: 234903 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		297	mg/Kg	4.00

Sample: 234904 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		901	mg/Kg	4.00

Sample: 234905 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00

Sample: 234906 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1500	mg/Kg	4.00

Sample: 234907 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4.00

Sample: 234908 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		2020	mg/Kg	4.00

Sample: 234910 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		970	mg/Kg	4.00

Sample: 234911 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		851	mg/Kg	4.00

Sample: 234912 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		252	mg/Kg	4.00

Sample: 234913 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234914 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234915 - AH-2 9-9.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234916 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00

Sample: 234917 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234918 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234919 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234920 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234921 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234922 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234923 - AH-3 7-7.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234924 - AH-3 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234925 - AH-3 9-9.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 235017 - AH-1 7.5-8'

Param	Flag	Result	Units	RL
Chloride		459	mg/Kg	4.00

Summary Report

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

Report Date: July 2, 2010

Work Order: 10061722



Project Location: Lea County, NM
Project Name: COG/JC Federal TB Spill #2 4 in. Line
Project Number: 114-6400550

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234926	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234927	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234928	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234929	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234930	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234931	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234932	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234933	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234934	AH-1 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234935	AH-1 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234936	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234937	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234938	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234939	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234940	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234941	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234942	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234943	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234944	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234945	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234946	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234947	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234948	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234949	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234950	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234951	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234952	AH-3 8.5-9'	soil	2010-06-15	00:00	2010-06-17
234953	AH-4 0-1'	soil	2010-06-15	00:00	2010-06-17
234954	AH-4 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234955	AH-4 2-2.5'	soil	2010-06-15	00:00	2010-06-17

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234956	AH-4 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234957	AH-4 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234958	AH-4 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234959	AH-4 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234960	AH-4 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234961	AH-4 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234962	AH-4 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234963	AH-5 0-1'	soil	2010-06-15	00:00	2010-06-17
234964	AH-5 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234965	AH-5 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234966	AH-5 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234967	AH-5 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234968	AH-6 0-1'	soil	2010-06-15	00:00	2010-06-17
234969	AH-6 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234970	AH-6 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234971	AH-6 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234972	AH-6 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234973	AH-6 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234974	AH-6 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234975	AH-6 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234976	AH-7 0-1'	soil	2010-06-15	00:00	2010-06-17
234977	AH-7 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234978	AH-7 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234979	AH-7 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234980	AH-7 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234981	AH-7 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234982	AH-7 5.5-6'	soil	2010-06-15	00:00	2010-06-17

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)
234926 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234936 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	0.216	141	23.0
234943 - AH-3 0-1'	0.540	4.17	6.97	10.7	192	680
234953 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234963 - AH-5 0-1'	<0.200	0.496	0.335	0.880	5820	231
234964 - AH-5 1-1.5'					1990	96.2
234968 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
234976 - AH-7 0-1'	<0.0200	0.146	0.165	0.470	64.0	42.4

Sample: 234926 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		4710	mg/Kg	4.00

Sample: 234927 - AH-1 1-1.5'

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.

Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00

Sample: 234928 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234929 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234930 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234931 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234932 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234933 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234934 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234935 - AH-1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234936 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		1570	mg/Kg	4.00

Sample: 234937 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1240	mg/Kg	4.00

Sample: 234938 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		883	mg/Kg	4.00

Sample: 234939 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234940 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		247	mg/Kg	4.00

Sample: 234941 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234942 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234943 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		11100	mg/Kg	4.00

Sample: 234944 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3410	mg/Kg	4.00

Sample: 234945 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		421	mg/Kg	4.00

Sample: 234946 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1130	mg/Kg	4.00

Sample: 234947 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1090	mg/Kg	4.00

Sample: 234948 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1840	mg/Kg	4.00

Sample: 234949 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		1980	mg/Kg	4.00

Sample: 234950 - AH-3 7-7.5'

Param	Flag	Result	Units	RL
Chloride		1900	mg/Kg	4.00

Sample: 234951 - AH-3 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1420	mg/Kg	4.00

Sample: 234952 - AH-3 8.5-9'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4.00

Sample: 234953 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		4800	mg/Kg	4.00

Sample: 234954 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1480	mg/Kg	4.00

Sample: 234955 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1800	mg/Kg	4.00

Sample: 234956 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		5820	mg/Kg	4.00

Sample: 234957 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		2210	mg/Kg	4.00

Sample: 234958 - AH-4 5-5.5'

Param	Flag	Result	Units	RL
Chloride		2220	mg/Kg	4.00

Sample: 234959 - AH-4 6-6.5'

Param	Flag	Result	Units	RL
Chloride		2760	mg/Kg	4.00

Sample: 234960 - AH-4 7-7.5'

Param	Flag	Result	Units	RL
Chloride		2270	mg/Kg	4.00

Sample: 234961 - AH-4 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1970	mg/Kg	4.00

Sample: 234962 - AH-4 9-9.5'

Param	Flag	Result	Units	RL
Chloride		4010	mg/Kg	4.00

Sample: 234963 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		3380	mg/Kg	4.00

Sample: 234964 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		984	mg/Kg	4.00

Sample: 234965 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		791	mg/Kg	4.00

Sample: 234966 - AH-5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		939	mg/Kg	4.00

Sample: 234967 - AH-5 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4.00

Sample: 234968 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		7500	mg/Kg	4.00

Sample: 234969 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234970 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		208	mg/Kg	4.00

Sample: 234971 - AH-6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		548	mg/Kg	4.00

Sample: 234972 - AH-6 4-4.5'

Param	Flag	Result	Units	RL
Chloride		632	mg/Kg	4.00

Sample: 234973 - AH-6 5-5.5'

Param	Flag	Result	Units	RL
Chloride		781	mg/Kg	4.00

Sample: 234974 - AH-6 6-6.5'

Param	Flag	Result	Units	RL
Chloride		791	mg/Kg	4.00

Sample: 234975 - AH-6 7-7.5'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4.00

Sample: 234976 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		7520	mg/Kg	4.00

Sample: 234977 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234978 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 234979 - AH-7 3-3.5'

Param	Flag	Result	Units	RL
Chloride		282	mg/Kg	4.00

Sample: 234980 - AH-7 4-4.5'

Param	Flag	Result	Units	RL
Chloride		949	mg/Kg	4.00

Sample: 234981 - AH-7 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1810	mg/Kg	4.00

Sample: 234982 - AH-7 5.5-6'

Param	Flag	Result	Units	RL
Chloride		2100	mg/Kg	4.00

Summary Report

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

Report Date: October 25, 2010

Work Order: 10102018



Project Location: Lea County, NM
Project Name: COG/JC Federal TB Spill #1 Well #2
Project Number: 114-6400550

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
247985	BH-1 0-1'	soil	2010-10-19	00:00	2010-10-20
247986	BH-1 3'	soil	2010-10-19	00:00	2010-10-20
247987	BH-1 5'	soil	2010-10-19	00:00	2010-10-20
247988	BH-1 7'	soil	2010-10-19	00:00	2010-10-20
247989	BH-1 10'	soil	2010-10-19	00:00	2010-10-20
247990	BH-1 15'	soil	2010-10-19	00:00	2010-10-20
247991	BH-1 20'	soil	2010-10-19	00:00	2010-10-20
247992	BH-2 0-1'	soil	2010-10-19	00:00	2010-10-20
247993	BH-2 3'	soil	2010-10-19	00:00	2010-10-20
247994	BH-2 5'	soil	2010-10-19	00:00	2010-10-20
247995	BH-2 7'	soil	2010-10-19	00:00	2010-10-20
247996	BH-2 10'	soil	2010-10-19	00:00	2010-10-20
247997	BH-3 0-1'	soil	2010-10-19	00:00	2010-10-20
247998	BH-3 3'	soil	2010-10-19	00:00	2010-10-20
247999	BH-3 5'	soil	2010-10-19	00:00	2010-10-20
248000	BH-3 7'	soil	2010-10-19	00:00	2010-10-20
248001	BH-3 10'	soil	2010-10-19	00:00	2010-10-20

Sample: 247985 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 247986 - BH-1 3'

Param	Flag	Result	Units	RL
Chloride		1130	mg/Kg	4.00

Sample: 247987 - BH-1 5'

Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00

Sample: 247988 - BH-1 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 247989 - BH-1 10'

Param	Flag	Result	Units	RL
Chloride		626	mg/Kg	4.00

Sample: 247990 - BH-1 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 247991 - BH-1 20'

Param	Flag	Result	Units	RL
Chloride		343	mg/Kg	4.00

Sample: 247992 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		8590	mg/Kg	4.00

Sample: 247993 - BH-2 3'

Param	Flag	Result	Units	RL
Chloride		6260	mg/Kg	4.00

Sample: 247994 - BH-2 5'

Param	Flag	Result	Units	RL
Chloride		489	mg/Kg	4.00

Sample: 247995 - BH-2 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 247996 - BH-2 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 247997 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		300	mg/Kg	4.00

Sample: 247998 - BH-3 3'

Param	Flag	Result	Units	RL
Chloride		320	mg/Kg	4.00

Sample: 247999 - BH-3 5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 248000 - BH-3 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 248001 - BH-3 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00