SITE INFORMATION

Report Type: Work Plan

General Site Information:						
Site:	Schley Federal #11 Flow Line					
Company:	COG Operating LLC					
Well Location	Unit F	Sec 29	T 17S	R 29E		
Spill Location	Unit L	Sec 29	T 17S	R 29E		
Lease Number:	API-30-015-32134					
County:	Eddy County					
Spill GPS	32.80492° N			104.10145° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 82 and CR 212, travel south on CR 212 for 0.2 miles, turn right and travel 1.6 miles to the spill.					

Release Data:	
Date Released:	8/28/2010
Type Release:	Produced Fluid
Source of Contamination:	Flowline failure
Fluid Released:	11 bbls
Fluids Recovered:	10 bbls

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
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	
>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	5,000

TETRA TECH

February 7, 2011

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., Schley Federal #11 Flow line Spill, Unit L, Section 29, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Schley Federal #11 Flow line. The spill area is located in Unit L, Section 29, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.80492°, W 104.10145°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on August 28, 2010 and released approximately eleven (11) barrels of produced liquid from a flow line. To alleviate the problem, COG personnel repaired the flow line. Ten (10) barrels of standing fluids were recovered. The spill initiated and was contained south of a lease road, affecting an area approximately 25' X 50', with some overspray. The initial C-141 form is enclosed in Appendix C.

Groundwater

According to the *Geology and Groundwater Resources of Eddy County, New Mexico* (Report 3), one well is located in Section 29, with reported depth to water of 120' below surface. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The Geology and Groundwater Resources of Eddy County, New Mexico (Report 3) well report data is shown in Appendix B.

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

Regulatory

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

Soil Assessment and Analytical Results

On September 14, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of three (3) auger holes (AH-1 through AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Auger hole (AH-1) was installed in the spill area, where the fluids pooled and AH-2 and AH-3 in the overspray area. 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 results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 1, all the submitted samples were below RRAL for TPH and BTEX. Auger hole (AH-1) showed a chloride concentration of 4,670 mg/kg (0-1') and the area was not vertically defined. The remaining auger holes (AH-2 and AH-3) did not show an impact and had chloride concentrations below reporting limit of <200 mg/kg.

Work Plan

Based upon the results, the spill area appears to be confined to the area of AH-1. Auger holes (AH-2 and AH-3) did not show an impact to the soils. Tetra Tech proposes to removal the impacted soils, which exceed a chloride concentration of 1,000 mg/kg in area of AH-1. Once excavated to the appropriate depth, additional samples (trench) will be collected using a backhoe to define the vertical extents. Based on the results, the excavated area will be backfilled with clean soil.

TETRA TECH

If deeper impact is encountered, 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 safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. If the depths are not reached, a 40 mil liner will be installed at depth of 4' to 5' below surface to cap the impacted area.

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

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

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

Figures

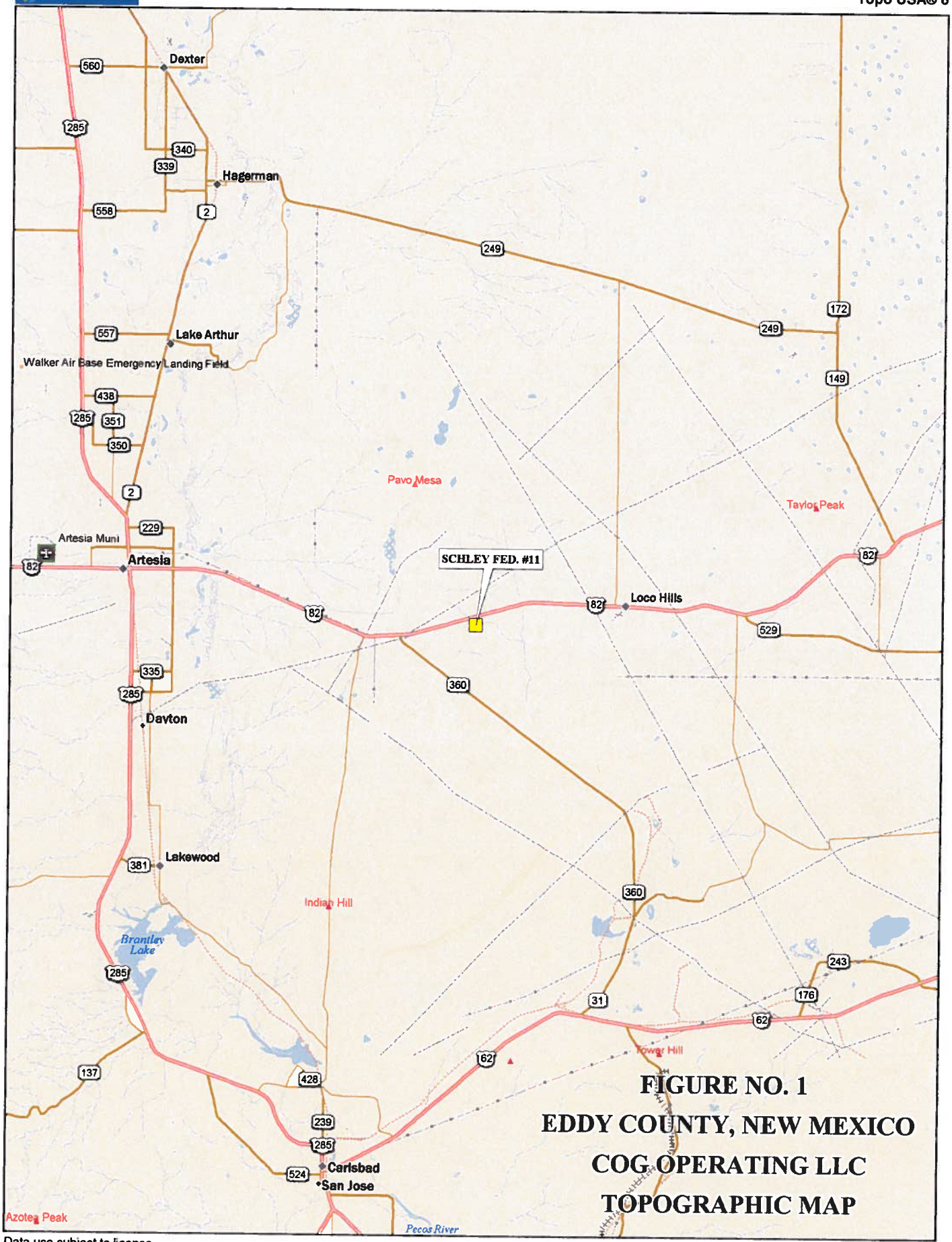


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

TN
MN (7.9°E)

Scale 1 : 400,000
1" = 6.31 mi
Data Zoom 9-0

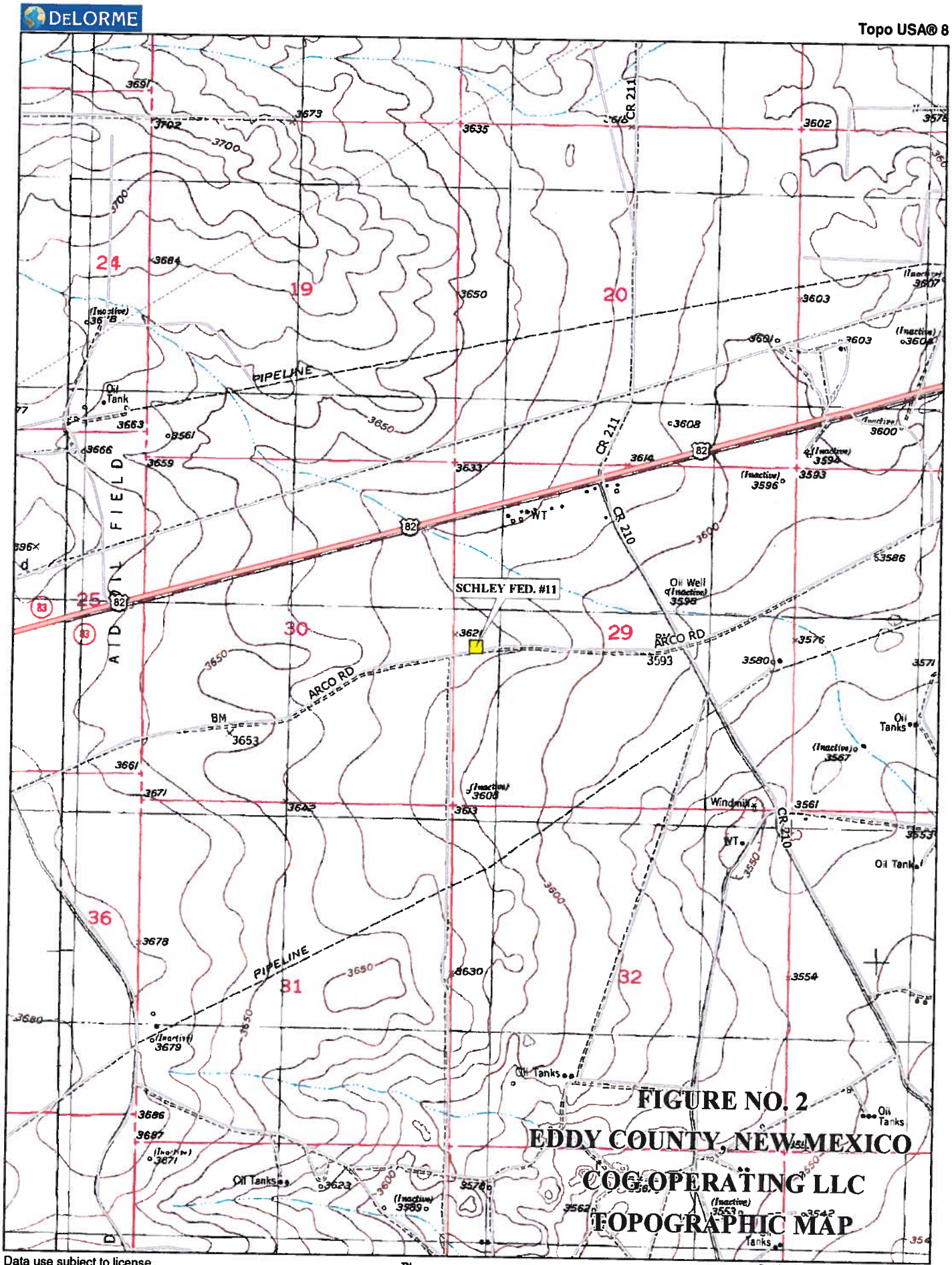
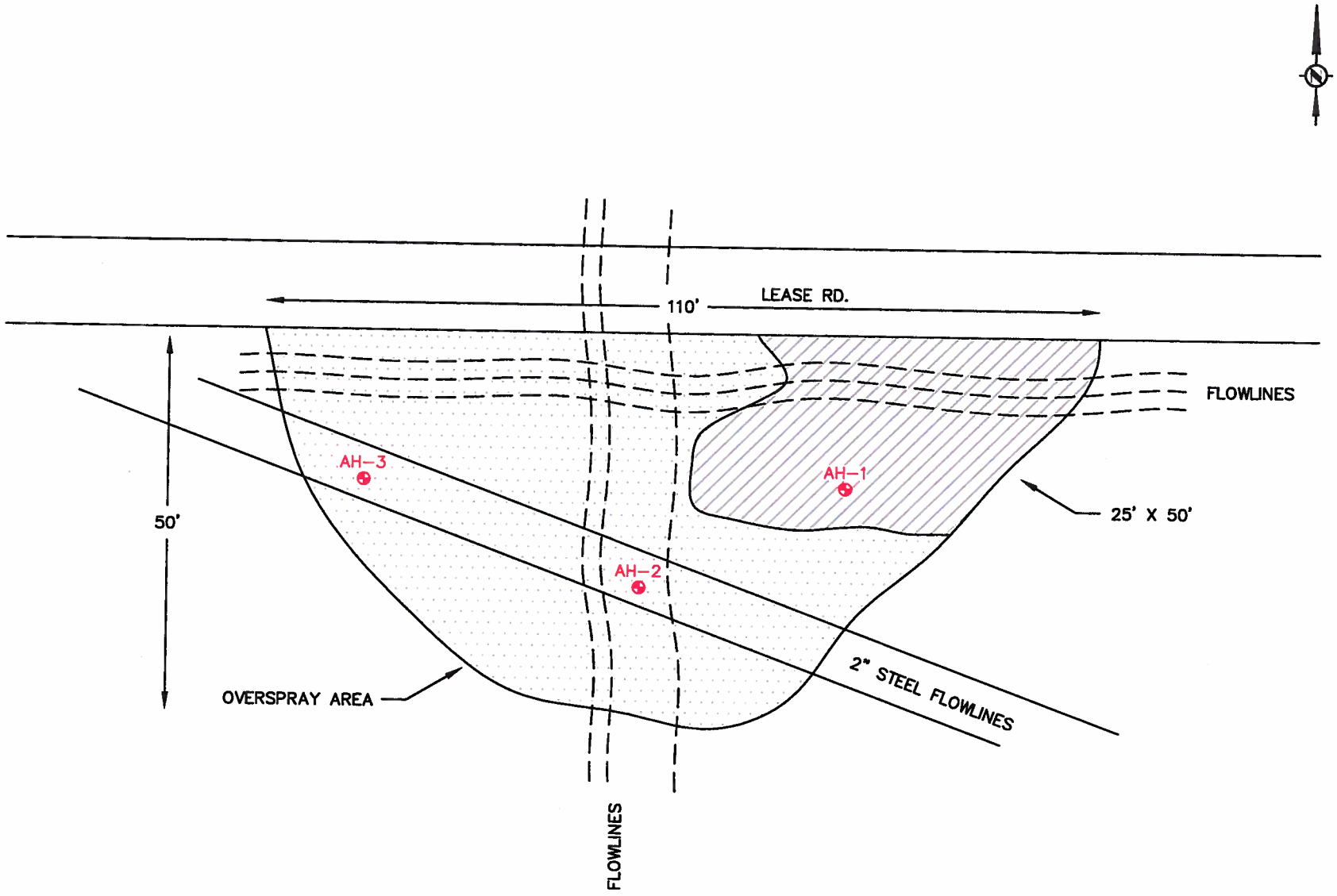


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP



SPILL AREA
SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

SCHLEY FED. #11

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 9/14/10
DWN. BY: JJ
FILE: N:\COG\640\SCHLEY FED. #11

Tables

Table 1
COG Operating LLC.
SCHLEY FEDERAL #11
Eddy 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-1	9/14/2010	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	**4,670**
AH-2	9/14/2010	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
AH-3	9/14/2010	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200

BEB Below Excavation Bottom

(--) Not Analyzed

Proposed Excavated Material

Photos

COG Operating LLC
Schley Federal #11
Eddy County, New Mexico

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View East – AH-1

View South West – AH-2, AH-3

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

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	Schley Federal #11	Facility Type	Flowline

Surface Owner Federal	Mineral Owner	Lease No. API#30-015-32134

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K F	~~23~~ 29	17S	29E					Eddy

Latitude 32 48.296 **Longitude** 104 06.087

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 11bbls	Volume Recovered 10bbls
Source of Release Flowline	Date and Hour of Occurrence 08/28/2010	Date and Hour of Discovery 08/28/2010 9:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The cause of the release was due to a ruptured flowline. The section of flowline that ruptured was replaced with a new section and the flowline was put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 11bbls of produced fluid was released from the flowline and we were able to recover 10bbls with a vacuum truck. The dimensions of the spill site areas measured 3' x 40' along the roadway and the oversprayed area measured 20' x 50'. The lease road has been scraped and returned to previous condition. (The closest well location to the release is the Schley Federal #3, API#30-015-30450). 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.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 09/08/2010 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Schley Federal #11
Eddy County, New Mexico

16 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 61	22	23 SITE	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 29 East

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

16 South 30 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

17 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 79	23	24
30	29	28	27	26	25
31	32	33	34 53	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 80	23	24
30	29 210 208'	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

18 South 28 East

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

18 South 29 East

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

18 South 30 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

New Mexico State Engineers Well Reports
USGS Well Reports
Geology and Groundwater Conditions in Southern Eddy, County, NM
NMOCD - Groundwater Data

LOCATION NUMBER	WATER LEVEL: BELOW LAND SURFACE (feet)	WATER LEVEL: DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
17.28.2.240	27.6	Dec. 1, 1948	3	W	S	Depth to water measured while pumping.
14.220	80	–	61	W	S & D	Driller: Cy Hinshaw. See analysis, Table 3.
19.200	224.3	Dec. 2, 1948	1.2	W	S	Depth to water measured while pumping.
22.230	45.5	Dec. 1, 1948	–	N	N	Abandoned stock well.
17.29.22.110	79.7	Nov. 29, 1948	3 E.	W	S	Depth to water measured while pumping.
29.400	210	Dec. 3, 1948	1.1	W	S	do.
17.31.34.000	271+	Dec. 6, 1948	3.5	W	S	do. See analysis, Table 3.
18.21.13.310	505	–	10 R.	W	S & D	Formerly C.C.C. well. Cased to 30 ft.
27.440	530	–	–	W	S	Cased to 120 ft.
32.430	800 (?)	–	12 R.	W	S & D	Lowered cylinder 5 ft. in 1948 because water level declined. Cased to 380 ft.
18.23.6.140	440	Jan. 12, 1950	–	W	S & D	
18.25.23.111	117.8	Jan. 1950	–	W	S	

See explanation at beginning of table.
1 Measured Dec. 3, 1948.

Appendix C

Summary Report

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

Report Date: September 27, 2010

Work Order: 10091629

Project Location: Eddy County, NM
Project Name: COG/Schley Federal #11
Project Number: 114-6400685

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244825	AH-1 0-1'	soil	2010-09-14	00:00	2010-09-16
244826	AH-2 0-1'	soil	2010-09-14	00:00	2010-09-16
244827	AH-3 0-1'	soil	2010-09-14	00:00	2010-09-16

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
244825 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244826 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244827 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 244825 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**4670**	mg/Kg	4.00

Sample: 244826 - AH-2 0-1'

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

Sample: 244827 - AH-3 0-1'

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

XWO #: 10091629

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-64006-85

PROJECT NAME: Schley Federal #11 Eddy Co NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 MOD. (Ext. to C35)	8015	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/808	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
244826	9/14		S		X	AH-1 0-1'	1				X		X	X												X				
826	↓		↓		↓	AH-2 0-1'	↓				↓		X	X												X				
827	↓		↓		↓	AH-3 0-1'	↓				↓		X	X												X				

RELINQUISHED BY: (Signature)	Date: 9-16-10 Time: 1039	RECEIVED BY: (Signature)	Date: 9/16/10 Time: 10:38
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) TF — Date: 9-14-10 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: Tx ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.8 C intact

REMARKS: XAll tests Midland

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.