SITE INFORMATION

Report Type: Work Plan

General Site Information:		
Site:	Brigham H #3 (well site)	
Company:	COG Operating LLC	
Section, Township and Range	Unit L Sec. 21 T-17S R-30E	
Lease Number:	API-30-015-30677	
County:	Eddy County	
GPS:	32.82012° N	103.98273° W
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of 82 and CR-219 in Loco Hills, travel north on 219 0.1 mi, turn left 0.2 mi, turn left to location	

Release Data:	
Date Released:	2/1/2011
Type Release:	Produced fluid
Source of Contamination:	Flowline
Fluid Released:	20 bbls
Fluids Recovered:	18 bbls

Official Communication:			
Name:	Pat Ellis		Kim Dorey
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) 631-0348
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		kim.dorey@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:	0	

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

TETRA TECH

June 9, 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., Brigham H #3 Well Site, Unit L, Section 21, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Brigham H #3 well site, Unit L, Section 21, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.82012°, W 103.98273°. 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 February 1, 2011, and released approximately twenty (20) barrels of produced fluid from a hole in a flow line. Approximately eighteen (18) barrels of fluid was recovered. To alleviate the problem, COG personnel replaced the flow line section. The spill initiated east of the Brigham H #3 well location, in the adjacent pasture area. The spill migrated approximately 120' east, with a width ranging from 10.0' to 20.0'. A secondary finger ran south approximately 30.0' with a width of 2.0'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 21. Based on the site location and NMOCD groundwater map, the average depth to groundwater in this area is approximately 275' to 300' below surface. The well map 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 March 3, 2011, Tetra Tech personnel inspected and sampled the spill area. Four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, the area of AH-2 was vertically defined and showed TPH and BTEX concentrations below the RRAL at 2-2.5' below surface. The remaining auger holes (AH-1, AH-3 ands AH-4) were not vertically defined, with TPH and BTEX concentrations above the RRAL. In addition, elevated chloride concentrations were also detected in the areas of AH-1, AH-3 and AH-4 and not vertically defined.

In order to delineate the TPH, BTEX, and chloride impact, soil borings were installed utilizing an air rotary drilling rig. On May 29, 2011, Tetra Tech personnel supervised the installation of soil borings (SB-1 and SB-2). Due to safety concerns with overhead power lines, SB-1 was installed between AH-4 and AH-3. The soil borings were installed to a total depth of 40.0' below surface. Referring to Table 1, the soil borings declined below the RRAL for TPH and BTEX at 7.0' below surface. The elevated chloride concentrations showed a significant decline with depth. The soil boring locations are shown on Figure 3.

TETRA TECH

Work Plan

COG proposes the removal of impacted material to the appropriate depth as highlighted in Table 1 and shown on Figure 4. The proposed excavation depths range from 2.0' to 10.0' below surface. 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.

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 4.0' below surface to cap the impacted area.

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

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

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

Figures

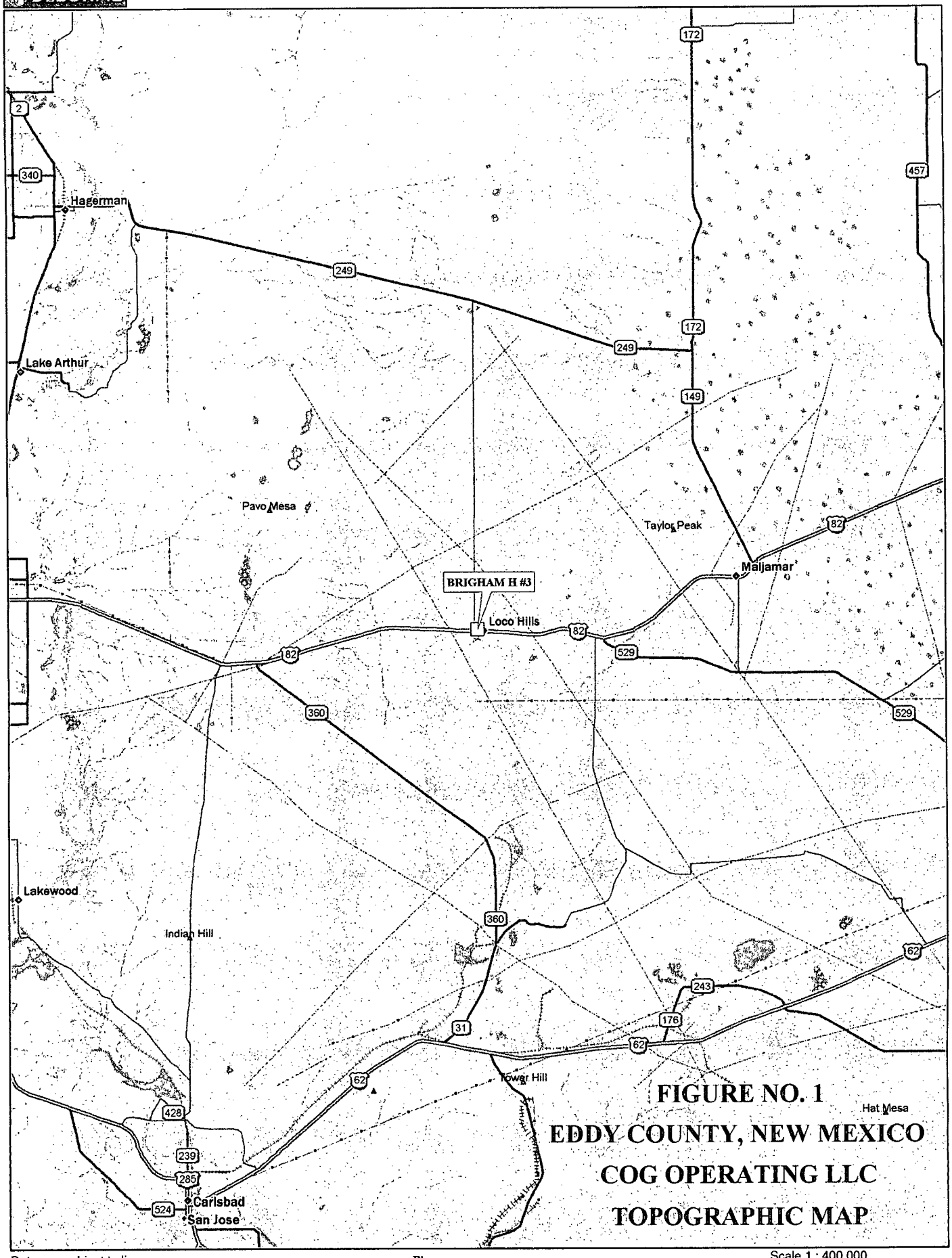


FIGURE NO. 1

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 400,000

1" = 6.31 mi

Data Zoom 9-0

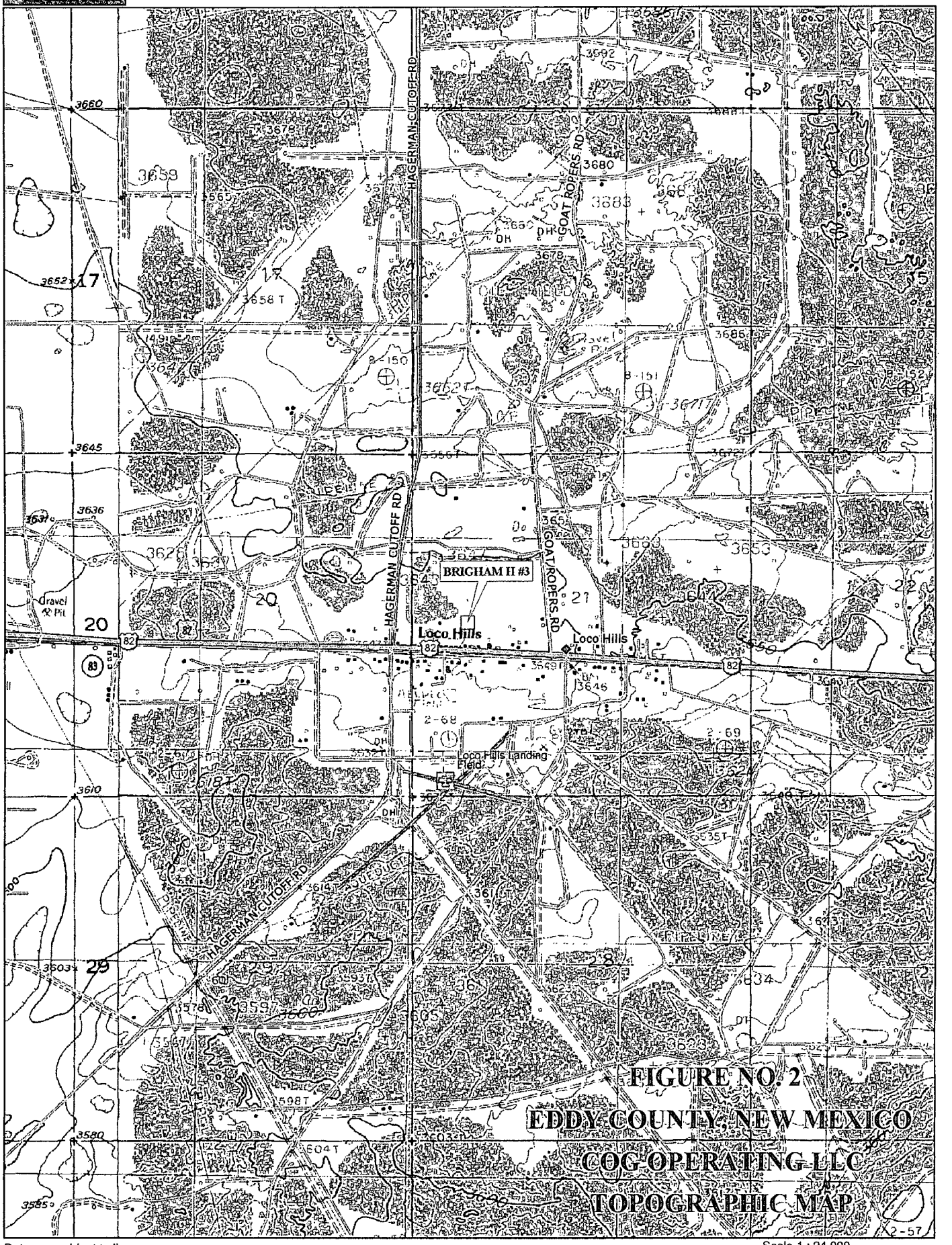


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

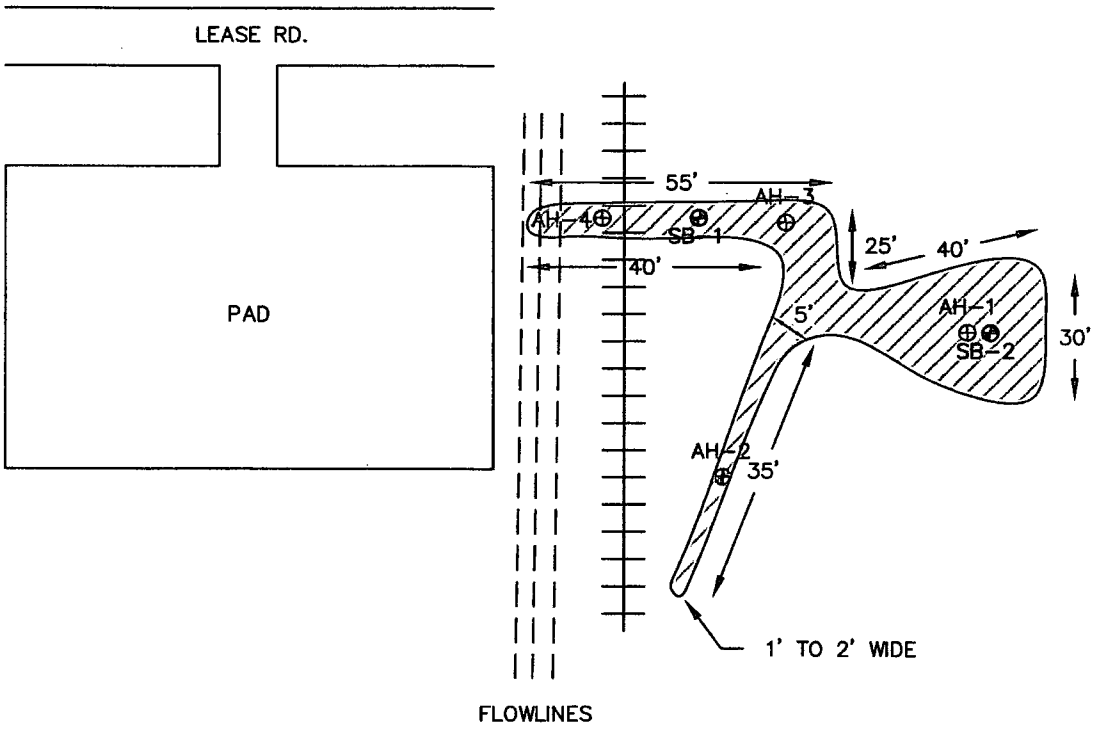
TN

MN (7.8°E)

Scale 1 : 24,000

1" = 2,000.0 ft

Data Zoom 13-0



SPILL AREA
AUGER HOLE LOCATIONS
SOIL BORE LOCATIONS
OVERHEAD POWERLINES

NOT TO SCALE

FIGURE NO. 3

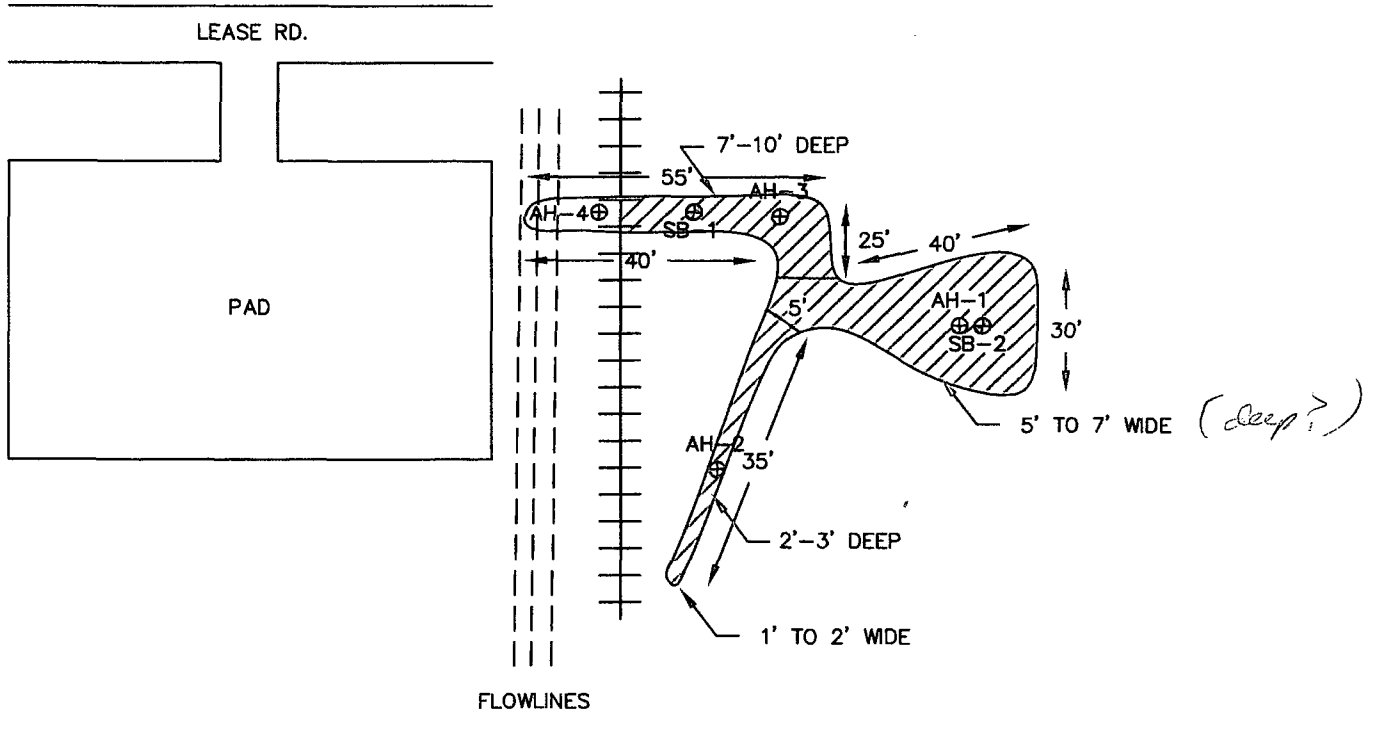
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

BRIGHAM H #3

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 6/9/2011
DWN. BY: IM
FILE: H:\COG\6400826 BRIGHAM H #3



PROPOSED EXCAVATION DEPTHS
AUGER HOLE LOCATIONS
SOIL BORE LOCATIONS
OVERHEAD POWERLINES

NOT TO SCALE

FIGURE NO. 4

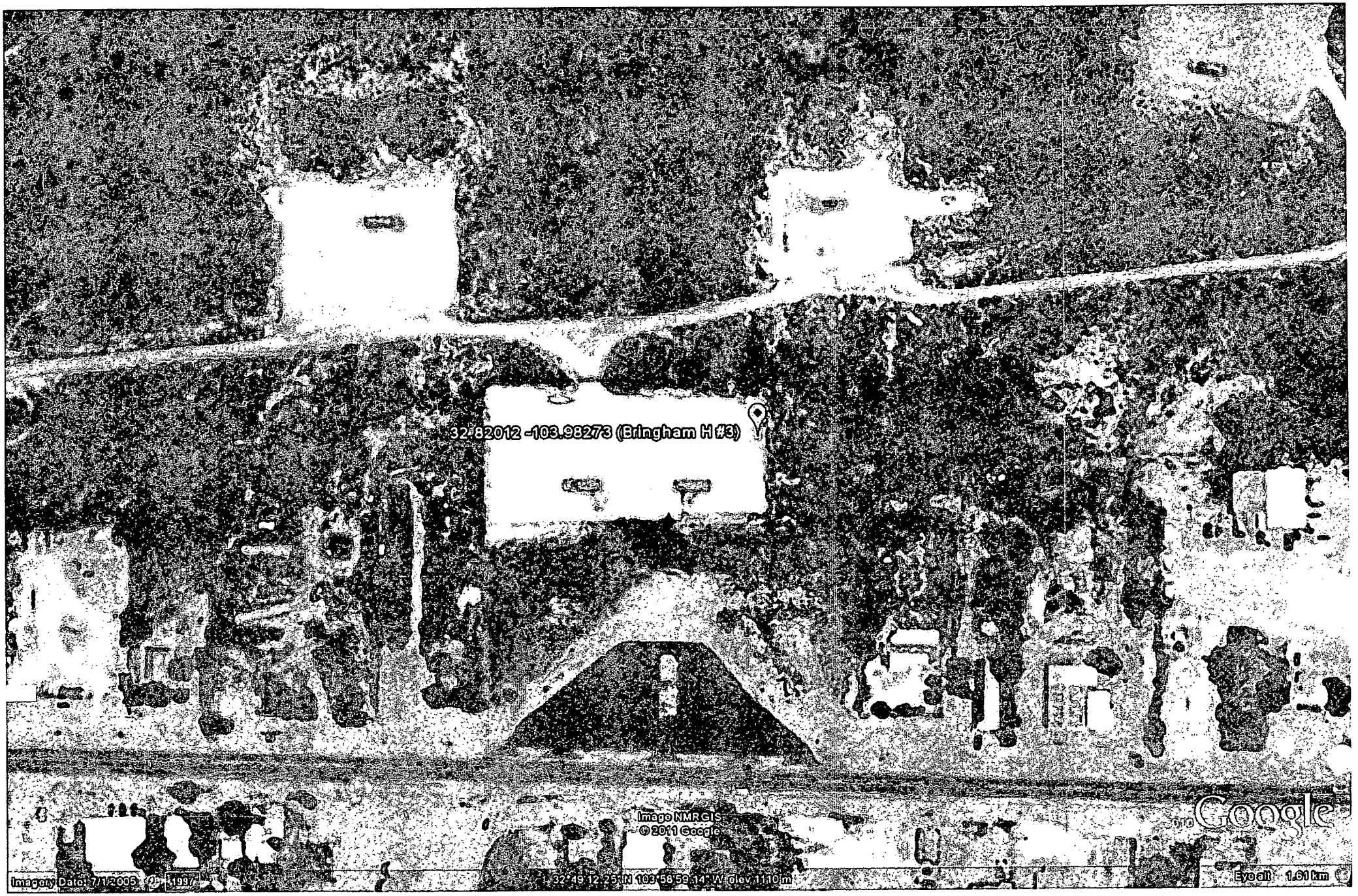
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

BRIGHAM H #3

DATE: 6/9/2011
DWN. BY: IM
FILE: H:\COG\6400826 BRIGHAM H #3

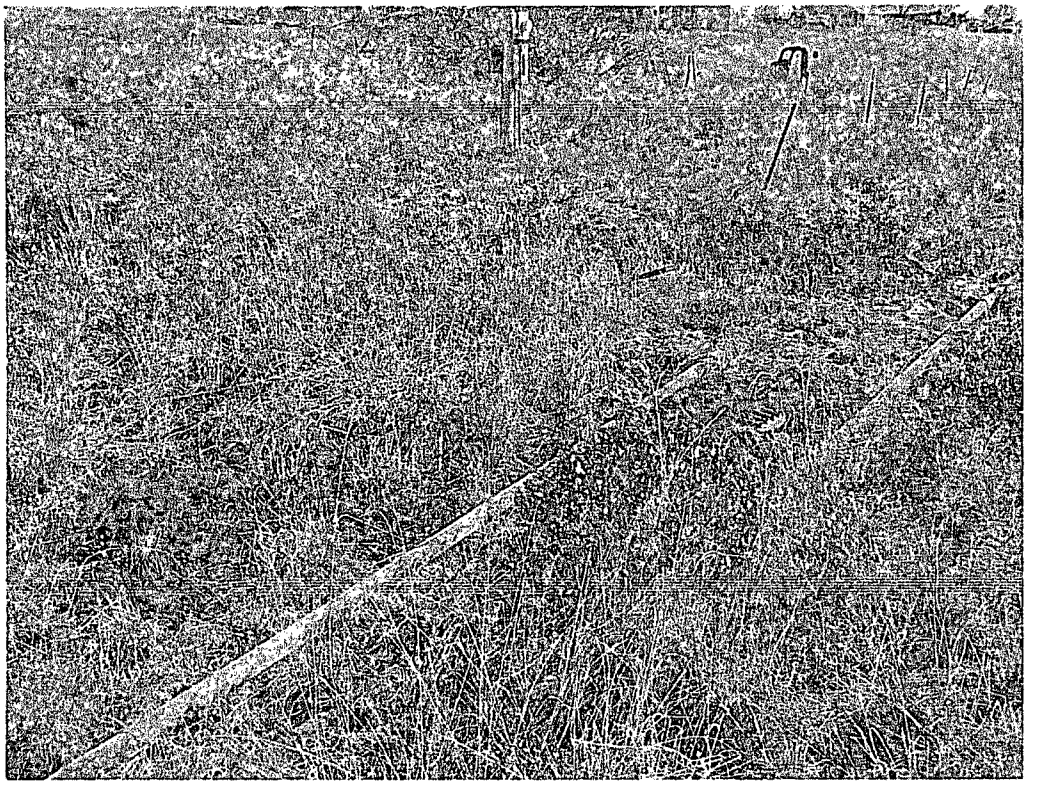
TETRA TECH, INC.
MIDLAND, TEXAS


32.82012 -103.98273 (Bringham H #3)
Image NMRGIS
© 2011 Google
Google
Imagery Date: 7/1/2005
32°49'12.25" N 103°58'59.14" W elev 1110 m
Eye alt 1.61 km

Photos

COG Operating LLC
Brigham H #3
Eddy County, New Mexico

TETRA TECH



View south east near AH-4

Limited drilling rig access near AH-4 due to overhead lines

Tables

Table 1
COG Operating LLC.
BRIGHAM H #3
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	3/3/2011	0-1'		X		1,870	24,200	26,070	5.23	24.9	30.5	55.2	115.8	756
	"	1-1.5'		X		3,890	22,900	26,790	5.85	58.5	78.2	135	277.6	1,080
	"	2-2.5'		X		4,110	18,800	22,910	10.8	84.5	76.6	124	295.9	5,110
	"	3-3.5'		X		10,400	21,900	32,300	39.9	348	220	351	958.9	12,800
SB-2	5/9/2011	0-1'	0.5	X		1,050	8,300	9,350	-	-	-	-	-	1,380
	"	3'		X		5,770	9,870	15,640	19.0	166	134	204	523.0	12,800
	"	5'		X		5,210	6,590	11,800	30.3	194	121	179	524.3	5,640
	"	7'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	0.127	0.343	0.5	236
	"	10'		X		9.9	61.1	71.0	-	-	-	-	-	334
	"	15'		X		-	-	-	-	-	-	-	-	<200
	"	20'		X		-	-	-	-	-	-	-	-	<200
	"	25'		X		-	-	-	-	-	-	-	-	288
	"	30'		X		-	-	-	-	-	-	-	-	219
	"	40'		X		-	-	-	-	-	-	-	-	<200
AH-2	3/3/2011	0-1'		X		1,590	20,500	22,090	4.07	12.4	19.9	40.2	76.6	578
	"	1-1.5'		X		4,600	29,700	34,300	4.49	33.8	58.3	97.3	193.9	<200
	"	2-2.5'		X		10.2	185	195.2	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200
	"	3-3.5'		X		<2.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200

Table 1
COG Operating LLC.
BRIGHAM H #3
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-3	3/3/2011	0-1'		X		5,220	16,500	21,720	22.1	132	96.3	159	409.4	1,590
	"	1-1.5'		X		3,840	16,200	20,040	4.73	61.8	60.5	105	232.0	4,760
	"	2-2.5'		X		3,430	12,200	15,630	6.06	61.7	58.9	102	228.7	5,040
	"	3-3.5'		X		11,500	59,100	70,600	66.2	511	257	424	1,258.2	8,820
SB-1	5/29/2011	0-1'	0.5	X		3,060	7,870	10,930	6.66	40.1	43.4	85.2	175.4	<200
	"	3'		X		2,550	8,060	10,610	-	-	-	-	-	355
	"	5'		X		2,760	2,670	5,430	-	-	-	-	-	16,800
	"	7'		X		156	164	320	<0.200	<0.200	1.64	4.72	6.4	15,600
	"	10'		X		-	-	-	-	-	-	-	-	3,170
	"	15'		X		-	-	-	-	-	-	-	-	953
	"	20'		X		-	-	-	-	-	-	-	-	261
	"	25'		X		-	-	-	-	-	-	-	-	222
	"	30'		X		-	-	-	-	-	-	-	-	227
	"	40'		X		-	-	-	-	-	-	-	-	238
AH-4	3/3/2011	0-1'		X		5,350	18,700	24,050	32.2	163	106	157	458.2	2,610
	"	1-1.5'		X		5,880	15,600	21,480	17.8	130	83.9	133	364.7	5,250
	"	2-2.5'		X		5,870	14,800	20,670	24.0	155	107	172	458.0	7,530
	"	3-3.5'		X		4,600	11,000	15,600	22.1	140	82.6	130	374.7	10,300

(--) Not Analyzed

BEB Below Excavation Bottom

[ ] Proposed Excavation Depths

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Brigham H #3	Facility Type	Well

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-30677

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	21	17S	30E					Eddy

Latitude 32 49.208 **Longitude** 103 58.965

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 20bbls	Volume Recovered 18bbls
Source of Release Flowline	Date and Hour of Occurrence 02/01/2011	Date and Hour of Discovery 02/01/2011 4:00 p.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.	

RECEIVED
JUL 05 2011
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Hot oiler was pumping down a flowline that had a small hole in it. The hot oiler truck immediately stopped and the flowline was patched. Since then the patched joint of flowline has been replaced with a new joint.

Describe Area Affected and Cleanup Action Taken.*

Initially 20bbls of produced fluid was released from the flowline and we were able to recover 18bbls with a vacuum truck. The fluid traveled 10' x 50' to a low area in pasture measuring 20' x 20'. All standing fluid was recovered with the vacuum truck. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM 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: 02/11/2011 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Brigham H #3
Eddy County, New Mexico

16 South 29 East

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

16 South 31 East

6	5	4	3	2	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 **290**	32	33	34	35	36

17 South 29 East

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

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 ***271***	35	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	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 31 East

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

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Site Location - Brigham H #3

Appendix C

Summary Report

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

Report Date: 11, 3

Work Order: 11030724

Project Location: Eddy County, NM
Project Name: Brigham H #3
Project Number: 114-6400826

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259750	AH-1 0-1'	soil	2011-03-03	00:00	2011-03-04
259751	AH-1 1-1.5'	soil	2011-03-03	00:00	2011-03-04
259752	AH-1 2-2.5'	soil	2011-03-03	00:00	2011-03-04
259753	AH-1 3-3.5'	soil	2011-03-03	00:00	2011-03-04
259754	AH-2 0-1'	soil	2011-03-03	00:00	2011-03-04
259755	AH-2 1-1.5'	soil	2011-03-03	00:00	2011-03-04
259756	AH-2 2-2.5'	soil	2011-03-03	00:00	2011-03-04
259757	AH-2 3-3.5'	soil	2011-03-03	00:00	2011-03-04
259758	AH-3 0-1'	soil	2011-03-03	00:00	2011-03-04
259759	AH-3 1-1.5'	soil	2011-03-03	00:00	2011-03-04
259760	AH-3 2-2.5'	soil	2011-03-03	00:00	2011-03-04
259761	AH-3 3-3.5'	soil	2011-03-03	00:00	2011-03-04
259762	AH-4 0-1'	soil	2011-03-03	00:00	2011-03-04
259763	AH-4 1-1.5'	soil	2011-03-03	00:00	2011-03-04
259764	AH-4 2-2.5'	soil	2011-03-03	00:00	2011-03-04
259765	AH-4 3-3.5'	soil	2011-03-03	00:00	2011-03-04

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
259750 - AH-1 0-1'	**5.23**	**24.9**	**30.5**	**55.2**	**24200**	**1870**
259751 - AH-1 1-1.5'	**5.85**	**58.5**	**78.2**	**135**	**22900**	**3890**
259752 - AH-1 2-2.5'	**10.8**	**84.5**	**76.6**	**124**	**18800**	**4110**
259753 - AH-1 3-3.5'	**39.9**	**348**	**220**	**351**	**21900**	**10400**
259754 - AH-2 0-1'	**4.07**	**12.4**	**19.9**	**40.2**	**20500**	**1590**
259755 - AH-2 1-1.5'	**4.49**	**33.8**	**58.3**	**97.3**	**29700**	**4600**
259756 - AH-2 2-2.5'	<0.0200	<0.0200	<0.0200	<0.0200	**185**	**10.2**
259757 - AH-2 3-3.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
259758 - AH-3 0-1'	**22.1**	**132**	**96.3**	**159**	**16500**	**5220**

continued ...

... continued

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)
259759 - AH-3 1-1.5'	**4.73**	**61.8**	**60.5**	**105**	**16200**	**3840**
259760 - AH-3 2-2.5'	**6.06**	**61.7**	**58.9**	**102**	**12200**	**3430**
259761 - AH-3 3-3.5'	**66.2**	**511**	**257**	**424**	**59100**	**11500**
259762 - AH-4 0-1'	**32.2**	**163**	**106**	**157**	**18700**	**5350**
259763 - AH-4 1-1.5'	**17.8**	**130**	**83.9**	**133**	**15600**	**5880**
259764 - AH-4 2-2.5'	**24.0**	**155**	**107**	**172**	**14800**	**5870**
259765 - AH-4 3-3.5'	**22.1**	**140**	**82.6**	**130**	**11000**	**4600**

Sample: 259750 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**756**	mg/Kg	4.00

Sample: 259751 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**1080**	mg/Kg	4.00

Sample: 259752 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**5110**	mg/Kg	4.00

Sample: 259753 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**12800**	mg/Kg	4.00

Sample: 259754 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**578**	mg/Kg	4.00

Sample: 259755 - AH-2 1-1.5'

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

Sample: 259756 - AH-2 2-2.5'

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

Sample: 259757 - AH-2 3-3.5'

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

Sample: 259758 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**1590**	mg/Kg	4.00

Sample: 259759 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**4760**	mg/Kg	4.00

Sample: 259760 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**5040**	mg/Kg	4.00

Sample: 259761 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**8820**	mg/Kg	4.00

Sample: 259762 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**2610**	mg/Kg	4.00

Sample: 259763 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**5250**	mg/Kg	4.00

Sample: 259764 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**7530**	mg/Kg	4.00

Sample: 259765 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**10300**	mg/Kg	4.00

Summary Report

Kim Dorey
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: May 25, 2011

Work Order: 11051101

Project Location: Eddy Co., NM
Project Name: Brigham H #3
Project Number: 114-6400826

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
266048	SB-1 0-1' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266049	SB-1 3' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266050	SB-1 5' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266051	SB-1 7' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266052	SB-1 10' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266053	SB-1 15' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266054	SB-1 20' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266055	SB-1 25' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266056	SB-1 30' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266057	SB-1 40' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266058	SB-2 0-1' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266059	SB-2 3' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266060	SB-2 5' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266061	SB-2 7' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266062	SB-2 10' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266063	SB-2 15' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266064	SB-2 20' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266065	SB-2 25' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266066	SB-2 30' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10
266067	SB-2 40' (6 in. BEB)	soil	2011-05-09	00:00	2011-05-10

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
266048 - SB-1 0-1' (6 in. BEB)	**6.66**	**40.1**	**43.4**	**85.2**	**7870**	**3060**
266049 - SB-1 3' (6 in. BEB)					**8060**	**2550**
266050 - SB-1 5' (6 in. BEB)	**11.6**	**75.2**	**56.9**	**90.8**	**2670**	**2760**
266051 - SB-1 7' (6 in. BEB)	<0.200	<0.200	**1.64**	**4.72**	**164**	**156**
266058 - SB-2 0-1' (6 in. BEB)					**8300**	**1050**

continued ...

... continued

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)
266059 - SB-2 3' (6 in. BEB)	**19.0**	**166**	**134**	**204**	**9870**	**5770**
266060 - SB-2 5' (6 in. BEB)	**30.3**	**194**	**121**	**179**	**6590**	**5210**
266061 - SB-2 7' (6 in. BEB)	<0.0200	<0.0200	**0.127**	**0.343**	<50.0	<2.00
266062 - SB-2 10' (6 in. BEB)					**61.1**	**9.94**

Sample: 266048 - SB-1 0-1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 266049 - SB-1 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**355**	mg/Kg	4

Sample: 266050 - SB-1 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**16800**	mg/Kg	4

Sample: 266051 - SB-1 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**15600**	mg/Kg	4

Sample: 266052 - SB-1 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**3170**	mg/Kg	4

Sample: 266053 - SB-1 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**953**	mg/Kg	4

Sample: 266054 - SB-1 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**261**	mg/Kg	4

Sample: 266055 - SB-1 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**222**	mg/Kg	4

Sample: 266056 - SB-1 30' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**227**	mg/Kg	4

Sample: 266057 - SB-1 40' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**238**	mg/Kg	4

Sample: 266058 - SB-2 0-1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**1380**	mg/Kg	4

Sample: 266059 - SB-2 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**12800**	mg/Kg	4

Sample: 266060 - SB-2 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**5640**	mg/Kg	4

Sample: 266061 - SB-2 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**236**	mg/Kg	4

Sample: 266062 - SB-2 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**334**	mg/Kg	4

Sample: 266063 - SB-2 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 266064 - SB-2 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 266065 - SB-2 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**288**	mg/Kg	4

Sample: 266066 - SB-2 30' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**219**	mg/Kg	4

Sample: 266067 - SB-2 40' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4