

## Bratcher, Mike, EMNRD

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**From:** Tavarez, Ike [Ike.Tavarez@tetrattech.com]  
**Sent:** Friday, January 07, 2011 9:54 AM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Pat Ellis; Joshua Russo  
**Subject:** COG - GJ West COOP #125 Work Plan Approval Request  
**Attachments:** COG - GJ West COOP #125 Work Plan .pdf; COG - GJ West COOP #125 Figures.pdf

COG Operating  
GJ West COOP #125  
Section 28, T17S, R29E  
State Land  
Eddy County, NM  
32.80022 104.07126

Mike,

Please find enclosed Work Plan on the GJ West COOP #125 located in Eddy County, New Mexico. Due to volume, the laboratory reports were not included with the attached work plan. Once the remedial activities are performed, we will submit a cumulative closure report for your files. If you need a hard copy of the work plan let me know. Once approved, Tetra Tech will schedule the soil remediation and notify you before we start. Please let me know if you need additional information or call me if you have any questions.

Ike Tavarez, PG | Senior Project Manager

Main: 432.682.4559 | Fax: 432.622.3945 | Cell: 432.426.3878

[Ike.Tavarez@tetrattech.com](mailto:Ike.Tavarez@tetrattech.com)

Tetra Tech | Complex World, Clear Solutions™

1910 North Big Spring | Midland, TX 79705 | [www.tetrattech.com](http://www.tetrattech.com)

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## SITE INFORMATION

Report Type: Work Plan

### General Site Information:

Site:	GJ West COOP #125	
Company:	COG Operating LLC	
Section, Township and Range	T-17S R-29E Sec 28 Unit P	
Lease Number:	30-015-03163	
County:	Eddy County	
GPS:	N 32.80022	W 104.07126
Surface Owner:	State	
Mineral Owner:		
Directions:	From intersection of Co Rd 219 and Hwy 82 in Loco Hills, NM: Travel 5.5 west on Hwy 82 to Co Rd 212, Turn south on 212 for 2.0 miles, Turn west (right) 1.0 miles to location	

### Release Data:

Date Released:	6/24/2010
Type Release:	Produced water
Source of Contamination:	Steel line ruptured
Fluid Released:	50 bbls
Fluids Recovered:	0 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@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
<b>Total Ranking Score:</b>	<b>0</b>	

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



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January 5, 2010

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., GJ West COOP Unit #125,  
Unit P, Section 28, 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 GJ West COOP Unit #125 located in Unit P, Section 28, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.80022°, W 104.07126°. 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 June 24, 2010. Approximately fifty (50) barrels of produced fluids was release from a ruptured steel flow line. Zero (0) barrels of released fluids were recovered. The spill is located northwest of GJ West COOP Unit #125 in the pasture. The spill migrated east down a natural wash approximately 900', with an average width of 5'. The initial C-141 form is enclosed in Appendix A.

### **Groundwater**

No water wells were listed within Section 28. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 150' below surface. The well report data 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 5,000 mg/kg.

## Soil Assessment and Analytical Results

On August 6, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of eleven (11) auger holes (AH-1 through AH-11) were installed using a stainless steel hand auger to assess the impacted soils. To assess the spill area, the auger holes were spaced 75' to 80' apart. 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 areas of auger holes (AH-1, AH-2, AH-4, AH-5, AH-7, AH-8 and AH-9) exceeded TPH RRAL at depths ranging from 1' to 7' below surface and all were vertically defined. Auger hole (AH-1) exceeded the total BTEX from surface to a total depth of 7' below surface and declined below the RRAL at 8' below surface.

Elevated chloride concentrations were detected in the majority of the auger hole locations. All of the auger holes were vertically defined, except for AH-1, AH-2, AH-4 and AH-5. On the auger holes defined, the chloride impact depths ranged from 2' to 9' below surface. The remaining auger holes were not vertically defined and required additional delineation.

In order to delineate the chloride impact, soil borings were installed utilizing an air rotary drilling rig. On November 30, 2010, Tetra Tech personnel supervised the installation of four (4) soil borings (SB-1 through SB-4) near the auger holes, which were not vertically defined. Samples were collected to a total depth of 30' bgs (SB-2), 40' bgs (SB-1 and SB-4), and 50' bgs (SB-3).



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Referring to Table 1, the chloride concentrations declined with depth and were all vertically defined. Soil borings (SB-1, SB-2, SB-3 and SB-4) were vertically defined at depths of 25', 15', 25' and 40', respectively.

### **Work Plan**

COG proposes to excavate and removal of impacted material as highlighted (green) in attached Table 1. Once the areas are excavated to the appropriate depths, the excavation will be backfilled with clean soil.

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 is 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 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 report will be submitted to the NMOCD. If you have any questions or require any additional information regarding this work plan proposal, please call me at (432) 682-4559.

Respectfully submitted,  
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Kim Dorey  
Staff Geologist

cc: Pat Ellis – COG

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	GJ WEST COOP UNIT #125	Facility Type	Well (Flowline)

Surface Owner	State	Mineral Owner	Lease No. API# 30-015-03163
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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
P	28	17S	29E					Eddy

Latitude 32 48.015 Longitude 104 04.276

**NATURE OF RELEASE**

Type of Release	Produced Fluids	Volume of Release	50bbls	Volume Recovered	0bbls
Source of Release	Flowline	Date and Hour of Occurrence	06/24/2010	Date and Hour of Discovery	06/24/2010 1:00 p.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher—OCD			
By Whom?	Josh Russo	Date and Hour	06/25/2010 9:19 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.\*

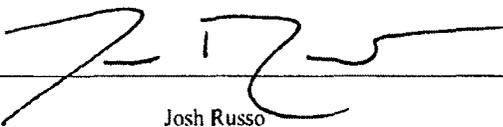
Describe Cause of Problem and Remedial Action Taken.\*

The cause of this release was due to a ruptured flowline. The flowline has been repaired and put back into service.

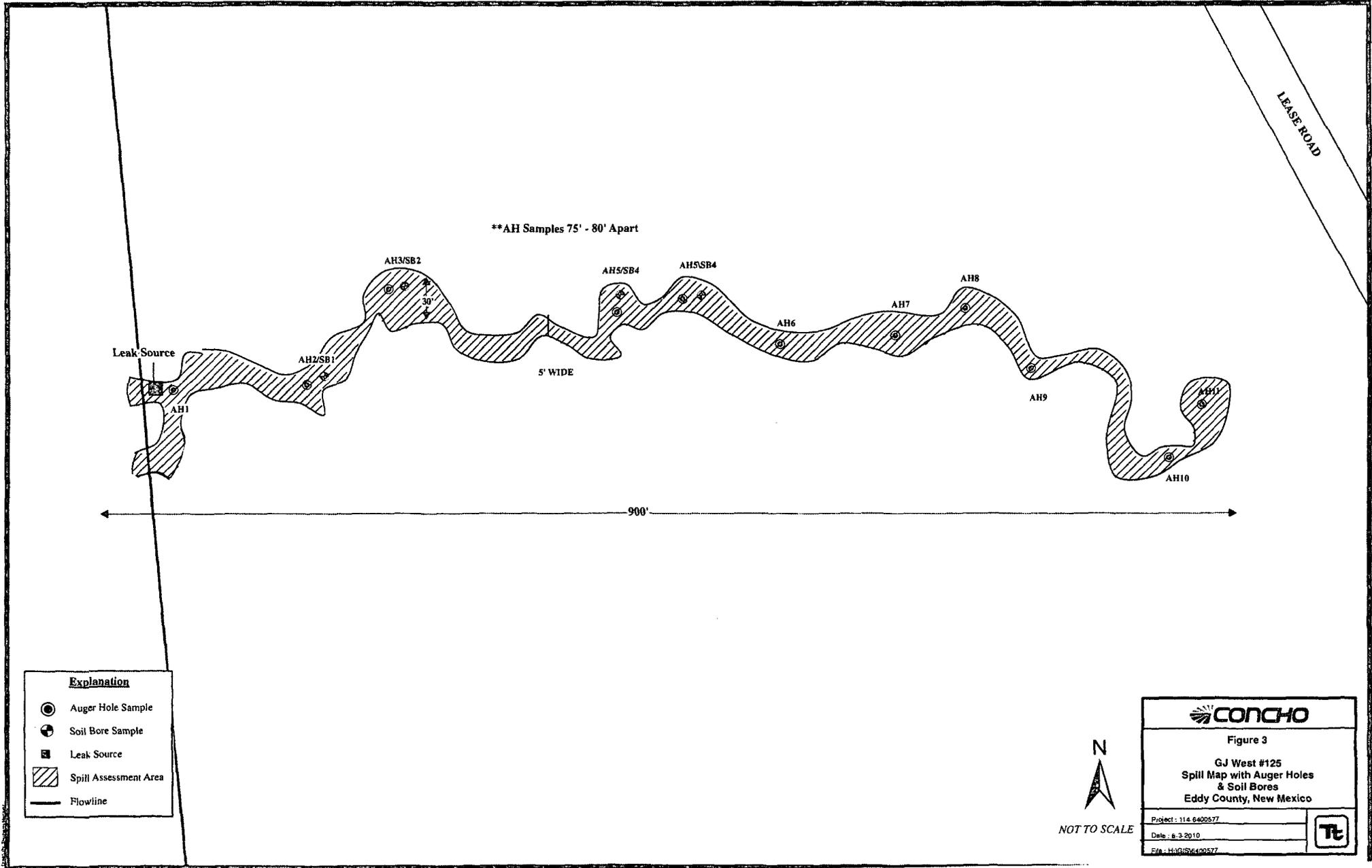
Describe Area Affected and Cleanup Action Taken.\*

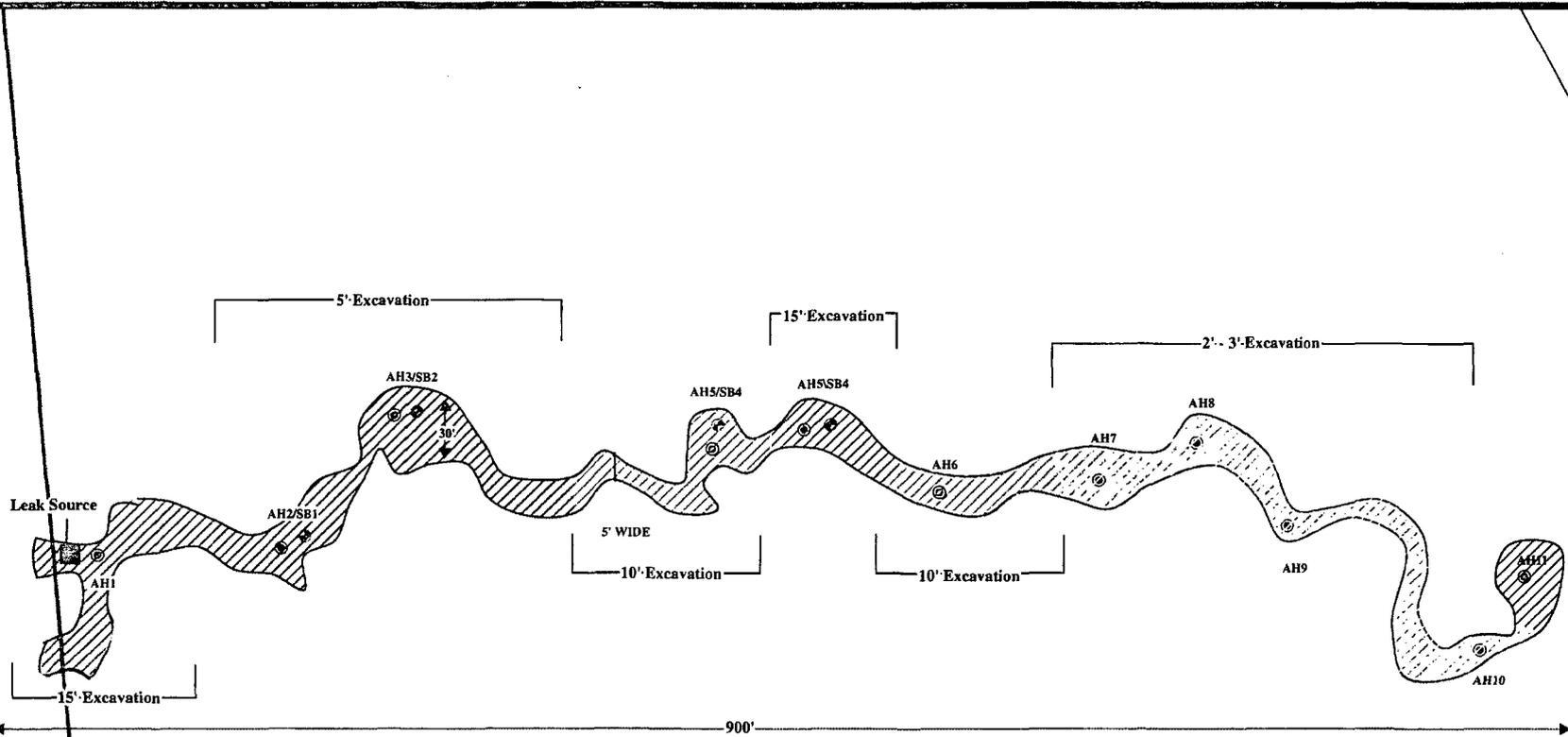
The ruptured GJ West Coop #125 flowline released 50bbls of produced fluids into the pasture and we were not able to recover any fluid with a vacuum truck. The dimensions of the spill area are 750' long and no greater than 15' wide. (The closest well location to the release site is the GJ West Coop Unit #4, which is 150' northwest of the spill site, API # 30-015-03173, Unit P, Sec. 28-T17S-R29E, 990 FSL 330 FEL, Eddy County, NM, GPS 32.80096 - 104.07228) 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 NMODC 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:		<b>OIL CONSERVATION DIVISION</b>	
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:	06/28/2010	Phone:	432-212-2399
			Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary





\*\*AH Samples 75' - 80' Apart

Explanation	
⊙	Auger Hole Sample
⊕	Soil Bore Sample
⊠	Leak Source
▨	Spill Assessment Area
—	Flowline

N  
  
 NOT TO SCALE

Figure 4	
GJ West #125 Proposed Excavation Depths Eddy County, New Mexico	
Project: 114-8406577	
Date: 8-3-2010	
Fig. H-UGIS4-00577	

**Table 1**  
**COG Operating LLC.**  
**GJ WEST CO-OP #125**  
**EDDY COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth (ft)	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						
<b>AH-1</b>	8/6/2010	0-1'	X		618	7,630	<b>8,248</b>	3.45	34.1	15.5	38.8	<b>91.85</b>	1,490
	"	1-1.5'	X		3,340	6,820	<b>10,160</b>	4.82	53.3	45.4	56.7	<b>160.22</b>	6,670
	"	2-2.5'	X		2,140	6,990	<b>18,408</b>	5.11	50.7	42.8	51.7	<b>150.31</b>	5,740
	"	3-3.5'	X		2,670	7,190	<b>9,860</b>	7.46	68.4	53.0	65.4	<b>194.26</b>	5,640
	"	4-4.5'	X		1,580	1,140	<b>2,720</b>	1.15	21.5	22.2	27.0	<b>71.85</b>	13,000
	"	5-5.5'	X		2,050	1,810	<b>3,860</b>	0.88	22.7	23.6	29.9	<b>77.08</b>	11,500
	"	6-6.5'	X		3,340	2,150	<b>5,490</b>	1.06	25.0	28.0	35.7	<b>89.76</b>	11,800
	"	7-7.5'	X		3.05	58.2	<b>61.25</b>	<0.20	0.0327	0.502	0.1	<b>0.65</b>	7,140
	"	8-8.5'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	13,500
	"	9-9.5'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	11,700
<b>SB-1</b>	11/30/2010	0-1'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	<200
		3'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	244
		5'	X		-	-	<b>-</b>	0.70	1.29	3.78	11.90	<b>17.67</b>	9,280
		7'	X		-	-	<b>-</b>	<0.0200	<0.0200	<0.0200	0.261	<b>0.26</b>	13,400
		10'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	10,900
		15'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	12,800
		20'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	2,060
		25'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	<200
		30'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	<200
		40'	X		-	-	<b>-</b>	-	-	-	-	<b>-</b>	259









**Table 1**  
**COG Operating LLC.**  
**GJ WEST CO-OP #125**  
**EDDY COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth (ft)	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						
<b>AH-9</b>	8/9/2010	0-1'	X		486	5,770	<b>6,256</b>	<1.00	<1.00	<1.00	2.73	2.73	2,410
	"	1-1.5'	X		636	2,860	3,496	-	-	-	-	-	5,370
	"	2-2.5'	X		-	-	-	-	-	-	-	-	6,080
	"	3-3.5'	X		-	-	-	-	-	-	-	-	3,440
	"	4-4.5'	X		-	-	-	-	-	-	-	-	1,170
	"	5-5.5'	X		-	-	-	-	-	-	-	-	573
	"	6-6.5'	X		-	-	-	-	-	-	-	-	563
<b>AH-10</b>	8/9/2010	0-1'	X		<2.00	<50.0	<50.0	-	-	-	-	-	639
	"	1-1.5'	X		-	-	-	-	-	-	-	-	1,460
	"	2-2.5'	X		-	-	-	-	-	-	-	-	1,410
	"	3-3.5'	X		-	-	-	-	-	-	-	-	<200
	"	4-4.5'	X		-	-	-	-	-	-	-	-	<200
	"	5-5.5'	X		-	-	-	-	-	-	-	-	<200
	"	6-6.5'	X		-	-	-	-	-	-	-	-	<200
<b>AH-11</b>	8/9/2010	0-1'	X		<2.00	<50.0	<50.0	-	-	-	-	-	<200
	"	1-1.5'	X		-	-	-	-	-	-	-	-	231

BEB Below Excavation Bottom  
 (--) Not Analyzed  
 Proposed excavated material

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG - GJ West COOP Unit #125**  
**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	22	23	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	20	21	22	23	24
110	30	29	28	27	26
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

**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	23	24
30	29	28	79	26	25
31	32	33	34	35	36
			53		

**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	23	24
30	29	28	27	26	25
31	32	SITE	34	35	36

**17 South      30 East**

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

**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	36
				85	

**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

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data
-  Field water level
-  New Mexico Water and Infrastructure Data System

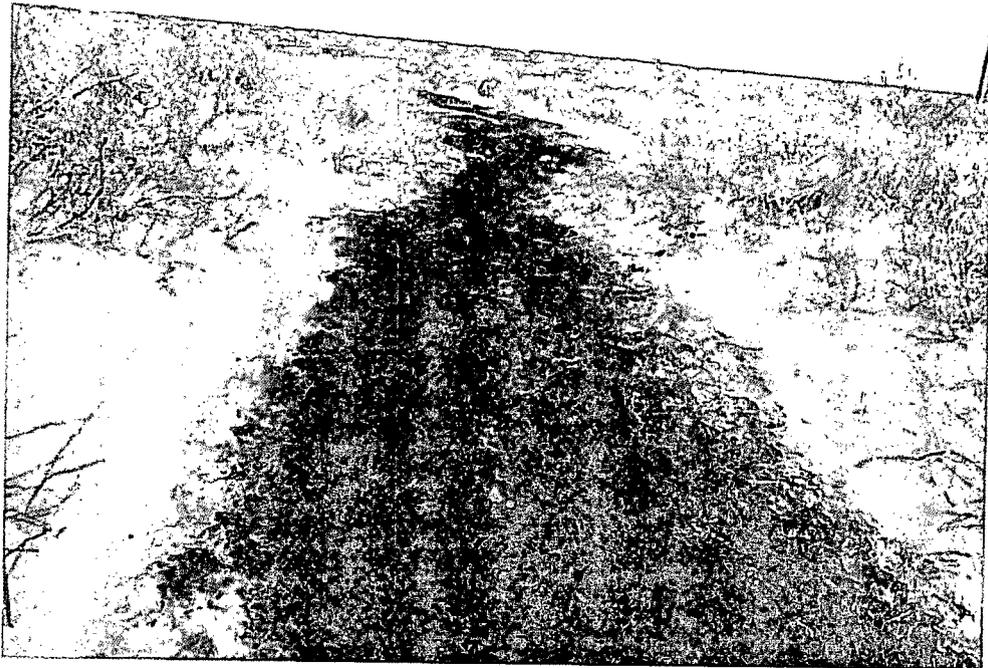
COG Operating LLC  
GJ West COOP #125  
Eddy County, New Mexico



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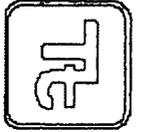


Source of spill (8/6/10)

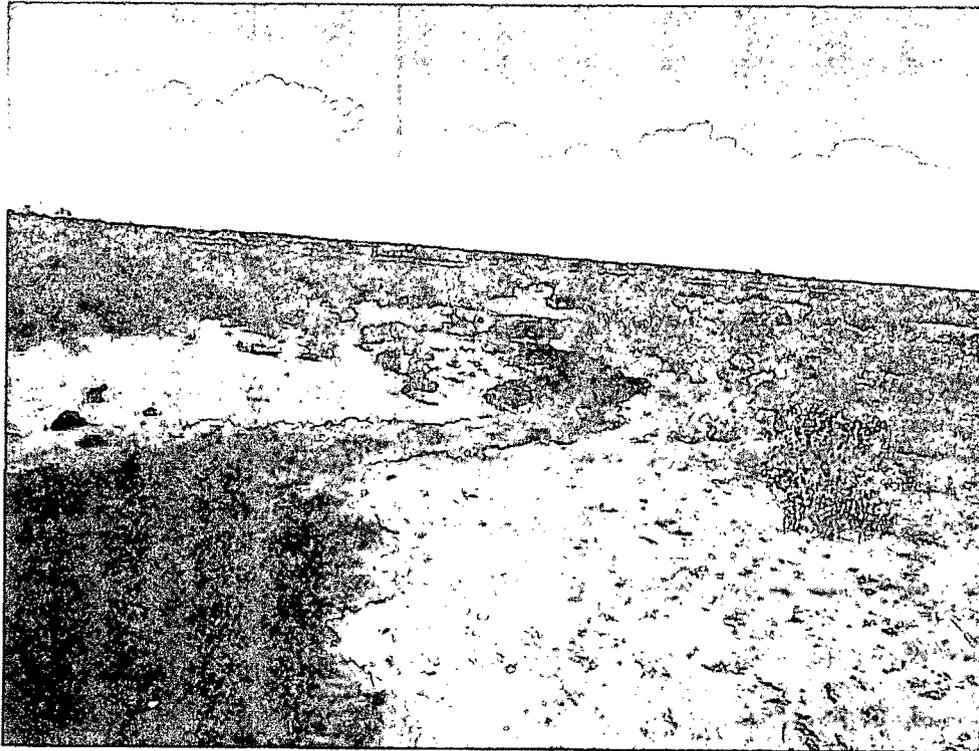


View East - Spill migrated along native draw (8/6/10)

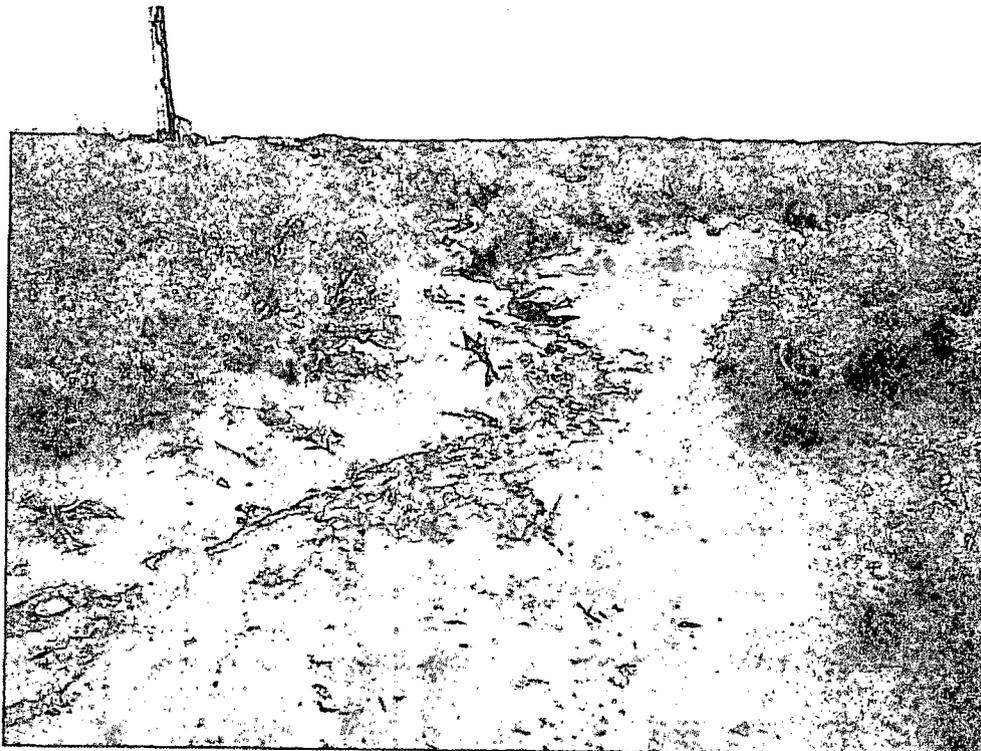
COG Operating LLC  
GJ West COOP #125  
Eddy County, New Mexico



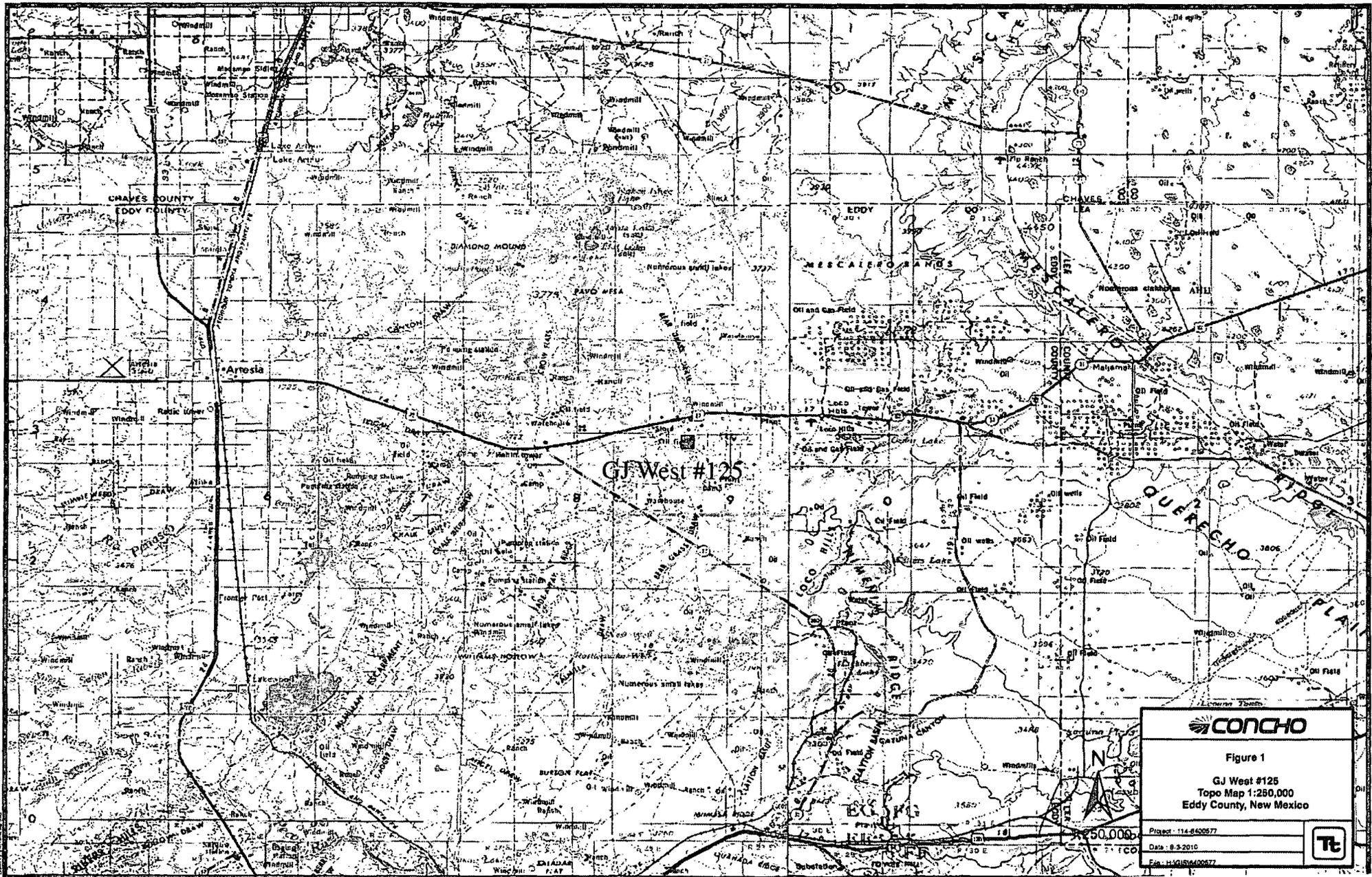
TETRA  
TECH



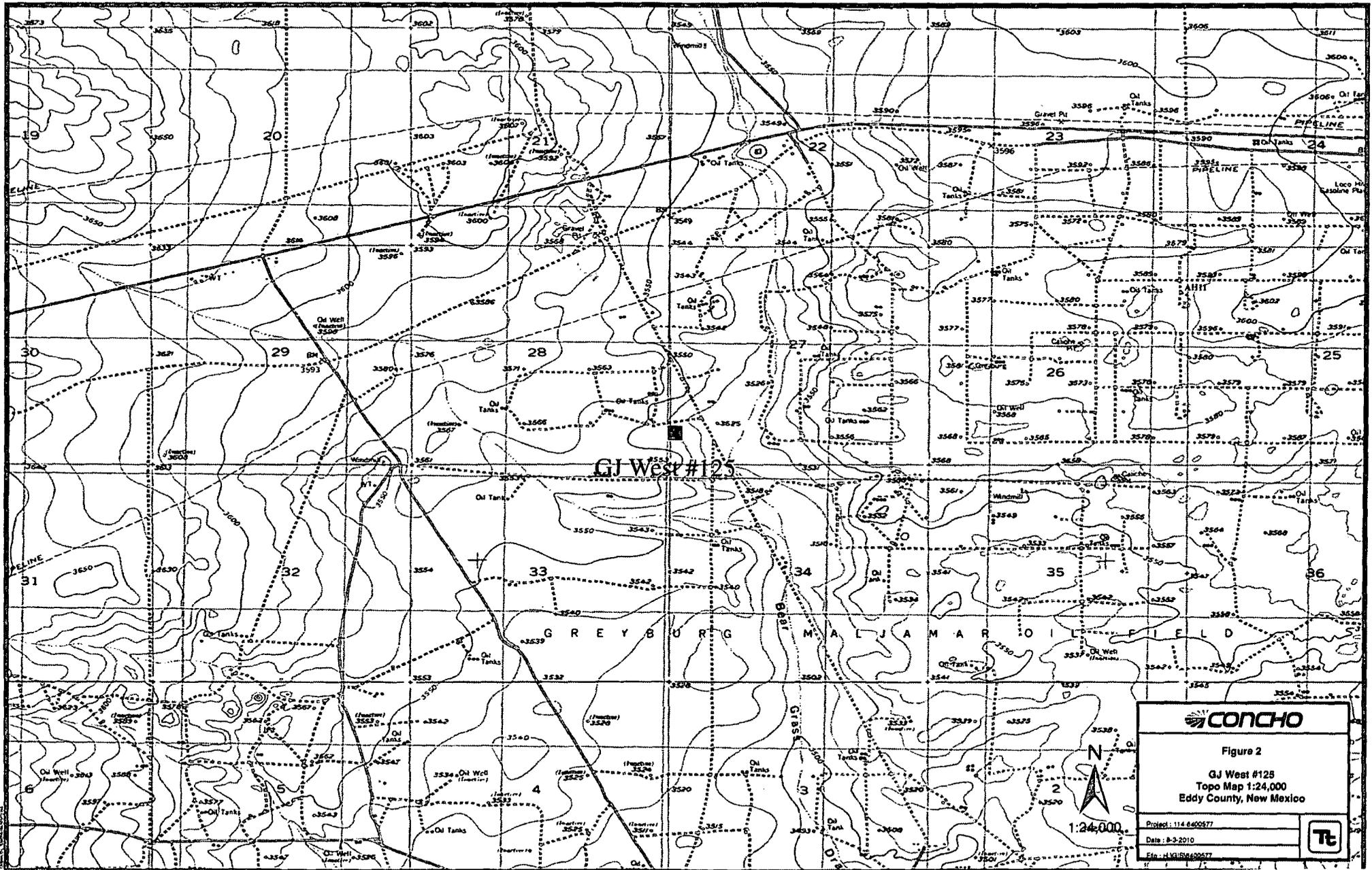
View east near AH-7 (8/6/10)



View west near AH-10 Spill tapered off dramatically



<b>CONCHO</b>	
Figure 1	
GJ West #125	
Topo Map 1:250,000	
Eddy County, New Mexico	
Project: 114-6400577	
Date: 8-3-2010	
File: H:\GIS\114-6400577	



<b>CONCHO</b>	
Figure 2	
GJ West #125 Topo Map 1:24,000 Eddy County, New Mexico	
Project: 114 6402577	
Date: 8-3-2010	
File: H:\GIS\11402577	