

## Bratcher, Mike, EMNRD

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**From:** Tavaréz, Ike [Ike.Tavaréz@tetrattech.com]  
**Sent:** Wednesday, October 07, 2009 9:53 AM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Pat Ellis  
**Subject:** COG - RJU #119 Work Plan  
**Attachments:** COG - RJU #119, Work Plan.pdf; COG - RJU #119, Work Plan Figures.pdf

Mike,

Please find enclosed the COG - RJU #119 Work Plan. As discussed in our meeting, the proposed excavation depths and liner installation are presented in the work plan. COG is currently scheduling the excavation for next week. Our main concern on the excavation is the active Conoco line running through the spill area. Prior to excavation, I would like to discuss this issue with you. Please let me know if you have any questions concerning the work plan. I will mail you a hard copy of the work plan for your files. Thanks

Ike Tavaréz, P.E. Senior Project Manager

Phone: 432 682 4559 | Fax: 432 682 3943 | Cell: 432 425 3278

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

Tetra Tech - Complex World. Clear Solutions™

1910 North 9th Spring - Midland, TX 79701 | [www.tetrattech.com](http://www.tetrattech.com)

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**TETRA TECH**

October 6, 2009

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

**Re: Work Plan for the COG Operating LLC., RJU Unit #119, Injection line leak, Unit P, Section 27, 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 RJU #119 located in Unit P, Section 27, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.80042°, W 104.05663°. 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 May 30, 2009. Approximately 200 barrels of produced water was released from a hole on a 2-inch injection line. The 2 inch poly line was repaired with new connections. Vacuum trucks were utilized to recover 150 barrels of standing fluids. The initial C-141 is enclosed in Appendix A.

### **Groundwater**

No water wells were listed within Section 27. An abandoned water well was located in Section 35 and measured a total depth of 153' (dry). According to the Geology and Groundwater Resources of Eddy County, New Mexico (Report 3), one well is located in Section 22 (Bear Grass Draw) with a depth to water of 79.0' below surface. In addition, a well located in Section 29 was reported at 210 below surface. According to the NMOCD groundwater map the average depth to groundwater in this area is approximately 150' 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: 432.682.3539 Fax: 432.682.3946 [www.tetratech.com](http://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 Results**

On June 4, 2009, Tetra Tech personnel inspected the spill area, which measured approximately 40' x 205' and 10' x 100', located west of the County Road. Prior to sampling, COG excavated 1.0' to 2.0' of impacted soil and hauled to proper disposal. 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 D. The results of the sampling are summarized in Table 1.

Referring to Table 1, AH-1 and AH-2 samples exceeded the TPH RRAL to a depth of 2.0' below surface. In addition, the total BTEX exceeded the RRAL in AH-1 and AH-2. Elevated chloride concentrations were detected in all of the auger holes, with no chlorides delineated in any of the auger holes.

In order to complete delineation of the chlorides at the sites, on June 30, 2009, Tetra Tech personnel were onsite to install ten (10) boreholes (SB-1 through SB-10) utilizing an air rotary rig. Some of the borings were installed in the vicinity of the previous auger holes. The boreholes were extended to a maximum depth of 15 to 35 feet bgs with samples collected at 2 to 3 foot intervals for the first 15 feet and 5 foot intervals thereafter and submitted to the laboratory for analysis of chlorides and selected samples for BTEX.

Analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extended from 11 feet (SB-2) to 30 feet (SB-1) bgs. All samples had chloride concentrations that decreased with depth. Borehole logs are included in Appendix C. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The results of the sampling are summarized in Table 1. The borehole and auger hole locations are shown on Figure 3.

## **Work Plan**

Based upon the corrective action discussion with the NMOCD on July 27, 2009, Tetra Tech personnel will supervise the removal of impacted soils for proper disposal. In addition, selected excavated areas will be capped (lined) with a 40 mil plastic liner.



**TETRA TECH**

Once the areas are excavated to the appropriate depths, the excavation will be backfilled with clean soil. The liner will be installed at a depth of 4.0' below surface. The depths of the excavations and liner installation areas are shown on Figure 4. Two lines are located in the area of spill/excavation. The active line (Conoco) is running east and west through the center of the spill area and an abandoned line (DCP) runs north and south through the spill. These areas will need to be cleared prior to excavating around the lines.

If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Ike Tavarez, P.G.  
Senior Project Manager

cc: Pat Ellis – COG

**Table 1**  
**COG Operating LLC**  
**RJU #119 Flowline Spill**  
**Eddy County, New Mexico**

Area	Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
Area of SB-1	AH-5	6/4/2009	0-1	X		3200	19.9	3219.9	-	-	-	-	1170
		6/4/2009	1-1.5	X		-	-	-	-	-	-	-	412
		6/4/2009	2-2.5	X		-	-	-	-	-	-	-	535
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	638
		6/4/2009	4-4.5	X		-	-	-	-	-	-	-	1160
		6/4/2009	5-5.5	X		-	-	-	-	-	-	-	937
		6/4/2009	6-6.5	X		-	-	-	-	-	-	-	927
		6/4/2009	7-7.5	X		-	-	-	-	-	-	-	1380
		6/4/2009	8-8.5	X		-	-	-	-	-	-	-	1100
Area of SB-2	AH-4	6/4/2009	0-1	X		<50.0	18.1	18.1	-	-	-	-	5390
		6/4/2009	1-1.5	X		-	-	-	-	-	-	-	5570
		6/4/2009	2-2.5	X		-	-	-	-	-	-	-	8120
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	3280
		6/4/2009	4-4.5	X		-	-	-	-	-	-	-	2740
		6/4/2009	5-5.5	X		-	-	-	-	-	-	-	2710
		6/30/2009	5-6	X		-	-	-	-	-	-	-	3,990
		6/30/2009	8-9	X		-	-	-	-	-	-	-	3,290
		6/30/2009	11-12	X		-	-	-	-	-	-	-	590
Area of SB-2	SB-2	6/30/2009	13-14	X		-	-	-	-	-	-	-	207
		6/30/2009	15-16	X		-	-	-	-	-	-	-	<200
Area of SB-2	Liner	6/30/2009	11-12	X		-	-	-	-	-	-	-	6,240
		6/30/2009	13-14	X		-	-	-	-	-	-	-	2,760
		6/30/2009	15-16	X		-	-	-	-	-	-	-	4,210
		6/30/2009	20-21	X		-	-	-	-	-	-	-	1,870
		6/30/2009	25-26	X		-	-	-	-	-	-	-	1,290
		6/30/2009	30-31	X		-	-	-	-	-	-	-	706
		6/30/2009	35-36	X		-	-	-	-	-	-	-	406

(-) Not Analyzed

Proposed Excavation Depths  
 \_\_\_\_\_ Liner

**Table 1**  
**COG Operating LLC**  
**RJU #119 Flowline Spill**  
**Eddy County, New Mexico**

Area	Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
Area of SB-3	AH-3	6/4/2009	0-1	X		<50.0	31.6	31.6	-	-	-	-	2330
		6/4/2009	1-1.5	X		-	-	-	-	-	-	-	799
		6/4/2009	2-2.5	X		-	-	-	-	-	-	-	468
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	1350
		6/4/2009	4-4.5	X		-	-	-	-	-	-	-	2490
		6/4/2009	5-5.5	X		-	-	-	-	-	-	-	3540
		6/4/2009	6-6.5	X		-	-	-	-	-	-	-	4080
	SB-3		5-6	X		-	-	-	-	-	-	-	1,430
		6/30/2009	8-9	X		-	-	-	-	-	-	-	2,880
		6/30/2009	11-12	X		-	-	-	-	-	-	-	2,820
		6/30/2009	13-14	X		-	-	-	-	-	-	-	2,250
		6/30/2009	15-16	X		-	-	-	-	-	-	-	1,980
		6/30/2009	20-21	X		-	-	-	-	-	-	-	993
		6/30/2009	25-26	X		-	-	-	-	-	-	-	<200
Area of SB-4	SB-4	6/30/2009	0-1	X		1160	736	1896	<0.0500	7.52	19.5	43.0	1,070
		6/30/2009	2-3	X		691	817	1508	<0.100	7.19	20.1	37.2	1,520
		6/30/2009	5-6	X		-	-	-	<0.0500	6.06	23.2	34.0	1,390
		6/30/2009	8-9	X		-	-	-	<0.0100	<0.0100	<0.0100	<0.0100	1,860
		6/30/2009	11-12	X		-	-	-	-	-	-	-	1,790
		6/30/2009	13-14	X		-	-	-	-	-	-	-	966
		6/30/2009	15-16	X		-	-	-	-	-	-	-	518
		6/30/2009	20-21	X		-	-	-	-	-	-	-	510
		6/30/2009	25-26	X		-	-	-	-	-	-	-	336

(-) Not Analyzed



Proposed Excavation Depths

Liner

**Table 1**  
**COG Operating LLC**  
**RJU #119 Flowline Spill**  
**Eddy County, New Mexico**

Area	Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
Area of SB-5	AH-2	6/4/2009	0-1	X		3570	2330	5900	7.55	74.1	72.5	101	1250
		6/4/2009	1-1.5	X		4320	2830	7150	9.86	112	105	129	1670
		6/4/2009	2-2.5	X		1120	2370	3490	4.78	94.4	93.5	118	3250
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	4760
		6/4/2009	4-4.5	X		-	-	-	-	-	-	-	5240
		6/4/2009	5-5.5	X		-	-	-	-	-	-	-	5740
		6/4/2009	6-6.5	X		-	-	-	-	-	-	-	5270
	SB-5	6/30/2009	3-4	X		-	-	-	<0.0100	<0.0100	<0.0100	<0.0100	2,670
		6/30/2009	5-6	X		-	-	-	-	-	-	-	1,790
		6/30/2009	8-9	X		-	-	-	-	-	-	-	2,950
		6/30/2009	11-12	X		-	-	-	-	-	-	-	3,660
		6/30/2009	13-14	X		-	-	-	-	-	-	-	5,090
		6/30/2009	15-16	X		-	-	-	-	-	-	-	5,090
		6/30/2009	20-21	X		-	-	-	-	-	-	-	2,600
	liners	6/30/2009	25-26	X		-	-	-	-	-	-	-	386
Area of SB-6	SB-6	6/30/2009	0-1	X		-	-	-	-	-	-	-	1,380
		6/30/2009	2-3	X		-	-	-	-	-	-	-	10,200
		6/30/2009	5-6	X		-	-	-	-	-	-	-	5,910
		6/30/2009	8-9	X		-	-	-	-	-	-	-	6,300
		6/30/2009	11-12	X		-	-	-	-	-	-	-	2,430
		6/30/2009	13-14	X		-	-	-	-	-	-	-	1,850
		6/30/2009	15-16	X		-	-	-	-	-	-	-	436
		6/30/2009	20-21	X		-	-	-	-	-	-	-	421
		6/30/2009	25-26	X		-	-	-	-	-	-	-	389
		6/30/2009	30-31	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed

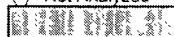
 Proposed Excavation Depths

 Liner

**Table 1**  
**COG Operating LLC**  
**RJU #119 Flowline Spill**  
**Eddy County, New Mexico**

Area	Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
Area of SB-7	AH-1	6/4/2009	0-1	X		6910	766	7676	<0.0500	2.80	22.2	34.9	1520
		6/4/2009	1-1.5	X		4140	1130	5270	-	-	-	-	1690
		6/4/2009	2-2.5	X		<50.0	21.0	21.0	-	-	-	-	675
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	1280
		6/4/2009	4-4.5	X		-	-	-	-	-	-	-	1440
		6/4/2009	5-5.5	X		-	-	-	-	-	-	-	1450
		6/4/2009	6-6.5	X		-	-	-	-	-	-	-	994
liner	SB-7	6/30/2009	5-6	X		-	-	-	-	-	-	-	6,230
		6/30/2009	8-9	X		-	-	-	-	-	-	-	4,100
		6/30/2009	11-12	X		-	-	-	-	-	-	-	3,180
		6/30/2009	13-14	X		-	-	-	-	-	-	-	1,820
		6/30/2009	15-16	X		-	-	-	-	-	-	-	1,590
		6/30/2009	20-21	X		-	-	-	-	-	-	-	1,180
		6/30/2009	25-26	X		-	-	-	-	-	-	-	952
		6/30/2009	30-31	X		-	-	-	-	-	-	-	309
Area of SB-8	SB-8	6/30/2009	0-1	X		-	-	-	-	-	-	-	10,700
		6/30/2009	2-3	X		-	-	-	-	-	-	-	3,980
		6/30/2009	5-6	X		-	-	-	-	-	-	-	3,120
		6/30/2009	8-9	X		-	-	-	-	-	-	-	3,390
		6/30/2009	11-12	X		-	-	-	-	-	-	-	3,130
		6/30/2009	13-14	X		-	-	-	-	-	-	-	4,020
		6/30/2009	15-16	X		-	-	-	-	-	-	-	5,120
		6/30/2009	20-21	X		-	-	-	-	-	-	-	4,480
		6/30/2009	25-26	X		-	-	-	-	-	-	-	275
		6/30/2009	30-31	X		-	-	-	-	-	-	-	310

(-) Not Analyzed



Proposed Excavation Depths

Liner



Table 1  
COG Operating LLC  
RJU #119 Flowline Spill  
Eddy County, New Mexico

Area	Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
Area of SB-9	AH-6	6/4/2009	0-1	X		<50.0	<1.00	<50.0	-	-	-	-	6750
		6/4/2009	1-1.5	X		-	-	-	-	-	-	-	8750
		6/4/2009	2-2.5	X		-	-	-	-	-	-	-	1180
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	1120
		6/4/2009	4-4.5	X		-	-	-	-	-	-	-	3710
	liner	6/4/2009	5-5.5	X		-	-	-	-	-	-	-	2850
		6/4/2009	6-6.5	X		-	-	-	-	-	-	-	2540
	SB-9	6/30/2009	5-6	X		-	-	-	-	-	-	-	2,080
		6/30/2009	8-9	X		-	-	-	-	-	-	-	3,030
		6/30/2009	11-12	X		-	-	-	-	-	-	-	3,150
		6/30/2009	13-14	X		-	-	-	-	-	-	-	2,370
		6/30/2009	15-16	X		-	-	-	-	-	-	-	2,260
		6/30/2009	20-21	X		-	-	-	-	-	-	-	5,250
		6/30/2009	25-26	X		-	-	-	-	-	-	-	838
		6/30/2009	30-31	X		-	-	-	-	-	-	-	486
Area of SB-10	SB-10	6/30/2009	0-1	X		-	-	-	-	-	-	-	<200
		6/30/2009	2-3	X		-	-	-	-	-	-	-	527
		6/30/2009	5-6	X		-	-	-	-	-	-	-	1,150
		6/30/2009	8-9	X		-	-	-	-	-	-	-	2,360
		6/30/2009	11-12	X		-	-	-	-	-	-	-	9,190
	liner	6/30/2009	13-14	X		-	-	-	-	-	-	-	7,050
		6/30/2009	15-16	X		-	-	-	-	-	-	-	4,920
		6/30/2009	20-21	X		-	-	-	-	-	-	-	3,620
		6/30/2009	25-26	X		-	-	-	-	-	-	-	2,140
		6/30/2009	30-31	X		-	-	-	-	-	-	-	709
		6/30/2009	35-36	X		-	-	-	-	-	-	-	274

(-) Not Analyzed

Proposed Excavation Depths

Liner

Table 1  
COG Operating LLC  
RJU #119 Flowline Spill  
Eddy County, New Mexico

Area	Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
Area of SB-11	AH-7	6/4/2009	0-1	X		<50.0	6.14	6.14	-	-	-	-	8240
		6/4/2009	1-1.5	X		-	-	-	-	-	-	-	6460
		6/4/2009	2-2.5	X		-	-	-	-	-	-	-	9000
		6/4/2009	3-3.5	X		-	-	-	-	-	-	-	9310
SB-11		6/30/2009	5-6	X		-	-	-	-	-	-	-	3,820
		6/30/2009	8-9	X		-	-	-	-	-	-	-	4,030
		6/30/2009	11-12	X		-	-	-	-	-	-	-	9,070
		6/30/2009	13-14	X		-	-	-	-	-	-	-	4,930
		6/30/2009	15-16	X		-	-	-	-	-	-	-	3,750
		6/30/2009	20-21	X		-	-	-	-	-	-	-	1,330
		6/30/2009	25-26	X		-	-	-	-	-	-	-	310
		6/30/2009	30-31	X		-	-	-	-	-	-	-	284

(-) Not Analyzed

Proposed Excavation Depths  
Liner

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-14  
Revised October 10, 200

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	Kanicia Carrillo
Address	550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No.	432-685-4332
Facility Name	RJ Unit #119	Facility Type	Injection Well
Surface Owner	Mineral Owner	Lease No. 30-015-03146	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	27	17S	29E	660	South	1980	East	Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release-Produced Water	Volume of Release-200bbls	Volume Recovered- 150bbls
Source of Release- Hole in 2" injection line	Date and Hour of Occurrence- 5/30/09- 12:00 pm	Date and Hour of Discovery 5/30/09-12:00pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher NMOCD District 2	
By Whom? Kent Greenway	Date and Hour 6/1/09- 9:30 am	
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.\*

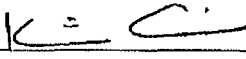
Describe Cause of Problem and Remedial Action Taken.\*

Hole in a 2" steel injection line. Injection was shut in at this location and the line will be replaced.

Describe Area Affected and Cleanup Action Taken.\*

Approximately 50' X 100' area in pasture was affected. All liquid was vacuumed up. The area is being dug out to a 1' depth for testing. 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 for your 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: Kanicia Carrillo		Approved by District Supervisor:	
Title: Regulatory Analyst		Approval Date:	Expiration Date:
E-mail Address: kcarrillo@conchoresources.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 6/3/09 Phone: 432-685-4332			

\* Attach Additional Sheets If Necessary

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG - RJU Unit #119**  
**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
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

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	27	26	25
31	32	33	34	35	36

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

17 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	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

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

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

123 Field water level

143 NMOCD Groundwater map well location

CLAYTON COUNTY

R.28E. Parallel R.29E. R.30E. South R.31E.

5d

5c

T.16S.

TO WALDEN

TO LAWRENCE

T.17S.

East

Meridian

T.18S.

5c

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0210?

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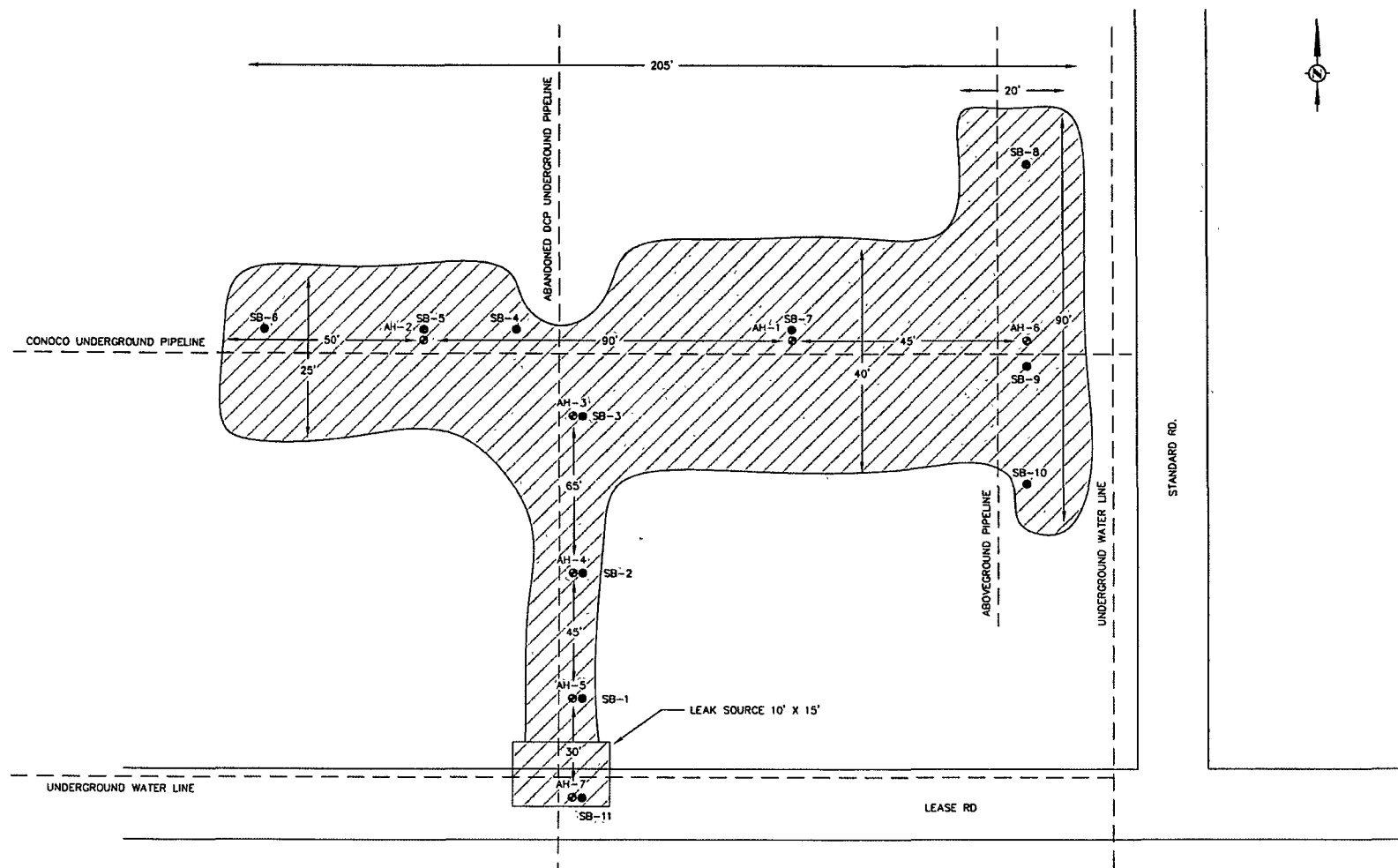
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[Hatched Box] SPILL AREA  
 [Circle with Dot] SAMPLE LOCATIONS  
 [Dot] SOIL BORING LOCATIONS

NOT TO SCALE

DATE:  
6/12/09  
 DWN. BY:  
JJ  
 FILE:  
N:\COG\8402310  
RJU #119 FLOWLINE

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

RJU #119 FLOWLINE LEAK

TETRA TECH, INC.  
 MIDLAND, TEXAS

