



May 15, 2007

#3116075

Ms. Lorena Goerger, Project Manager  
New Mexico Environment Department  
Petroleum Storage Tank Bureau  
2044 Galisteo Street  
Santa Fe, NM 87505

**RE: FIRST QUARTERLY GROUND WATER MONITORING REPORT FOR  
CONOCO MINI MART, 3837 HIGHWAY 64, CHAMA, NEW MEXICO  
FACILITY #27498 RID #2316 WPID #3179-5**

Dear Ms. Goerger:

The following is the first quarterly ground water monitoring report since the UST removal and excavation at the above referenced site. The sampling event was completed on April 4, 2007.

Included with the report are the laboratory analyses for the water samples collected from the monitoring wells associated with the release site.

If you have any additional questions, please do not hesitate to call.

Sincerely,

SOUDER, MILLER & ASSOCIATES

A handwritten signature in blue ink that reads 'Tami Ross'.

Tami Ross  
Staff Scientist

A handwritten signature in blue ink that reads 'Reid S. Allan'.

Reid S. Allan, P.G.  
Vice President/Principal Scientist

# FIRST QUARTER GROUND WATER MONITORING REPORT

For

**Conoco Mini-Mart  
3827 Highway 64  
Chama, New Mexico  
Facility #27498 RID #2316 WPID #3179-5**

May 14, 2007



**Prepared For:  
New Mexico Environment Department  
Petroleum Storage Tank Bureau**



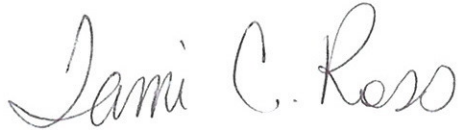
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**COVER PAGE  
FORM 1216  
QUARTERLY MONITORING REPORT**

1. **Site Name:**  
Conoco Mini Mart
2. **Responsible party:**  
State Lead Site
3. **Responsible party mailing address** (list contact person if different):  
2044 Galisteo Street  
Santa Fe, NM 87505
4. **Facility Number:**  
27498
5. **Address/legal description:**  
3837 US Hwy 64, Chama, NM
6. **Author/consulting company:**  
Tami Ross and Souder, Miller & Associates
7. **Date of report:**  
May 14, 2007
8. **Date of confirmation of release or date PSTB was notified of release:**  
May 16, 1994

**STATEMENT OF FAMILIARITY**

I, the undersigned, am personally familiar with the information submitted in this report and the attached documents and attest that it is true and complete.



Tami C. Ross  
Staff Scientist



Reid S. Allan  
Vice President/Principal Scientist

May 14, 2007

## I Introduction

### A. *Scope of Work:*

This report is pursuant to the September 21, 2006 work plan approved by the New Mexico Environment Department (NMED) and amended on December 13, 2006 (WPID# 3179). On April 4, 2007, ground water samples were collected from 10 site monitoring wells: MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13 as shown on Figure 2. The site location is illustrated in Figure 1.

### B. *This quarter's highlights, if any.*

This is the first quarter sampling event since the underground storage tank (UST) removal and remedial excavation on the north side of the site. The site excavation consisted of 1,060 cubic yards of hydrocarbon contaminated soil. UST removal, excavation, backfill, and compaction work was completed from December 11-15, 2006. Five new site monitoring wells were installed March 27-29, 2007; MW-9, MW-10, MW-11, MW-12, and MW-13.

Contaminants of concern (COC) are above New Mexico Water Quality Control Commission Regulation (NMWQCCR) standards in monitoring wells MW-5, MW-7, MW-8, MW-11, MW-12, and MW-13. Existing monitoring wells MW-5, MW-7, and MW-8 showed an overall increase in contaminants of concern since the last sampling event on July 10, 2006. Table 2 summarizes the ground water sample analyses for this quarterly event.

Existing site monitoring wells MW-1 and MW-2 were destroyed during the remedial excavation activities. Monitoring well MW-3 was unable to be located at the time of the sampling event; however, SMA survey crew located the well during the surveying of the newly installed monitoring wells.

Non-aqueous phase hydrocarbon liquid (NAPL) was not present in site monitoring wells.

## II Activities Performed During This Quarter

### A. *Brief description of remediation system and date installed.*

Not applicable.

### B. *Description of activities performed to keep system operating properly including: inspections, maintenance procedures and modifications, if any.*

Not applicable.

### C. *Monitoring activities performed.*

### **Volatile Organic Monitoring**

Ten site monitoring wells (MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13) at the Conoco Mini Mart were sampled on April 4, 2007 and analyzed for volatile organics by EPA Method 8021 and polynuclear aromatic hydrocarbons by EPA Method 8310. Figures 4 – 6 are contaminant concentration contour maps. Procedures for sampling the monitoring wells are described in Appendix 1. Laboratory results are included in Appendix 3. Analytical results are provided in Table 2 and 3.

The highest concentration of contaminants is located in the vicinity of MW-7 and MW-8. Based on this information, SMA believes that the car wash and pump islands are potentially the second source for the ground water contamination plume.

Monitoring wells MW-4, MW-6, MW-9, and MW-10 were below the NMWQCCR standards for all VOC contaminants analyzed.

### **Dissolved Lead Monitoring**

The 10 previously mentioned monitoring wells were also analyzed for dissolved lead by EPA Method 6010. All sampled monitoring wells were below the NMWQCCR standard in this quarter of monitoring for dissolved lead.

### **Non-Aqueous Phase Liquid Monitoring**

No NAPL was observed in site monitoring wells during this quarterly sampling event.

### **Ground Water Measurements**

This quarter, 10 site monitoring wells were gauged for depth to water on April 4, 2007. Field notes are included in Appendix 2. The historical ground water surface elevation data for the site can be found in Table 1. Figure 3 is a potentiometric surface map. In general, the direction of ground water flow is to the southwest at a gradient of 0.019 ft/ft. The ground water flow direction and gradient are consistent with historical monitoring results. Groundwater levels have increased an average of 1.86 feet since the July 2006 sampling event.

## **III Summary and Conclusions**

### *A. Discussion of any trends or changes noted in analytical results or site conditions.*

This quarterly sampling is the first sampling event since the UST removal and excavation. Five new site monitoring wells were installed on March 27-29, 2007. Contaminants of concern (benzene, total xylenes, and naphthalene) are well above the NMWQCCR standards in six of the site monitoring wells.

The ground water contaminant plume has not been fully delineated to the north. Perimeter soil conditions were recorded during the UST removal in December 2006, and

off site soil contamination was observed on the north side of the property. Also, the contaminant plume has not been fully delineated to the east or the west. This is apparent in the groundwater sampling results during this sampling event and the perimeter conditions reported during the UST removal and excavation (SMA, 2007).

The water levels have increased an average of 1.86 feet since the last sampling event in July 2006.

*B. Ongoing assessment of remediation system.*

Not applicable for this quarterly event.

*C. Recommendations.*

SMA recommends the following:

1. Demolition of the car wash and excavation of the soils beneath the car wash.
2. SMA recommends continued quarterly monitoring of all site monitoring wells.

### **Figures**

1. Vicinity Map
2. Site Map
3. Potentiometric Surface Map
4. Benzene Concentration Map
5. Total Xylenes Concentration Map
6. Total Naphthalenes Concentration Map

### **Tables**

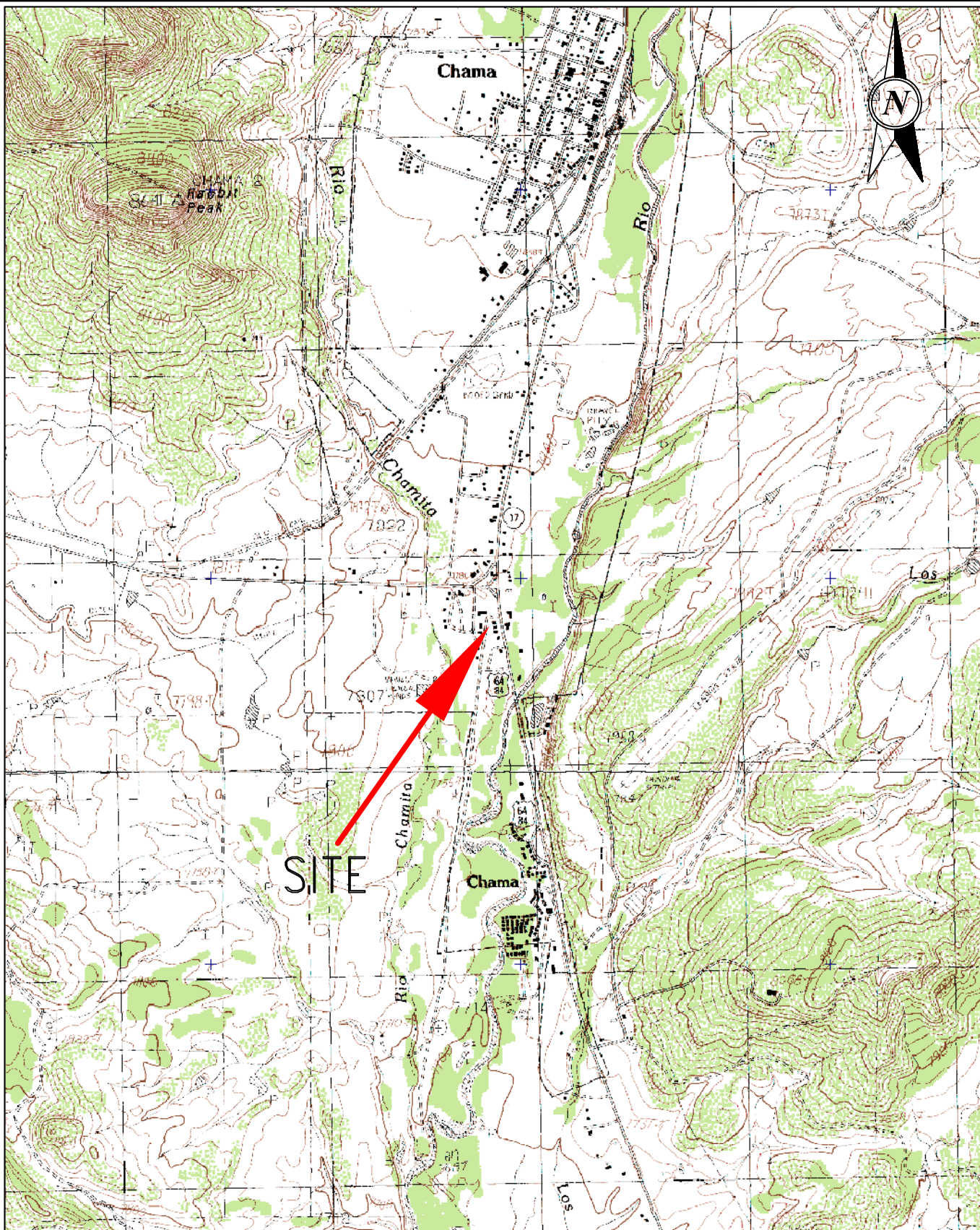
1. Summary of Ground Water Elevation Results
2. Summary of Ground Water Sample Analysis (8021)
3. Summary of Ground Water Sample Analysis (8310)

### **Appendices**

1. Sampling protocol
2. Field notes
3. Laboratory results



## Figures



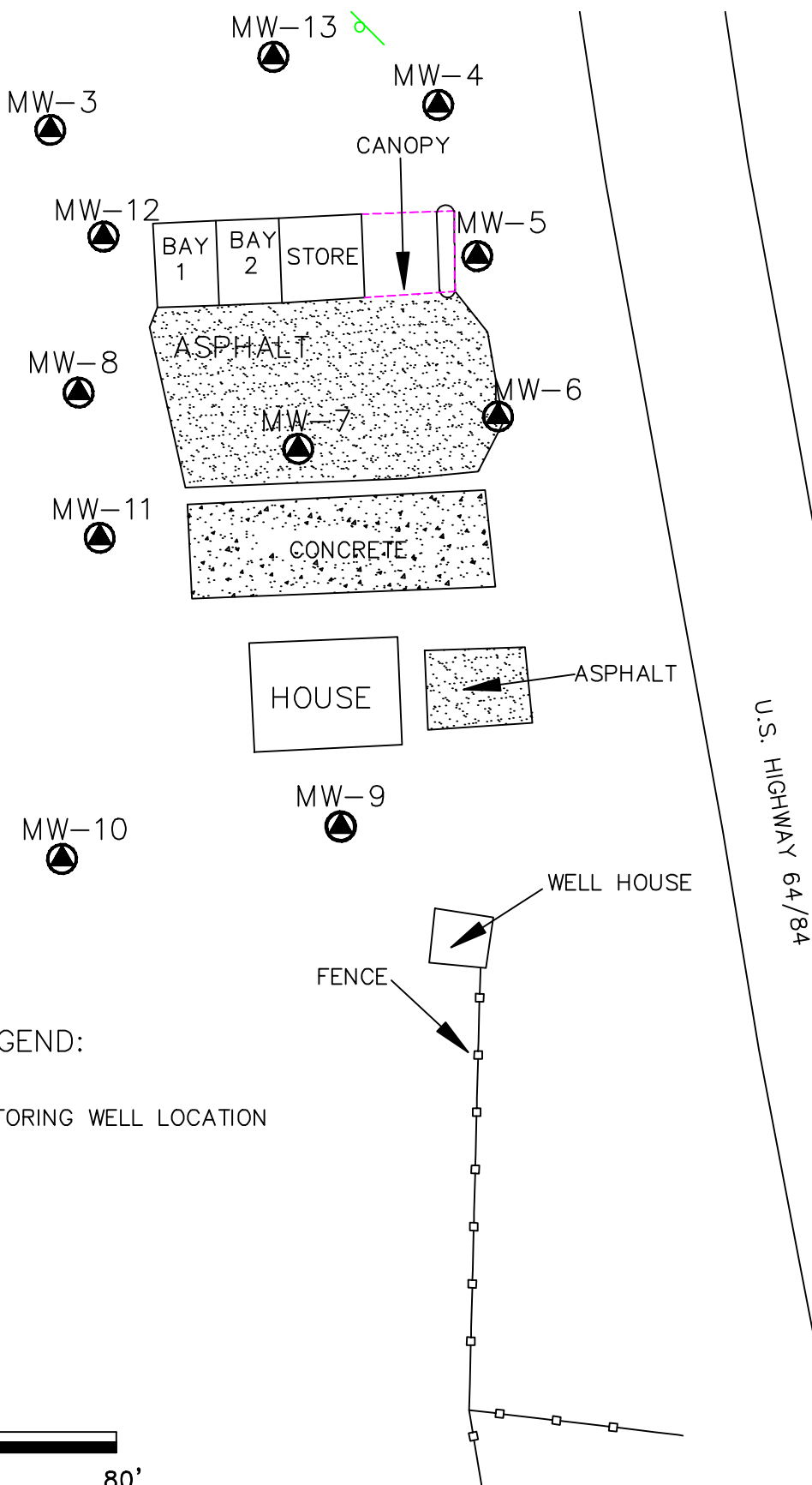
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 700 ft Scale: 1: 24,000 Detail: 13-0 Datum: WGS84



612 E. Murray Drive  
 Farmington, New Mexico 87401  
 (505) 325-5667  
 Santa Fe - Farmington  
 Albuquerque - Las Cruces

APPROVED: RCA	DATE: 8/8/06
DRAWN BY: TROSS	DATE: 8/8/06
REVISIONS BY:	DATE:
PROJECT NO: 3116075	FIGURE: 1

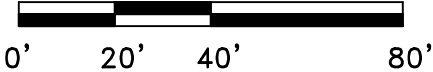
**VICINITY MAP**  
 CONOCO MINI MART  
 3837 HWY 64  
 CHAMA, NEW MEXICO



LEGEND:

- MW-11 - MONITORING WELL LOCATION
- SIGN

SCALE

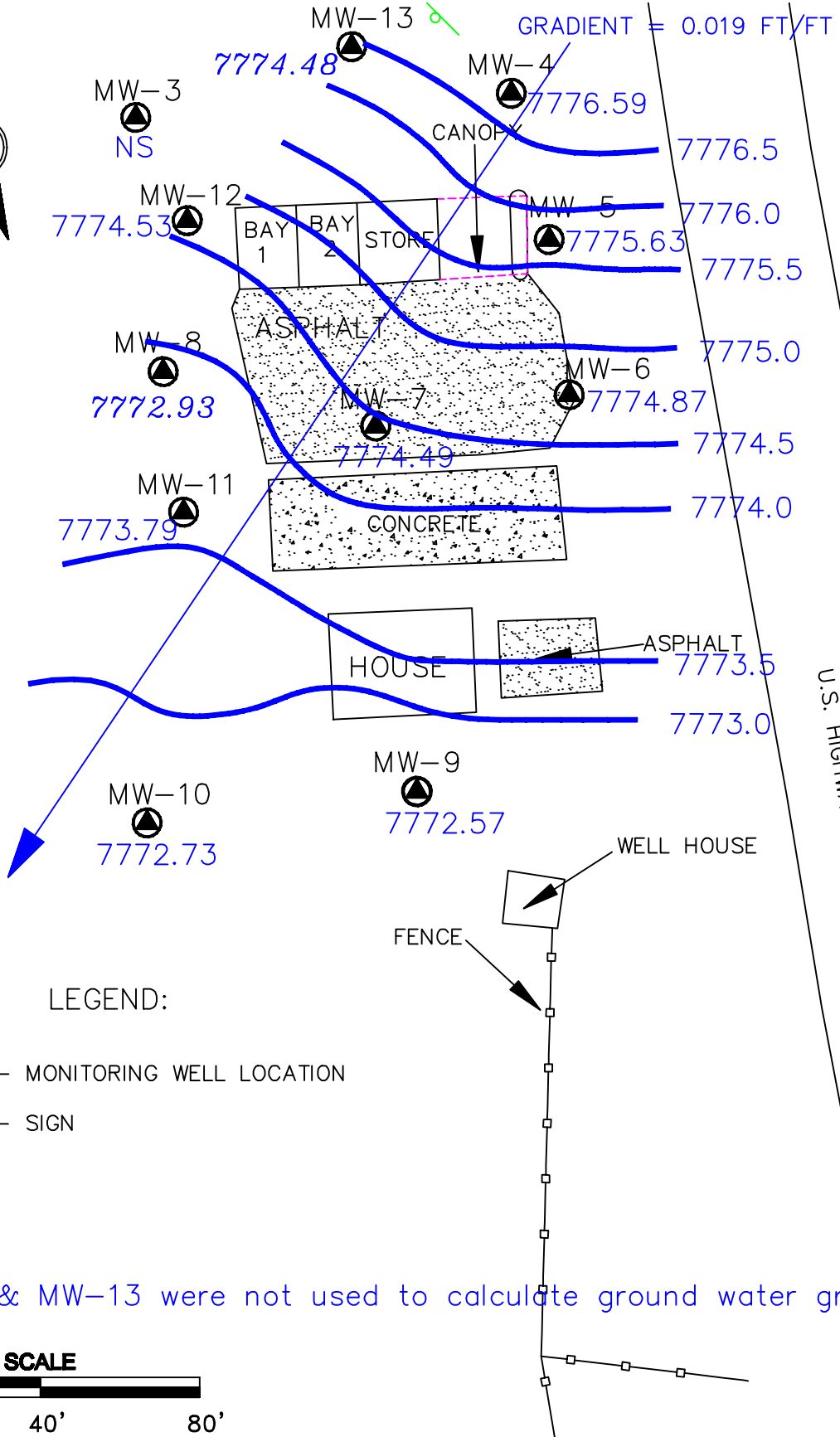


REVISED BY:	DATE:
DRAWN BY: TLONG	DATE: 4/25/07
APPROVED: RSA	DATE: 4/25/07
PROJECT NO. 3116075	FIGURE: 2

**SITE MAP**

**CONOCO MINI MART  
CHAMA, NEW MEXICO**

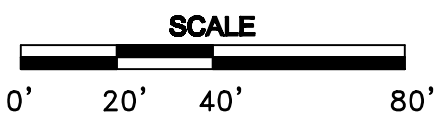




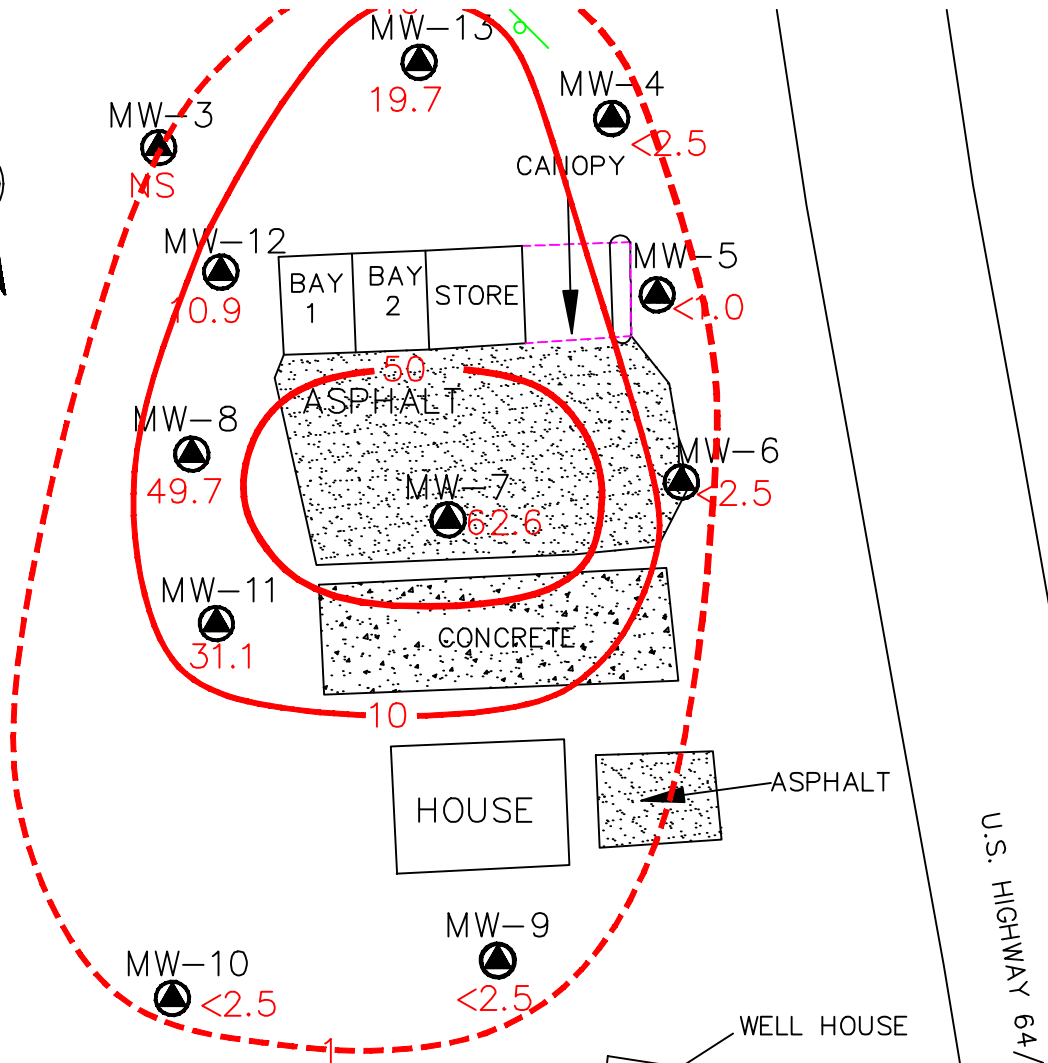
LEGEND:

- MW-11 - MONITORING WELL LOCATION
- SIGN

MW-8 & MW-13 were not used to calculate ground water gradient



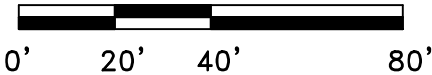
	REVISED BY:	DATE:	<b>POTENTIOMETRIC SURFACE MAP</b>  <b>CONOCO MINI MART CHAMA, NEW MEXICO</b>
	DRAWN BY: TLONG	DATE: 4/25/07	
	APPROVED: RSA	DATE: 4/25/07	
	PROJECT NO: 3116075	FIGURE: 3	



LEGEND:

- MW-11 - MONITORING WELL LOCATION
- SIGN
- BENZENE ISO-CONCENTRATION CONTOUR (DASHED WHERE INFERRED (ug/L))

SCALE

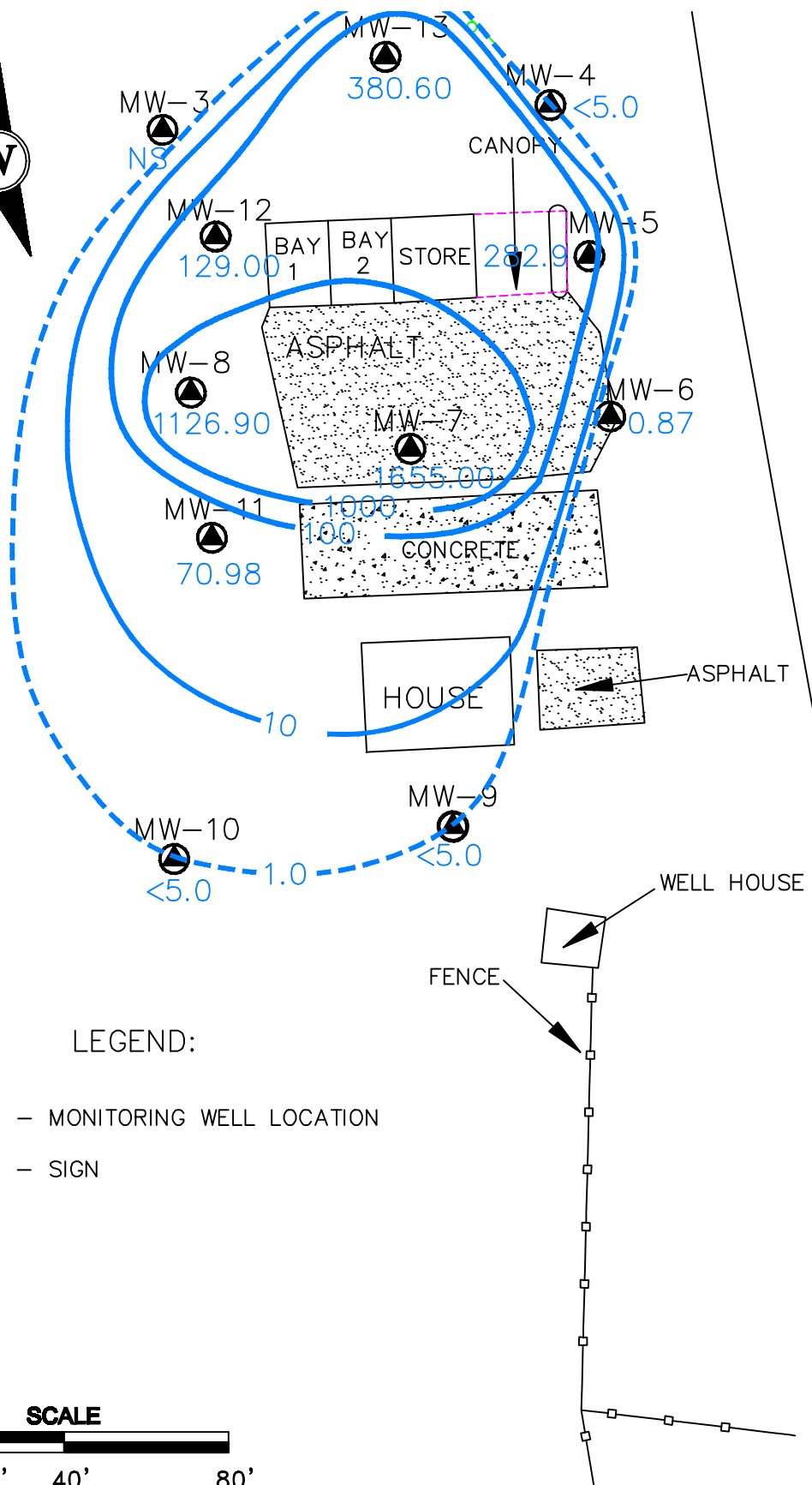


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DRAWN BY: TLONG	DATE: 4/25/07
APPROVED: RSA	DATE: 4/25/07
PROJECT NO: 3116075	FIGURE: 4

**BENZENE CONTAMINANT  
CONCENTRATION MAP**

**CONOCO MINI MART  
CHAMA, NEW MEXICO**

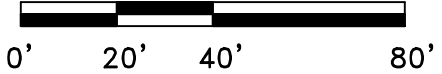




LEGEND:

- MW-11 - MONITORING WELL LOCATION
- SIGN

SCALE

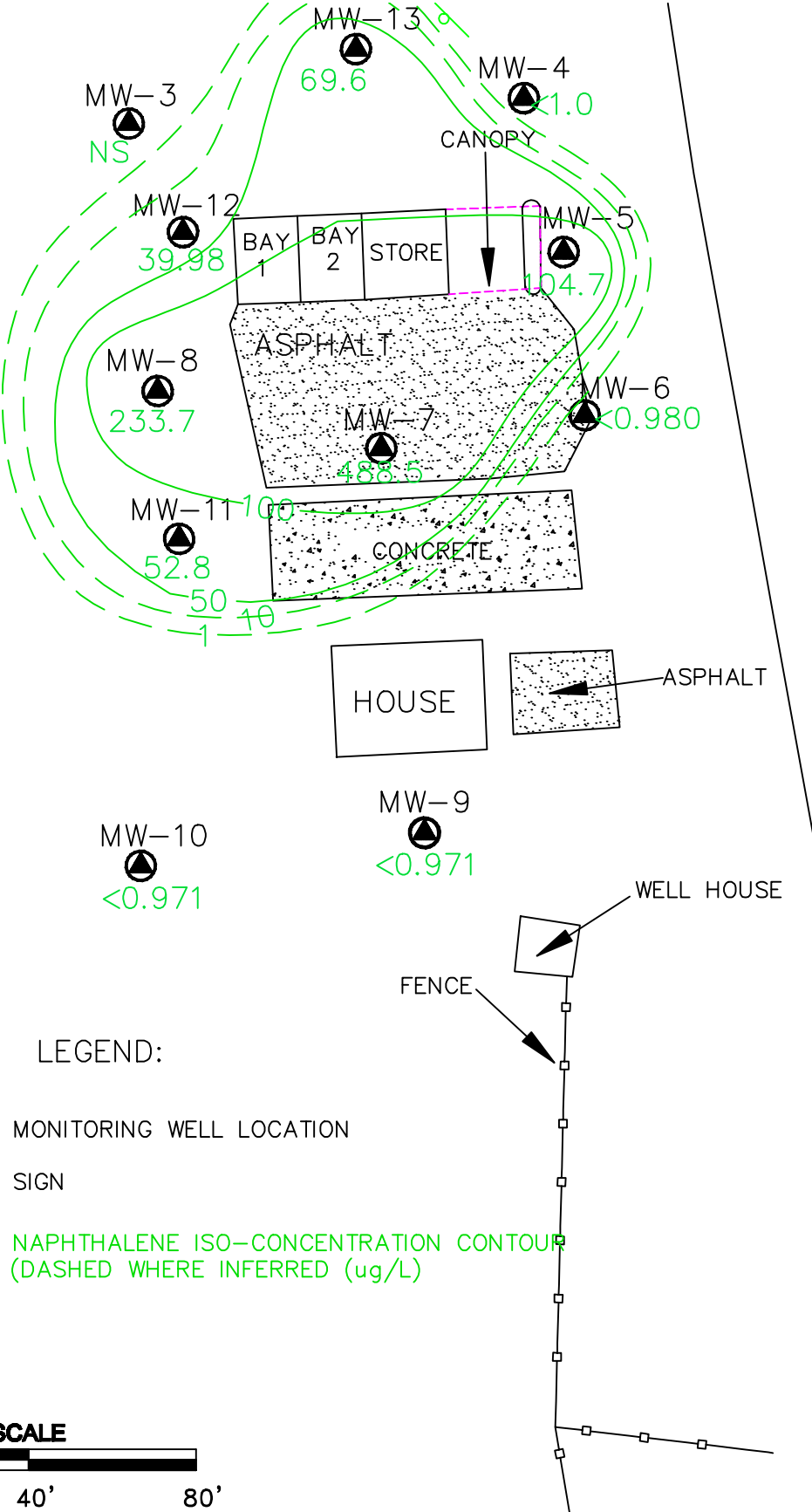


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DRAWN BY: TLONG	DATE: 4/25/07
APPROVED: RSA	DATE: 4/25/07
PROJECT NO: 3116075	FIGURE: 5

**XYLENES CONTAMINANT  
CONCENTRATION MAP**

**CONOCO MINI MART  
CHAMA, NEW MEXICO**

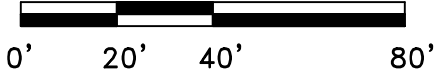




LEGEND:

- MW-11 - MONITORING WELL LOCATION
- SIGN
- NAPHTHALENE ISO-CONCENTRATION CONTOUR (DASHED WHERE INFERRED (ug/L))

SCALE



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DRAWN BY: TLONG	DATE: 4/25/07
APPROVED: RSA	DATE: 4/25/07
PROJECT NO: 3116075	FIGURE: 6

**NAPHTHALENE  
CONCENTRATION MAP**

**CONOCO MINI MART  
CHAMA, NEW MEXICO**



## Tables



**Table 1**  
**Summary of Groundwater Elevation Results**  
**Conoco Mini Mart**  
**Chama, New Mexico**

(Feet)

Monitoring Well Identification	Date	Total Depth of Well	Top of Casing	Depth to Water	Relative Water Elevation
MW-1	7/8/2005	15.00	7780.17	5.74	7774.43
	7/10/2006	14.71		5.26	7774.91
	4/4/2007	<i>DESTROYED DURING TANK PULL</i>			
MW-2	7/8/2005	15.00	7779.97	6.01	7773.96
	7/10/2006	15.75		5.78	7774.19
	4/4/2007	<i>DESTROYED DURING TANK PULL</i>			
MW-3	7/8/2005	15.50	7780.16	5.76	7774.40
	7/10/2006	15.00		6.21	7773.95
	4/4/2007	<i>UNABLE TO LOCATE</i>			
MW-4	7/8/2005	15.50	7779.55	4.40	7775.15
	7/10/2006	14.94		4.58	7774.97
	4/4/2007	14.09		2.96	7776.59
MW-5	7/8/2005	15.00	7779.02	5.76	7773.26
	7/10/2006	14.60		5.93	7773.09
	4/4/2007	14.65		3.39	7775.63
MW-6	7/8/2005	12.00	7778.61	5.63	7772.98
	7/10/2006	11.30		5.90	7772.71
	4/4/2007	11.30		3.74	7774.87

**Table 1**  
**Summary of Groundwater Elevation Results**  
**Conoco Mini Mart**  
**Chama, New Mexico**

(Feet)

Monitoring Well Identification	Date	Total Depth of Well	Top of Casing	Depth to Water	Relative Water Elevation
MW-7	7/8/2005	12.50	7779.28	6.84	7772.44
	7/10/2006	11.90		6.59	7772.69
	4/4/2007	12.00		4.79	7774.49
MW-8	7/8/2005	15.00	7779.64	7.76	7771.88
	7/10/2006	14.85		7.91	7771.73
	4/4/2007	14.95		6.71	7772.93
MW-9	4/4/2007	11.30	7777.49	4.92	7772.57
MW-10	4/4/2007	13.30	7777.61	4.88	7772.73
MW-11	4/4/2007	12.00	7778.53	4.74	7773.79
MW-12	4/4/2007	13.55	7780.28	5.75	7774.53
MW-13	4/4/2007	13.55	7780.47	5.99	7774.48
AVERAGE DEPTH TO GROUNDWATER	4.79 FEET				
AVERAGE INCREASE IN ELEVATION	1.86 Feet				

Table 2  
 Summary of Groundwater Sample Analytical Results  
 US EPA Method 8021  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-1	7/8/2005	58.0	2.1	160.0	290.0	510.1	<1.0	NA
	7/10/2006	5.8	<0.5	17.9	13.2	36.9	<1.0	NA
	4/4/2007	DESTROYED DURING TANK PULL						
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-2	7/8/2005	290.0	32.0	720.0	1800.0	2842.0	<5.0	NA
	7/10/2006	174.0	9.0	357.0	418.3	958.3	11.5	NA
	4/4/2007	DESTROYED DURING TANK PULL						
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-3	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA
	4/4/2007	UNABLE TO LOCATE						
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-4	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA
	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05



Table 2  
 Summary of Groundwater Sample Analytical Results  
 US EPA Method 8021  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-5	7/8/2005	<1.0	4.8	210.0	940.0	1154.8	<1.0	NA
	7/10/2006	<0.5	1.9	142.0	255.5	399.4	1.7	NA
	4/4/2007	1.9	0.49	195.0	282.9	478.4	<1.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-6	7/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	7/10/2006	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	NA
	4/4/2007	<2.5	<2.5	<2.5	0.87	0.87	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-7	7/8/2005	700.0	86.0	530.0	1300.0	2616.0	<10	NA
	7/10/2006	50.0	21.7	399.0	1264.0	1734.7	17.5	NA
	4/4/2007	62.6	12.00	508.0	1655.00	2237.60	23.3	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-8	7/8/2005	49.0	42.0	600.0	1600.0	2291.0	<10	NA
	7/10/2006	75.8	3.7	425.0	503.0	1007.5	44.3	NA
	4/4/2007	49.7	7.96	570.0	1126.90	1754.56	80.9	<0.018
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Table 2  
 Summary of Groundwater Sample Analytical Results  
 US EPA Method 8021  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-9	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-10	4/4/2007	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-11	4/4/2007	<b>31.1</b>	16.1	138.0	70.98	256.2	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-12	4/4/2007	<b>10.9</b>	<2.5	43.5	129.00	183.4	<5.0	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Monitoring Well Identification	Method 8021							Method 6010
	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	Lead
MW-13	4/4/2007	<b>19.7</b>	8.36	193.0	380.60	601.7	19.7	<0.009
NMWQCC and 20 NMAC 5 Standards		10.0	750.0	750.0	620.0		100.0	0.05

Notes:

Data in italics adopted from INTERA report dated 9/7/2005 (analyzed per Method 8260)  
 Method 8021 results in ug/L; Method 6010 results in mg/L  
 MTBE = Methyl Tertiary Butyl Ether  
**Red** indicates concentration exceeds standard  
 NA = Not Analyzed



Table 3  
 Summary of Groundwater Analytical Results  
 US EPA Method 8310  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-1	7/10/2006	<0.943	<0.943	<0.189	<0.0943	<0.0943	<0.132	<0.0943	<0.189	<0.189	<0.472	1.57	<0.472	<0.189	
	4/4/2007	DESTROYED DURING TANK PULL													
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	
Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-2	7/10/2006											620.00			
	4/4/2007	DESTROYED DURING TANK PULL													
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	
Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-3	7/10/2006	<0.943	<0.943	<0.189	<0.0943	<0.0943	<0.132	<0.0943	<0.189	<0.189	<0.472	<0.943	<0.472	<0.189	
	4/4/2007	UNABLE TO LOCATE													
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	
Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-4	7/10/2006	<1.0	<1.0	<0.2	<0.1	<0.1	<0.14	<0.1	<0.2	<0.2	<0.5	<1.0	<0.5	<0.2	
	4/4/2007	<1.00	<1.00	<0.2	<0.1	<0.1	<0.14	<0.1	<0.2	<0.2	<0.5	<1.0	<0.5	<0.2	
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	
Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-5	7/10/2006	<0.952	<0.952	<0.19	<0.0952	<0.0952	<0.133	0.334	<0.19	<0.19	<0.476	96.9	<0.476	<0.19	
	4/4/2007	<1.18	<1.18	<0.235	<0.118	<0.118	<0.165	<0.118	<0.235	<0.235	<0.588	104.7	<0.588	<0.235	
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	
Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-6	7/10/2006	<0.943	<0.943	<0.189	<0.0943	<0.0943	<0.132	<0.0943	<0.189	<0.189	<0.472	<0.943	<0.472	<0.189	
	4/4/2007	<0.980	<0.980	<0.196	<0.0980	<0.0980	<0.137	<0.0980	<0.196	<0.196	<0.490	<0.980	<0.490	<0.196	
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	
Monitoring Well Identification	Method 8310														
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene	
MW-7	7/10/2006	73.00	<0.943	<0.189	<0.0943	12.7	<0.132	<0.0943	<0.189	<0.189	<0.472	427.6	30.6	0.273	
	4/4/2007	71.50	<1.25	<0.250	<0.125	<0.125	<0.175	<0.125	<0.250	<0.250	6.68	488.5	19.5	<0.250	
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00	

Table 3  
 Summary of Groundwater Analytical Results  
 US EPA Method 8310  
 Conoco Mini Mart  
 Chama, New Mexico

Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-8	7/10/2006	5.73	<0.952	<0.190	<0.0952	<0.0952	<0.133	<0.0952	<0.190	<0.190	<0.476	74.1	24.5	<0.190
	4/4/2007	63.60	<0.980	<0.196	<0.0980	<0.0980	<0.137	<0.0980	<0.196	<0.196	5.44	233.70	36.6	<0.196
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-9	4/4/2007	<0.971	<0.971	<0.194	<0.0971	<0.0971	<0.136	<0.0971	<0.194	<0.194	<0.485	<0.971	<0.485	<0.194
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-10	4/4/2007	<0.971	<0.971	<0.194	<0.0971	<0.0971	<0.136	<0.0971	<0.194	<0.194	<0.485	<0.971	<0.485	<0.194
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-11	4/4/2007	24.20	<0.971	<0.194	<0.0971	<0.0971	<0.136	<0.0971	<0.190	<0.194	<0.485	52.8	15.2	1.86
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-12	4/4/2007	18.80	<0.990	<0.198	<0.099	<0.099	<0.139	<0.099	<0.198	<0.198	<0.495	39.98	18.1	<0.198
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00
Monitoring Well Identification	Method 8310													
	Date	Acenaphthene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Total Naphthalenes	Phenanthrene	Pyrene
MW-13	4/4/2007	16.90	<1.18	<0.235	<0.118	<0.118	<0.165	<0.118	<0.235	<0.235	<0.588	69.6	<0.588	<0.235
NMWQCC Standard		2200.00	11000.00	1.20	0.70	1.20	1.20	117.00	0.12	1460.00	1460.00	30.00	1100.00	1100.00

Notes:

Methods 8310 results in ug/L  
 Red indicates concentration exceeds standard

**Appendix 1**  
**Sampling Protocol**



Ground water samples were collected as established in the New Mexico Underground Storage Tank Bureau Guidelines for Corrective Action promulgated March 2000.

Water levels were measured prior to sample collection using a cleaned water level probe beginning with least contaminated, or clean monitoring wells to the most contaminated monitoring wells. Water levels of each monitoring well were recorded in field form. The water level probe was rinsed three times with distilled water prior to measuring water level in each monitoring well.

Monitoring wells were purged of three well bore volumes or until the well went dry prior to sampling. Samples collected for Method 8260 were collected in 40 ml vials, preserved with mercuric chloride, labeled with the date, time, monitoring well number, and the name of the sampler, and stored on ice. Samples collected for Method 8310 were collected in 1 L amber bottles, labeled with the date, time, monitoring well number and the name of the sampler, and stored on ice. Samples collected for Method 6010 were collected in 125 mL polypropylene bottles, labeled with the date, time, monitoring well number and the name of the sampler, and stored on ice.

Sample numbers were recorded on chain of custody forms and field notebook prior to delivery to the analyzing laboratory.

**Appendix 2**  
**Field Notes, Copies**

**Appendix 3**  
**Laboratory Results**