

**FOURTH QUARTER 2000  
GROUNDWATER MONITORING RESULTS  
B&C Gas Mini Mart  
Livermore, California**

Prepared by

Conor Pacific  
2580 Wyandotte Street, Suite G  
Mountain View, California 94043

January 2001

Project BNC 103



**Transmittal**

**To:** Ms. Eva Chu  
 Hazardous Materials Specialist  
 Alameda County Environmental  
 Health Services  
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 Alameda, CA 94502-6577

**From:** Katrin Schliewen  
**Date:** January 24, 2001  
**Proj. No.:** BNC 103

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1	Ms. Eva Chu, Alameda County Env. Health Services	
1	Ms. Carol Mahoney, Alameda County Zone 7 Water Agency	
1	Regional Water Quality Control Board, LUFT	

# Conor Pacific

January 31, 2001  
Project No. BNC103

Mr. Balaji Angle  
Angle Enterprises  
5131 Shattuck Avenue  
Oakland, California 94609

Re: Fourth Quarter 2000 Groundwater Monitoring Results, B&C Gas Mini Mart, 2008 First Street, Livermore, California (Station ID 1689)

Dear Mr. Angle:

Conor Pacific has compiled fourth quarter 2000 groundwater monitoring results for B&C Gas Mini Mart (B&C), 2008 First Street, Livermore, California (Figure 1). This report includes fourth quarter 2000 groundwater elevation data, groundwater sampling methods, and results of groundwater chemical analyses. Nine out of the sixteen on- and off-site monitoring wells are scheduled to be sampled during fourth quarter. During the fourth quarter 2000 sampling event, eight of the nine wells were sampled. Well (MS) MW-1 was not sampled since free product was observed during well purging.

## SITE INFORMATION

### Canada

Vancouver

Victoria

Calgary

Edmonton

Saskatoon

Mississauga

Toronto

Ottawa

Halifax

St. John's

### U.S.

Richmond

Mountain View

### Site Name & Contact

Mr. Balaji Angle  
B&C Gas Mini Mart  
2008 First Street  
Livermore, California 94550  
(510) 654-3461

### Site Description

The B&C property is located on the northeast corner of First and South L Streets in Livermore, California, and currently serves as a gasoline station and mini market and is called Valley Gas. From at least 1988 until 1994, Desert Petroleum (DP) owned and operated the site. In January 1994, DP sold the site to the current owner, Mr. Balaji Angle. The following site description has been compiled from reports on file with Alameda County Environmental Health Services (ACEHS) and information provided by the site owner.

The site is located in the Livermore Valley groundwater basin, an area of sedimentary deposition containing braided channel systems with complex interfingering. Subsurface investigations conducted to the west of the B&C site have found an upper unconfined

water-bearing zone consisting primarily of gravels with sand and clay. A low-permeability clayey unit is found at depths of approximately 75 to 110 feet below ground surface (bgs). Below the clayey unit, the top of a lower, semi-confined aquifer is found at depths ranging from 110 to 145 feet bgs.<sup>1</sup>

Subsurface work conducted in the B&C area has found predominantly sandy clay, silty sand, silty gravel, and sandy gravel. Over the last eleven years, static water levels have ranged from 68.7 feet bgs (January 1992) to 17.0 feet bgs (February 1997). The groundwater flow generally ranges from west of north during the summer and fall months, to north of west during the winter and spring months. Table 1 presents historical site groundwater elevations.<sup>2</sup> Table 2 summarizes all B&C monitoring well constructions.

### **Previous Work Performed at Site**

A preliminary site assessment was conducted in September 1988. Three soil borings were completed; one of which was converted to a monitoring well (MW-1). In March 1994, a 280-gallon waste oil underground storage tank (UST) and 25 cubic yards of soil were removed as part of closing the auto repair shop at the station. Three months later in June, wells MW-2, MW-3, and MW-4 were installed (Figure 2).<sup>3</sup>

In August 1994, free product was encountered in well MW-2, and product removal commenced twice a month. By the end of January 1995, no measurable thickness of product remained, only sheen could be detected.<sup>4</sup> In March 1995, a release was reported to have occurred from the union between a tank subpump and product line. The quantity of the release is unknown.

One gasoline UST at the B&C site failed an integrity test in September 1995. The tank was immediately taken out of commission and ACEHS was notified. In July 1996, further source removal was conducted. Two more gasoline USTs were removed, and new double-walled fiberglass USTs and fiberglass piping with automated leak detection were installed. Other remedial activities included the removal of two hydraulic lifts and approximately 700 cubic yards of impacted soil. Also, one 1,000-gallon UST discovered during excavation activities was closed in place with approval from ACEHS and the Livermore Fire Department by grouting with a cement sand slurry. In October 1995, two additional monitoring wells (off-site well MW-5 and well MW-6) were installed for the B&C site (Figure 2).

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<sup>1</sup> H\*GCL, Inc. Deep Groundwater Conduit Study, Livermore Arcade Shopping Center, First Street and South P Street, Livermore, California. December 6, 1993.

<sup>2</sup> Groundwater elevation and flow direction data from Remediation Service Int'l quarterly reports.

<sup>3</sup> Remediation Service Int'l. Soil & Groundwater Investigation Report for 2008 First Street, Livermore, California. July 22, 1994.

<sup>4</sup> Product thickness information from Remediation Service, Int'l field records, "Free Product Removal Logs."

Nine downgradient wells (MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, D-1, and D-2) were installed during June and July 1999 to define the downgradient and lateral extent of the plume and provide long-term monitoring locations (Figure 2).<sup>5</sup> Two of the wells, D-1 and D-2, are installed in the semi-confined aquifer below the aquitard. The other wells are installed in the upper water-bearing zone. Table 1 summarizes the well construction details for all on-site and off-site wells installed to date.

The primary constituents of concern are total petroleum hydrocarbons as gasoline (TPH-G); the aromatic compounds benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX); and methyl tertiary-butyl ether (MTBE). Since 1994, concentrations of TPH-G in groundwater have generally decreased.

#### **Interim Remedial Action at Well MW-5**

Floating product was first observed in well MW-5 on July 30, 1998 (Table 2). The well is screened from 15 feet to 40 feet bgs, and the depth to groundwater has historically ranged from 18 to 33 feet bgs, well within the screened interval of the well. Due to the presence of floating free product in well MW-5, interim remedial actions were taken to remove the floating product from the well. A passive bailer or absorbent sock was selected to remove product from well MW-5 based on well access, the thickness of the product, and the rate at which the product enters the well as it is removed.

Over the time period monitored, the absorbent socks have removed sufficient product to reduce the free product thickness to a sheen or less. In April 1999, the absorbent sock was raised above the water table. In December 1999, 0.07 feet of free product was measured in well MW-5 and the absorbent sock was replaced in the well. No free product has been measured in MW-5 since and groundwater samples have been collected.

#### **GROUNDWATER SAMPLING AND ANALYSIS**

Fourth quarter activities are reviewed below. Groundwater sampling methods and results are presented and a discussion of historical analytical trends for site monitoring wells is included.

##### **Free Product**

During the fourth quarter 2000 sampling event, Conor Pacific checked for free product in all site wells. Of the wells which previously have been reported to contain free product (Wells MW-2, MW-5, and MW-6), none contained a measurable thickness of product this quarter. Off-site well (MS)MW-1, located approximately 800 feet downgradient from the B&C site on the Mill Springs Park property, was also checked for

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<sup>5</sup> Einarson, Fowler & Watson, November 5, 1999, Report of Downgradient Investigation, B&C Gas Mini Mart, 2008 First Street, Livermore, California.

product (Figure 2). (MS)MW-1 did not contain a measurable thickness of product, however free product was observed during well purging.

### **Groundwater Elevations**

On December 7, 2000, Conor Pacific measured the depth to water in all groundwater monitoring wells. Water levels were measured to the nearest 0.01 foot using a float-activated product probe, according to Conor Pacific's standard measuring protocol,<sup>6</sup> and were recorded on a water level data sheet (Appendix A). Groundwater elevations are calculated by subtracting depth-to-water measurements from the top of well casing elevations, surveyed to Livermore City datum, mean sea level (MSL).

Table 2 summarizes available groundwater elevations from August 1990 to December 2000. A comparison of well screen elevations (Table 1) and fourth quarter measurements shows that the water levels were below the top of the well screen in wells MW-1, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and (MS)MW-1. A groundwater contour map, based on December 2000 measurements, is shown in Figure 2. Fourth quarter groundwater elevations are generally about one foot lower than the third quarter 2000. Groundwater flow was generally due west during fourth quarter 2000 and the hydraulic gradient is approximately 0.013 foot per foot. The flow direction and gradient are in accordance with previous results.

A slight vertically downward gradient was observed between the upper water-bearing zone (MW-11 and MW-12) and the semi-confined aquifer (D-1 and D-2), as has been observed during previous quarters. This may be the result of the effects of slower recharge to the deeper, semi-confined aquifer compared with more rapid recharge to the upper water-bearing zone.

### **Sampling Methods**

Conor Pacific sampled eight monitoring wells on December 7-8, 2000, following Conor Pacific's standard protocol. The fourth quarter is a regular quarterly sampling event, during which nine monitoring wells are sampled, when possible. Off-site well (MS)MW-1 was not sampled this quarter due to the presence of free product globules observed during well purging. Wells were purged using either a submersible pump or a polyvinyl chloride (PVC) bailer. Samples were collected from each well using a disposable PVC bailer. Field measurements of temperature, pH, dissolved oxygen, turbidity, and electrical conductivity were taken and recorded on water sample field data sheets (Appendix A). All purge water was contained in 55-gallon drums and stored on-site pending proper disposal. Purge water with low hydrocarbon concentrations is pumped to the sanitary sewer under City of Livermore Groundwater Discharge Permit # 1514. All samples were properly stored on the day of sampling. Chain-of-custody

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<sup>6</sup> Einarson, Fowler & Watson. Third Quarter 1998 Groundwater Monitoring Results, B&C Gas Mini Mart, Livermore, California, Appendix A. September 10, 1998.

documentation accompanied the samples through collection and delivery to the analytical laboratory.

### **Analytical Program**

All groundwater analyses were performed by Sequoia Analytical of Petaluma, California, a state-certified laboratory. All groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) by U.S. Environmental Protection Agency (EPA) Method 8015M and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary-butyl ether (MTBE) by EPA Method 8020M. At the request of the ACEHS, the groundwater sample collected from MW-5 was also analyzed by EPA Method 8260B for seven oxygenates including MTBE. Laboratory analyses occurred within specified holding times and within laboratory quality control standards. The certified analytical report is located in Appendix A.

### **Analytical Results**

Over the last seven years of monitoring at the site, concentrations of benzene have steadily decreased in all site wells. Analysis of site groundwater samples for MTBE began in June 1995. Since then, concentrations of MTBE have decreased significantly. During the fourth quarter 2000, all hydrocarbon concentrations were lower this quarter than during the previous quarter with the exception of MTBE in well MW-5 which increased slightly. Seasonal changes in hydrocarbon concentrations have been evident during the past fourth quarters, probably a reflection of seasonal water level fluctuations. The highest hydrocarbon concentrations appear to be related to relatively lower water levels generally measured during the third quarter. Table 3 presents a historical summary of groundwater analytical results from the B&C site. Fourth quarter 2000 analytical results for benzene and MTBE are also presented on Figure 3.

#### Site Wells

Only one of the five wells located on the B&C Gas Mini Mart property was sampled during the fourth quarter 2000, namely MW-2. Hydrocarbon concentrations measured in the groundwater sample collected from MW-2 are significantly lower this quarter than they were in September 2000. During this quarter, TPH-G was detected at 8,010 micrograms per liter ( $\mu\text{g/L}$ ), BTEX compounds were detected at 548  $\mu\text{g/L}$ , 172  $\mu\text{g/L}$ , 453  $\mu\text{g/L}$ , and 621  $\mu\text{g/L}$ , respectively. The concentration of MTBE was measured at 142  $\mu\text{g/L}$ .

#### Downgradient Wells

Seven of the eight downgradient wells were sampled during fourth quarter. Off-site well (MS)MW-1 was not sampled due to the presence of product in the bailer during well purging. In general, hydrocarbon concentrations in groundwater samples collected from these wells during the fourth quarter 2000 were significantly lower than during the previous sampling event. The only exception is well MW-5 where the concentration of MTBE was somewhat higher this quarter than in the previous quarter.

Well MW-5, located 75 feet downgradient of the site, was sampled this quarter because no free product was measured in the well. The concentration of TPH-G (21,700 µg/L) was almost half that detected during third quarter 2000. The concentrations of the BTEX compounds also were lower than during third quarter 2000, detected at concentrations of 600 µg/L, 328 µg/L, 527 µg/L, and 1,450 µg/L, respectively. The concentration of MTBE in the groundwater sample collected during fourth quarter 2000 is somewhat higher this quarter than was measured during the previous quarter. The MTBE result reported in Table 3 (285 µg/L) was obtained using EPA Method 8260B for oxygenates and was approximately 10% lower than the MTBE concentration obtained from EPA Method 8020 (321 µg/L). No other oxygenates analyzed by EPA Method 8260B were detected in the groundwater sample collected from well MW-5. However, it should be noted that the reporting limits are elevated because the sample was diluted due to the presence of high levels of non-target analytes.

Well MW-7 is located on the Mill Springs Park Apartments property approximately 550 feet downgradient from the site. No hydrocarbons were detected this quarter. This is the first time that all hydrocarbon concentrations were below the detection limits for well MW-7. Concentrations have been decreasing since the well was first sampled in July 1999.

Well MW-8, located on Railroad Avenue at the Bank of America building contained only a low concentration of MTBE (7.83 µg/L) during this quarter. This MTBE concentration is lower than was detected during third quarter 2000 (14.3 µg/L) although it is not a historical low concentration (4.65 µg/L).

Well MW-13, located on Railroad Avenue east of the Bank of America, contained benzene (1.51 µg/L) and MTBE (25.0 µg/L). Both of these detections are historical low concentrations for well MW-13.

Well (MS)MW-1, located approximately 800 feet downgradient from the B&C site, was not sampled during fourth quarter 2000 because free product was observed in the PVC bailer during well purging.

No TPH-G, BTEX compounds, or MTBE were detected in downgradient wells MW-10, MW-12, and D-2. These results are consistent with historical results from these wells.

## **SUMMARY**

The fourth quarter 2000 was a regular quarterly sampling event where nine of the sixteen on- and off-site wells are sampled, when possible. Eight of the nine monitoring wells were sampled this quarter. The fourth quarter 2000 groundwater monitoring results are consistent with previous monitoring results. Hydrocarbon concentrations were lower in all cases than during the third quarter 2000, with the exception of the MTBE result in well MW-5. These results confirm a trend of generally decreasing hydrocarbon concentrations. The furthest downgradient detection of a hydrocarbon is MTBE detected



Mr. Balaji Angle  
January 31, 2001  
Page 7

at 7.83  $\mu\text{g/L}$  in well MW-8, approximately 1,200 feet from the site. This generally is consistent with results during 1999 and 2000.

### **FUTURE WORK**

At the request of the ACEHS, Conor Pacific submitted a workplan proposing the installation of two additional groundwater monitoring wells to better delineate the extent of the MTBE and BTEX plume.<sup>7</sup> The ACEHS approved the workplan in January 2001.<sup>8</sup> The work will begin after obtaining approval of the cost estimate from the Underground Storage Tank Fund, which is expected to occur during the first quarter 2001.

First quarter 2001 groundwater monitoring currently is scheduled for March 2001.

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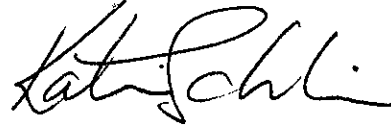
<sup>7</sup> Conor Pacific. Workplan Addendum for Additional Downgradient Investigation, B&C Gas Mini Mart, 2008 First Street, Livermore, California. January 2, 2001.

<sup>8</sup> Alameda County Health Care Services. Letter re: Workplan Approval for B&C Gas Mini Mart, 2008 1<sup>st</sup> Street, Livermore, California. January 5, 2001.

Mr. Balaji Angle  
January 31, 2001  
Page 8

If you have any questions regarding this report, please call us at (650) 386-3828.

Sincerely,  
Conor Pacific



Katrin Schliwen  
Project Hydrogeologist



Mark Smolley, RG 4650  
Senior Geologist

Attachments:

Tables

- Table 1 - Summary of Groundwater Elevations
- Table 2 - Monitoring Well Constructions
- Table 3 - Historical Groundwater Analytical Results

Figures

- Figure 1 - Site Location
- Figure 2 - Well Locations and Groundwater Contours (December 2000)
- Figure 3 - Groundwater Chemistry (December 2000)

Appendices

- Appendix A - Water Sample Field Data Sheets and Certified Analytical Reports

cc: Eva Chu, Alameda County Environmental Health Services  
Ms. Carol Mahoney, Alameda Co. Flood Control and Water Cons. District Zone 7  
Regional Water Quality Control Board, San Francisco Bay Region LUFT  
State Water Resources Control Board, UST Fund

Table 1  
Monitoring Well Constructions  
B&C Gas Mini Mart  
Livermore, California

Well No.	Drilling Method	Date Installed	T.D. Boring (ft.-bgs)	T.D. Well (ft.-bgs)	Borehole Diameter (inches)	Casing Material (PVC)	Casing Diameter (inches)	Screen Size (inches)	Sand Pack Material	Screened Interval (ft.-bgs)	Sand Pack Interval (ft.-bgs)
MW-1	HSA	Sep-88	77	77	8	PVC	2	0.020	#3 sand	27 - 77	25 - 77
MW-2	HSA	Jun-94	60	60	10	PVC	4	0.020	#2/20 sand	30 - 60	27 - 60
MW-3	HSA	Jun-94	60	60	10	PVC	4	0.020	#2/20 sand	30 - 60	27 - 60
MW-4	HSA	Jun-94	60	60	10	PVC	4	0.020	#2/20 sand	30 - 60	27 - 60
MW-5	HSA	Oct-95	42	40	10	PVC	4	0.020	#2 sand	15 - 40	12 - 40
MW-6	HSA	Oct-95	42	40	10	PVC	4	0.020	#2 sand	15 - 40	12 - 40
MW-7	HSA	Jun-99	62	49	8	PVC	2	0.020	#3 sand	29-49	27-51
MW-8	HSA	Jun-99	62	54	8	PVC	2	0.020	#3 sand	34-54	32-54
MW-9	HSA	Jun-99	45	45	8	PVC	2	0.020	#3 sand	25-45	23-45
MW-10	HSA	Jun-99	55	53.5	8	PVC	2	0.020	#3 sand	33.5-53.5	23-55
MW-11	HSA	Jun-99	50	49	8	PVC	2	0.020	#3 sand	29-49	27-49
MW-12	HSA	Jun-99	45	43.5	8	PVC	2	0.020	#3 sand	23.5-43.5	21-45
MW-13	HSA	Jul-99	55	55	8	PVC	2	0.020	#3 sand	35-55	32-55
D-1	HSA	Jun-99	125	125	8	PVC	2	0.020	#3 sand	110-125	104-125
D-2	HSA	Jun-99	115	114	8	PVC	2	0.020	#3 sand	99-114	94-114
(MS)MW-1	HSA	Apr-89	62	60	NA	PVC	2	NA	NA	30-60	NA

HSA      Hollow-Stem Auger  
T.D.      Total Depth  
ft -bgs    feet below ground surface  
NA        Not available

Well construction information for wells MW-2 through MW-6 collected from Remediation Service Int'l boring logs.

Table 2  
Summary of Groundwater Elevations  
B & C Gas Mini Mart  
Livermore, California

Well Number	Top-of-Casing Elevation (feet, MSL)	Date Measured	Depth to Water (feet)	Groundwater Elevation (feet, MSL)	Depth to Free product (feet)	Product Thickness (feet)
MW-1	487.00	09/22/88	60.50	426.50		
		08/02/90	43.10	443.90		
		10/10/91	66.39	420.61		
		01/08/92	68.72	418.28		
		05/11/93	34.76	452.24		
		09/21/93	38.70	448.30		
		05/22/94	33.57	453.43		
		06/19/94	37.51	446.56		
		08/25/94	43.27	440.80		
		11/22/94	40.58	443.49		
	484.07	03/13/95	28.06	456.01		
		06/01/95	21.76	462.31		
		02/29/96	18.86	465.21		
		Feb-97	NM	NM		
		07/30/98	25.90	458.17		
		11/05/98	33.23	450.84		
		03/23/99	25.49	458.58		
		06/08/99	27.78	456.29		
		09/27/99	30.65	453.42		
		12/20/99	32.99	451.08		
MW-2	483.86	03/21/00	23.95	460.12		
		06/21/00	26.55	457.52		
		09/12/00	29.58	454.49		
		12/07/00	30.70	453.37		
		06/19/94	38.15	445.71		
		08/25/94	44.13	-	43.47	0.66
		11/22/94	40.96	-	40.92	0.04
		03/09/95	29.28	-	28.47	0.81
		03/13/95	28.71	-	28.29	0.42
		06/01/95	22.61	461.25		
		02/29/96	20.05	463.81		
		Feb-97	18.30	465.56		
		07/30/98	25.75	-	25.74	0.01
		11/05/98	33.31	450.55		
03/23/99	25.51	458.35				
06/08/99	27.54	456.32				
09/27/99	30.73	453.13				
12/20/99	33.02	450.84				
03/21/00	24.13	459.73				
06/21/00	26.26	457.60				
09/12/00	29.40	454.46				
12/08/00	30.60	453.26				

Table 2  
 Summary of Groundwater Elevations  
 B & C Gas Mini Mart  
 Livermore, California

Well Number	Top-of-Casing Elevation (feet, MSL)	Date Measured	Depth to Water (feet)	Groundwater Elevation (feet, MSL)	Depth to Free product (feet)	Product Thickness (feet)
MW-3	484.24	06/19/94	37.15	447.09		
		08/25/94	42.31	441.93		
		11/22/94	40.07	444.17		
		03/13/95	27.94	456.30		
		06/01/95	21.31	462.93		
		02/29/96	18.78	465.46		
		Feb-97	16.97	467.27		
		07/30/98	24.88	459.36		
		11/05/98	32.09	452.15		
		03/23/99	24.49	459.75		
		06/08/99	26.77	457.47		
		09/27/99	29.52	454.72		
		12/20/99	31.85	452.39		
		03/21/00	22.95	461.29		
		06/21/00	25.60	458.64		
09/12/00	28.40	455.84				
12/07/00	29.56	454.68				
MW-4	485.04	06/19/94	37.49	447.55		
		08/25/94	42.25	442.79		
		11/22/94	40.59	444.45		
		03/13/95	28.00	457.04		
		06/01/95	21.51	463.53		
		02/29/96	18.42	466.62		
		Feb-97	17.47	467.57		
		07/30/98	25.47	459.57		
		11/05/98	32.67	452.37		
		03/23/99	25.09	459.95		
		06/08/99	27.43	457.61		
		09/27/99	30.16	454.88		
		12/20/99	32.52	452.52		
		03/21/00	23.43	461.61		
		06/21/00	26.14	458.90		
09/12/00	29.03	456.01				
12/07/00	29.15	455.89				
MW-5	481.97	02/29/96	19.35	462.62		
		Feb-97	18.19	463.78		
		07/30/98	25.25	456.72	25.24	0.01
		11/05/98	32.70	449.27	32.48	0.22
		03/23/99	25.15	456.82		
		06/08/99	27.27	454.70		
		09/27/99	30.00	451.97		
		12/20/99	32.30	449.67	32.23	0.07
		03/21/00	23.55	458.42		
		06/21/00	26.04	455.93		
		09/12/00	28.90	453.07		
		12/07/00	29.89	452.08		

Table 2  
 Summary of Groundwater Elevations  
 B & C Gas Mini Mart  
 Livermore, California

Well Number	Top-of-Casing Elevation (feet, MSL)	Date Measured	Depth to Water (feet)	Groundwater Elevation (feet, MSL)	Depth to Free product (feet)	Product Thickness (feet)
MW-6	483.93	02/29/96	20.32	463.61	25.58	0.01
		Feb-97	18.92	465.01		
		07/30/98	25.59	458.34		
		11/05/98	NM >28.4	NM		
		03/23/99	25.43	458.50		
		06/08/99	27.43	456.50		
		09/27/99	NM >28.6	NM		
		12/20/99	NM >28.7	NM		
		03/21/00	24.02 *	459.91		
		06/21/00	26.04 *	457.89		
		09/12/00	NM >28.7	NM		
		12/07/00	NM >28.6	NM		
MW-7	478.14	7/12/99	28.37	449.77		
		09/27/99	30.20	447.94		
		12/20/99	32.44	445.70		
		03/21/00	24.18	453.96		
		06/21/00	26.70	451.44		
		09/12/00	29.28	448.86		
		12/07/00	30.23	447.91		
MW-8	473.23	7/12/99	34.29	438.94		
		09/27/99	37.11	436.12		
		12/20/99	39.79	433.44		
		03/21/00	29.10	444.13		
		06/21/00	31.90	441.33		
		09/12/00	35.75	437.48		
		12/07/00	36.88	436.35		
MW-9	477.08	7/12/99	30.71	446.37		
		09/27/99	32.61	444.47		
		12/20/99	34.99	442.09		
		03/21/00	26.75	450.33		
		06/21/00	29.28	447.80		
		09/12/00	31.65	445.43		
		12/07/00	32.67	444.41		
MW-10	471.42	7/12/99	34.60	436.82		
		09/27/99	37.62	433.80		
		12/20/99	40.04	431.38		
		03/21/00	29.50	441.92		
		06/21/00	32.19	439.23		
		09/12/00	36.19	435.23		
		12/07/00	37.24	434.18		
MW-11	464.93	7/12/99	31.00	433.93		
		09/27/99	33.83	431.10		
		12/20/99	35.91	429.02		
		03/21/00	26.41	438.52		
		06/21/00	28.79	436.14		
		09/12/00	32.56	432.37		
		12/07/00	33.40	431.53		

Table 2  
Summary of Groundwater Elevations  
B & C Gas Mini Mart  
Livermore, California

Well Number	Top-of-Casing Elevation (feet, MSL)	Date Measured	Depth to Water (feet)	Groundwater Elevation (feet, MSL)	Depth to Free product (feet)	Product Thickness (feet)
MW-12	458.34	7/12/99	25.50	432.84		
		09/27/99	28.28	430.06		
		12/20/99	30.26	428.08		
		03/21/00	20.70	437.64		
		06/21/00	23.11	435.23		
		09/12/00	27.04	431.30		
		12/07/00	27.67	430.67		
MW-13	474.79	7/12/99	30.65	444.14		
		09/27/99	32.74	442.05		
		12/20/99	34.98	439.81		
		03/21/00	26.03	448.76		
		06/21/00	28.74	446.05		
		09/12/00	31.62	443.17		
		12/07/00	32.71	442.08		
D-1	464.70	7/12/99	30.67	434.03		
		09/27/99	35.32	429.38		
		12/20/99	36.32	428.38		
		03/21/00	27.84	436.86		
		06/21/00	30.40	434.30		
		09/12/00	34.11	430.59		
		12/07/00	33.97	430.73		
D-2	457.61	7/12/99	25.72	431.89		
		09/27/99	28.44	429.17		
		12/20/99	29.40	428.21		
		03/21/00	20.91	436.70		
		06/21/00	23.56	434.05		
		09/12/00	27.23	430.38		
		12/07/00	27.98	429.63		
(MS)MW-1	477.79	07/30/98	30.37	447.42	30.35	0.02
		11/05/98	38.01	439.78	(1)	
		03/23/99	29.44	448.35	(1)	
		06/08/99	31.70	446.09	(1)	
		09/27/99	34.38	443.41		
		12/20/99	37.36	440.43		
		03/21/00	28.22	449.57		
		06/21/00	30.95	446.84		
		09/12/00	33.54	444.25		
		12/07/00	34.56	443.23		

Notes: Data prior to 1998 from RSI quarterly reports. February 1997 date unknown  
MSL = mean sea level  
NM = not measured  
MS = Mill Springs Park  
(1) - free product visible in purge or sample water  
\* Obstruction in well MW-6 at approximately 28.6 feet below top of casing, or as indicated by ">"  
\*\* Suspect a measurement error for the water level in well MW-2 on 12/7/00

Table 3  
 Historical Groundwater Analytical Results  
 B&C Gas Mini Mart  
 Livermore, California

Well No.	Sample Date	TPH-G (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-1	Aug-90	24,000	1,300	1,300	400	2,700	NA
	Oct-91	2,000	430	170	100	290	NA
	Jan-92	1,000	200	120	30	150	NA
	May-93	960	66	8	41	90	NA
	Sep-93	1,900	311	118	34	112	NA
	May-94	10,000	690	1,100	340	1,200	NA
	Aug-94	13,000	290	690	120	670	NA
	Nov-94	19,000	400	770	230	130	NA
	Mar-95	6,000	900	100	980	740	NA
	Jun-95	2,400	210	380	53	280	13,000
	Sep-95	7,800	69	1,300	220	1,200	2,000
	Feb-96	120	4.2	1.4	4.7	5.6	14
	Feb-97	NS*	NS*	NS*	NS*	NS*	NS*
	Jul-98	1,400	26	110	57	243	5
	Nov-98	6,000	230	330	240	1,060	<100
	Mar-99	6,600	280	420	240	990	60
	Jun-99	1,630	70	52	55	138	67
	Dec-99	NS	NS	NS	NS	NS	NS
	Mar-00	300	17.6	14.2	9.89	40.7	7.84
	Jun-00	NS	NS	NS	NS	NS	NS
Sep-00	1,500	105	50.7	46.5	157	45.4	
Dec-00	NS	NS	NS	NS	NS	NS	
MW-2	Jun-94	290,000	18,000	36,000	4,600	26,000	NA
	Aug-94	NS**	NS**	NS**	NS**	NS**	NA
	Nov-94	NS**	NS**	NS**	NS**	NS**	NA
	Mar-95	NS**	NS**	NS**	NS**	NS**	NA
	Jun-95	25,000	2,300	3,400	720	3,100	16,000
	Sep-95	NS**	NS**	NS**	NS**	NS**	NS**
	Feb-96	57,000	2,500	650	3,700	3,100	6,500
	Feb-97	20,000	860	1,500	480	1,000	1,300
	Jul-98	NS**	NS**	NS**	NS**	NS**	NS**
	Nov-98	40,000	2,400	2,500	2,100	7,200	1,200
	Mar-99	22,000	780	880	780	1,730	300
	Jun-99	11,200	352	454	540	639	343
	Sep-99	18,000	992	331	901	2,140	225
	Dec-99	19,200	1,340	818	1,050	2,130	579
	Mar-00	6,340	281	184	233	348	90.2
	Jun-00	5,820	128	94.4	155	161	67.8
	Sep-00	18,100	981	926	1,080	2,630	239
	Dec-00	8,010	548	172	453	621	142



Table 3  
 Historical Groundwater Analytical Results  
 B&C Gas Mini Mart  
 Livermore, California

Well No.	Sample Date	TPH-G (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-3	Jun-94	11,000	640	580	270	790	NA
	Aug-94	41,000	1,600	2,300	330	1,800	NA
	Nov-94	18,000	8,000	10,000	900	5,000	NA
	Mar-95	44,000	1,600	1,300	5,000	6,600	NA
	Jun-95	15,000	600	1,900	490	2,600	4,200
	Sep-95	8,000	710	1,100	180	870	2,700
	Feb-96	13,000	260	200	200	1,100	1,500
	Feb-97	11,000	260	550	170	600	900
	Jul-98	25,000	330	1,200	490	1,860	300
	Nov-98	26,000	400	2,100	820	3,600	300
	Mar-99	6,900	100	160	110	265	220
	Jun-99	1,210	5.4	9.0	6.9	4.3	53.3
	Dec-99	NS	NS	NS	NS	NS	NS
	Mar-00	465	4.56	1.87	6.20	7.45	15.5
	Jun-00	NS	NS	NS	NS	NS	NS
	Sep-00	488	37.3	5.64	7.25	15.9	160
Dec-00	NS	NS	NS	NS	NS	NS	
MW-4	Jun-94	810	12	25	<0.5	22	NA
	Aug-94	850	37	51	9.5	35	NA
	Nov-94	1,700	110	110	5.8	58	NA
	Mar-95	1,300	180	8	52	77	NA
	Jun-95	ND	3	1	ND	1	ND
	Sep-95	<50	0.7	<0.5	<0.5	<0.5	<2.5
	Feb-96	87	<0.5	<0.5	<0.5	<0.5	<0.5
	Feb-97	<50	<0.5	<0.5	<0.5	<0.5	2.9
	Jul-98	<50	<0.4	0.6	<0.3	0.8	<5
	Nov-98	<50	0.7	<0.3	<0.3	<0.8	27
	Mar-99	<50	<0.4	<0.3	<0.3	<0.8	<5
	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	<2
	Dec-99	NS	NS	NS	NS	NS	NS
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	NS	NS	NS	NS	NS	NS
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
Dec-00	NS	NS	NS	NS	NS	NS	
MW-5	Oct-95	120,000	16,000	26,000	3,100	15,000	39,000
	Feb-96	47,000	3,400	4,200	860	4,100	20,000
	Feb-97	28,000	1,300	1,500	480	1,000	2,200
	Jul-98	47,000	1,400	4,000	2,000	8,500	600
	Nov-98	NS**	NS**	NS**	NS**	NS**	NS**
	Mar-99	36,000	1,500	2,400	1,500	5,500	900
	Jun-99	34,500	722	1,980	1,720	7,170	765
	Sep-99	49,100	540	2,500	1,730	8,040	255
	Dec-99	NS**	NS**	NS**	NS**	NS**	NS**
	Mar-00	10,700	217	300	332	1,480	160
	Jun-00	23,000	537	533	1,040	2,590	131***
	Sep-00	41,300	780	551	1,140	3,390	243***
	Dec-00	21,700	600	328	527	1,450	285***

Table 3  
 Historical Groundwater Analytical Results  
 B&C Gas Mini Mart  
 Livermore, California

Well No.	Sample Date	TPH-G (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-6	Oct-95	110,000	9,900	22,000	3,200	17,000	47,000
	Feb-96	23,000	2,000	460	2,900	2,600	6,300
	Feb-97	12,000	450	780	200	590	790
	Jul-98	NS**	NS**	NS**	NS**	NS**	NS**
	Nov-98	NS*	NS*	NS*	NS*	NS*	NS*
	Mar-99	5,700	240	260	120	440	150
	Jun-99	7,610	259	334	283	567	275
	Dec-99	NS	NS	NS	NS	NS	NS
	Mar-00	10,100	276	170	200	673	159
	Jun-00	NS	NS	NS	NS	NS	NS
	Sep-00	NS	NS	NS	NS	NS	NS
	Dec-00	NS	NS	NS	NS	NS	NS
MW-7	Jul-99	5,090	31.9	4.8	60	219	43.6
	Sep-99	2,160	2.8	8.2	5.9	27.3	14.0
	Dec-99	2,630	<2.5	<2.5	13.8	44.9	26.3
	Mar-00	624	<0.5	<0.5	<0.5	1.61	3.87
	Jun-00	435	<0.5	<0.5	0.875	1.28	4.87
	Sep-00	327	<0.5	<0.5	0.602	1.56	3.77
	Dec-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	88.5
	Sep-99	<50	<0.5	<0.5	<0.5	<0.5	52
	Dec-99	<50	<0.5	<0.5	<0.5	<0.5	47.3
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	4.65
	Jun-00	<50	<0.5	<0.5	<0.5	<0.5	5.56
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	14.3
	Dec-00	<50	<0.5	<0.5	<0.5	<0.5	7.83
MW-9	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	<2
	Dec-99	NS	NS	NS	NS	NS	NS
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	NS	NS	NS	NS	NS	NS
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-00	NS	NS	NS	NS	NS	NS
MW-10	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	<2
	Sep-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-99	<50	<0.5	<0.5	<0.5	<0.5	46.5
	Mar-00	52.7	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-11	Jun-99	91	0.7	2.0	1.1	2.6	<2
	Sep-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	NS	NS	NS	NS	NS	NS
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-00	NS	NS	NS	NS	NS	NS

Table 3  
 Historical Groundwater Analytical Results  
 B&C Gas Mini Mart  
 Livermore, California

Well No.	Sample Date	TPH-G (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
MW-12	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	<2
	Sep-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-13	Jul-99	214	42.8	<0.5	4.5	<0.5	332
	Sep-99	<100	5.8	<1	<1	<1	160
	Dec-99	71	6.7	<0.5	1.4	<0.5	132
	Mar-00	<50	2.32	<0.5	<0.5	<0.5	53.5
	Jun-00	<50	7.83	<0.5	0.732	<0.5	38.8
	Sep-00	<50	6.01	<0.5	<0.5	<0.5	77.4
	Dec-00	<50	1.51	<0.5	<0.5	<0.5	25.0
D-1	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	<2
	Sep-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	NS	NS	NS	NS	NS	NS
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-00	NS	NS	NS	NS	NS	NS
D-2	Jun-99	<50	<0.5	<0.5	<0.5	<0.5	<2
	Sep-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-99	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Mar-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Jun-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Sep-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	Dec-00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
(MS)MW-1	Aug-95	11,000	190	260	110	900	210
	Jul-98	NS**	NS**	NS**	NS**	NS**	NS**
	Nov-98	10,000	260	120	500	1,100	200
	Mar-99	NS**	NS**	NS**	NS**	NS**	NS**
	Jun-99	NS**	NS**	NS**	NS**	NS**	NS**
	Dec-99	661	9.7	3.5	21.7	31.1	7.2
	Mar-00	NS**	NS**	NS**	NS**	NS**	NS**
	Jun-00	NS**	NS**	NS**	NS**	NS**	NS**
	Sep-00	NS**	NS**	NS**	NS**	NS**	NS**
	Dec-00	NS**	NS**	NS**	NS**	NS**	NS**

ug/l = micrograms per liter

TPH-G = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

MS = Mill Springs Park

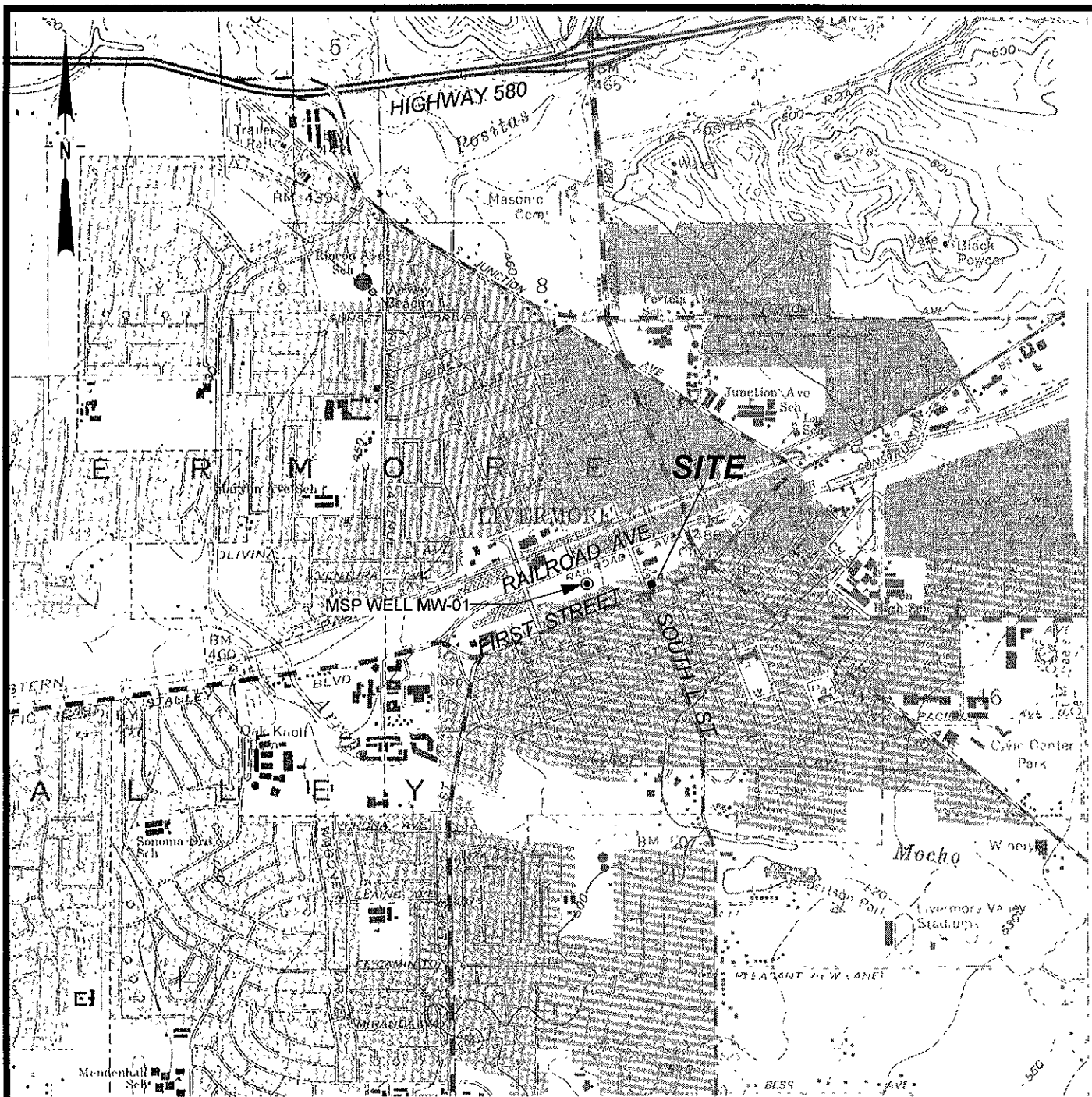
NA= not analyzed    NS= not sampled

\* = well inaccessible    \*\* = free product hydrocarbon present

\*\*\* = analytical result from EPA method 8260B

ND = not detected above reporting limit, limit not available

< = less than method reporting limit



Base map: USGS 7.5' topography, Livermore, California (1961; photorevised 1980)

SCALE: 0 2,000 4,000 FEET



VBNC/103/FIGURES/SITELOC.DSF 4/22/99

**Conor Pacific**



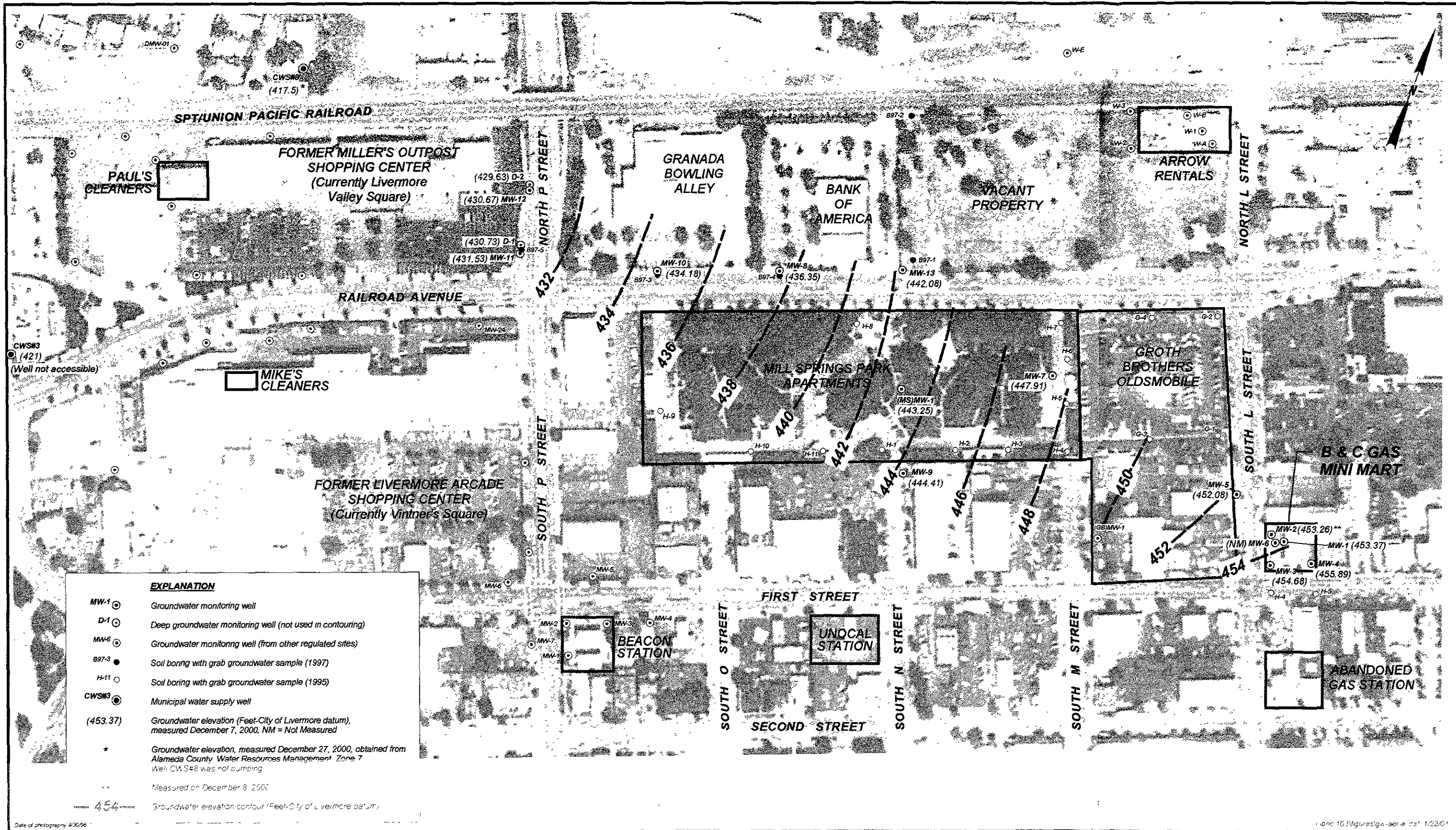
GROUNDWATER MONITORING  
B & C GAS MINI MART  
LIVERMORE, CALIFORNIA

SITE LOCATION MAP

FIGURE

**1**

PROJECT NO.  
BNC103



**EXPLANATION**

- MW-1 (●) Groundwater monitoring well
- D-1 (⊙) Deep groundwater monitoring well (not used in contouring)
- MW-6 (⊙) Groundwater monitoring well (from other regulated sites)
- B97-3 (●) Soil boring with grab groundwater sample (1997)
- H-11 (○) Soil boring with grab groundwater sample (1995)
- CWS#3 (●) Municipal water supply well
- (453.37) Groundwater elevation (Feet-City of Livermore datum), measured December 7, 2000, NM = Not Measured
- \* Groundwater elevation, measured December 27, 2000, obtained from Alameda County Water Resources Management Zone 7. Well CWS#8 was not pumping.
- \*\* Measured on December 8, 2000.
- Groundwater elevation contour (Feet-City of Livermore datum)

Date of photography 4/30/96

(and 103figures\gw-aerial.cs\* 1/22/01



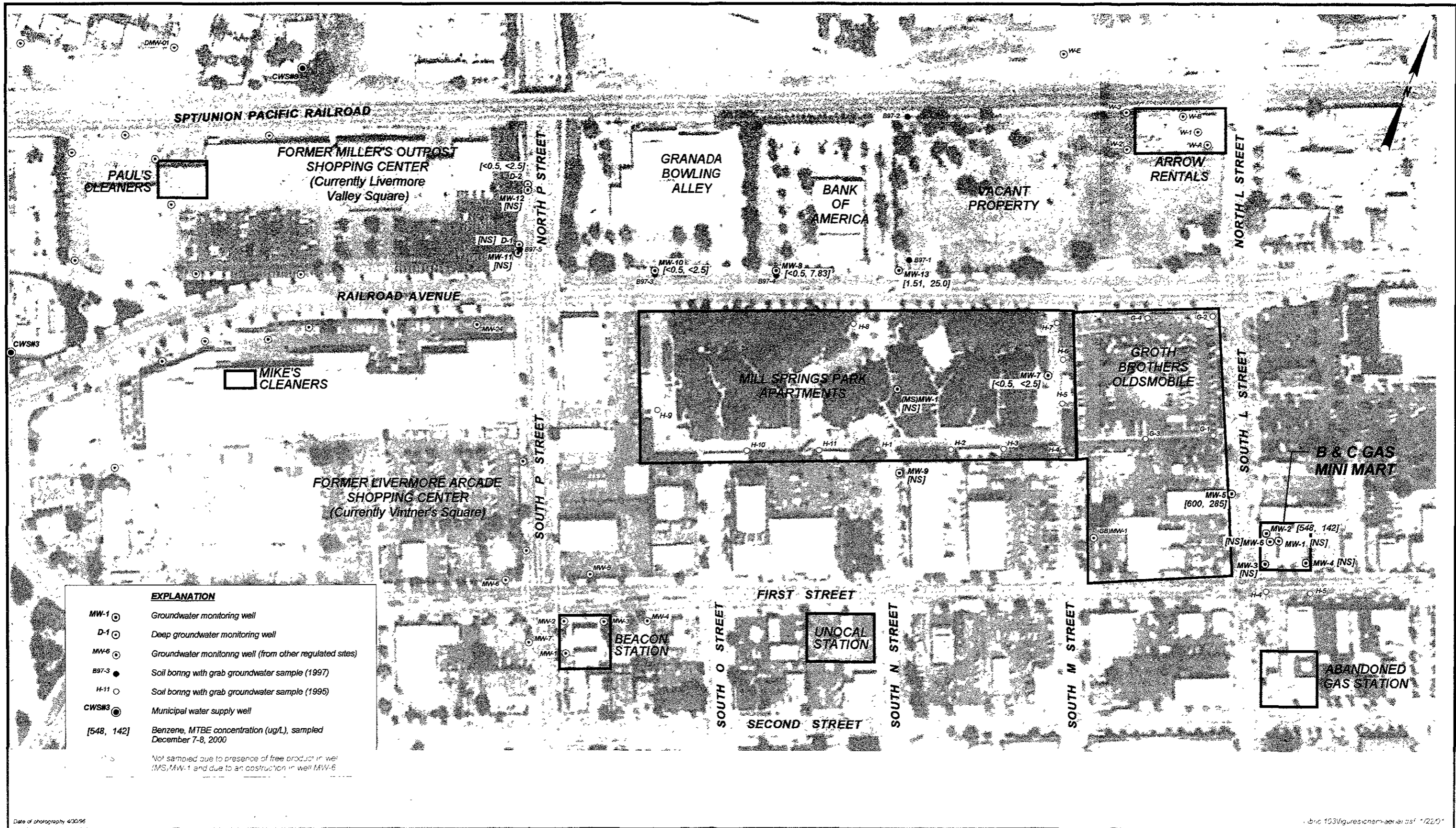
GROUNDWATER MONITORING  
B & C GAS MINI MART  
LIVERMORE CALIFORNIA

WELL LOCATIONS AND GROUNDWATER CONTOURS (DECEMBER 2000)

FIGURE  
**2**

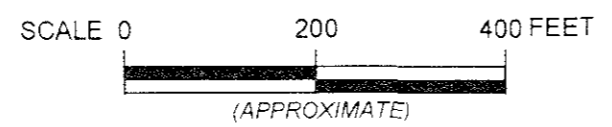
PROJECT NO  
BNC103





**EXPLANATION**

- MW-1 ○ Groundwater monitoring well
- D-1 ○ Deep groundwater monitoring well
- MW-6 ○ Groundwater monitoring well (from other regulated sites)
- B97-3 ● Soil boring with grab groundwater sample (1997)
- H-11 ○ Soil boring with grab groundwater sample (1995)
- CWSM3 ○ Municipal water supply well
- [548, 142] Benzene, MTBE concentration (ug/L), sampled December 7-8, 2000
- [NS] Not sampled due to presence of free product in well (MS, MW-1 and due to an obstruction in well MW-6)



GROUNDWATER MONITORING  
 B & C GAS MINI MART  
 LIVERMORE CALIFORNIA  
 GROUNDWATER CHEMISTRY (DECEMBER 2000)

FIGURE  
**3**  
 PROJECT NO  
 BNC103

WATER LEVEL DATA SHEET

Conor Pacific/EFW

Project: B&C Gas Mini Mart  
 Project No.: BNC103  
 Date(s): 12/7/00  
 Name: K. Brodrick, N. Marks  
 Weather: Partly Cloudy Sounder #: S, KECK

Well	Date	DTP (TOC)	DTPW (TOC)	Total Depth	Meas. By	Comments
MW-1	12/8/00	N/D	30.70	75.2	NEM	<p>← Assumed to be invalid measurement, should be 30.35 instead</p> <p>Obstructed at 20.55'</p> <p>Measurement taken on 12/8/00 was 30.6'0"</p> <p>M. S. 1/19/01</p>
MW-2	↓	↓	20.35		↓	
MW-3	↓	↓	29.56	51.6	↓	
MW-4	↓	↓	29.15	59.9	↓	
MW-5	↓	↓	29.09	39.7	Wm	
MW-6	↓	↓	20.55	NM	NEM	
MW-7	↓	↓	30.23	49.3	↓	
MW-8	↓	↓	30.00	53.3	↓	
MW-9	↓	↓	32.67	43.9	↓	
MW-10	↓	↓	37.24	53.0	↓	
MW-11	↓	↓	33.40	40.9	KB	
MW-12	↓	↓	27.67	43.3	↓	
MW-13	↓	↓	32.71	54.2	NEM	
D-1	↓	↓	33.97	124.0	KB	
D-2	↓	↓	27.90	111.1	↓	
MS MW01	↓	↓	34.56	NM	NEM	









LOCATION: B7C Gas Mini Mart

SAMPLE ID: MW-7

PROJECT NO: BNC103

SAMPLED BY: K Brodrick

CLIENT: B7C Gas Mini Mart

REGULATORY AGENCY: \_\_\_\_\_

SAMPLE TYPE: Groundwater ✓ Surface Water \_\_\_\_\_ Leachate \_\_\_\_\_ Treatment System \_\_\_\_\_ Other \_\_\_\_\_

CASING DIAMETER (OD-inches): 3/4 \_\_\_\_\_ 1 \_\_\_\_\_ 2 ✓ 4 \_\_\_\_\_ 4.5 \_\_\_\_\_ 6 \_\_\_\_\_ 8 \_\_\_\_\_ Other \_\_\_\_\_

GALLONS PER LINEAR FOOT: (0.02) (0.04) (0.17) (0.66) (0.83) (1.5) (2.6)

Well Total Depth (ft): <u>49.3</u>	Volume in Casing (gal): <u>3.3</u>
Depth to Water (ft): <u>30.32</u>	Calculated Purge (volumes / gal): <u>9.7</u>
Height of Water Column (ft): <u>18.98</u>	Actual Pre-Sampling Purge (gal): <u>10.0</u>

PURGE:

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer ✓ Disp. Bailer \_\_\_\_\_

PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_

Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Purge Water Containment: drummed

Field QC Samples Collected at this Well (Equipment or Field Blank): EB- \_\_\_\_\_ FB- \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Volume (gallons)	Temp. (°C)	Elec. Conductivity (µmhos/cm)	pH (std. units)	Color (visual)	Turbidity (visual)	Other	Observation
<u>1100</u>	<u>3.5</u>	<u>18.4</u>	<u>909</u>	<u>7.21</u>	<u>lt. brown</u>	<u>moderate</u>		
<u>1107</u>	<u>7.0</u>	<u>18.7</u>	<u>924</u>	<u>7.21</u>	<u>↓</u>	<u>high</u>		
<u>1114</u>	<u>10.0</u>	<u>19.0</u>	<u>1010</u>	<u>7.27</u>	<u>↓</u>	<u>↓</u>		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

Purge Date: 12/8/00

SAMPLE:

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer \_\_\_\_\_ Disp. Bailer (44')

PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_

Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Temp. (°C)	Electical Conductivity (µmhos/cm)	pH (std. units)	Dissolved Oxygen (mg/l)	Color (visual)	Turbidity (NTU)	Other
<u>1122</u>	<u>19.0</u>	<u>1010</u>	<u>7.22</u>	<u>4.03</u>	<u>lt. brown</u>	<u>&gt;999</u>	
Sheen: <u>none</u>		Odor: <u>slight</u>				Sample Date: <u>12/8/00</u>	

Field Measurement Devices: Horiba ✓ Omega \_\_\_\_\_ QuickCheck \_\_\_\_\_ D.O. Test Kit \_\_\_\_\_

REMARKS: \_\_\_\_\_

Calibrated Horiba 1055, 12/8/00: pH: 7.04, 10.14; EC: 0, 2060; FWP: 0; DO: auto; T: 13.8°C

SIGNATURE: [Signature] DATE: 12/8/00

# Conor Pacific



## WATER SAMPLE FIELD DATA

LOCATION: B&C Gas/Mini Mart SAMPLE ID: MW-8  
 PROJECT NO: BNC-103 SAMPLED BY: R Park  
 CLIENT: B&C Gas/Mini Mart REGULATORY AGENCY: \_\_\_\_\_  
 SAMPLE TYPE: Groundwater  Surface Water \_\_\_\_\_ Leachate \_\_\_\_\_ Treatment System \_\_\_\_\_ Other \_\_\_\_\_  
 CASING DIAMETER (OD-inches): 3/4 \_\_\_\_\_ 1 \_\_\_\_\_ 2  4 \_\_\_\_\_ 4.5 \_\_\_\_\_ 6 \_\_\_\_\_ 8 \_\_\_\_\_ Other \_\_\_\_\_  
 GALLONS PER LINEAR FOOT: (0.02) (0.04) (0.17) (0.66) (0.83) (1.5) (2.6)

Well Total Depth (ft): 53.1 Volume in Casing (gal): 2.8  
 Depth to Water (ft): 30.81 Calculated Purge (volumes / gal.): 8.4  
 Height of Water Column (ft): 10.29 Actual Pre-Sampling Purge (gal): 0.5

**PURGE:**

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer  Disp. Bailer \_\_\_\_\_  
 PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_  
 Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_  
 Purge Water Containment: drummed  
 Field QC Samples Collected at this Well (Equipment or Field Blank): EB-\_\_\_\_ FB-\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Volume (gallons)	Temp. (°C)	Elec. Conductivity (µmhos/cm)	pH (std. units)	Color (visual)	Turbidity (visual)	Other	Observation
<u>1553</u>	<u>3</u>	<u>18.9</u>	<u>887</u>	<u>6.98</u>	<u>lt brown</u>	<u>medium</u>		
<u>1555</u>	<u>6</u>	<u>19.1</u>	<u>915</u>	<u>7.03</u>	<u>↓</u>	<u>↓</u>		
<u>1550</u>	<u>8.5</u>	<u>19.1</u>	<u>910</u>	<u>7.03</u>	<u>↓</u>	<u>high</u>		

Purge Date: 12/7/00

**SAMPLE:**

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer \_\_\_\_\_ Disp. Bailer (40')  
 PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_  
 Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Temp. (°C)	Electical Conductivity (µmhos/cm)	pH (std. units)	Dissolved Oxygen (mg/l)	Color (visual)	Turbidity (NTU)	Other
<u>1605</u>	<u>19.0</u>	<u>990</u>	<u>7.04</u>	<u>1.05</u>	<u>lt brown</u>	<u>7999</u>	
Sheen: <u>none</u>			Odor: <u>none</u>			Sample Date: <u>12/7/00</u>	

Field Measurement Devices: Horiba l Omega \_\_\_\_\_ QuickCheck \_\_\_\_\_ D.O. Test Kit \_\_\_\_\_

**REMARKS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: [Signature] DATE: 12/7/00





# Conor Pacific



## WATER SAMPLE FIELD DATA

LOCATION: BIG GAS Mini Mart

SAMPLE ID: UW-13

PROJECT NO: BNC 103

SAMPLED BY: K Broderick

CLIENT: BIG GAS Mini Mart

REGULATORY AGENCY: \_\_\_\_\_

SAMPLE TYPE: Groundwater  Surface Water \_\_\_\_\_ Leachate \_\_\_\_\_ Treatment System \_\_\_\_\_ Other \_\_\_\_\_

CASING DIAMETER (OD-inches): 3/4 \_\_\_\_\_ 1 \_\_\_\_\_ 2  4 \_\_\_\_\_ 4.5 \_\_\_\_\_ 6 \_\_\_\_\_ 8 \_\_\_\_\_ Other \_\_\_\_\_

GALLONS PER LINEAR FOOT: (0.02) (0.04) (0.17) (0.66) (0.83) (1.5) (2.6)

Well Total Depth (ft): <u>54.2</u>	Volume in Casing (gal): <u>3.70</u>
Depth to Water (ft): <u>32.71</u>	Calculated Purge (volumes / gal.): <u>11</u>
Height of Water Column (ft): <u>21.49</u>	Actual Pre-Sampling Purge (gal): <u>11</u>

### PURGE:

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer  Disp. Bailer \_\_\_\_\_

PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_

Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Purge Water Containment: Drum med

Field QC Samples Collected at this Well (Equipment or Field Blank): EB- \_\_\_\_\_ FB- \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Volume (gallons)	Temp. (°C)	Elec. Conductivity (µmhos/cm)	pH (std. units)	Color (visual)	Turbidity (visual)	Other	Observation
<u>1145</u>	<u>4</u>	<u>18.9</u>	<u>1040</u>	<u>7.15</u>	<u>light brown</u>	<u>medium</u>		
<u>1150</u>	<u>8</u>	<u>19.4</u>	<u>1040</u>	<u>7.20</u>	<u>light brown</u>	<u>medium</u>		
<u>1259</u>	<u>11</u>	<u>20.4</u>	<u>1030</u>	<u>7.20</u>	<u>↓</u>	<u>↓</u>		

Purge Date: 12/7/00

### SAMPLE:

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer \_\_\_\_\_ Disp. Bailer  <sup>49</sup>

PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_

Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Temp. (°C)	Electical Conductivity (µmhos/cm)	pH (std. units)	Dissolved Oxygen (mg/l)	Color (visual)	Turbidity (NTU)	Other
<u>1310</u>	<u>20.4</u>	<u>251</u>	<u>7.15</u>	<u>NM</u>	<u>light brown</u>	<u>476</u>	

Sheen: none      Odor: none      Sample Date: 12/7/00

Field Measurement Devices: Horiba 0 Omega \_\_\_\_\_ QuickCheck \_\_\_\_\_ D.O. Test Kit \_\_\_\_\_

REMARKS: 1124 Calibrated Horiba DO auto, ph 7.04, span to 10.11, Cond to 0, span to 2000, turb to 0, temp 15.0 °C

DO not measured due to instrument error

SIGNATURE: [Signature]      DATE: 12/7/00



LOCATION: Bic Gas/Mini Mart

SAMPLE ID: D-2

PROJECT NO: BNC 103

SAMPLED BY: R Park

CLIENT: Bic Gas/Mini Mart

REGULATORY AGENCY: \_\_\_\_\_

SAMPLE TYPE: Groundwater ✓ Surface Water \_\_\_\_\_ Leachate \_\_\_\_\_ Treatment System \_\_\_\_\_ Other \_\_\_\_\_

CASING DIAMETER (OD-inches): 3/4 \_\_\_\_\_ 1 \_\_\_\_\_ 2 ✓ ~~4~~ in 4.5 \_\_\_\_\_ 6 \_\_\_\_\_ 8 \_\_\_\_\_ Other \_\_\_\_\_

GALLONS PER LINEAR FOOT: (0.02) (0.04) (0.17) (0.66) (0.83) (1.5) (2.6)

Well Total Depth (ft): <u>111.1</u>	Volume in Casing (gal): <u>14.2</u>
Depth to Water (ft): <u>27.98</u>	Calculated Purge (volumes / gal.): <u>42.4</u>
Height of Water Column (ft): <u>83.12</u>	Actual Pre-Sampling Purge (gal): <u>43.0</u>

**PURGE:**

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer \_\_\_\_\_ Disp. Bailer \_\_\_\_\_

PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_

Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump (100') Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Purge Water Containment: drummed

Field QC Samples Collected at this Well (Equipment or Field Blank): EB- \_\_\_\_\_ FB- \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Volume (gallons)	Temp. (°C)	Elec. Conductivity (umhos/cm)	pH (std. units)	Color (visual)	Turbidity (visual)	Other	Observation
<u>1431</u>	<u>14.5</u>	<u>19.1</u>	<u>990</u>	<u>7.34</u>	<u>11.6 brown</u>	<u>high</u>		
<u>1437</u>	<u>29.0</u>	<u>19.3</u>	<u>1010</u>	<u>7.37</u>	<u>↓</u>	<u>moderate</u>		
<u>1443</u>	<u>43.0</u>	<u>19.4</u>	<u>1010</u>	<u>7.39</u>	<u>11.6 brown tint</u>	<u>low</u>		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

Purge Date: 12/7/00

**SAMPLE:**

Device (Depth of Intake from TOC): S.S. Bailer \_\_\_\_\_ Teflon Bailer \_\_\_\_\_ PVC Bailer \_\_\_\_\_ Disp. Bailer (106')

PVC Hand Pump \_\_\_\_\_ Peristaltic Pump \_\_\_\_\_ Centrifugal Pump \_\_\_\_\_ Bladder Pump \_\_\_\_\_

Pneumatic Displacement Pump \_\_\_\_\_ Electric Submersible Pump \_\_\_\_\_ Dedicated \_\_\_\_\_ Other \_\_\_\_\_

Time (2400 Hr)	Temp. (°C)	Electical Conductivity (umhos/cm)	pH (std. units)	Dissolved Oxygen (mg/l)	Color (visual)	Turbidity (NTU)	Other
<u>1451</u>	<u>19.3</u>	<u>1010</u>	<u>7.35</u>	<u>5.0A</u>	<u>11.6 brown</u>	<u>7999</u>	
Sheen: <u>none</u>	Odor: <u>none</u>	Sample Date: <u>12/7/00</u>					

Field Measurement Devices: Horiba ✓ Omega \_\_\_\_\_ QuickCheck \_\_\_\_\_ D.O. Test Kit \_\_\_\_\_

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: [Signature] DATE: 12/7/00







# Sequoia Analytical

4200

1455 McDowell Blvd. North, Ste. D  
Petaluma, CA 94954  
(707) 792-1865  
FAX (707) 792-0342  
www.sequoialabs.com

December 29 , 2000

Katrin Schliewen  
Conor Pacific / EFW  
2580 Wyandotte St., Suite G  
Mountain View, CA 94043  
RE: B&C Gas Mini Mart / P012231

Enclosed are the results of analyses for samples received by the laboratory on 12/11/00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Michelle M. Portis  
Project Manager

CA ELAP Certificate Number 2374





Conor Pacific / EFW  
2580 Wyandotte St., Suite G  
Mountain View CA, 94043

Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
12/29/00 16:52

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	P012231-01	Water	12/08/00 13:43	12/11/00 14:30
MW-5	P012231-02	Water	12/08/00 12:08	12/11/00 14:30
MW-7	P012231-03	Water	12/08/00 11:22	12/11/00 14:30
MW-8	P012231-04	Water	12/07/00 16:05	12/11/00 14:30
MW-10	P012231-05	Water	12/07/00 16:30	12/11/00 14:30
MW-12	P012231-06	Water	12/07/00 15:09	12/11/00 14:30
MW-13	P012231-07	Water	12/07/00 13:10	12/11/00 14:30
D-2	P012231-08	Water	12/07/00 14:51	12/11/00 14:30
122099-A	P012231-09	Water	12/07/00 11:05	12/11/00 14:30





Conor Pacific / EFW  
 2580 Wyandotte St., Suite G  
 Mountain View CA, 94043

Project: B&C Gas Mini Mart  
 Project Number: BNC103  
 Project Manager: Katrin Schliewen

Reported:  
 12/29/00 16:52

## Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M Sequoia Analytical - Petaluma

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>MW-2 (P012231-01) Water</b> Sampled: 12/08/00 13:43 Received: 12/11/00 14:30										
Gasoline	8010	500		ug/l	10	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	548	5.00		"	"	"	"	"	"	
Toluene	172	5.00		"	"	"	"	"	"	
Ethylbenzene	453	5.00		"	"	"	"	"	"	
Xylenes (total)	621	5.00		"	"	"	"	"	"	
Methyl tert-butyl ether	142	25.0		"	"	"	"	"	"	QR-04
Surrogate: <i>a,a,a</i> -Trifluorotoluene		104 %		65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %		65-135		"	"	"	"	
<b>MW-5 (P012231-02) Water</b> Sampled: 12/08/00 12:08 Received: 12/11/00 14:30										
Gasoline	21700	2500		ug/l	50	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	600	25.0		"	"	"	"	"	"	
Toluene	328	25.0		"	"	"	"	"	"	
Ethylbenzene	527	25.0		"	"	"	"	"	"	
Xylenes (total)	1450	25.0		"	"	"	"	"	"	
Methyl tert-butyl ether	321	125		"	"	"	"	"	"	QR-04
Surrogate: <i>a,a,a</i> -Trifluorotoluene		102 %		65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %		65-135		"	"	"	"	
<b>MW-7 (P012231-03) Water</b> Sampled: 12/08/00 11:22 Received: 12/11/00 14:30										
Gasoline	ND	50.0		ug/l	1	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	ND	0.500		"	"	"	"	"	"	
Toluene	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.500		"	"	"	"	"	"	
Xylenes (total)	ND	0.500		"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.50		"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		96.7 %		65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %		65-135		"	"	"	"	





Conor Pacific / EFW  
2580 Wyandotte St., Suite G  
Mountain View CA, 94043

Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
12/29/00 16:52

**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M**

**Sequoia Analytical - Petaluma**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-8 (P012231-04) Water</b> Sampled: 12/07/00 16:05 Received: 12/11/00 14:30									
Gasoline	ND	50.0	ug/l	1	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	7.83	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		97.7 %		65-135	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.7 %		65-135	"	"	"	"	
<b>MW-10 (P012231-05) Water</b> Sampled: 12/07/00 16:30 Received: 12/11/00 14:30									
Gasoline	ND	50.0	ug/l	1	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		101 %		65-135	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.3 %		65-135	"	"	"	"	
<b>MW-12 (P012231-06) Water</b> Sampled: 12/07/00 15:09 Received: 12/11/00 14:30									
Gasoline	ND	50.0	ug/l	1	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		99.3 %		65-135	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.0 %		65-135	"	"	"	"	





Conor Pacific / EFW  
 2580 Wyandotte St., Suite G  
 Mountain View CA, 94043

Project: B&C Gas Mini Mart  
 Project Number: BNC103  
 Project Manager: Katrin Schliewen

Reported:  
 12/29/00 16:52

## Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M

### Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-13 (P012231-07) Water** Sampled: 12/07/00 13:10 Received: 12/11/00 14:30

Gasoline	ND	50.0	ug/l	1	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	1.51	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	25.0	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		100 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	65-135		"	"	"	"	

**D-2 (P012231-08) Water** Sampled: 12/07/00 14:51 Received: 12/11/00 14:30

Gasoline	ND	50.0	ug/l	1	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		97.3 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.7 %	65-135		"	"	"	"	

**122099-A (P012231-09) Water** Sampled: 12/07/00 11:05 Received: 12/11/00 14:30

Gasoline	24000	1000	ug/l	20	0120301	12/15/00	12/15/00	EPA 8015M/8020M	
Benzene	35.3	10.0	"	"	"	"	"	"	QR-04
Toluene	115	10.0	"	"	"	"	"	"	
Ethylbenzene	10.9	10.0	"	"	"	"	"	"	
Xylenes (total)	6300	10.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	50.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %	65-135		"	"	"	"	





Conor Pacific / EFW  
2580 Wyandotte St., Suite G  
Mountain View CA, 94043

Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
01/04/01 15:20

**Volatile Organic Compounds by EPA Method 8260B  
Sequoia Analytical - Petaluma**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-5 (P012231-02) Water</b> <b>Sampled: 12/08/00 12:08</b> <b>Received: 12/11/00 14:30</b> <b>R-05</b>									
Tert-amyl methyl ether	ND	100	ug/l	100	0120346	12/18/00	12/18/00	EPA 8260B	
Tert-butyl alcohol	ND	2000	"	"	"	"	"	"	
Di-isopropyl ether	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	50.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	50.0	"	"	"	"	"	"	
Ethanol	ND	10000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	100	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>285</b>	<b>50.0</b>	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>94.0 %</i>		<i>88-118</i>	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>102 %</i>		<i>81-130</i>	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>100 %</i>		<i>84-115</i>	"	"	"	"	

**REVISED REPORT**  
**JAN 04 2001**  
**SEQUOIA ANALYTICAL**  
**PETALUMA LAB**





Conor Pacific / EFW  
2580 Wyandotte St., Suite G  
Mountain View CA, 94043

Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
12/29/00 16:52

**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control**  
**Sequoia Analytical - Petaluma**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 0120301 - EPA 5030, waters**

**Blank (0120301-BLK1)**

Prepared & Analyzed: 12/15/00

Gasoline	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	2.50	"							
Surrogate: <i>a,a,a</i> -Trifluorotoluene	300		"	300		100	65-135			
Surrogate: 4-Bromofluorobenzene	268		"	300		89.3	65-135			

**LCS (0120301-BS1)**

Prepared & Analyzed: 12/15/00

Gasoline	2320	50.0	ug/l	2750		84.4	65-135			
Benzene	35.3	0.500	"	32.0		110	65-135			
Toluene	192	0.500	"	193		99.5	65-135			
Ethylbenzene	42.3	0.500	"	46.0		92.0	65-135			
Xylenes (total)	212	0.500	"	231		91.8	65-135			
Methyl tert-butyl ether	56.1	2.50	"	52.0		108	65-135			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	341		"	300		114	65-135			
Surrogate: 4-Bromofluorobenzene	290		"	300		96.7	65-135			

**Matrix Spike (0120301-MS1)**

Source: P012273-01

Prepared & Analyzed: 12/15/00

Gasoline	2520	50.0	ug/l	2750	ND	91.6	65-135			
Benzene	36.4	0.500	"	32.0	ND	114	65-135			
Toluene	202	0.500	"	193	ND	105	65-135			
Ethylbenzene	44.3	0.500	"	46.0	ND	96.3	65-135			
Xylenes (total)	225	0.500	"	231	ND	97.4	65-135			
Methyl tert-butyl ether	62.8	2.50	"	52.0	ND	121	65-135			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	329		"	300		110	65-135			
Surrogate: 4-Bromofluorobenzene	292		"	300		97.3	65-135			





Conor Pacific / EFW  
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Mountain View CA, 94043

Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
12/29/00 16:52

**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 0120301 - EPA 5030, waters**

**Matrix Spike Dup (0120301-MSD1)**

**Source: P012273-01**

**Prepared & Analyzed: 12/15/00**

Gasoline	2410	50.0	ug/l	2750	ND	87.6	65-135	4.46	20	
Benzene	34.4	0.500	"	32.0	ND	108	65-135	5.65	20	
Toluene	193	0.500	"	193	ND	100	65-135	4.56	20	
Ethylbenzene	42.9	0.500	"	46.0	ND	93.3	65-135	3.21	20	
Xylenes (total)	215	0.500	"	231	ND	93.1	65-135	4.55	20	
Methyl tert-butyl ether	58.4	2.50	"	52.0	ND	112	65-135	7.26	20	
Surrogate: a,a,a-Trifluorotoluene	327		"	300		109	65-135			
Surrogate: 4-Bromofluorobenzene	289		"	300		96.3	65-135			







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Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
12/29/00 16:52

**Volatile Organic Compounds by EPA Method 8260B - Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 0120346 - EPA 5030 waters**

**Blank (0120346-BLK1)**

Prepared & Analyzed: 12/16/00

Tert-amyl methyl ether	ND	1.00	ug/l							
Tert-butyl alcohol	ND	20.0	"							
Di-isopropyl ether	ND	1.00	"							
1,2-Dibromoethane (EDB)	ND	0.500	"							
1,2-Dichloroethane	ND	0.500	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	1.00	"							
Methyl tert-butyl ether	ND	0.500	"							
Surrogate: Dibromofluoromethane	4.82		"	5.00		96.4	88-118			
Surrogate: 1,2-Dichloroethane-d4	4.83		"	5.00		96.6	81-130			
Surrogate: Toluene-d8	4.91		"	5.00		98.2	84-115			

**Blank (0120346-BLK2)**

Prepared & Analyzed: 12/18/00

Tert-amyl methyl ether	ND	1.00	ug/l							
Tert-butyl alcohol	ND	20.0	"							
Di-isopropyl ether	ND	1.00	"							
1,2-Dibromoethane (EDB)	ND	0.500	"							
1,2-Dichloroethane	ND	0.500	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	1.00	"							
Methyl tert-butyl ether	ND	0.500	"							
Surrogate: Dibromofluoromethane	4.67		"	5.00		93.4	88-118			
Surrogate: 1,2-Dichloroethane-d4	4.89		"	5.00		97.8	81-130			
Surrogate: Toluene-d8	4.90		"	5.00		98.0	84-115			

**LCS (0120346-BS1)**

Prepared & Analyzed: 12/16/00

Methyl tert-butyl ether	5.34	0.500	ug/l	5.00		107	79-118			
Surrogate: Dibromofluoromethane	4.97		"	5.00		99.4	88-118			
Surrogate: 1,2-Dichloroethane-d4	5.34		"	5.00		107	81-130			
Surrogate: Toluene-d8	5.09		"	5.00		102	84-115			





Conor Pacific / EFW 2580 Wyandotte St., Suite G Mountain View CA, 94043	Project: B&C Gas Mini Mart Project Number: BNC103 Project Manager: Katrin Schliewen	Reported: 12/29/00 16:52
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 0120346 - EPA 5030 waters**

**LCS (0120346-BS2)**

Prepared & Analyzed: 12/18/00

Methyl tert-butyl ether	4.89	0.500	ug/l	5.00		97.8	79-118			
Surrogate: Dibromofluoromethane	4.80		"	5.00		96.0	88-118			
Surrogate: 1,2-Dichloroethane-d4	5.18		"	5.00		104	81-130			
Surrogate: Toluene-d8	4.95		"	5.00		99.0	84-115			

**Matrix Spike (0120346-MS1)**

Source: P012232-05

Prepared & Analyzed: 12/16/00

Methyl tert-butyl ether	5.50	0.500	ug/l	5.00	ND	110	79-118			
Surrogate: Dibromofluoromethane	5.14		"	5.00		103	88-118			
Surrogate: 1,2-Dichloroethane-d4	5.81		"	5.00		116	81-130			
Surrogate: Toluene-d8	4.95		"	5.00		99.0	84-115			

**Matrix Spike Dup (0120346-MSD1)**

Source: P012232-05

Prepared & Analyzed: 12/16/00

Methyl tert-butyl ether	5.51	0.500	ug/l	5.00	ND	110	79-118	0.182	20	
Surrogate: Dibromofluoromethane	5.03		"	5.00		101	88-118			
Surrogate: 1,2-Dichloroethane-d4	5.83		"	5.00		117	81-130			
Surrogate: Toluene-d8	4.95		"	5.00		99.0	84-115			





Conor Pacific / BFW  
2580 Wyandotte St., Suite G  
Mountain View CA, 94043

Project: B&C Gas Mini Mart  
Project Number: BNC103  
Project Manager: Katrin Schliewen

Reported:  
12/29/00 16:52

**Notes and Definitions**

- QR-04 Results between the primary and confirmation columns varied by greater than 40% RPD.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference





# CHAIN OF CUSTODY

PROJECT NO.: <b>BNC103</b>		SITE NAME: <b>BIG GAS MINI MART</b>		ANALYSES						EDD required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
SAMPLER(S): <b>RUBIN</b> <small>(printed)</small>		<i>[Signature]</i> <small>(signature)</small>									
CONTRACT LABORATORY: <b>Sequoia-Petaluma</b>				Container Info							
TURN-AROUND TIME: <b>Standard</b>											
Sample I.D.	Lab I.D.	Collection		Matrix	Depth	Type/Vol.			Cont. Qty.	Remarks	
		Date	Time			Filter	Preserv.				
MW-2		12/2/00	1343	water	✓	3			3		
MW-5			1208			2	3	3	6		
MW-7			1122			3	3		3		
MW-8		12/7/00	1105			4	3		3		
MW-10			1130			5	3		3		
MW-12			1509			6	3		3		
MW-13			1310			7	3		3		
D-2			1451			8	3		3		
MSMW01		NO SAMPLE					3		3		
122099-A		12/7/00	1105			9	3		3		
COOLER CUSTODY SEALS INTACT <input type="checkbox"/>											
NOT INTACT <input type="checkbox"/>											
COOLER TEMPERATURE <u>6</u> °C											

Relinquished by: (signature)  
*[Signature]*

Relinquished by: (signature)  
*[Signature]*

Relinquished by: (signature)  
*[Signature]* 12/11/00

Received by: (signature)  
*[Signature]*

Received by: (signature)  
*[Signature]*

Received by: (signature)  
*[Signature]*

Date/Time:  
12/11/00 935

Date/Time:  
12/11/00

Date/Time:  
12/11/00 1230

SEND RESULTS TO:  
Attn: **Katrin Schliewen**  
Conor Pacific/EFW  
2580 Wyandotte St., Suite G  
Mountain View, CA 94043  
Phone (650) 386-3828  
Fax (650) 386-3815