

AC Transit

Alameda-Contra Costa Transit District

10626 East 14th Street, Oakland, California 94603 ☐ (510) 577-8804
FAX ☐ (510) 577-8859

January 16, 2001

JAN 23 2002



Mr. Barney Chan
Alameda County Health Division
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, Second Floor
Alameda, CA 94502

R0296

Dear Mr. Chan:

Subject: Quarterly Groundwater Monitoring Report
AC Transit, 1100 Seminary Avenue, Oakland, CA


AC Transit hereby submits the enclosed quarterly groundwater monitoring report for the fourth quarter of 2001 for the AC Transit facility located at 1100 Seminary Avenue in Oakland. Groundwater sampling of monitoring wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Cameron-Cole in accordance with directives from your office.

Groundwater samples were collected from the six on-site monitoring wells on October 16, 2001. Samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and diesel using EPA Method 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl-tert butyl ether (MTBE) using EPA Method 8260B and nitrate and sulfate using Standard Methods 300.0A. Field parameters collected during sampling included pH, temperature, electrical conductivity, dissolved oxygen, ferrous iron and oxidation reduction potential. In addition, monitoring well MW-2 is being purged dry monthly and during each quarterly sampling event

Analytical results of grab water samples showed benzene concentrations above the California maximum contaminant level of 1 ppb in wells MW-1, MW-2, and MW-3. Ethylbenzene was detected above the MCL of 700 ppb in well MW-2 at a concentration of 1,100 ppb. Unspecified hydrocarbons, thought to be degraded diesel, were detected at concentrations above laboratory reporting limits in all wells except MW-2.

These results continue to be consistent with past sampling results. Monthly purging of well MW-2 began in July 2001. The next quarterly sampling event is scheduled to occur in February 2002. If you have any questions regarding this report or other matters pertaining to this site, please call me at (510) 577-8869.

Sincerely,


Suzanne Patton, P.E.
Environmental Engineer

Enclosure
Barneychan01'16'02.doc

MOVING TOWARD THE 21st CENTURY

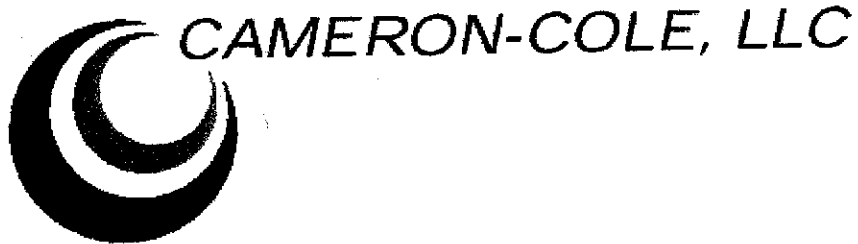
**MONITORING REPORT
FOR THE AC TRANSIT FACILITY
LOCATED AT 1100 SEMINARY AVENUE,
OAKLAND, CALIFORNIA**

December 30, 2001

Ms. Suzanne Patton
AC Transit
10626 E. 14th Street
Oakland, California 94603

Prepared By:
Cameron-Cole
101 W. Atlantic
Building 90
Alameda, California 94501

Project No: 2014



**MONITORING REPORT FOR THE
AC TRANSIT FACILITY
LOCATED AT 1100 SEMINARY AVENUE,
OAKLAND, CALIFORNIA**

December 30, 2001

Prepared For:

Ms. Suzanne Patton
AC Transit
10626 E. 14th Street
Oakland, California 94603

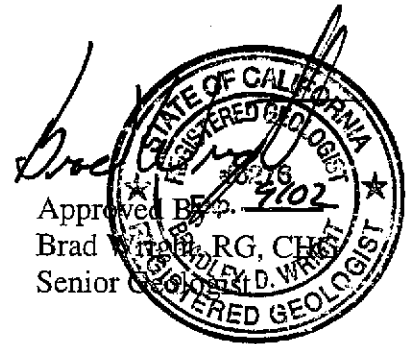
Prepared By:

Cameron-Cole
101 W. Atlantic Avenue
Building 90
Alameda, California 94501

Project No: 2014

Erik R. Berry for:

Written By
Brady Hanson
Geologist I



INTRODUCTION

This report presents the results from the October 2001 sampling event for the AC Transit Facility located at 1100 Seminary Avenue, Oakland, California (Site) (Figure 1). Groundwater sampling of monitor wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Cameron-Cole, in accordance with directives from the Alameda County Health Care Services Agency (ACHCS).

OBJECTIVES AND SCOPE OF WORK

Work performed during quarterly sampling included measuring depth to water and presence of free phase hydrocarbons in the monitor wells and sample collection. Field parameters collected during sampling included pH, temperature, electric conductivity, dissolved oxygen (DO), ferrous iron (Fe^{2+}) and oxygen reduction potential (ORP). Groundwater samples were collected for laboratory analysis using United States Environmental Protection Agency (USEPA) Method 8015 for total petroleum hydrocarbons (TPH) gasoline/diesel, USEPA Method 8260B for benzene, toluene, ethylbenzene, and xylene (BTEX) and methyl-tert butyl ether (MTBE) and methods of chemical analysis for water and waste (MCAWW) 300.0A for nitrate and sulfate.

Chain-of-custody documents and certified analytical reports are presented in Appendix A. Field data sheets are included in Appendix B.

Groundwater Elevations and Flow Direction

Prior to purging and sample collection, all six Site monitor wells were inspected and measured for presence of free phase hydrocarbons and depth to groundwater. Measurements of depths to groundwater are presented on Table 1 and were used to construct the groundwater elevation contours shown in Figure 2. As shown on Figure 2, groundwater flow is to the west at a gradient of 0.012 feet/foot.

Groundwater Sampling Activities

The monitor wells were purged a minimum of three casing volumes, using a centrifugal pump and samples were collected using disposable polyethylene bailers. During well purging, field parameters for pH, electrical conductivity, DO, ORP and temperature were monitored using calibrated field meters. Due to the very low yield encountered while purging monitoring well MW-11, only two casing volumes were evacuated before it became dry.

In addition, MW-2 is now being completely purged dry monthly and during all quarterly sampling events in an attempt to cleanse the formation around the immediate vicinity of the well. Field data sheets for this new over-purge event are included in Appendix B.

Groundwater samples were transferred to appropriate laboratory supplied and preserved containers and placed in an ice-filled cooler for shipment under chain-of-custody to a State of California certified laboratory. A trip blank was submitted for analysis by USEPA Method 8260B.

Groundwater Analytical Results

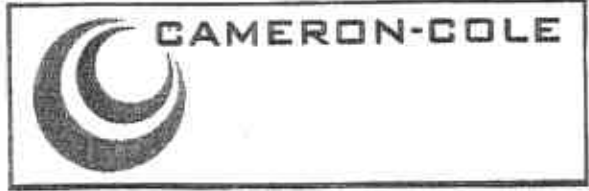
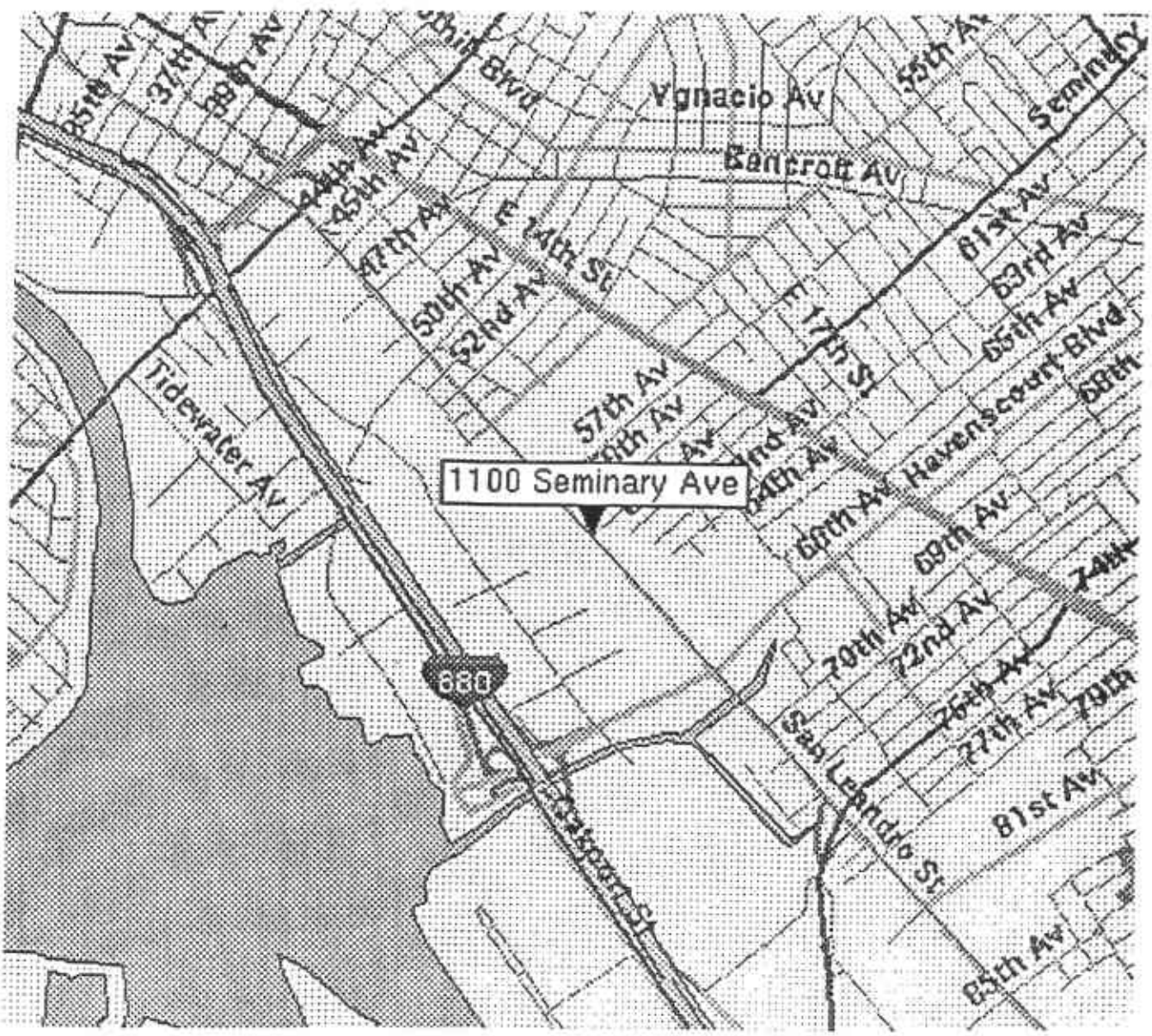
Table 2 presents groundwater historic and fourth quarter 2001 analytical results. Concentrations of benzene above the State of California maximum contaminant level (MCL) of 1.0 part per billion (ppb) were detected in monitor wells MW-1, MW-2 and MW-3. Ethylbenzene was detected above the MCL of 700 ppb in monitor well MW-2. TPH-Diesel, qualified as "degraded" by the laboratory, was detected above the reporting limit in monitor well MW-2. TPH-Gas was detected above the reporting limit in monitor wells MW-2 and MW-3. Additionally, chemical concentrations above laboratory reporting limits detected in all monitoring wells except MW-2 included unspecified hydrocarbons. The unspecified hydrocarbons detected in these Site monitor wells is thought to be degraded diesel. No analytes were detected in the trip blanks or method blanks. A lab control spike and lab control spike duplicate passed the USEPA's criteria for acceptance.

SUMMARY OF RESULTS

- Groundwater flow direction is towards the west at a gradient of 0.012 feet/foot.
- Chemical concentrations in excess of MCLs were limited to benzene in wells MW-1, MW-2 and MW-3 and ethylbenzene in MW-2.

PROJECTED WORK AND RECOMMENDATIONS

- Quarterly groundwater monitoring is scheduled for February 2002.
- Continued monthly over purges of MW-2.



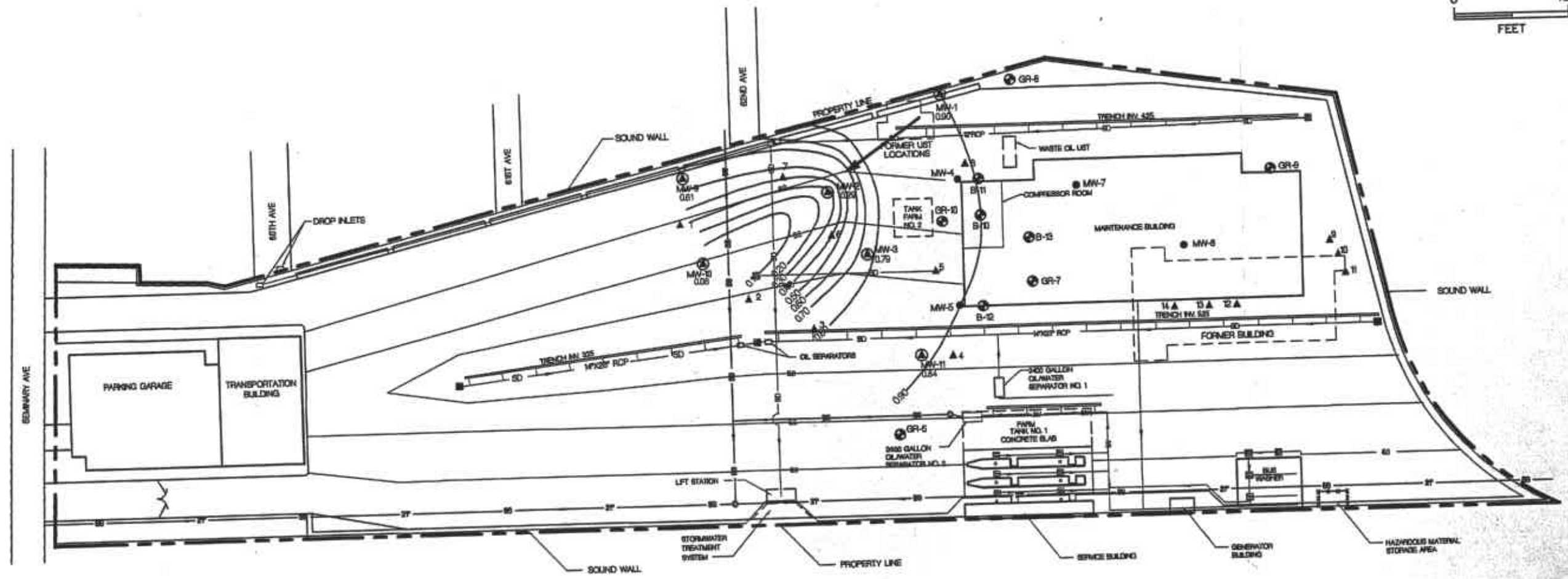
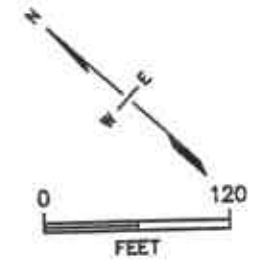
AC TRANSIT - OAKLAND, CALIFORNIA

FIGURE 1
SITE LOCATION MAP
1100 SEMINARY ROAD

SCALE:	NO SCALE	DATE:	3/22/00
--------	----------	-------	---------

LOCMAP





LEGEND:

- | | | | |
|---------|-------------------------------|-----|----------------------------------|
| — 150 — | GROUNDWATER ELEVATION CONTOUR | 159 | GROUNDWATER ELEVATION (FT. MSL) |
| → | REPORTED GROUNDWATER FLOW | ⊙ | EXISTING MONITORING WELL |
| — 60 — | CONTOUR | ● | ABANDONED MONITORING WELL |
| — SD — | STORM DRAIN PIPELINE | ⊕ | PREVIOUSLY INSTALLED SOIL BORING |
| — SS — | SANITARY SEWER PIPELINE | ▲ | NEWLY INSTALLED SOIL BORING |
| — IW — | INDUSTRIAL WASTE PIPELINE | ⊙ | MANHOLE |
| — — — | SURFACE DRAINAGE TRENCH | ▭ | CATCH BASIN |

BY	DATE
WPE	12/03/01



CAMERON-COLE

FIGURE 2

AC TRANSIT - OAKLAND, CALIFORNIA

1100 SEMINARY ROAD-POTENTIOMETRIC SURFACE MAP

OCTOBER 16, 2001

SCALE	1" = 120'	DWG. NO:	2011-02
-------	-----------	----------	---------

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	Top of Casing Elevation (ft-msl)*	Product Thickness (feet)	DTW (feet)	Measured Groundwater Elevation (ft-msl)	Groundwater Elevation Corrected for Product Thickness**
MW-9	7-Feb-00	5.8	None	4.37	1.43	
	25-May-00		None	4.95	0.85	
	22-Aug-00		None	5.18	0.62	
	20-Nov-00		None	4.70	1.10	
	1-Mar-01		None	3.03	2.77	
	14-May-01		None	4.56	1.24	
	26-Jul-01		None	5.17	0.63	
	16-Oct-01		None	5.19	0.61	
MW-10	7-Feb-00	4.65	None	3.19	1.46	
	25-May-00		None	3.11	1.54	
	22-Aug-00		None	4.35	0.30	
	20-Nov-00		None	4.18	0.47	
	1-Mar-01		None	3.14	1.51	
	14-May-01		None	3.27	1.38	
	26-Jul-01		None	3.95	0.70	
	16-Oct-01		None	4.57	0.08	
MW-11	7-Feb-00	4.19	None	4.97	-0.78	
	25-May-00		None	7.58	-3.39	
	22-Aug-00		None	3.01	1.18	
	20-Nov-00		None	2.88	1.31	
	1-Mar-01		None	1.91	2.28	
	14-May-01		None	4.49	-0.3	
	26-Jul-01		None	2.95	1.24	
	16-Oct-01		None	3.35	0.84	

Notes:

* ft-msl: feet-mean sea level

** used 0.8 specific gravity of product

DTW: Depth to Water

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl		MTBE	Nitrate	Sulfate	DO	Fe
							Benzene	Xylenes					
		MCL (ppb)			1.0	150	700	1,750	13				
MW-10	7-Feb-00	<50	<50	470	<1	<1	<1	<1	<2	53	114,000	1,200	55,000
	25-May-00	<50	<50	220	<1.0	<1.0	<1.0	<1.0	<2.0	480	136,000	1,940	0
	22-Aug-00	<50	<50	140	<1.0	<1.0	<1.0	<1.0	<2.0	69	126,000	4,350	0
	20-Nov-00	<50	<50	300	<1.0	<1.0	<1.0	<1.0	<2.0	<50	76,200	3,790	0
	1-Mar-01	<50	<50	250	<1.0	<1.0	<1.0	<1.0	<2.0	<250	106,000	7,440	0
	14-May-01	<50	<50	74	<1.0	<1.0	<1.0	<1.0	<2.0	<50	135,000	6,790	0
	26-Jul-01	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	<50	125,000	9,680	1,970
16-Oct-01	<50	<50	190	<1.0	<1.0	<1.0	<1.0	<2.0	<50	90,100	28,000	570	
MW-11	7-Feb-00	<50	<50	400	<1	<1	<1	<1	25	800	167,000	7,300	16,200
	25-May-00	<50	<50	200	<1.0	<1.0	<1.0	<1.0	16	480	207,000	6,540	0
	22-Aug-00	<50	<50	170	<1.0	<1.0	<1.0	<1.0	9.3	610	168,000	4,640	20
	20-Nov-00	<50	<50	190	<1.0	<1.0	<1.0	<1.0	7.5	550	143,000	2,380	0
	1-Mar-01	<50	<50	250	<1.0	<1.0	<1.0	<1.0	15.0	170	80,300	5,860	0
	14-May-01	<50	<50	160	<1.0	<1.0	<1.0	<1.0	14.0	230	103,000	6,060	2,910
	26-Jul-01	<50	<50	220	5.9	<1.0	<1.0	2.7	20.0	180	71,300	7,360	>3300
16-Oct-01	<50	<50	170	<1.0	<1.0	<1.0	<1.0	12.0	190	101,000	8,810	>3300	

Notes:

ppb: parts per billion

TPH-G: total petroleum hydrocarbons as gasoline

TPH-D: total petroleum hydrocarbons as diesel

TPH: total petroleum hydrocarbons as motor oil or unknown hydrocarbon

MCL: Maximum Contaminant Level

MTBE: Methyl-tert-butylether

DO: Dissolved Oxygen

Fe: Ferrous Iron