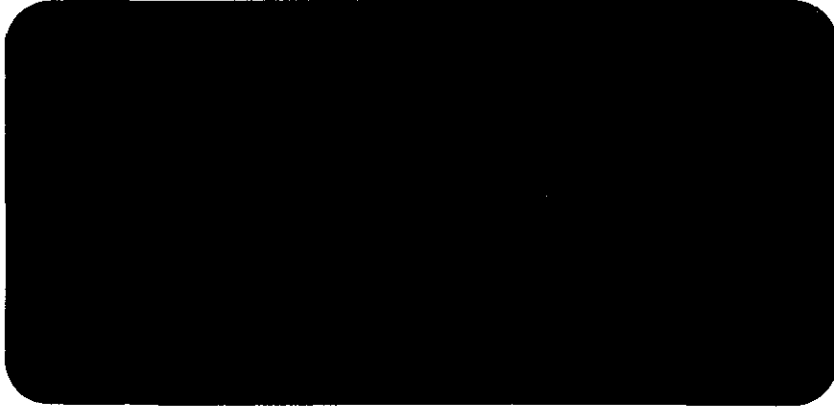


approve recommendation to overexc. gasoline pit,  
destroying MW-1 and 4 VEWS.  
I need to be present for sampling pit walls, etc.



01/11/1983  
11:15 AM



**GROUNDWATER  
MONITORING REPORT**

Cavanaugh Motors Facility  
1700 Park Street  
Alameda, California

*Feb 1995*

February 3, 1995

Prepared for

Mr. Dave Cavanaugh  
**Cavanaugh Motors**  
1700 Park Street  
Alameda, California 94501

Prepared by

**TMC Environmental Inc.**  
13908 San Pablo Avenue, Suite 101  
San Pablo, California 94806

Project No. 101090

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1700 PARK STREET, ALAMEDA, CALIFORNIA

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ATTACHMENTS

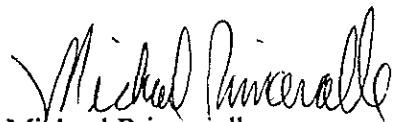
ATTACHMENT 1,	LABORATORY REPORTS
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## CERTIFICATION OF PROFESSIONAL SUPERVISION


Groundwater Monitoring Report  
Cavanaugh Motors Facility  
1700 Park Street  
Alameda, California

TMC ENVIRONMENTAL, Inc. supervised the preparation of this Groundwater Monitoring Report, dated February 3, 1995, for the Cavanaugh Motors facility in the City of Alameda, Alameda County, California. Techniques and standards of care common to the consulting geologic profession in California, where used in the preparation of this report.

This document, signed and stamped with seal, follows section 7835 of the Geologist and Geophysicists Act, Business and Professions Code, State of California and the requirements of the California Regional Water Quality Control Board, San Francisco Bay Region.



Michael Princevalle  
Soil Scientist/Senior Project Manager



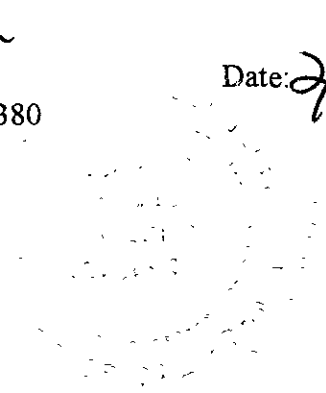
Donald Chung  
Staff Engineer

TMC Environmental, Inc. certifying professional:



Mark T. Youngkin, Vice President  
Certified Engineering Geologist No. EG-1380  
License expires June 30, 1996.

Date: 2/3/95



# GROUNDWATER MONITORING REPORT

1700 Park Street, Alameda, California

## 1.0 SUMMARY OF FINDINGS

In December 1989 and August 1990, two underground storage tanks (a gasoline tank and a waste oil tank) were removed from separate locations on the site. In April, 1990, and January 1991, approximately 120 cubic yards of accessible contaminated soils were excavated from the tank locations. Approximately 120 cubic yards of contaminated soils are being treated on site.

TMC ENVIRONMENTAL, INC. (TMC) subsequently installed six groundwater monitoring wells at the site and are indicated in this report as MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. Groundwater monitoring well MW-1 is located within the gasoline tank excavation. Monitoring well MW-2 is located up-gradient from the former gasoline tank and is near the southern limits of the site. Monitoring well MW-4 is located in the western portion of the site, "cross-gradient" from the former gasoline tank. Groundwater monitoring well MW-6 is located within the limits of the former waste oil tank excavation inside the existing auto repair shop. Monitoring wells MW-3 and MW-5 are located in the down gradient direction from the former waste oil tank.

Due to the proximity of buildings, not all of the soil contamination was excavated from the former gasoline tank pit. In March, 1993, TMC installed a soil vapor extraction system in the vicinity of the former gasoline tank to remediate gasoline-contaminated soils (associated with the former gasoline tank) remaining at the site. To verify that the soil contamination was remediated, four soil borings were placed within the soil contaminant plume. TMC performed this work August 25, 1994. Sample results revealed that the soil vapor extraction system was effective in remediating soil contamination that remained in the vicinity of the former gasoline tank.

Per the request of the Alameda County Health Care Services Agency, Department of Environmental Health, Division of Hazardous Materials, TMC installed an additional groundwater monitoring well (August 25, 1994) down gradient from the former gasoline tank. This well was constructed similarly to the existing monitoring wells. This well is indicated as MW-7. Chemical analysis of soil samples recovered from this well revealed non-detectable levels of gasoline and BTEX.

Subsequently, TMC recovered groundwater samples from the above-indicated wells. TMC performed this work January 13, 1994. Groundwater samples collected from MW-1 and MW-7 were chemically analyzed for: total volatile hydrocarbons (TVH) as gasoline and benzene, toluene, ethylbenzene, and total xylene (BTEX). Additionally, groundwater samples from wells MW-3, MW-5, and MW-6 were tested for diesel, petroleum oil and grease, and purgeable halocarbons.

Samples from MW-1 continue to show the presence of gasoline and BTEX's. Well MW-7, located down gradient from the former tank and MW-1, had non-detectable levels of gasoline and BTEX's. Samples from MW-5 and MW-6 revealed detectable levels of Chlorobenzene. However, these levels are below MCL's of 100 ppb. Samples from MW-3 showed non-detectable Chlorobenzene levels. Samples from MW-6 showed detectable levels of diesel, whereas MW-3 and MW-5 had non-detectable diesel. Samples from MW-3, MW-5, and MW-6 all revealed non-detectable levels of petroleum oil and grease.

Groundwater gradient and direction was estimated by using water levels measurements from monitoring wells MW-2, MW-3 and MW-4. Recent groundwater data indicates groundwater flows in a north westerly direction, with a gradient of 0.0114 feet/foot.

## 2.0 GENERAL SITE INFORMATION

### 2.1 SITE LOCATION

The Cavanaugh Motors property, called "site" in this report, is at the following address and description (see Plate 1, Site Vicinity Map):

1700 Park Street, City of Alameda  
Alameda County, California  
Appraisers parcel number: APN 70-192-21-1 and 24  
Lots 1, 2, 3, portion of 4, 7 Block E of Alameda  
Station Homestead Tract (Book 17 page 60)

The site is at the northeast corner of the intersection of Park Street and Buena Vista Avenue. The corner lot is approximately 150 feet by 200 feet in dimension.

### 2.2 RESPONSIBLE PARTY

The current property owner's are:

Lee and Dave Cavanaugh  
1700 Park Street, Alameda, California 94501

Mr. Dave Cavanaugh is the owner contact, and can be reached at (510) 523-5246.

## 2.3 CONSULTANT OF RECORD

The consultant of record for this project is:

TMC Environmental Inc. (TMC)  
13908 San Pablo Avenue, Suite 101  
San Pablo, California 94806

The contacts for TMC are Mr. Tom Ghigliotto, or Mr. Michael Princevalle, Senior Project Manager. Mr. Ghigliotto and Mr. Princevalle can be reached at (510) 232-8366.

## 2.4 LEAD IMPLEMENTING AGENCY

The enforcing agency authorized by the Regional Water Quality Control Board (RWQCB) to oversee this site is:

Alameda County Health Care Services Agency  
Department of Environmental Health  
Division of Hazardous Materials  
1131 Harbor Bay Parkway, Alameda, California 94501

The officer overseeing this case is Ms. Eva Chu. Ms. Chu can be called at (510) ~~337-2864~~ <sup>967-6700</sup>.

TMC followed the guidelines by the enforcing agency and the Bay Area Regional Water Quality Control Board (RWQCB) in preparing this report. The investigation, reclamation, and reporting guidelines applicable to leaking underground fuel tanks, available through these agencies, apply to this discharge. These guidelines are available from the Alameda County Health Care Services Agency (ACHCSA).

## 2.5 SITE CONDITION

The site is presently being used as an automobile dealership and repair facility. The property is located in a commercial and residential neighborhood. Current activities include: a new car showroom; sales offices; parts storage and distribution; outside car storage; and a vehicle repair shop; see Plate 2, Site Plan. No underground storage facilities exist at site.

Foot and vehicle traffic is heavy in this neighborhood and site. The site contains a large building with paved parking areas and driveways. Access to the dealership is from both Park Street that borders the property on the north and Buena Vista Avenue that borders the property on the south. A gasoline station and automobile dealers occur across Park Street to the west and south,



respectively. A motor vehicle repair shop bounds the site on the northeast. Adjacent to the site on the eastern portion of the site is a residential neighborhood.

Seven groundwater monitoring wells exist at the site. These are indicated in this report and on Plate 2, Site Plan, as MW-1 MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7. These wells are constructed to monitor the shallow water bearing zone beneath the site. Additionally, four soil vapor extraction wells exist on site, and are indicated as VW1, VW2, VW3 and VW4.

## 2.6 GEOLOGY

The site is approximately one half mile west of the Oakland Estuary and Inner Harbor Waterway. San Francisco Bay is about one mile west of the site. The Inner Harbor Waterway connects San Leandro Bay and San Francisco Bay. As suggested by U.S. Geological Survey geological publications, the site is on the Alameda Bay Plain that has an alluvial fan environment. The Merritt Sand Formation is the main stratigraphic unit in the upper aquifer. This unit usually has unconsolidated beach sand and near shore deposits. Borings on the site have encountered unconsolidated sands and clayey sands. Lenses of clayey sand occur in the sand. It appears that groundwater in the Merritt Sand Formation is unconfined. Groundwater is approximately eight feet below surface grade (BSG) at the site during most of the year, but may rise to within five feet BSG during winter rainfall.

## 2.7 ENVIRONMENTAL SITE WORK

In December 1989 and August 1990, two underground storage tanks (one gasoline and one automotive waste oil) were removed from separate locations at the site; see Plate 2. Soil samples recovered during the tank removal activities revealed the presence of petroleum materials. The soils found to be contaminated, and accessible, were excavated and stockpiled on site. Approximately 120 cubic yards of contaminated soil were removed and stockpiled on site. Site conditions prevented the complete removal of contaminated soils associated with the gasoline tank.

Subsequent to the tank removals and soil excavation, TMC performed a subsurface soils and groundwater investigation at the site. As part of the investigation, six groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. Detectable levels of gasoline were found in soils and groundwater in the vicinity of the former gasoline tank. Detectable levels of diesel/kerosene and dichlorobenzene were found in the vicinity of the former waste oil tank. Results of this investigation work and the subsequent quarterly monitoring indicate ground water contamination associated with the former tanks is localized.

During the subsurface investigation work, four vapor extraction wells (VW-1, VW-2, VW-3 and VW-4) were installed at the site. The purpose of the extraction wells was to remediate the contaminated soils in the vicinity of the former gasoline tank. TMC constructed a soil vapor extraction system in February 1993. Initial pilot tests of the system revealed that elevated groundwater levels at the site (due to high rainfall) hampered the effectiveness of the system. Once the groundwater levels dropped, the system was started (July 7, 1993). Its operation continued until influent soil - vapor readings declined and stabilized to approximately 40 ppm. The system was shut down January 24, 1994.

On August 25, 1994, TMC drilled four soil borings in the vicinity of MW-1 and the former gasoline tank. These borings are indicated as VB-1, VB-2, VB-3, and VB-4. The purpose of this work was to verify that the soil vapor extraction system was effective in remediating soil contaminated soils associated with the former tank.

TMC additionally constructed a groundwater monitoring well approximately 10 feet down gradient from the former gasoline tank, indicated as MW-7.

Results of the soil samples recovered from the verification bores (VB-1 through VB-4) and the groundwater monitoring well MW-7 revealed detectable levels of Ethyl Benzene in sample VB3-2 (7 - 7½ feet) of 12 parts per billion (ppb). All other soil samples had non-detectable levels of the target analytes.

### 3.0 GROUNDWATER SAMPLING

On January 13, 1995, TMC recovered groundwater samples from monitoring wells MW-1, MW-3, MW-5, MW-6, and MW-7. The ACHCSA letter, dated December 29, 1994, allowed omission of sampling wells MW-2 and MW-4.

The ground water samples from MW-1 and MW-7 were chemically analyzed for the target chemicals of total volatile hydrocarbons (TVH) as gasoline, benzene, toluene, ethylbenzene, and total xylene (BTEX). Groundwater samples from wells MW-3, MW-5, and MW-6 were tested for diesel, oil & grease, and purgeable halocarbons. The following tables summarize the chemical compounds detected. Table 1, Gasoline Results for Groundwater Samples, lists the gasoline results for groundwater samples.

TABLE 1 GASOLINE RESULTS FOR GROUND WATER SAMPLES

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
<i>June 1990 Groundwater Sampling</i>						
6-08-90	MW-1	28000	6200	7000	630	6100
6-08-90	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
6-08-90	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
6-08-90	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
<i>December 1990 Groundwater Sampling</i>						
12-17-90	MW-1	7200	620	250	1200	1400
12-17-90	MW-2	ND<50	1.1	ND<0.5	2.3	2.1
12-17-90	MW-3	140	ND<0.5	1.3	1.3	9.1
12-17-90	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
<i>July 1991 Groundwater Sampling</i>						
7-29-91	MW-1	21000	890	1900	320	1700
7-30-91	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-18-91	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-30-91	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-18-91	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-18-91	MW-6	ND<50	1.3	ND<0.5	ND<0.5	1.6
<i>December 1991 Groundwater Sampling</i>						
12-4-91	MW-1	4300	3.2	1.3	88	630
12-4-91	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>April 1992 Groundwater Sampling</i>						

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
4-30-92	MW-1	16000	910	2000	250	1400
4-29-92	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-29-92	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-29-92	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-30-92	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-30-92	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>July 1992 Groundwater Sampling</i>						
7-28-92	MW-1	12000	1200	2300	340	1800
7-27-92	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-27-92	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-27-92	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-27-92	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-28-92	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>October 1992 Groundwater Sampling</i>						
10-19-92	MW-1	5000	400	710	170	750
10-19-92	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>February 1993 Groundwater Sampling</i>						
2-24-93	MW-1	8800	780	1200	230	1000
2-24-93	MW-2	ND<50	0.5	ND<0.5	ND<0.5	ND<0.5
2-24-93	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-24-93	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-24-93	MW-5	ND<50	ND<0.5	1.8	ND<0.5	ND<0.5

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
2-24-93	MW-6	ND<50	ND<0.5	6.8	ND<0.5	ND<0.5
<i>May 1993 Groundwater Sampling</i>						
5-19-93	MW-1	24000	2500	4700	560	3100
5-19-93	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>August 1993 Groundwater Sampling</i>						
8-11-93	MW-1	13000	1200	2100	350	2000
8-11-93	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
8-11-93	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
8-11-93	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
8-11-93	MW-5	ND<50	ND<0.5	ND<0.5	0.8	ND<0.5
8-11-93	MW-6	ND<50	ND<0.5	ND<0.5	7.9	ND<0.5
<i>February 1994 Groundwater Sampling</i>						
2-2-94	MW-1	7300	600	920	250	1,000
2-2-94	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>May 1994 Groundwater Sampling</i>						
5-26-94	MW-1	15000	1200	2000	370	1500
5-26-94	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-26-94	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
5-26-94	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-26-94	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-26-94	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>September 1994 Groundwater Sampling</i>						
9-15-94	MW-1	4900	150	340	100	410
9-15-94	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-7	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>January 13, 1995 Groundwater Sampling</i>						
1-13-95	MW-1	11000	260	770	310	1200
1-13-95	MW-2	ns	ns	ns	ns	ns
1-13-95	MW-3	NA	NA	NA	NA	NA
1-13-95	MW-4	ns	ns	ns	ns	ns
1-13-95	MW-5	NA	NA	NA	NA	NA
1-13-95	MW-6	NA	NA	NA	NA	NA
1-13-95	MW-7	ND<50.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5

ND- Not detected below reporting limits      NA - Not analyzed      ns - Not sampled

Results of the samples show that MW-1 (located in the back fill of the former gasoline tank) continues to have detectable levels of gasoline and BTEX's. Chart 1, MW-1 Quarterly Sampling Results for Gasoline and Chart 2, MW-1 Quarterly Sampling Results for BTEX, show fluctuating Gasoline and BTEX concentrations. The elevated concentrations of Gasoline and BTEX contamination in samples collected from MW-1 during the January 13, 1995 sampling event are most likely due to the elevated groundwater table. As the groundwater rose due to recent heavy rains, Gasoline and BTEX contamination normally adsorbed to dry soil particles became immersed in the groundwater, resulting in the elevated Gasoline and BTEX

concentrations found in samples collected from MW-1. Well MW-7 has non-detectable levels of Gasoline.

Table 2 presents results of laboratory analyses for extractable petroleum hydrocarbons (Diesel/Kerosene, Oil and Grease) and purgeable halocarbons (Chlorobenzene).

TABLE 2 DIESEL, OIL & GREASE AND CHLOROBENZENE RESULTS FOR WATER SAMPLES

<i>Date Sampled</i>	<i>Monitoring Well</i>	<i>Diesel ug/L</i>	<i>Kerosene ug/L</i>	<i>Oil &amp; Grease mg/L</i>	<i>Chlorobenzene ug/L</i>
<i>July 1991 Groundwater Sampling</i>					
7-18-91	MW-3	NA	NA	ND<5	NA
7-18-91	MW-5	NA	NA	ND<5	NA
7-18-91	MW-6	NA	NA	ND<5	NA
<i>December 1991 Groundwater Sampling</i>					
12-4-91	MW-3	ND<50	ND<50	ND<5	ND<1.0
12-4-91	MW-5	ND<50	ND<50	ND<5	4.6
12-4-91	MW-6	1,400	ND<50	ND<5	33
<i>April 1992 Groundwater Sampling</i>					
4-29-92	MW-3	ND<50	ND<50	ND<5	ND<1.0
4-29-92	MW-5	ND<50	ND<50	ND<5	3
4-29-92	MW-6	670	ND<50	ND<5	7
<i>July 1992 Groundwater Sampling</i>					
7-28-92	MW-3	ND<50	ND<50	ND<5	ND<1.0
7-28-92	MW-5	ND<50	ND<50	ND<5	2
7-28-92	MW-6	1,700	ND<50	ND<5	17
<i>October 1992 Groundwater Sampling</i>					
10-19-92	MW-3	ND<50	ND<50	ND<5	ND<1.0
10-19-92	MW-5	ND<50	ND<50	ND<5	2
10-19-92	MW-6	500	ND<50	ND<5	26
<i>February 1993 Groundwater Sampling</i>					

Date Sampled	Monitoring Well	Diesel ug/L	Kerosene ug/L	Oil & Grease mg/L	Chlorobenzene ug/L
2-24-93	MW-3	ND<50	ND<50	ND<5	ND<1.0
2-24-93	MW-5	ND<50	ND<50	ND<5	1
2-24-93	MW-6	ND<50	170 +	ND<5	6
<i>May 1993 Groundwater Sampling</i>					
5-19-93	MW-3	ND<50	ND<50	ND<5	ND
5-19-93	MW-5	ND<50	ND<50	ND<5	2
5-19-93	MW-6	670	ND<50	ND<5	4
<i>August 1993 Groundwater Sampling</i>					
8-11-93	MW-3	ND<50	ND<50	ND<5	ND<1
8-11-93	MW-5	ND<50	ND<50	ND<5	ND<1
8-11-93	MW-6	80	*	7.0	10
<i>February 1994 Groundwater Sampling</i>					
2-2-94	MW-3	ND<50	ND<50	ND<05	ND<1
2-2-94	MW-5	ND<50	ND<50	ND<5	ND<1
2-2-94	MW-6	ND<50	220	ND<5	3
<i>May 1994 Groundwater Sampling</i>					
5-24-94	MW-3	ND<50	N/A	ND<5	ND<0.4
5-24-94	MW-5	ND<50	N/A	ND<5	0.6
5-24-94	MW-6	ND<50	N/A	ND<5	5.5
<i>September 1994 Groundwater Sampling</i>					
9-15-94	MW-3	ND<50	N/A	ND<5	ND<0.4
9-15-94	MW-5	ND<50	N/A	ND<5	ND<0.4
9-15-94	MW-6	ND<50	N/A	ND<5	4.6
<i>January 1995 Groundwater Sampling</i>					
1-13-95	MW-3	ND<50	N/A	ND<0.5	ND



Date Sampled	Monitoring Well	Diesel ug/L	Kerosene ug/L	Oil & Grease mg/L	Chlorobenzene ug/L
1-13-95	MW-5	ND<50	N/A	ND<0.5	1.1
1-13-95	MW-6	210	N/A	ND<0.5	5.0

ND - NOT DETECTED BELOW REPORTING LIMITS

NA - NOT ANALYZED BY LABORATORY

+ - DOES NOT MATCH DIESEL STANDARD (POSSIBLE MOTOR OIL HYDROCARBONS)

\* - KEROSENE RANGE NOT REPORTED DUE TO OVERLAP OF HYDROCARBON RANGES

Samples from well MW-6 (located in the pit back fill of a former waste oil tank) revealed detectable levels of Diesel; see Chart 3, MW-6 Quarterly Sampling Results for Diesel/Kerosene.

Samples from monitoring wells MW-3, MW-5 and MW-6 continue to show non-detectable levels of Oil and Grease.

Chlorobenzene was reported in soil samples recovered during the waste oil tank removal. Previous groundwater sampling show detectable levels of Chlorobenzene in monitoring wells MW-5 and MW-6; with non-detectable levels in MW-3. In this latest sampling (January 13, 1995) results show the continuing presence of Chlorobenzene in MW-5 and MW-6; see Chart 4, MW-5 and MW-6 Quarterly Sampling Results for Chlorobenzene. The Chlorobenzene levels, however, are well below water Maximum Contaminant Levels (MCL's) of 100 parts per billion or 0.10 parts per million.

#### 4.0 GROUNDWATER MEASUREMENTS

Once the wells were uncapped for sampling each was allowed to equilibrate with atmospheric pressure. The wells were periodically measured until two successive measurements of the water elevation in each well agreed within 0.01 of a foot. Details of groundwater measuring are in Attachment 3, Records of Water Sample Collection. By measuring the water levels in three groundwater monitoring wells, MW-2, MW-3, and MW-4, TMC calculated the down gradient direction and horizontal gradient. Table 3 summarizes groundwater level data collected over the thirteen sampling episodes.

TABLE 3 GROUNDWATER MEASUREMENTS FROM MONITORING WELLS

Date	Well Label	Water Level	Casing Elevation (msl)	Water Elevation (msl)
6-20-90	MW2	-7.16	16.73	9.57
6-20-90	MW3	-7.37	15.89	8.52

<i>Date</i>	<i>Well Label</i>	<i>Water Level</i>	<i>Casing Elevation (msl)</i>	<i>Water Elevation (msl)</i>
6-20-90	MW4	-7.60	16.39	8.79
9-13-90	MW2	-8.78	16.73	7.95
9-13-90	MW3	-8.70	15.89	7.19
9-13-90	MW4	-8.80	16.39	7.59
12-17-90	MW2	-8.78	16.73	7.95
12-17-90	MW3	-8.42	15.89	7.47
12-17-90	MW4	-8.61	16.39	7.78
12-4-91	MW2	-7.99	16.73	8.74
12-4-91	MW3	-8.18	15.89	7.71
12-4-91	MW4	-8.26	16.39	8.13
4-29-92	MW2	-6.05	16.73	10.68
4-29-92	MW3	-6.73	15.89	9.16
4-29-92	MW4	-6.81	16.39	9.58
8-29-92	MW1	-7.92	16.39	8.47
8-29-92	MW2	-7.82	16.73	8.91
8-29-92	MW3	-8.21	15.89	7.68
8-29-92	MW4	-8.14	16.39	8.25
8-29-92	MW5	-7.57	15.13	7.56
8-29-92	MW6	-8.00	15.98	7.98
10-19-92	MW1	-8.44	16.39	7.95
10-19-92	MW2	-8.37	16.73	8.36
10-19-92	MW3	-8.58	15.89	7.31
10-19-92	MW4	-8.53	16.39	7.86
10-19-92	MW5	-7.96	15.13	7.17
10-19-92	MW6	-8.44	15.98	7.54
2-24-93	MW1	-5.36	16.39	11.03
2-24-93	MW2	-5.42	16.73	11.31

<i>Date</i>	<i>Well Label</i>	<i>Water Level</i>	<i>Casing Elevation (msl)</i>	<i>Water Elevation (msl)</i>
2-24-93	MW3	-6.11	15.89	9.78
2-24-93	MW4	-6.30	16.39	10.09
2-24-93	MW5	-5.32	15.13	9.81
2-24-93	MW6	-5.40	15.98	10.58
5-19-93	MW-1	-6.35	16.39	10.04
5-19-93	MW-2	-6.35	16.73	10.38
5-19-93	MW-3	-7.14	15.89	8.75
5-19-93	MW-4	-7.09	16.39	9.30
5-19-93	MW-5	-6.38	15.13	8.77
5-19-93	MW-6	-6.57	15.98	9.41
8-11-93	MW-1	-8.06	16.39	8.33
8-11-93	MW-2	-8.09	16.73	8.64
8-11-93	MW-3	-8.45	15.89	7.44
8-11-93	MW-4	-8.31	16.39	8.08
8-11-93	MW-5	-7.68	15.13	7.45
8-11-93	MW-6	-8.16	15.98	7.82
2-2-94	MW-1	-7.43	16.39	8.96
2-2-94	MW-2	-7.48	16.73	9.25
2-2-94	MW-3	-7.69	15.89	8.20
2-2-94	MW-4	-7.83	16.39	8.56
2-2-94	MW-5	-6.98	15.13	8.15
2-2-94	MW-6	-7.40	15.98	8.58
5-26-94	MW-1	-6.95	16.39	9.44
5-26-94	MW-2	-6.97	16.73	9.76
5-26-94	MW-3	-7.39	15.89	8.50
5-26-94	MW-4	-7.44	16.39	8.95

<i>Date</i>	<i>Well Label</i>	<i>Water Level</i>	<i>Casing Elevation (msl)</i>	<i>Water Elevation (msl)</i>
5-26-94	MW-5	-6.72	15.13	8.41
5-26-94	MW-6	-7.01	15.98	8.97
9-15-94	MW-1	-8.04	16.34	8.30
9-15-94	MW-2	-7.95	16.72	8.77
9-15-94	MW-3	-8.28	15.89	7.61
9-15-94	MW-4	-8.15	16.35	8.20
9-15-94	MW-5	-7.68	15.13	7.45
9-15-94	MW-6	-8.10	15.98	7.88
9-15-94	MW-7	-8.13	16.31	8.18
1-13-95	MW-1	-5.59	16.34	10.75
1-13-95	MW-2	-5.64	16.72	11.08
1-13-95	MW-3	-5.94	15.89	9.95
1-13-95	MW-4	-6.27	16.35	10.08
1-13-95	MW-5	-5.13	15.13	10.00
1-13-95	MW-6	-5.49	15.98	10.49
1-13-95	MW-7	-5.72	16.31	10.59

Table 4 summarizes the estimated groundwater down flow direction and horizontal gradient. TMC used a three point solution to estimate the direction and gradient. Ground water level data from MW-2, MW-3 and MW-4 were used in the estimate.

TABLE 4 GROUNDWATER GRADIENT AND DIRECTION

<i>Measurement Date</i>	<i>Down Gradient Direction</i>	<i>Horizontal Gradient</i>	<i>Average Water Level feet above msl</i>
6-20-90	North 26 degrees West	0.009 ft/ft	9.0
9-13-90	North 2 degrees East	0.005 ft/ft	7.9
12-17-90	North 19 degrees East	0.003 ft/ft	8.1
12-4-91	North 12 degrees West	0.008 ft/ft	8.5
4-29-92	North 20 degrees West	0.012 ft/ft	9.8
8-29-92	North 5 degrees West	0.009 ft/ft	8.1
10-19-92	North 2 degrees East	0.007 ft/ft	7.7
2-24-93	North 31 degrees West	0.014 ft/ft	10.4
5-19-93	North 7 degrees West	0.014 ft/ft	9.4
8-11-93	North 4 degrees West	0.008 ft/ft	7.96
2-24-94	North 12 degrees West	0.008 ft/ft	8.69
5-26-94	North 10 degrees West	0.01 ft/ft	8.91
9-15-94	North 1.5 degrees West	0.008 ft/ft	8.19
1-13-95	North 43 degrees West	0.011ft/ft	10.42

Review of previous groundwater measurements indicate the down gradient direction and the horizontal gradient vary between groundwater sampling measurement episodes. The variation is relatively low for measurements of this type. The changing groundwater gradient and elevations indicate the shallow water is sensitive to seasonal changes in rainfall.

The most recent data indicate a North 43 degrees West flow direction at an average horizontal gradient of 0.011 ft/ft. The horizontal gradient is similar to the topographic slope of the lot. Groundwater measurement episodes indicate a range of flow direction from N43°W to N19°E, and a range of horizontal gradient from 0.005 to 0.014 ft/ft. Plate 3, Groundwater Gradient Map, and the attached worksheet illustrate the most recent (January 1995) horizontal gradient calculated across the site.

## 5.0 WATER SAMPLE DATA QUALITY

The quality assurance and quality control (QA/QC) review of the new sample data for this report indicates that the data is acceptable for the purpose and objectives of this project. TMC did not review data summarized from previous reports. The U.S. Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) and the California Department of Health Services (DOHS) Leaking Underground Fuel Tank (LUFT) Manual were used to evaluate the sampling data since the SW-846 and LUFT methodologies were primarily used to analyze the samples. The samples were analyzed by AMER of Sunnyvale, California. The certified laboratory reports and chain-of-custody forms are presented in the attachments.

### 5.1 QUALITY OF GROUNDWATER SAMPLES

During sampling, all monitoring wells were purged of at least 3 bore volumes of water, in accordance with EPA protocol. At the end of purging, the well water was clear in all wells. The deionized water equipment blank for the sampling reported no detectable compounds.

### 5.2 CHAIN OF CUSTODY DOCUMENTATION

Complete chain-of-custody forms were maintained for all samples from the time of their collection until their submission to the laboratory. No errors in chain-of-custody protocol were noted.

### 5.3 PURGEABLE HALOCARBONS

Based on the QC data reviewed, the results of analyses for halogenated volatile organic hydrocarbons by EPA SW-846 Method 601 appear reasonably representative. Groundwater samples were analyzed within the EPA-specified maximum holding time. Surrogate spike recoveries were judged acceptable based on professional judgement. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist.

### 5.4 TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX

Based on the QC data reviewed, total petroleum hydrocarbons (TPH) as gasoline analysis by EPA Method 8015M and benzene, toluene, ethylbenzene, and total xylenes (BTEX) analyses by EPA Method 8020 appear reasonably representative. Samples were analyzed within the Regional Water Quality Control Board specified 7-day maximum holding time for water samples. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist.

## 5.5 TOTAL PETROLEUM HYDROCARBONS AS DIESEL

Based on the QC data review, total petroleum hydrocarbons (TPH) analysis by EPA Method 8015M appear reasonably representative. Samples were analyzed within the Regional Water Quality Control Board specified 14 day maximum holding time for water samples. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist.

## 5.6 HYDROCARBON OIL & GREASE

Based on the QC data reviewed, the results of analyses for hydrocarbon oil & grease by EPA Method 5520 F analysis appear reasonably representative. Groundwater samples were analyzed within the EPA-specified maximum holding time. Surrogate spike recoveries were judged acceptable based on professional judgement. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist. No hydrocarbon oil & grease was detected in the method blanks.

## 6.0 COMMENTS AND SCHEDULE OF ACTIVITIES

Results from the verifying soil bore samples and MW-7 indicate that the gasoline contaminated soils (surrounding the former gasoline tank and excavation) were removed by the soil vapor extraction system. Groundwater samples from monitoring well MW-1 (placed in the former tank pit), however, continue to show detectable levels of gasoline and BTEX's. Groundwater samples from MW-7 (placed approximately 10 feet down gradient from MW-1) show non-detectable gasoline BTEX levels. TMC, therefore, believes that a pocket of gasoline contamination remains in the capillary fringe in the vicinity of MW-1, and is not subject to vapor extraction remediation. TMC proposes to excavate the contaminated materials surrounding MW-1, estimated to be 10 cubic yards. The contaminated soils will be stockpiled on the existing soil pile and treated.

TMC will destroy MW-1 (prior to excavation) and the existing soil vapor recovery wells. This work will be performed by a state-licensed drilling contractor and under the supervision of a state registered geologist or civil engineer.

In accordance with a letter from the ACHCSA, dated December 29, 1994, TMC proposes to sample and gauge the monitoring wells on the following schedule. Sampling of MW-7 on a quarterly basis, sampling of MW-3, MW-5, and MW-6 on a semi-annual basis, and the gauging only of MW-2 and MW-4 when required for groundwater gradient calculations. Groundwater

samples from MW-7 will be analyzed for TPH-Gasoline and BTEX when they are next due for sampling. Samples from MW-3, MW-5, and MW-6 will be analyzed for TPH-Diesel, oil and grease, and purgeable halocarbons when they are next due for sampling.

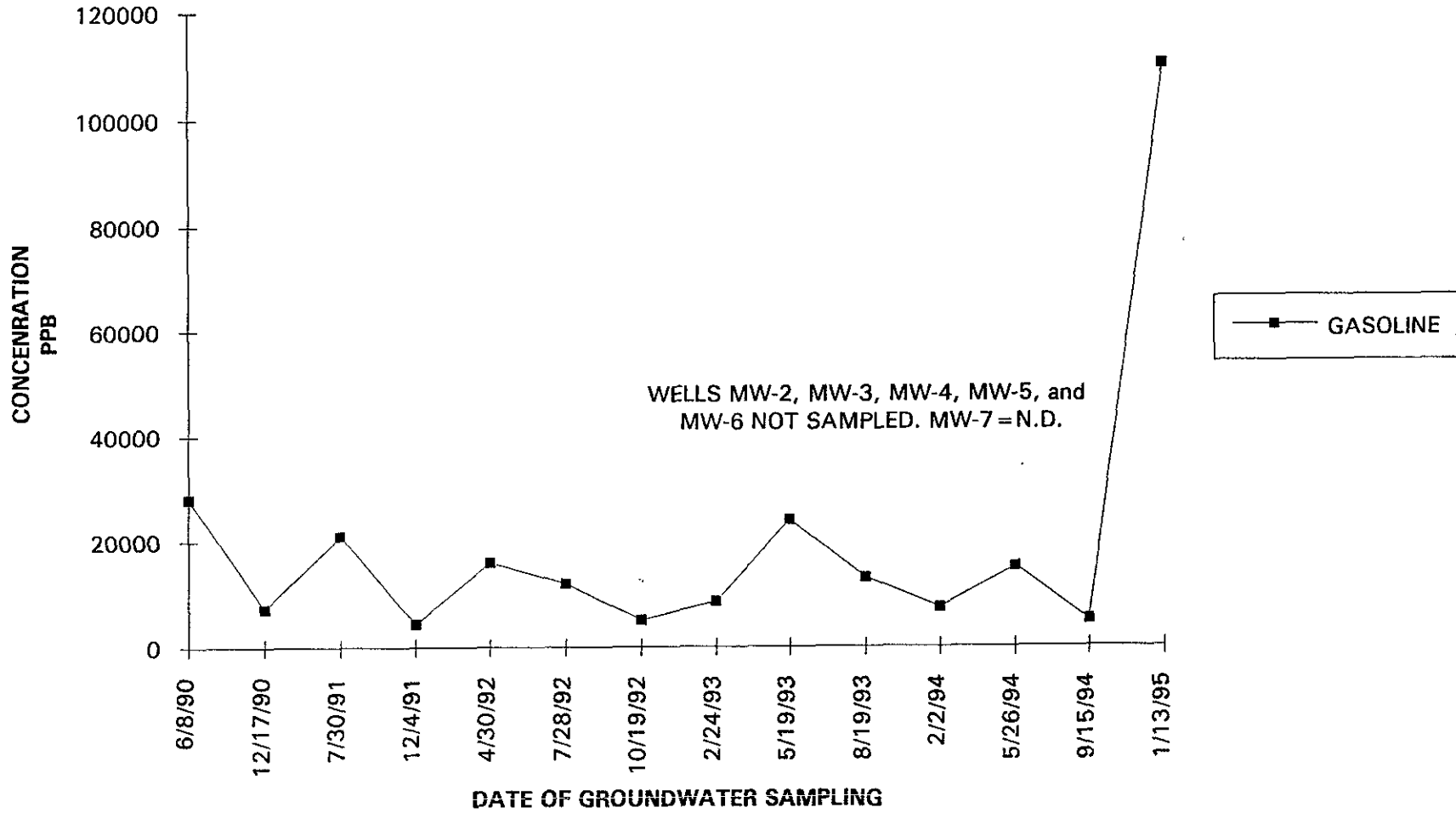
## 7.0 LIMITATIONS

The procedures and opinions in this report agree with professional practice as provided in the guidelines of the California Regional Water Quality Control Board for addressing fuel leaks from underground tanks. This report is only part of the ongoing work required by the lead implementing agency at this site. The lab test results rely on limited data collected at the sampling location only. Budget constraints restrict the amount of testing allowed. The lab test results may not apply to the general site as a whole. Therefore, TMC Environmental Inc. cannot have complete knowledge of the underlying conditions. We provide the information in the resulting report to our client so he may make a more informed decision about site conditions. The professional opinion and judgement in the reports is subject to revisions in light of new information. We do not state or imply any guarantees or warranties that the subject property is or is not free of environmental impairment. Monitoring wells and soil venting wells are temporary sampling and remediation wells that eventually must be permitted and destroyed by a licensed driller at the clients expense.



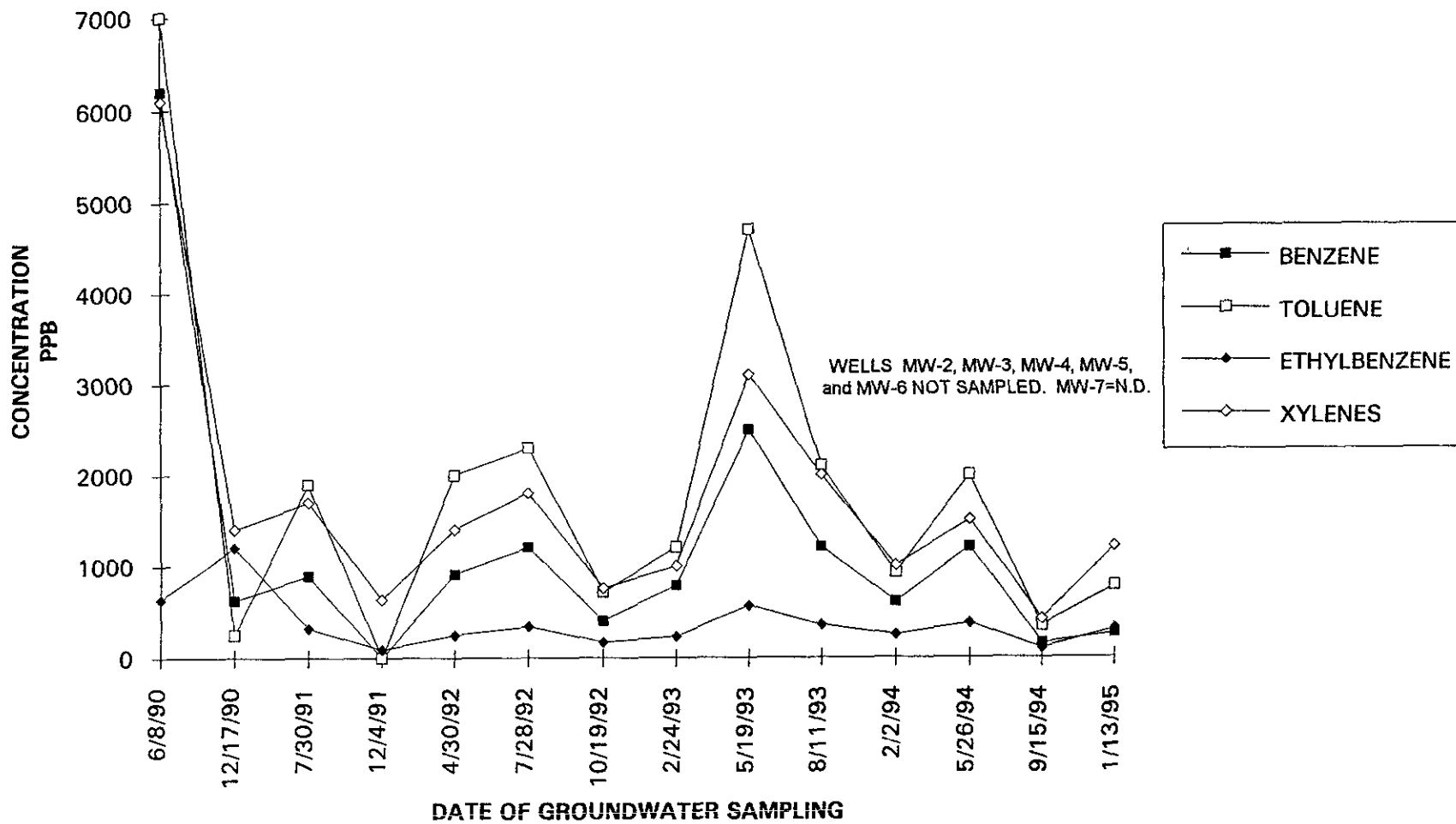
**CHART 1**  
**MW1 QUARTERLY SAMPLING RESULTS FOR GASOLINE**

CAVANAUGH MOTORS

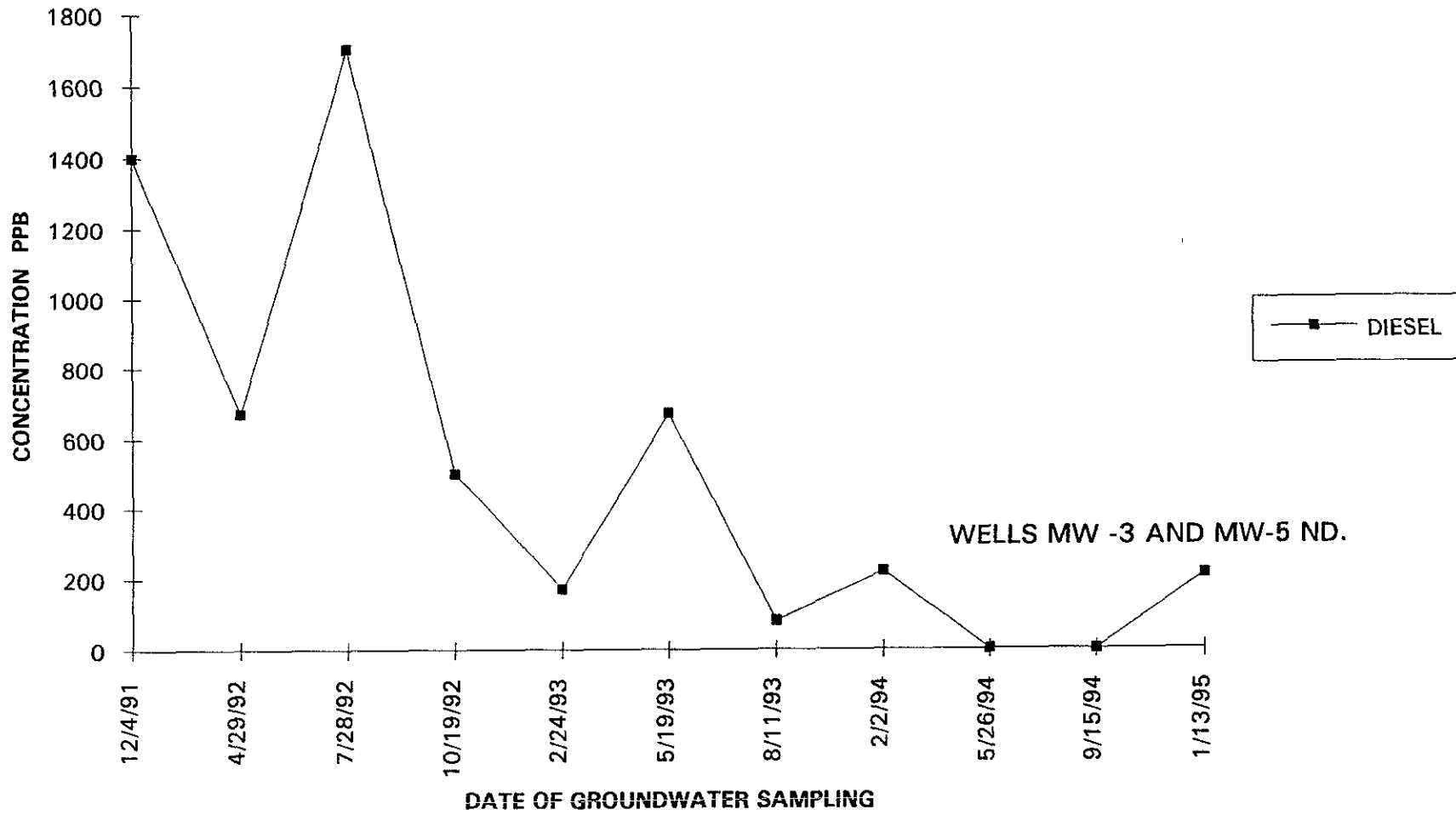


**CHART 2**  
**MW1 QUARTERLY SAMPLING RESULTS FOR BTEX**

CAVANAUGH MOTORS

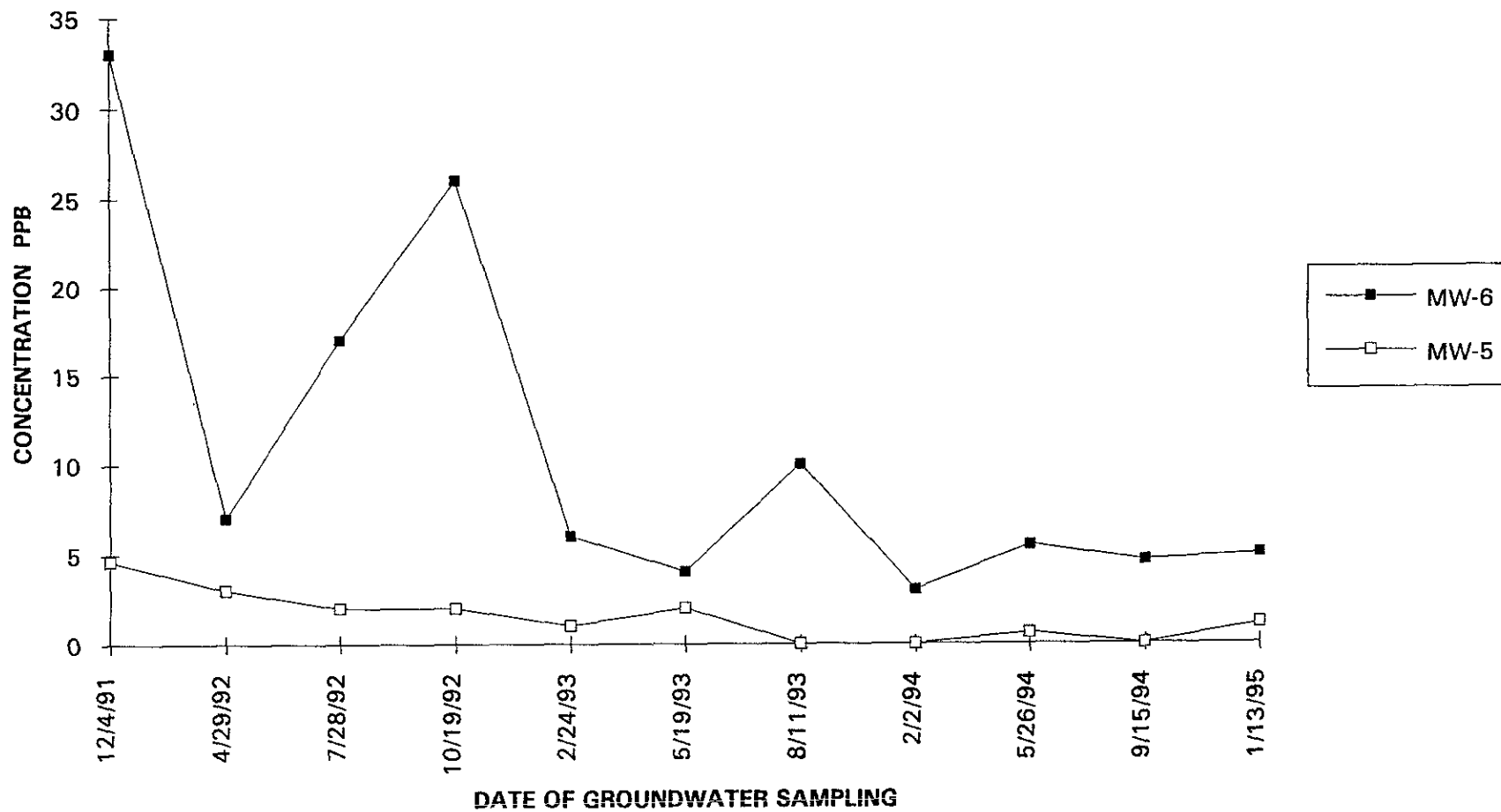


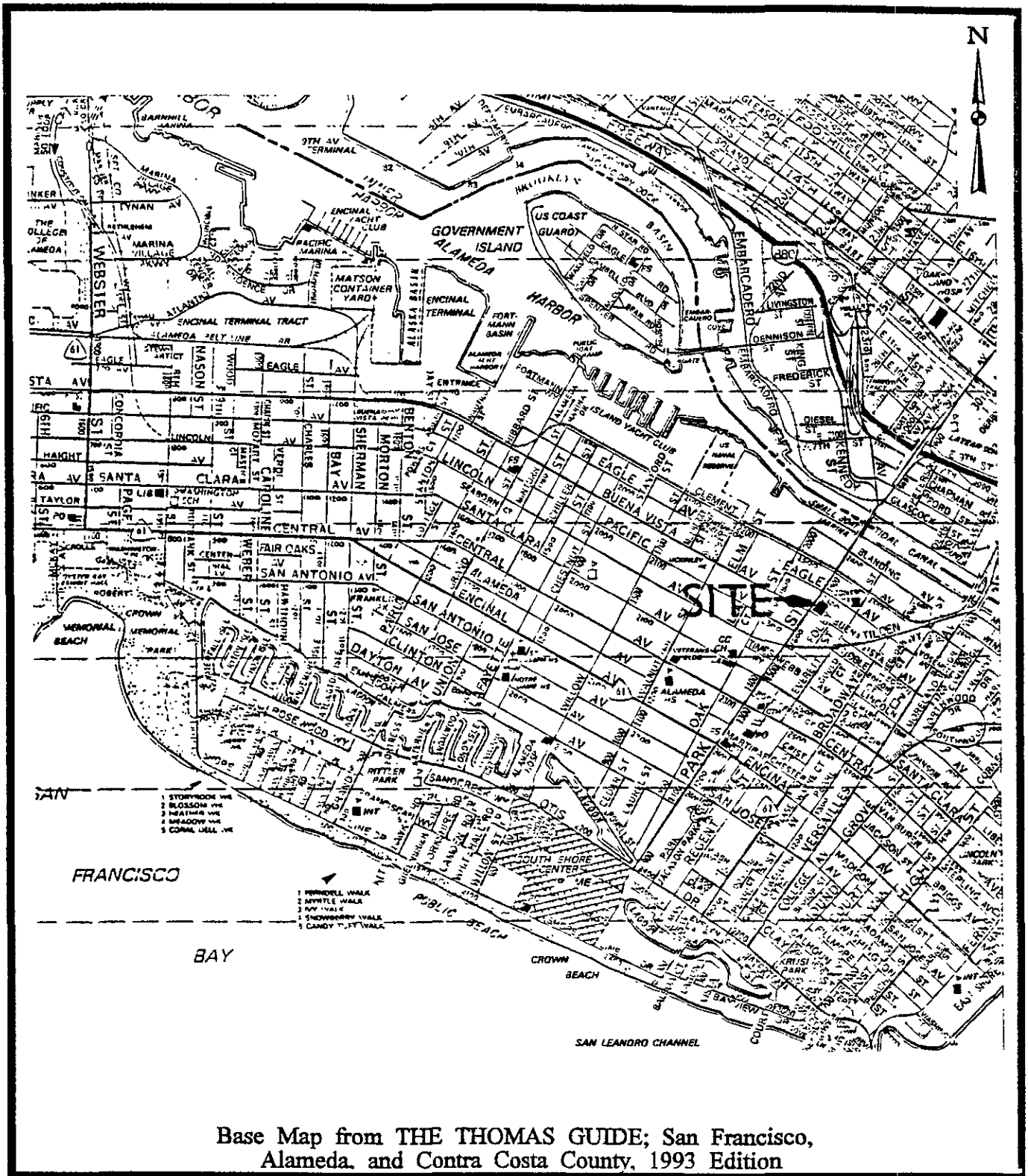
**CHART 3**  
**MW-6 QUARTERLY SAMPLING RESULTS FOR DIESEL**  
CAVANAUGH MOTORS



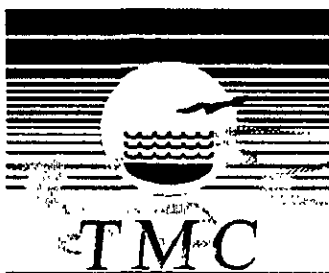
**CHART 4**  
**MW-5 AND MW-6 QUARTERLY SAMPLING**  
**RESULTS FOR CHLORO BENZENE**

CAVANAUGH MOTORS





Base Map from THE THOMAS GUIDE; San Francisco, Alameda, and Contra Costa County, 1993 Edition



Environmental, Inc.

## SITE VICINITY MAP

CAVANAUGH MOTORS

1700 Park Street

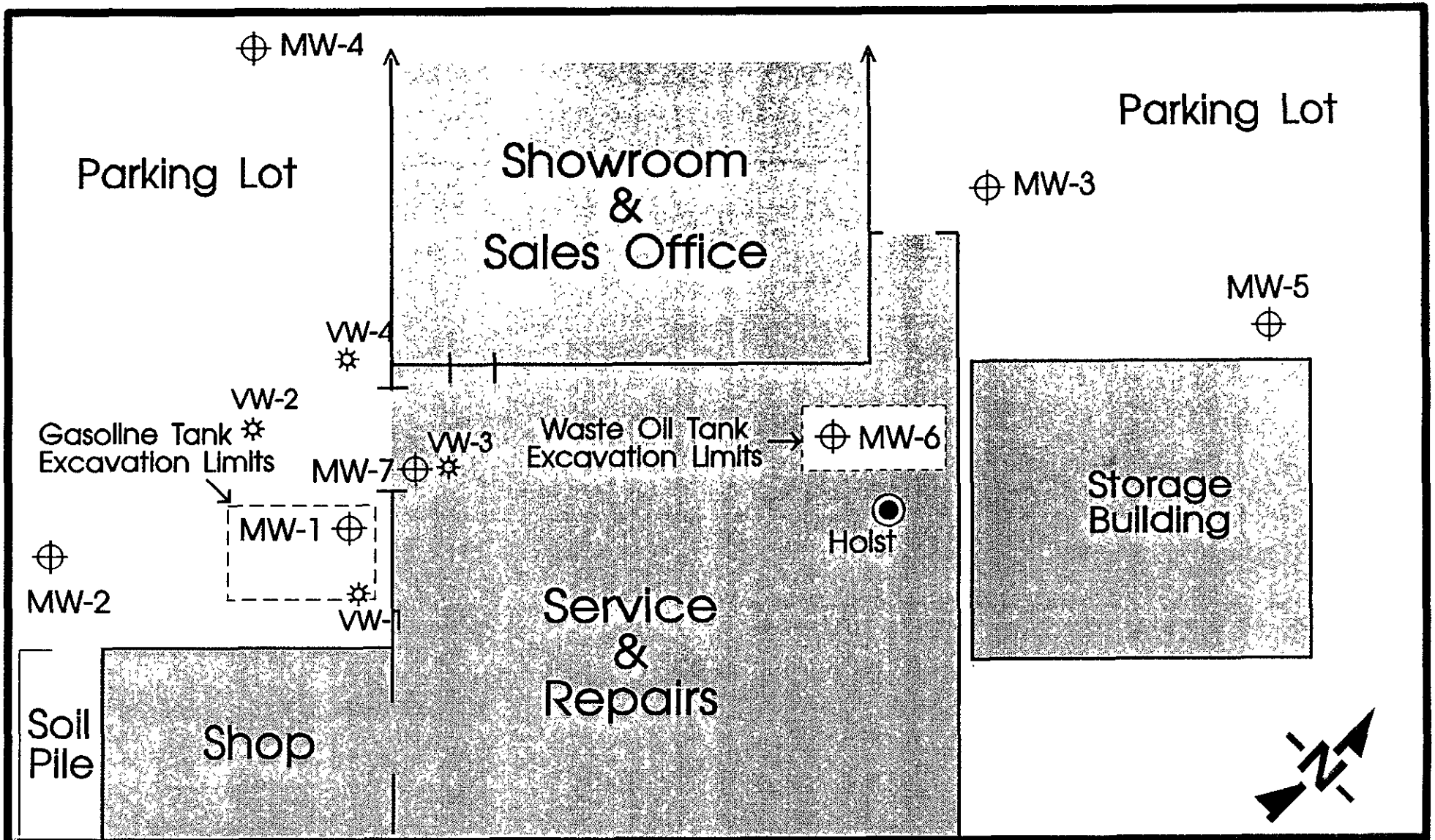
Alameda, California

Project # 101090

February 1995

PLATE

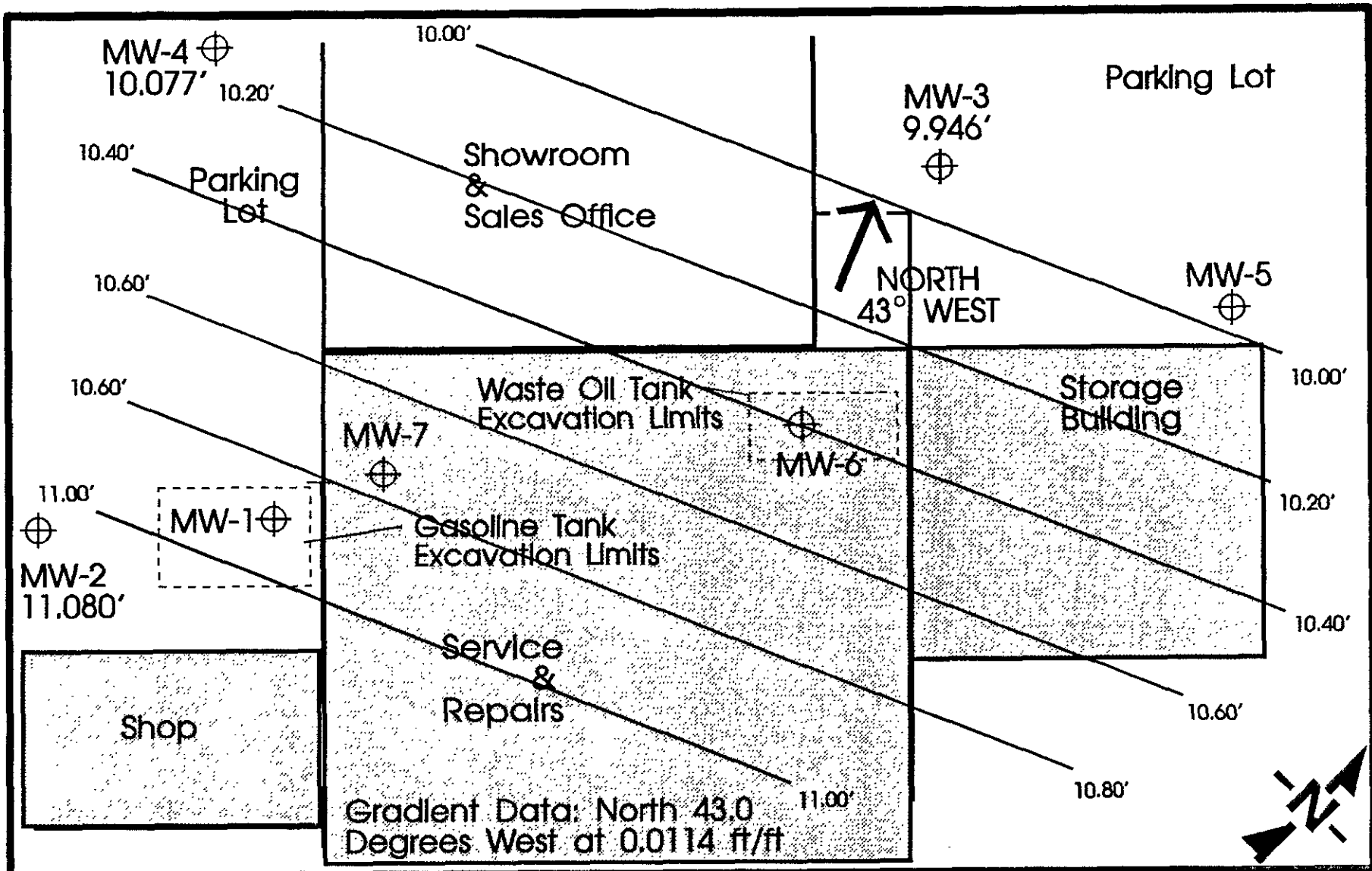
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LEGEND	
MW-0	Monitoring Well
VW-1	Vapor Extraction Well
[Box]	Building Interiors

Project No. 101090  
 February, 1995  
 Scale 1 Inch=20 ft.

**SITE PLAN**  
**Cavanaugh Motors**  
 1700 Park Street, Alameda California



**LEGEND**



MW-0  
1.00 ft

All Elevations Are In Feet MSL.

Project# 101090 Feb. 1995  
Approximate Scale: 1 inch = 20 feet

**GROUNDWATER GRADIENT  
MAP**

**Cavanaugh Motors**

1700 Park Street, Alameda Ca

ATTACHMENT 1  
LABORATORY REPORTS



# AMER

Advanced Materials Engineering Research, Inc.

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**ANALYSIS REPORT**  
**(ELAP Certificate No. 1909)**  
**EPA METHOD 8020**

**CLIENT:**

TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806

DATE SAMPLED: 01-13-95

DATE RECEIVED: 01-16-95

DATE REPORTED: 01-25-95

AMER ID: E803

MATRIX: WATER

**PROJECT MANAGER: Donald Chung**

**PROJECT: 1700 Park St., #101090**

Client I.D.	AMER I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	DF
MW7	E5011601	ND	ND	ND	ND	1
MW1	E5011602	260	770	310	1200	1
Units		ug/l	ug/l	ug/l	ug/l	
Method Detection Limits		0.5ug/l	0.5ug/l	0.5ug/l	0.5ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection. Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor.

Reviewed By



Lei Chen, Laboratory Manager

# AMER

Advanced Materials Engineering Research, Inc.

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**ANALYSIS REPORT**  
**(ELAP Certificate No. 1909)**  
**EPA METHOD 8015M**

**CLIENT:**

TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806

DATE SAMPLED: 01-13-95  
DATE RECEIVED: 01-16-95  
DATE REPORTED: 01-25-95  
AMER ID: E803

**MATRIX: WATER**


**PROJECT MANAGER: Donald Chung**

**PROJECT: 1700 Park St., #101090**

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
MW7	E5011601	ND	1
MW1	E5011602	<b>11000</b>	1
Units		ug/l	
Method Detection Limits		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection. Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor.

Reviewed By

  
Lei Chen, Laboratory Manager

# AMER

Advanced Materials Engineering Research, Inc.

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**ANALYSIS REPORT**  
**(ELAP Certificate No. 1909)**  
**EPA METHOD 8015M**

**CLIENT:**

TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806

DATE SAMPLED: 01-13-95  
DATE RECEIVED: 01-16-95  
DATE REPORTED: 01-25-95  
AMER ID: E803

**MATRIX: WATER**

**PROJECT MANAGER: Donald Chung**

**PROJECT: 1700 Park St., #101090**

Client I.D.	AMER I.D.	8015M/ TPH-DIESEL	DF
MW6	E5011603	210	1
MW3	E5011604	ND	1
MW5	E5011605	ND	1
Units		ug/l	
Method Detection Limits		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection. Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor.

Reviewed By



Lei Chen, Laboratory Manager

# AMER

Advanced Materials Engineering Research, Inc.

**ANALYSIS REPORT**  
**(ELAP CERTIFICATE No. 1909)**  
**EPA METHOD 601**

Client: TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806

Project Manager: Donald Chung

Laboratory Report ID.: E803

Sample Name: MW6, E5011603

Project Name: 1700 Park St., #101090

Date Sampled: 01-13-95

Date Received: 01-16-95

Date Analyzed: 01-16-95

Date Reported: 01-25-95

Matrix: WATER

Dilution Factor: 1

ANALYTES	RESULTS ug/l	MDL ug/l	ANALYTES	RESULTS ug/l	MDL ug/l
Bromodichloromethane	ND	0.8	1,1-Dichloroethene	ND	0.4
Bromoform	ND	0.8	cis-1,2-dichloroethelyne	ND	0.5
bromomethane	ND	2	trans-1,2-Dichloroethene	ND	0.4
Carbon tetrachloride	ND	0.4	1,2-Dichloropropane	ND	0.4
Chlorobenzene	5.0	0.4	cis-1,3-Dichloropropene	ND	0.8
Chloroethane	ND	0.5	trans-1,3-Dichloropropene	ND	0.8
2-Chloroethyl vinyl ether	ND	0.4	Freon 113	ND	2.0
Chloroform	ND	0.4	Methylene Chloride	ND	4
Chloromethane	ND	2	1,1,2,2-Tetrachloroethane	ND	0.4
Dibromochloromethane	ND	0.8	Tetrachloroethene	ND	0.4
1,2-Dichlorobenzene	ND	0.8	1,1,1-Trichloroethane	ND	0.4
1,3-Dichlorobenzene	ND	0.4	1,1,2-Trichloroethane	ND	0.5
1,4-Dichlorobenzene	ND	0.4	Trichloroethene	ND	0.4
Dichlorodifluoromethane	ND	2	Trichlorofluoromethane	ND	0.8
1,1-Dichloroethane	ND	0.4	Vinyle Chloride	ND	0.5
1,2-Dichloroethane	ND	0.8			

**Notes**

\*Indicates extra compound requested by the client.

NR-Analyses not requested

COC-Chain of Custody

ND-Analyses not detected at, or above the stated detection limit

ppb-ug/l for waters, ug/kg for soils

DL-Detection Limit Factor

SDL-Sample Detection Limit-Multiply DL by the DL Factor to obtain the detection limit for a specific analyte

MDL- Method Detection Limit

Sample Detection Limit is equal to the MDL multiplied to the DF

**Procedures:**

This analysis was performed in using EPA Method 8010, EPA Method 8020, and EPA 5030

**Certification:**

California Department of Health Services ELAP Certificate #1909

Reviewed By:



Lei Chen, Laboratory Manager

# AMER

Advanced Materials Engineering Research, Inc.

**ANALYSIS REPORT**  
**(ELAP CERTIFICATE No. 1909)**  
**EPA METHOD 601**

Client: TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806

Project Manager: Donald Chung

Laboratory Report ID.: E803

Sample Name: MW3, E5011604

Project Name: 1700 Park St., #101090

Date Sampled: 01-13-95

Date Received: 01-16-95

Date Analyzed: 01-16-95

Date Reported: 01-25-95

Matrix: WATER

Dilution Factor: 1

ANALYTES	RESULTS ug/l	MDL ug/l	ANALYTES	RESULTS ug/l	MDL ug/l
Bromodichloromethane	ND	0.8	1,1-Dichloroethene	ND	0.4
Bromoform	ND	0.8	cis-1,2-dichloroethelyne	ND	0.5
bromomethane	ND	2	trans-1,2-Dichloroethene	ND	0.4
Carbon tetrachloride	ND	0.4	1,2-Dichloropropane	ND	0.4
Chlorobenzene	ND	0.4	cis-1,3-Dichloropropene	ND	0.8
Chloroethane	ND	0.5	trans-1,3-Dichloropropene	ND	0.8
2-Chloroethyl vinyl ether	ND	0.4	Freon 113	ND	2.0
Chloroform	ND	0.4	Methylene Chloride	ND	4
Chloromethane	ND	2	1,1,2,2-Tetrachloroethane	ND	0.4
Dibromochloromethane	ND	0.8	Tetrachloroethene	ND	0.4
1,2-Dichlorobenzene	ND	0.8	1,1,1-Trichloroethane	ND	0.4
1,3-Dichlorobenzene	ND	0.4	1,1,2-Trichloroethane	ND	0.5
1,4-Dichlorobenzene	ND	0.4	Trichloroethene	ND	0.4
Dichlorodifluoromethane	ND	2	Trichlorofluoromethane	ND	0.8
1,1-Dichloroethane	ND	0.4	Vinyle Chloride	ND	0.5
1,2-Dichloroethane	ND	0.8			

Notes

\*Indicates extra compound requested by the client.

NR-Analysis not requested.

COC-Chain of Custody

ND-Analytes not detected at, or above the stated detection limit

ppb-ug/l for waters; ug/kg for soils

DL-Detection Limit Factor

SDL-Sample Detection Limit-Multiply DL by the DL Factor to obtain the detection limit for a specific analyte

MDL- Method Detection Limit

Sample Detection Limit is equal to the MDL multiplied to the DF

Procedures:

This analysis was performed in using EPA Method 8010, EPA Method 8020, and EPA 5030

Certification:

California Department of Health Services ELAP Certificate #1909

Reviewed By:



Lei Chen, Laboratory Manager

# AMER

Advanced Materials Engineering Research, Inc.

**ANALYSIS REPORT**  
**(ELAP CERTIFICATE No. 1909)**  
**EPA METHOD 601**

Client: TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806

Project Manager: Donald Chung

Laboratory Report ID.: E803

Sample Name: MW5, E5011605

Project Name: 1700 Park St., #101090

Date Sampled: 01-13-95

Date Received: 01-16-95

Date Analyzed: 01-16-95

Date Reported: 01-25-95

Matrix: WATER

Dilution Factor: 1

ANALYTES	RESULTS ug/l	MDL ug/l	ANALYTES	RESULTS ug/l	MDL ug/l
Bromodichloromethane	ND	0.8	1,1-Dichloroethene	ND	0.4
Bromoform	ND	0.8	cis-1,2-dichloroethelyne	ND	0.5
bromomethane	ND	2	trans-1,2-Dichloroethene	ND	0.4
Carbon tetrachloride	ND	0.4	1,2-Dichloropropane	ND	0.4
Chlorobenzene	1.1	0.4	cis-1,3-Dichloropropene	ND	0.8
Chloroethane	ND	0.5	trans-1,3-Dichloropropene	ND	0.8
2-Chloroethyl vinyl ether	ND	0.4	Freon 113	ND	2.0
Chloroform	ND	0.4	Methylene Chloride	ND	4
Chloromethane	ND	2	1,1,2,2-Tetrachloroethane	ND	0.4
Dibromochloromethane	ND	0.8	Tetrachloroethene	ND	0.4
1,2-Dichlorobenzene	ND	0.8	1,1,1-Trichloroethane	ND	0.4
1,3-Dichlorobenzene	ND	0.4	1,1,2-Trichloroethane	ND	0.5
1,4-Dichlorobenzene	ND	0.4	Trichloroethene	ND	0.4
Dichlorodifluoromethane	ND	2	Trichlorofluoromethane	ND	0.8
1,1-Dichloroethane	ND	0.4	Vinyle Chloride	ND	0.5
1,2-Dichloroethane	ND	0.8			

Notes

\*Indicates extra compound requested by the client

NR-Analysis not requested.

COC-Chain of Custody

ND-Analytes not detected at, or above the stated detection limit

ppb-ug/l for waters; ug/kg for soils

DL-Detection Limit Factor

SDL-Sample Detection Limit-Multiply DL by the DL Factor to obtain the detection limit for a specific analyte

MDL- Method Detection Limit

Sample Detection Limit is equal to the MDL multiplied to the DF

Procedures:

This analysis was performed in using EPA Method 8010, EPA Method 8020, and EPA 5030

Certification:

California Department of Health Services ELAP Certificate #1909

Reviewed By:



Lei Chen, Laboratory Manager

# AMER

Advanced Materials Engineering Research, Inc.

**ANALYSIS REPORT**  
**(ELAP Certificate No. 1909)**  
**EPA METHOD 5520F**

Client: TMC Environmental, Inc.  
13908 San Pablo Ave., Suite 101  
San Pablo, CA 94806  
Project Manager: Donald Chung  
Laboratory Report ID.: E803  
**Project Name: 1700 Park St., #101090**

Date Sampled: 01-13-95  
Date Received: 01-16-95  
Date Analyzed: 01-20-95  
Date Reported: 01-25-95  
Matrix: WATER

Client I.D.	AMER I.D.	5520F Total Oil & Grease	Dilution Factor	MDL	Units
MW6	E5011603	ND	1	0.5	mg/l
MW3	E5011604	ND	1	0.5	mg/l
MW5	E5011605	ND	1	0.5	mg/l

N.D. Not Detected. Analytes were found to be at or below the stated detection limit.  
Sample Detection Limit is equal to the Method Detection Limit multiplied by the Dilution Factor

Spike Recovery: 93%

Reviewed By:



Lei Chen, Laboratory Manager

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E803

AMER I.D. E5011601-SP  
 Project: # #101090  
 Ext/Prep. Method: EPA 5030, DHS TPH  
 Date: 01-20-95  
 Analyst: BK

Analytical Method: EPA M. 8015/8020  
 Analysis date: 01-20-95  
 Analyst: BK  
 Matrix: Water  
 Unit: ug/l

Analyte	Sample Result	Spike Level	SP Result	SP %R	SPD Result	SPD %R	AVE. %R	LCL %R	UCL %R	RPD %	UCL %RPD
Benzene	0.00	20.00	20.24	101	20.15	101	101	76	127	0	11
Toluene	0.00	20.00	20.39	102	20.29	101	102	76	125	1	13
Chlorobenzene	0.00	20.00	19.97	100	19.59	98	99	75	130	2	13
TPH-Gasoline	0.00	500.00	511.75	102	533.21	107	104	70	130	4	30
TPH - Diesel	0.00	1000.00	950.86	95	890.42	89	92	70	130	7	30

Notes:  
 Sample Result-Concentration of Sample which is to used for Sample Spike & Sample Spike Duplicate  
 Spike Level- Level of Concentration Added to the Sample  
 SP Result- Sample Spike Result  
 SP %R- Sample Spike Percent Recovery  
 SPD Result- Sample Spike Duplicate Result  
 SPD %R- Sample Spike Duplicate Percent Recovery  
 AVE. % R.- Average Percent Recovery for SP & SPD % Recovery  
 LCL- Lower Criteria Level  
 UCL- Upper Criteria Level  
 RPD- Relative Percent Difference



EPA 601/8010 TEST QA/QC TABLE

AMER WORKORDER: E803

AMER I.D. Number: E803-MSP  
 Project: #101090  
 Ext/Prep. Method: EPA 5030  
 Date: 01-16-95  
 Analyst: LC

Analytical Method: EPA M. 601\8010  
 Analysis date: 01-16-95  
 Analyst: LC  
 Matrix: Water  
 Unit: ug/l

Analyte	Sample Result	Spike Level	MSP Result	MSP %R	MSPD Result	MSPD %R	AVE. %R	LCL %R	UCL %R	RPD %	UCL %RPD
1,1-dichloroethene	0.00	50.00	51.65	103	49.11	98	101	61	145	5	14
Trichloroethene	0.00	50.00	49.38	99	52.03	104	101	71	120	5	14
Chlorobenzene	0.00	50.00	48.98	98	49.72	99	99	75	130	1	13

Notes:  
 Sample Result-Concentration of Sample which is to used for Sample Spike & Sample Spike Duplicate  
 Spike Level- Level of Concentration Added to the Sample  
 MSP Result- Matrix Spike Result  
 MSP %R- Matrix Spike Percent Recovery  
 MSPD Result- Matrix Spike Duplicate Result  
 MSPD %R- Matrix Spike Duplicate Percent Recovery  
 AVG. %R - Average Recovery for MSP & MSPD % Recovery  
 LCL- Lower Criteria Level  
 UCL- Upper Criteria Level  
 RPD- Relative Percent Difference  
 UCL % RPD - Upper Criteria Level Relative Percent Difference



TMC Environmental, Inc.  
 13908 San Pablo Ave.  
 Suite 101  
 San Pablo, California  
 (510) 232-8366

**CHAIN OF CUSTODY RECORD**  
**ANALYSIS REQUEST FORM**  
 FOR  
**ENVIRONMENTAL SAMPLING**

JOB # 101090	JOB ADDRESS: 1700 PARK ST., ALAMEDA, CA	SAMPLER: D. CHUNG
LABORATORY NAME: <del>CURTIS &amp; TOMPKINS, LTD. 2323 FIFTH STREET, BERKELEY, CA 94710</del>		

LAB ID NO.	SAMPLE LABEL	SOIL	WATER	DATE	TIME	TVH-GAS BTEX	TEH-DIESEL	8010	011-80205E	5520 F
E5011601	MW7		X	1/13/95	1218	X				
E5011602	MW1		X	1/13/95	1310	X				
E5011603	MW6		X	1/13/95	1416		X	X	X	
E5011604	MW3		X	1/13/95	1445		X	X	X	
E5011605	MW5		X	1/13/95	1507		X	X	X	

Special Instructions:

Relinquished By:

Received By:

(Print Name) DONALD CHUNG	Date: 1/16/95	(Print Name) BILL LARSON
(Signature) <i>Donald Chung</i>	Time: 1:26	(Signature) <i>Bill Larson</i> #533
(Print Name) B. Larson	Date: 1/16/95	(Print Name)
(Signature) <i>Bill Larson</i>	Time: 2:45	(Signature) <i>Shirley Hi</i>
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)

LABORATORY NOTES: \_\_\_\_\_ DAYS TURNAROUND TIME FOR ANALYSIS RESULTS  
 PLEASE INCLUDE SAMPLE CONDITION REPORT WITH RESULTS

PLEASE FAX A COPY OF THE ANALYTICAL RESULTS TO THE FOLLOWING:  
 TMC ENVIRONMENTAL, INC. AT (510) 232-5133

ATTACHMENT 2  
RECORD OF WATER SAMPLE COLLECTION

# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW1	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	1044	1139	1150		
DEPTH IN FEET (MEASURE TO 0.01')	5.61'	5.59'	5.59'		

## WELL PURGING METHOD

TOTAL DEPTH OF WELL: 14.28'	DEPTH TO WATER: 5.59'	DIAMETER OF WELL: 4"
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 17.0 GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1242	61.4	1.00	NA	CLEAR
5.5	1245	64.6	0.96	NA	SLIGHTLY TURBID, RUST COLORED
11	1247	65.3	0.91	NA	CLEAR
16.5	1251	66.2	0.85	NA	SLIGHTLY TURBID, GREY
17	1252	67.4	0.85	NA	SLIGHTLY TURBID, GREY

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU): 5.5	TIME COLLECTED: 1310
PURGE WATER DESCRIPTION:	<input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input checked="" type="checkbox"/> CLEAR <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR <input type="checkbox"/> OTHER (describe)	

NA = NOT AVAILABLE: pH METER MALFUNCTIONED

# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW2	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	0950	1047			
DEPTH IN FEET (MEASURE TO 0.01')	5.64'	5.64'			

## WELL PURGING METHOD

TOTAL DEPTH OF WELL:	DEPTH TO WATER:	DIAMETER OF WELL:
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PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD:	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU):	TIME COLLECTED:
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> NO SHEEN <input type="checkbox"/> NO ODOR <input checked="" type="checkbox"/> OTHER (describe): WELL GAUGED ONLY		

# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW3	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	1408	1416			
DEPTH IN FEET (MEASURE TO 0.01')	5.94'	5.94'			

## WELL PURGING METHOD

TOTAL DEPTH OF WELL: 14.55'	DEPTH TO WATER: 5.94'	DIAMETER OF WELL: 4"
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 16.5 GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1420	60.4	1.46	NA	CLEAR
5.5	1422	61.3	1.39	NA	CLEAR
11	1426	61.7	1.49	NA	CLEAR
16	1428	61.8	1.49	NA	CLEAR
16.5	1429	61.9	1.50	NA	CLEAR

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU): 0.62	TIME COLLECTED: 1445
PURGE WATER DESCRIPTION:	<input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input checked="" type="checkbox"/> CLEAR <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR <input type="checkbox"/> OTHER (describe):	

NA = NOT AVAILABLE: pH METER MALFUNCTIONED

# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW4	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	1002	1054				
DEPTH IN FEET (MEASURE TO 0.01')	6.27'	6.27'				

## WELL PURGING METHOD

TOTAL DEPTH OF WELL:	DEPTH TO WATER:	DIAMETER OF WELL:
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = \_\_\_\_\_ GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD:	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU):	TIME COLLECTED:
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> NO SHEEN <input type="checkbox"/> NO ODOR <input checked="" type="checkbox"/> OTHER (describe): WELL GAUGED ONLY		

# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW5	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	1017	1102	1115	1132		
DEPTH IN FEET (MEASURE TO 0.01')	6.20'	5.14'	5.13'	5.13'		

## WELL PURGING METHOD

TOTAL DEPTH OF WELL: 19.19'	DEPTH TO WATER: 5.13'	DIAMETER OF WELL: 2"
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 7.5 GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: NEW DISPOSABLE BAILER	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1441	60.4	1.61	NA	CLEAR
2	1445	60.9	1.56	NA	SLIGHTLY TURBID, LIGHT BROWN
4	1448	61.5	1.58	NA	SLIGHTLY TURBID, LIGHT BROWN
6	1452	61.8	1.40	NA	SLIGHTLY TURBID, LIGHT BROWN
7.5	1455	61.9	1.60	NA	SLIGHTLY TURBID, LIGHT BROWN

SAMPLING METHOD: NEW DISPOSABLE BAILER	SAMPLE TURBIDITY (NTU): 5.3	TIME COLLECTED: 1507
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input checked="" type="checkbox"/> CLEAR <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR <input type="checkbox"/> OTHER (describe):		

NA = NOT AVAILABLE: pH METER MALFUNCTIONED



# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW6	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	1032	1106				
DEPTH IN FEET (MEASURE TO 0.01')	5.49'	5.49'				

## WELL PURGING METHOD

TOTAL DEPTH OF WELL: 19.28'	DEPTH TO WATER: 5.49'	DIAMETER OF WELL: 2"
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 7.0 GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: NEW DISPOSABLE BAILER	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1332	64.1	1.36	NA	CLEAR
2	1339	63.5	2.55	NA	TURBID, BROWN
4	1343	63.8	2.69	NA	TURBID, BROWN
6	1348	63.9	2.89	NA	TURBID, BROWN
7	1351	63.9	2.79	NA	TURBID, BROWN

SAMPLING METHOD: NEW DISPOSABLE BAILER	SAMPLE TURBIDITY (NTU): 60.2	TIME COLLECTED: 1416
PURGE WATER DESCRIPTION:	<input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input checked="" type="checkbox"/> CLEAR <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR <input type="checkbox"/> OTHER (describe):	

NA = NOT AVAILABLE: pH METER MALFUNCTIONED

# RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW7	DATE COLLECTED: 1/13/95	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO, DONALD CHUNG	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND:  CAPPED  LOCKED  DRY  WATER  DEBRIS  REPLACE CAP  REPLACE LOCK  
 OTHER (describe)

TIME MEASURED	1043	1110	1136			
DEPTH IN FEET (MEASURE TO 0.01')	5.74'	5.72'	5.72'			

## WELL PURGING METHOD

TOTAL DEPTH OF WELL: 15.21'	DEPTH TO WATER: 5.72'	DIAMETER OF WELL: 2"
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 5.0 GALLONS  
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: NEW DISPOSABLE BAILER	OVA-FID VAPOR READING, ppm :
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## WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1157	64.9	0.73	NA	CLEAR
1.5	1200	65.7	0.78	NA	SLIGHTLY TURBID, LIGHT BROWN
3	1204	66.3	0.78	NA	SLIGHTLY TURBID, LIGHT BROWN
4.5	1207	66.3	0.81	NA	SLIGHTLY TURBID, LIGHT BROWN
5	1208	67.1	0.77	NA	SLIGHTLY TURBID, LIGHT BROWN

SAMPLING METHOD: NEW DISPOSABLE BAILER	SAMPLE TURBIDITY (NTU): 120.2	TIME COLLECTED: 1218
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input checked="" type="checkbox"/> ODOR <input checked="" type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input checked="" type="checkbox"/> NO SHEEN <input type="checkbox"/> NO ODOR <input type="checkbox"/> OTHER (describe):		

NA = NOT AVAILABLE: pH METER MALFUNCTIONED

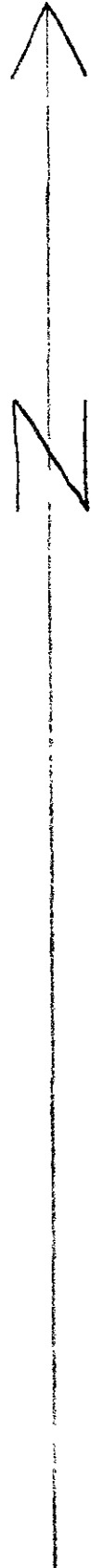
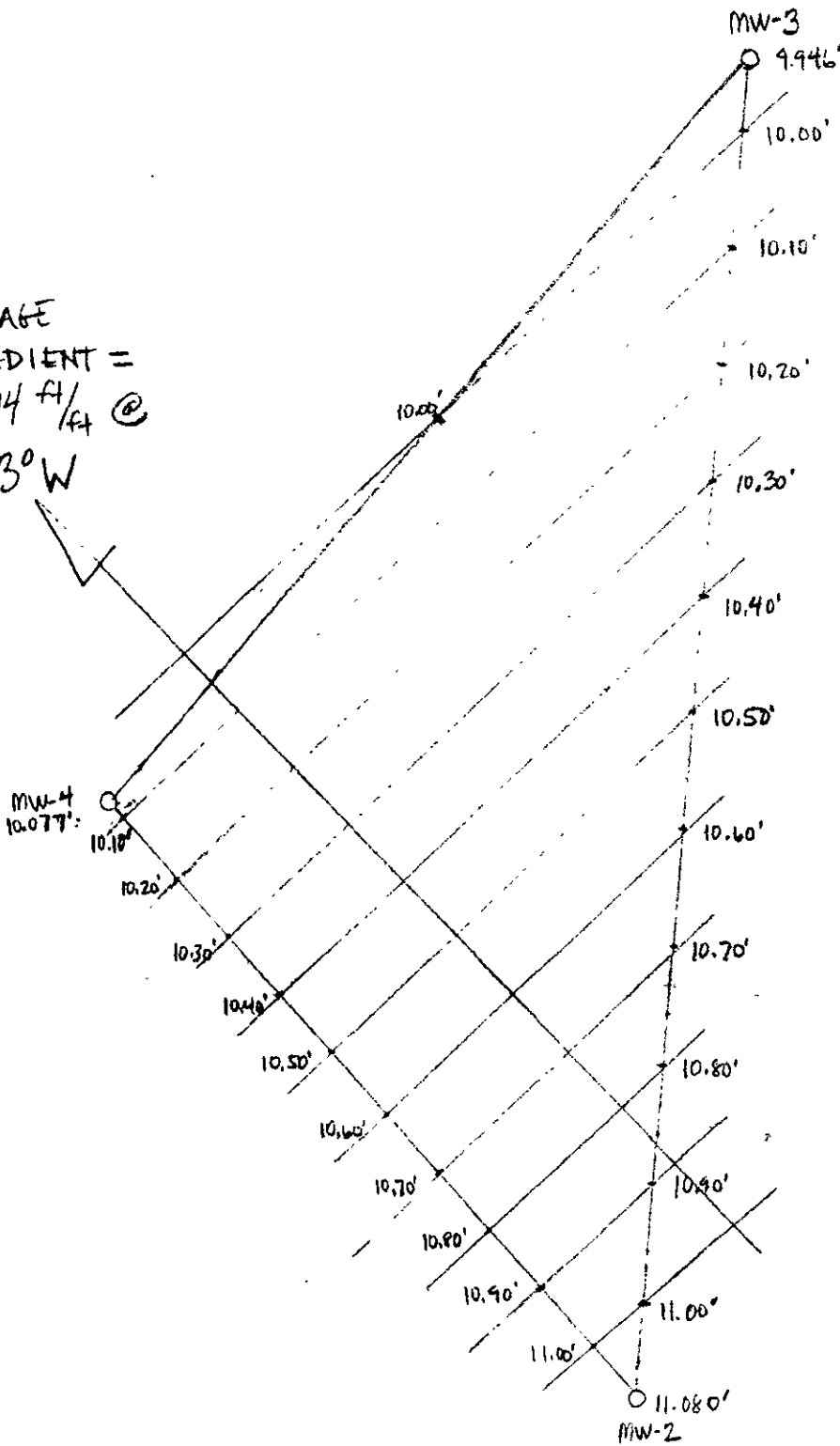
ATTACHMENT 3  
GROUNDWATER GRADIENT WORKSHEET

JAVANAUGH TRUCKS  
GROUNDWATER GRADIENT WORKSHEET

#101090

WELLS MEASURED 1-13-95

STRAGE  
GRADIENT =  
0.114 ft/ft @  
43° W



SCALE: 1" = 20'

ELEVATIONS ARE IN FEET MSL