

# GOOD CHEVROLET

1630 Park Street • Phone 510/522-9221  
ALAMEDA, CA 94501

12/7/94 ② Future reports should include field notes of pH, temp, salts, purge, etc.

- ① Will they research trenches?
- ③ Not positive stuff is off site. indicate conc. in mms often higher - No exposure to O<sub>2</sub>, etc.

November 14, 1994

Should determine location of sewer mains then do HP west of HP 3 in trench (sewer) backfill

ALCO  
HAZMAT  
CLEANUP  
12 NOV 21 11 4: 20

Ms. Juliet Shin  
Alameda County Health Care Services  
Department of Environmental Health  
800 Swan Way, Room 200  
Oakland, CA 94621

Mr. Richard Hiett  
Regional Water Quality  
Control Board  
San Francisco Bay Region  
2101 Webster Street #500  
Oakland, CA 94612

Re: 1630 Park Street, Alameda, CA

Dear Ms. Shin and Mr. Hiett:

Enclosed please find a copy of our Supplemental Investigation and Quarterly Gound Water Monitoring Report.

Should you have any questions, please call or write Mr. David Glick at Geo Plexus, Inc.

Thank you,

GOOD CHEVROLET

JoAnn Stewart

JKS:js

Enclosures



October 31, 1994

Ms. JoAnn Stewart, General Manager  
Good Chevrolet  
1630 Park Street  
Alameda, California 94501

Subject: October, 1994 Quarterly Ground Water Report for  
Good Chevrolet, 1630 Park Street, Alameda, CA.

Dear Ms. Stewart:

As requested and authorized, the attached Quarterly Ground Water Monitoring Report has been prepared to document the monitoring well sampling efforts performed at the subject site. The report presents the recorded ground water elevations along with the ground water sampling protocols and the results of the analytical testing performed on ground water samples collected on October 27, 1994. The report also summarizes the findings recorded throughout the last year of monitoring and presents conclusions and recommendations based on these findings.

In summary, the water samples obtained from all five monitoring wells contained detectable concentrations of Total Petroleum Hydrocarbons as gasoline ranging from 130-15,000 ppb. Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylenes) were also detected in the ground water samples.

Monitoring Well MW-5 (off-site and down-gradient well) continues to exhibit the highest concentrations of Total Petroleum Hydrocarbons and Volatile Aromatic Compounds with reduced concentrations on the subject property. This data confirms the findings of the supplemental site characterization investigations which indicated that the observed gasoline plume originates from a source located "down-gradient" from the project site and that the project site is not the source of the observed contamination.

It is recommended that additional off-site parties be investigated/pursued as the source of the observed ground water contamination. The findings and confirmation of the off-site source could result in amendments to our previous conclusions suggesting that Good Chevrolet was, or in-part, responsible for the observed soil and ground water contamination.

The next quarterly sampling event is scheduled to be performed in January, 1995. It has been a pleasure to be of service to you on this project.

Copies of this report should be forwarded to:

Ms. Juliet Shin  
Alameda County Health Care Services  
Department of Environmental Health  
80 Swan Way, Room 200  
Oakland, CA 94621

Mr. Richard Hiatt  
Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Room 500  
Oakland, CA 94612

It has been a pleasure to be of service to you on this project. Questions or comments regarding the attached report should be addressed to the undersigned.

Respectfully submitted,

Geo Plexus, Incorporated



David C. Glick, CEG 1338  
Director, Geological and  
Environmental Services



OCTOBER, 1994 QUARTERLY  
GROUND WATER MONITORING REPORT  
for  
GOOD CHEVROLET  
1630 PARK STREET  
ALAMEDA, CALIFORNIA

October 31, 1994

Project C92020

OCTOBER, 1994 QUARTERLY  
GROUND WATER MONITORING REPORT  
for  
GOOD CHEVROLET  
1630 PARK STREET  
ALAMEDA, CALIFORNIA

INTRODUCTION

The project site is located at 1630 Park Street in the City of Alameda, in Alameda County, California as indicated on Figure 1. The site is the location of an automobile dealership and service center.

A 300 gallon waste oil storage tank and a 500 gallon underground gasoline storage tank were reportedly removed from the property by Petroleum Engineering, Inc. in October, 1986. A subsurface investigation including installation of three ground water monitoring wells (see Figure 2) was performed by Groundwater Technology, Inc. in January, 1987 (Groundwater Technology, Inc. Report Dated April 29, 1987).

The three monitoring wells have been monitored to evaluate the ground water conditions and to establish the direction(s) of ground water flow at the project site. The monitoring determined that the direction of flow beneath the site varies from a northwesterly direction to a northeasterly direction throughout the year. The quarterly sampling has also detected Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds at various concentrations throughout the year.

A supplemental investigation was performed which included advancing 7 soil borings across the parking area of the property. This investigation identified high concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene) in the immediate vicinity of the former underground storage tanks at depths of 5-12 feet below the ground surface. The borings identified concentrations of Total Petroleum Hydrocarbons as gasoline as high as 15,000 parts per million (ppm) decreasing to 1,000 ppm within 30-feet from the former tanks (lateral direction) and decreasing to 1,800 ppm at the down-gradient property boundary.

Two additional ground water monitoring wells were installed in April, 1994 to further characterize the down-gradient water conditions. The findings of the initial ground water samples indicated a significant increase in concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds down-gradient of the property suggesting that additional sources of contamination exists. The ground water monitoring suggests the existence of an off-site and down-gradient source of the gasoline constituents.

### GRADIENT SURVEY

The elevation of the top of the casing of the monitoring wells at the site were established during previous investigations with reported vertical control of 0.01 foot. Ground water elevations were measured in each well to the nearest 0.01 foot with an electronic water level meter (prior to purging) to monitor the variations in the direction and gradient of ground water flow beneath the site.

Ground water elevations recorded suggest that the ground water flow is to the north as indicated on Figure 2. The ground water gradient was determined to be 0.0073 ft/ft (also see Figure 2). The direction of ground water flow places Monitoring Wells MW-2 and MW-5 in the "down-gradient" direction from the former tanks.

### MONITORING WELL SAMPLING

Free product measurements were obtained for each monitoring well at the time of sample acquisition utilizing a teflon bailer lowered into the well to obtain a water sample. The bailer was used to collect a water sample to observe the presence of hydrocarbon odors, visible sheen, or free product. Free product or visible sheens were not observed in the initial bailer water samples or following purging of the wells from Monitoring Wells MW-1 through MW-4; however, the water samples obtained from the wells MW-1, MW-2, and MW-5 exhibited gasoline odors. Monitoring Well MW-5 exhibited significant odors as purging continued.

Prior to sampling the monitoring wells, four to six well volumes were purged from each well through the use of a teflon bailer. Electrical conductivity, temperature, and pH of the ground water were recorded throughout the purging process. The purging activities continued until the electrical conductivity, temperature, and pH of the discharged water stabilized and the water appeared free of suspended solids.

Water samples for analytical testing were obtained through the use of a teflon bailer and were collected in sterilized glass vials with Teflon lined screw caps. The samples were immediately sealed in the vials and properly labeled including: the date, time, sample location, project number, and indication of any preservatives (HCl) added to the sample. The samples were placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

The water obtained from the monitoring wells during the purging and sampling activities was contained on-site pending receipt of the laboratory test results.

### ANALYTICAL TESTING

The ground water samples were submitted to and tested by McCampbell Analytical, Inc., a State of California certified laboratory. Analytical testing was scheduled and performed in accordance with the State of California, Regional Water Quality Control Board and Alameda County Department of Environmental Health Guidelines.

The samples were tested for Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015 and Volatile Aromatics by EPA Method 8020/5030. The analytical test data, along with the Chain-of-Custody Form are presented in Appendix A.

### SUMMARY OF FINDINGS

Ground water elevations recorded during the sampling suggest that ground water is at a depth of 8-10 feet below the ground surface and flows in a north-northwest direction at a gradient of 0.0094 ft/ft. This flow direction is consistent with the variable northwest to northeast directions recorded for the site throughout the last year. The flow directions establishes that Monitoring Wells MW-2 and MW-5 are located in the "down-gradient" direction from the location of the former underground storage tanks.

The analytical test results for the ground water samples obtained for this sampling event detected reportable quantities of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatics (BTXE) for the samples from all five monitoring wells. Table 1 summarizes the current analytical test results along with the results of the previous analytical testing.

Total Petroleum Hydrocarbons as gasoline concentrations ranged from 130 parts per billion (ppb) in Monitoring Well MW-4 to 15,000 ppb at Monitoring Well MW-5.

Monitoring Well MW-5 (down-gradient well) continues to exhibit the highest concentrations of Total Petroleum Hydrocarbons and Volatile Aromatic Compounds with reduced concentrations on the subject property which suggests that the source of the observed gasoline plume is located down-gradient from the project site.

Figures 3 and 4 illustrate the distribution of Total Petroleum Hydrocarbons as gasoline and Benzene in the ground water based on current analytical test data.

**TABLE 1**  
**SUMMARY OF GROUND WATER ANALYTICAL TEST DATA**

<u>Date Sampled</u>	<u>Total Petroleum Hydrocarbons</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-Benzene</u>	<u>Total Xylenes</u>
<u>Monitoring Well MW-1</u>					
1-21-87 (1)	21,020	1,148	8,627	1,792	6,012
1-11-89 (1)	1,400	74	10	13	5
7-12-89 (1)	1,200	470	49	45	33
4-09-91 (2)	850	260	10	15	12
7-14-92 (3)	13,000	2,300	1,200	1,200	1,200
10-7-92 (3)	3,600	1,600	80	120	120
1-11-93 (3)	1,200	410	16	23	19
4-23-93 (3)	2,200	720	180	82	150
7-08-93 (3)	3,200	1,200	110	97	100
10-15-93 (3)	3,700	1,400	43	94	36
1-25-94 (3)	1,600	680	16	41	35
4-28-94 (3)	6,100	1,900	380	250	340
7-27-94 (3)	6,000	1,800	510	220	450
10-27-94 (3)	3,000	1,100	79	82	87
<u>Monitoring Well MW-2</u>					
1-21-87 (1)	5,018	386	1,981	285	1,432
1-11-89 (1)	10,000	3,000	410	240	190
7-12-89 (1)	7,600	2,700	540	250	320
4-09-91 (2)	4,900	910	210	130	200
7-14-92 (3)	13,000	4,400	1,500	610	1,100
10-7-92 (3)	11,000	5,200	1,500	500	1,200
1-11-93 (3)	17,000	940	1,100	480	930
4-23-93 (3)	52,000	13,000	8,400	1,700	5,300
7-08-93 (3)	6,400	2,500	470	280	530
10-15-93 (3)	17,000	3,900	870	500	940
1-25-94 (3)	16,000	5,400	1,140	640	1,500
4-28-94 (3)	15,000	4,000	910	480	1,200
7-27-94 (3)	18,000	6,000	760	630	1,600
10-27-94 (3)	9,500	2,700	230	320	640

Note: (1) Concentrations reported by Groundwater Technology, Inc.  
 (2) Concentrations reported by Environmental Science & Engineering, Inc.  
 (3) Samples obtained and reported by Geo Plexus, Inc.



TABLE 1 (Continued)

SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

<u>Date Sampled</u>	<u>Total Petroleum Hydrocarbons</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-Benzene</u>	<u>Total Xylenes</u>
<u>Monitoring Well MW-3</u>					
1-21-87 (1)	10,287	1,428	3,281	610	2,761
1-11-89 (1)	5,300	1,800	340	150	160
7-12-89 (1)	7,800	3,100	900	300	480
4-09-91 (2)	9,400	1,400	730	200	510
7-14-92 (3)	17,000	3,500	390	390	260
10-7-92 (3)	9,200	4,300	470	390	610
1-11-93 (3)	2,000	740	29	58	28
4-23-93 (3)	6,500	2,600	280	260	190
7-08-93 (3)	5,200	2,100	260	250	180
10-15-93 (3)	11,000	3,500	580	430	370
1-25-94 (3)	6,200	2,500	270	160	28
4-28-94 (3)	5,300	1,700	190	210	180
7-27-94 (3)	5,900	2,000	360	260	330
10-27-94 (3)	8,000	2,200	580	260	470

Monitoring Well MW-4

4-28-94 (3)	190	3.8	2.9	2.1	3.1
7-27-94 (3)	180	15	9.2	7.6	28
10-27-94 (3)	130	8.6	6.6	4.5	17

Monitoring Well MW-5

4-28-94 (3)	30,000	4,000	3,000	810	3,500
7-27-94 (3)	9,300	2,000	800	290	940
10-27-94 (3)	15,000	2,700	1,300	420	1,100

Note: (1) Concentrations reported by Groundwater Technology, Inc.  
 (2) Concentrations reported by Environmental Science & Engineering, Inc.  
 (3) Samples obtained and reported by Geo Plexus, Inc.

### RECOMMENDATIONS

It is recommended that the existing ground water monitoring wells located at the project site continue to be monitored and sampled quarterly in accordance with the established/approved quarterly monitoring program. The next sampling event is scheduled for January, 1995.

It is further recommended that additional off-site parties be investigated/pursued as the source of the observed ground water contamination. The findings and confirmation of the off-site source could result in amendments to our previous conclusions suggesting that Good Chevrolet was, or in-part, responsible for the observed soil and ground water contamination.

### LIMITATIONS

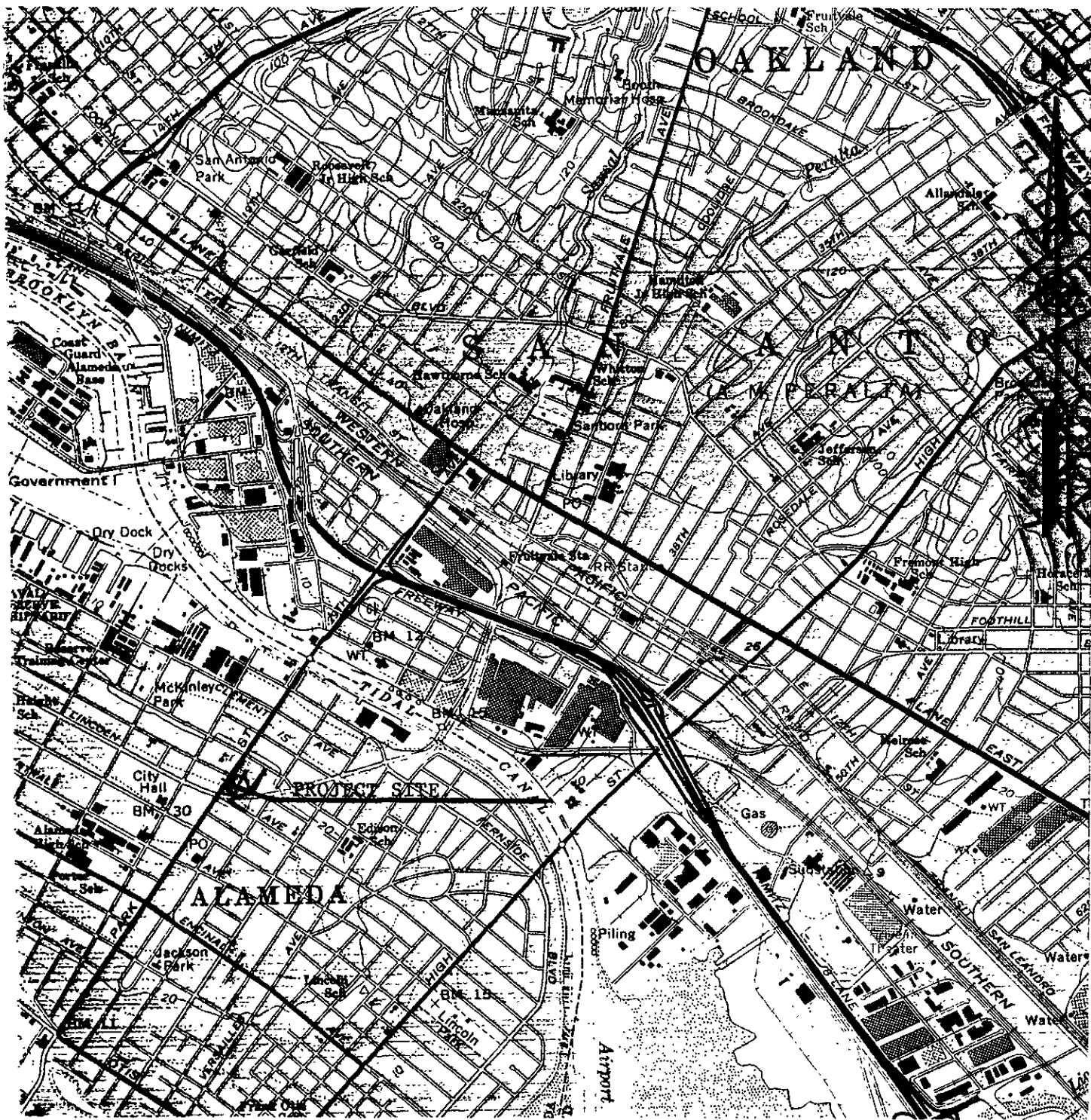
We have only observed a small portion of the pertinent subsurface and ground water conditions present at the site. The conclusions and recommendations made herein are based on the assumption that subsurface and ground water conditions do not deviate appreciably from those described in the reports and observed during the field investigation.

Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

No attempt was made to verify the accuracy of the published information prepared by others used in preparation of this assessment report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.

Geo Plexus, Incorporated



GOOD CHEVROLET		
DATE	SCALE	DRAWN BY
10-9-92	1"=2000'	deg
LOCATION MAP		
		Figure 1

GeoPlexus, Inc.

ARROW INDICATES DIRECTION OF TRAFFIC FLOW

CENTER LINE

PARKING LANE

SIDEWALK

SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

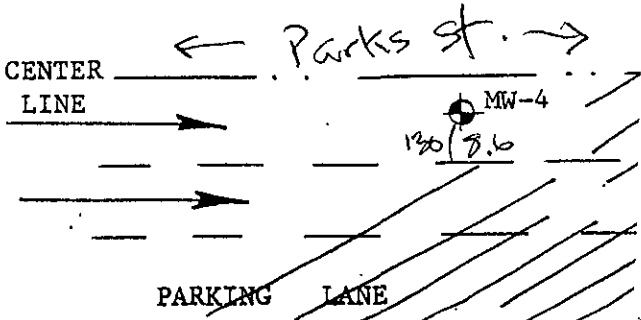
0.0073 ft/ft  
DIRECTION OF FLOW

	CASING ELEVATION	DEPTH TO WATER	WATER ELEVATION
MW-1	104.76	9.37	95.39
MW-2	104.86	9.59	95.27
MW-3	104.52	9.25	95.27
MW-4	104.86	9.83	95.03
MW-5	103.62	8.92	94.70

Note: Casing and ground water elevations based on Temporary Bench Mark (TBM) with an assumed elevation of 100.00 feet.

GOOD CHEVROLET		
DATE 10-27-94	SCALE 1"=20'	DRAWN BY dcg
GROUND WATER GRADIENT		
		Figure 2

ARROW INDICATES DIRECTION OF TRAFFIC FLOW



MW-4 in sewer trench flow towards right - to bridge

SIDEWALK

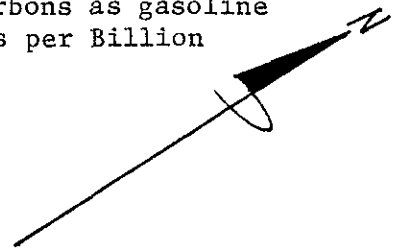
SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

NOTE: Concentrations of Total Petroleum Hydrocarbons as gasoline in Parts per Billion



ppb TPH6/benzene

GOOD CHEVROLET		
DATE 10/30/94	SCALE 1"=20'	DRAWN BY dcg
TPHg CONCENTRATIONS-WATER		
		Figure 3

ARROW INDICATES DIRECTION OF TRAFFIC FLOW

CENTER LINE

PARKING LANE

SIDEWALK

SIDEWALK

GOOD CHEVROLET SHOWROOM

WINNER FORD

APPROXIMATE LOCATION OF FORMER TANKS AND LIMITS OF EXCAVATION

NOTE: BENZENE CONCENTRATIONS IN PARTS PER BILLION

GOOD CHEVROLET

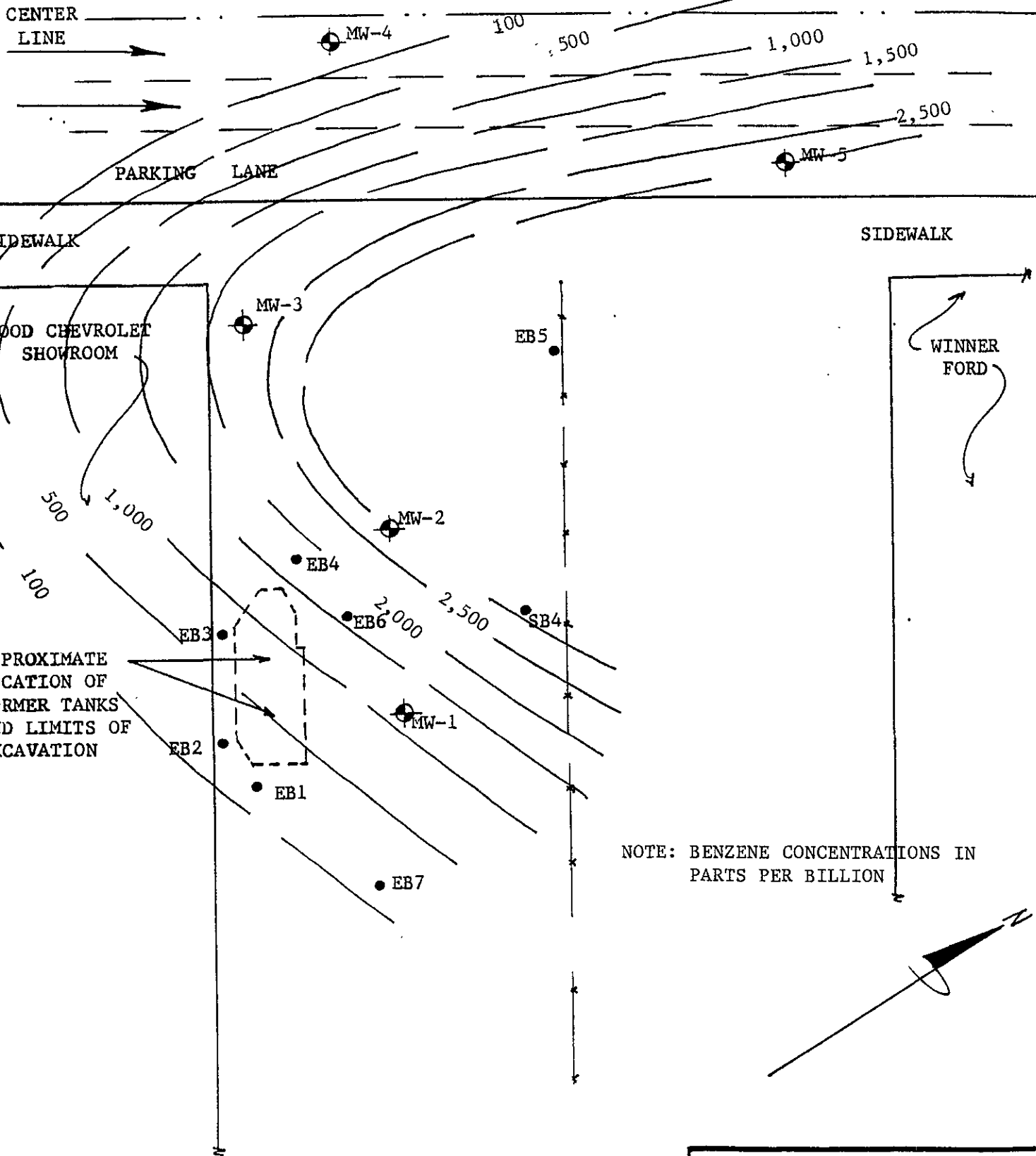
DATE 10/30/94

SCALE 1"=20'

DRAWN BY dcg

BENZENE CONCENTRATIONS

Figure 4



Quarterly Ground Water Sampling Report  
Good Chevrolet  
Alameda, California

October 31, 1994

APPENDIX A  
CHAIN-OF-CUSTODY FORM  
AND  
ANALYTICAL TEST DATA

**Geo Plexus, Incorporated**

1900 Wyatt Drive, Suite 1, Santa Clara, California 95054 Phone 408/987-0210 Fax 408/988-0815

315666P132

PROJECT NUMBER		PROJECT NAME				Number of Cntrs	Type of Containers	Type of Analysis										Condition of Samples	Initial
C93013		GOOD CHEVROLET						Send Report Attention of:	Report Due	Verbal Due									
Sample Number	Date	Time	Comp	Grab	Station Location														
MW1 - WS1A,B	10/27/94	1242		1	MON WELL 1	2ea	ACCREDITED 40 ML VDA	TPH <sub>9</sub> / BTEX										41923	
MW2 - WS1A,B		1159		1	MON WELL 2													41924	
MW3 - WS1A,B		1114		1	MON WELL 3													41925	
MW4 - WS1A,B		1053		1	MON WELL 4													41926	
MW5 - WS1A,B		1200		1	MON WELL 5													41927	
Relinquished by: (Signature) <i>[Signature]</i>						Received by: (Signature) <i>[Signature]</i>						Remarks: STANDARD TURNAROUND							
Date/Time: 10/28/94 10:00						Date/Time: 10/28/94 10:00													
Relinquished by: (Signature) <i>[Signature]</i>						Received by: (Signature) <i>[Signature]</i>						VOICED & CALLED NUMBER							
Date/Time: 10/28/94 12:55						Date/Time: 10/28/94 12:55						ICF/T ✓ GOOD CONDITION ✓ HEAD SPACE ADEQUATE ✓							
Relinquished by: (Signature)						Received by: (Signature)						PRESERVATIVE ✓ APPROPRIATE ✓ CONTAINERS ✓							



GEO Plexus, Inc. 1900 Wyatt Drive, # 1 Santa Clara, CA 95054	Client Project ID: # C93013; Good Chevrolet	Date Sampled: 10/27/94
	Client Contact: David Glick	Date Received: 10/28/94
	Client P.O:	Date Extracted: 10/28-10/31/94
		Date Analyzed: 10/28-10/31/94

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with BTEX\***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) <sup>+</sup>	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
41923	MW1-WS1A	W	3000,a	1100	79	82	87	90
41924	MW2-WS1A	W	9500,a	2700	230	320	640	88
41925	MW3-WS1A	W	8000,a	2200	580	260	470	85
41926	MW4-WS1A	W	130,a	8.6	6.6	4.5	17	103
41927	MW5-WS1A	W	15,000,a	2700	1300	420	1100	91
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

\*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant (aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.