

GROUNDWATER
TECHNOLOGY

A DIVISION OF OIL RECOVERY SYSTEMS, INC.

4080 Pike Lane, Suite D, Concord, CA 94520-1227 (415) 671-2387

April 29, 1987
L8208A

Ms. Jo Ann Stewart
Good Chevrolet
1630 Park Street
Alameda, California 94501

Dear Ms. Stewart,

Please find attached the report entitled "Subsurface Investigation" for the Good Chevrolet property at 1630 Park Street, Alameda, California. Included in this report are recommendations for additional work, which Groundwater Technology, Inc., (GTI) feels will most effectively define the extent of subsurface contamination.

On two separate occasions, the California Regional Water Quality Control Board Region II informed GTI that periodic groundwater sampling would be sufficient at the site. However, in a recent telephone conversation with Mr. Greg Zentner of the California Regional Water Quality Control Board - II (CRWQCB-II), we were informed that the subsurface contamination found in the initial assessment must be further defined. It is the opinion of the Board that the waters of San Francisco Bay may be subject to impact by petroleum hydrocarbons released from underground storage tanks formerly located on the Good Chevrolet property. As a result, the board requires that additional monitoring wells be installed to assess the potential for hydrocarbon migration into the bay.

The report submitted should be forwarded to the Regional Board following your review. The address is:

California Regional Water Quality Control Board
Region II - San Francisco Bay
1111 Jackson Street, Room 6040
Oakland, California 94607
(415) 464-1255
Attn: Greg Zentner

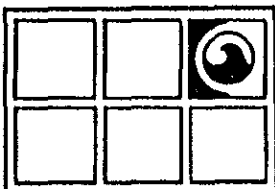
REPORT
SUBSURFACE INVESTIGATION
GOOD CHEVROLET
1630 PARK STREET
ALAMEDA, CALIFORNIA

April 1987.



GROUNDWATER TECHNOLOGY, INC.

OIL RECOVERY SYSTEMS



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**REPORT
SUBSURFACE INVESTIGATION
GOOD CHEVROLET
1630 PARK STREET
ALAMEDA, CALIFORNIA**

April 29, 1987

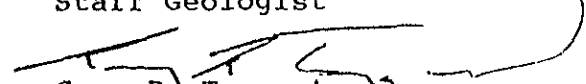
Prepared for:

Jo Ann Stewart
Good Chevrolet
1630 Park Street
Alameda, California 94501

Prepared by:

GROUNDWATER TECHNOLOGY, INC.
4080 Pike Lane, Suite D
Concord, CA 94520


Scott Gable
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Gary B. Taggart
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Certified Engineering
Geologist No. 1061

20-8208
R8208A

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REPORT
SUBSURFACE INVESTIGATION
GOOD CHEVROLET
1630 PARK STREET
ALAMEDA, CALIFORNIA
April 29, 1987

INTRODUCTION

This report presents the results of Groundwater Technology, Inc.'s Subsurface Investigation at Good Chevrolet, located at 1630 Park Street, Alameda, California (See Figure 1, Site Location Map). Groundwater Technology, Inc. (GTI) was retained in December 1986 to conduct an investigation of the Good Chevrolet property which, consisted of the installation of three monitoring wells, a review of regional hydrogeologic conditions and collection and laboratory analysis of soil and groundwater samples.

BACKGROUND

Subsurface hydrocarbon contamination was initially detected at this site during removal of two underground storage tanks by Petroleum Engineering, Inc. in October 1986. One 300 gallon waste oil tank and one 500 gallon gasoline tank were removed after on-site storage was discontinued. On October 22, 1986, Blaine Technical Services collected three soil samples from the two adjacent tank pits. The gasoline tank pit was initially sampled at ten feet below surface, then excavated to a depth of 14 feet, and re-sampled. These samples were analyzed for total

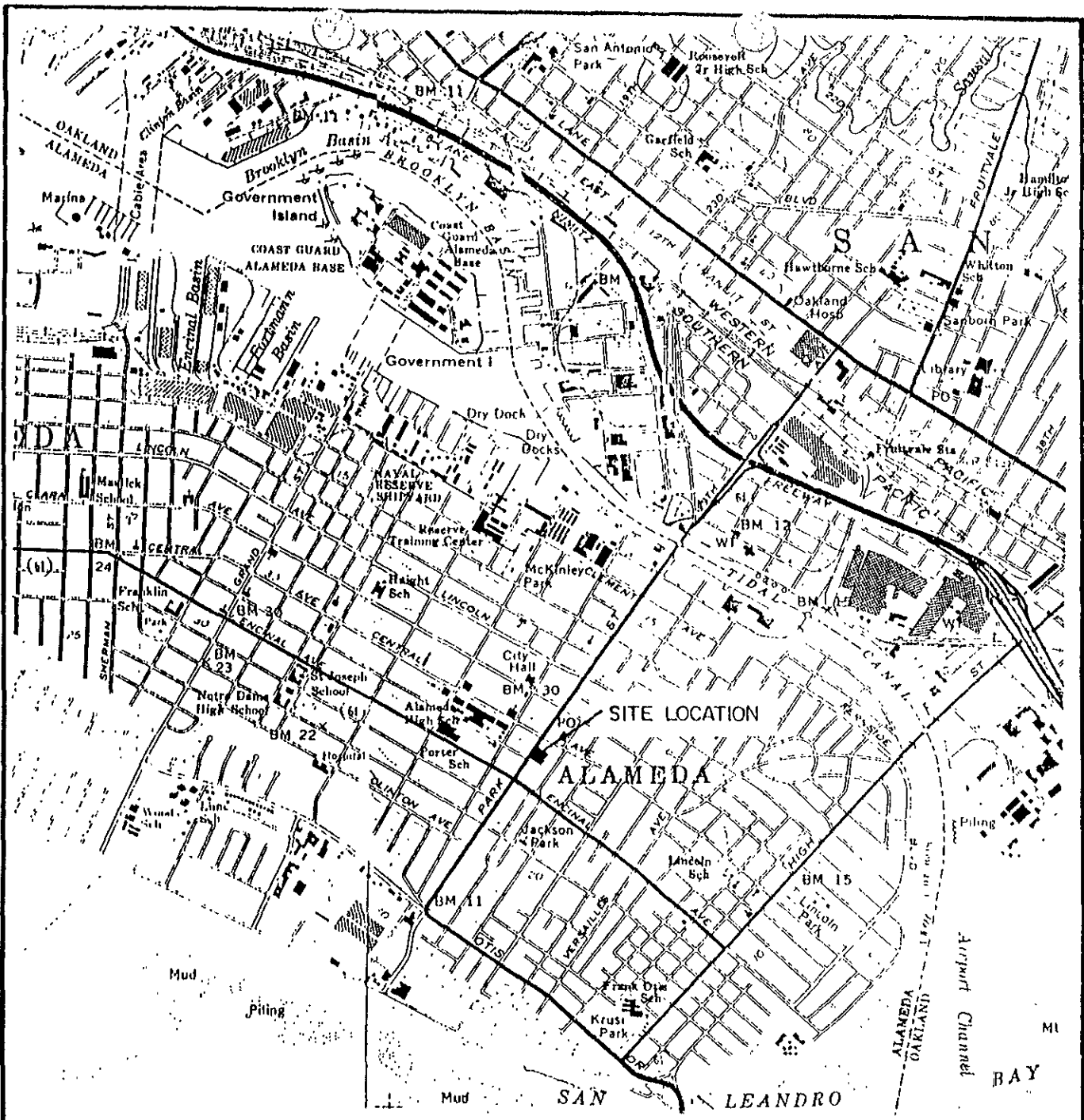
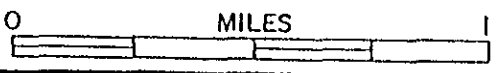


FIGURE I
SITE LOCATION MAP



GOOD CHEVROLET
ALAMEDA, CALIFORNIA



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Good Chevrolet
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hydrocarbons as gasoline, and found to contain 2509 parts per million (ppm) and 1441 ppm, respectively. The waste oil tank pit was sampled at a depth of eight feet below grade, and was analyzed for total hydrocarbons as waste oil. The hydrocarbons concentration from this sample measured 57 ppm. Excavated soils were placed on site for aeration under the supervision of GTI.

SCOPE OF WORK

The purpose of this investigation was to provide a general assessment of potential hydrocarbon contamination and hydrogeologic conditions at the site. Specifically, our scope of services was as follows:

- ° Explore the subsurface by drilling five soil borings in the vicinity of the tank pit area; three to 20 feet below surface and two to 10 feet below surface.
- ° Collect soil samples at 5 foot intervals while drilling. Select soil samples for analyses of concentrations of benzene, toluene, xylene (BTX), total hydrocarbons (THC), lead, and polychlorinated biphenyls (PCB's).
- ° Convert three soil borings into monitoring wells to assess the extent of any groundwater contamination.
- ° Monitor groundwater levels in the wells to determine local groundwater gradient.

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- ° Collect groundwater samples for laboratory analysis of concentrations of benzene, toluene, ethyl benzene, xylene (BTEX), total hydrocarbon (THC), lead, and polychlorinated biphenyls (PCB's).
- ° Present observations, analytical results, and findings in a report.

SOIL BORINGS

Five soil borings were drilled on January 15, 1987 in the vicinity of the underground tank pit. The purpose of the borings was to provide an initial assessment of the vertical and horizontal extent of subsurface hydrocarbon contamination. Three of the borings were drilled to a depth of 20 feet (and later converted to monitoring wells) and the remaining two borings were drilled to 10 feet (See Figure 2, Site Plan).

All soil borings were drilled with a truck-mounted drill rig using 7.5 inch outside diameter (O.D) hollow stem augers. Drilling was performed under the direction of a Groundwater Technology field geologist who also maintained a continuous log of the materials encountered.

SOIL SAMPLING

Soil samples were collected during drilling using a 2.5 inch O.D. split spoon sampler lined with three 2 inch x 6 inch brass sample tubes. The sampler was hammer-driven eighteen inches ahead of the drill bit at each sample point. Samples were

PARK AVENUE

CHEVROLET
DEALERSHIP BLDG.

1428 ppb Benzene
MW3 30.3 ppm TPH

TANK
PIT
AREA

386 ppb Benzene
MW2 5 ppm TPH

SB4

FENCE

1,140 ppb Benzene
MW1 21 ppm TPH

SB5

LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING

FIGURE 2
SITE PLAN



NO SCALE

GOOD CHEVROLET
ALAMEDA, CALIFORNIA



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collected every five feet to the bottom of the boring, beginning at 4.0 feet below surface. The soil filled sample tubes were then sealed and preserved on ice. Selected samples were delivered for analysis to Sequoia Analytical Laboratory, Redwood City, California and were accompanied by a Chain-of-Custody manifest.

MONITORING WELL INSTALLATION

After drilling, three of the soil borings were converted to monitoring wells (See Figure 2, Site Plan). The wells were constructed with fifteen feet of two inch PVC, (.020 inch machine slotted) well screen, threaded to five feet of two-inch blank pipe. The screen and casing were lowered into the boring and the remaining annular space was packed with washed #2 Monterey Sand to 4 feet below grade.

A surface seal composed of bentonite clay tablets followed by cement grout was poured over the sand pack to the surface, where a traffic rated round box was installed to protect the well head (See Appendix I for well construction details).

GROUNDWATER SAMPLING

After installation, the monitoring wells were developed by hand bailing, and subsequently sampled after purging. Groundwater samples were collected using an EPA approved Teflon sampler. Water was then transferred to 40 ml septum capped glass

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vials in a manner such that no headspace existed in the vials after sealing. The sample vials were labeled, placed on ice, and delivered to Groundwater Technology Environmental Laboratories, Concord, California. A Chain-of-Custody manifest accompanied the water samples at all times.

SITE CONDITIONS

SITE SETTING

The Good Chevrolet property is located within a predominantly commercial area of the City of Alameda, California. The elevation of the site is approximately 20 feet above sea level. The City of Alameda is a flat island in eastern San Francisco Bay composed of native soil and artificial fill material. This island is surrounded by the Oakland - Alameda Tidal Canal to the north and east, and the San Francisco bay to the west and south. The average tidal fluctuation observed in the site area is approximately five feet.

GEOLOGY

The site is immediately underlain by the Merritt Sand which consists of unconsolidated, beach and near shore deposits. Underlying the Merritt Sand, is the Alameda Formation consisting of interbedded unconsolidated marine and continental sediments.

The materials encountered during Groundwater Technology, Inc.'s field work consisted predominantly of dark silty sand with minor amounts of silty clay (See Appendix I - Drilling Logs).

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HYDROGEOLOGY

The site is located on the Alameda Bay Plain which is composed of alluvial fans, alluvial cones, and the Merritt sand, which is a distinct hydrogeologic unit. Groundwater in the Merritt sand is mainly unconfined and the water table is situated near the ground surface. The water table aquifer is brackish in quality and not suitable for domestic use. The underlying Alameda Formation consists of numerous relatively flat-lying gravel and sand aquifers separated by extensive clay aquitards. Some wells in the area have penetrated to depths approaching 400 feet.

During GTI's investigation, groundwater was encountered at approximately 14 feet below surface, and later stabilized at a depth of 8 feet below surface.

SUBSURFACE CONTAMINATION

During drilling and sampling, gasoline odors were noted in all boreholes except boring 4. Hydrocarbon contamination was generally found at a depth from 6 feet to the water table (See Appendix I - Drilling Logs).

Soil samples collected on February 15, 1987 were analyzed for gasoline constituents, lead, and polychlorinated biphenyls (PCB's). Benzene, toluene, xylene, and total hydrocarbons were analyzed using EPA methods 5020/8015/8020. Lead was analyzed using EPA Method 3050/7240, and method 3550/8080 was conducted

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for PCB analysis. The results of the analyses are summarized in Table 1 below and the laboratory reports are presented in Appendix II.

TABLE I
SOIL ANALYSIS

(ppm)

Sample I.D.	Benzene	Toluene	Xylene	Total Hydrocarbons	Lead	PCB
MW - 1 10'	2.9	3.6	1.8	24	1.3	ND
MW - 1 15'	ND	ND	ND	ND	1.3	ND
MW - 2 5'	ND	ND	ND	ND	.92	ND
MW - 2 10'	14	22	23	350	1.1	ND
MW - 3 10'	9.8	16	16	200	1.1	ND
MW - 3 15'	ND	ND	ND	ND	.74	°
SB - 5 10'	ND	.22	ND	6.5	47	ND

All analyses performed by Sequoia Laboratories, Redwood City, California. For method detection limits, See Appendix II.

* - Analysis not performed
ND - Not Detected

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Water samples were collected on February 21, 1987, and analyzed for gasoline constituents, lead and PCB's. Analysis was performed for benzene, toluene, ethyl benzene, xylene, and total hydrocarbons using modified EPA method 602. Lead analysis was performed using method 7241. Polychlorinated biphenyls were analyzed by EPA Method 608. The results of the analyses are summarized in Table II below, and the laboratory reports are presented in Appendix III.

TABLE II
Water Analysis
(ppm)

Sample I.D.	Benzene	Toluene	Ethyl Benzene	Xylene	Total Hydrocarbons	Lead	PCB
MW-1	1.14	8.63	1.79	6.01	21.0	ND	ND
MW-2	.386	1.98	.285	1.43	5.0	.041	ND
MW-3	1.428	3.28	.610	2.76	10.3	ND	ND

All analysis performed by Groundwater Technology Environmental Laboratories, Concord, California. For Method Detection Limits (See Appendix III).

ND = Non Detectable Concentration

Soil contamination is evident in the northern section of the work area in the vicinity of monitoring wells 2 and 3. Measurable concentrations of polychlorinated biphenyls were not present in the soil. Approximately 1 ppm lead was detected in all soil samples, except the ten-foot sample in soil boring

Good Chevrolet
April 29, 1987

five. An anomalous 47 ppm was detected in this sample. Gasoline constituents in concentrations up to 350 parts per million (ppm) of total hydrocarbons were detected in monitoring well 2 at ten feet below grade (See Figure 2, Site Plan). Samples collected at 10 feet below surface in wells 1 and 3 had THC concentrations of 24 ppm and 200 ppm respectively. 106

Groundwater contamination by petroleum hydrocarbon was noted in all monitoring wells. Total hydrocarbons in wells 1, 2 and 3 measured 21.0, 5.0, and 10.3 ppm respectively. Aromatic hydrocarbons, including benzene were detected in all wells, in excess of 1.0 ppm, (See Appendix III - Analytical Results).

CONCLUSIONS AND RECOMMENDATIONS

Groundwater Technology's investigation at the Good Chevrolet property shows evidence that significant contamination has occurred in soil and groundwater below this site. No contamination by PCB's was observed, but one soil sample had a relatively high lead concentration. Gasoline hydrocarbons were detected in all borings (except boring 4), from six feet below grade, to the water table at 14 feet. Concentrations of aromatic gasoline constituents in groundwater exceed drinking water action levels established by the California State Department of Health Services. While ambient groundwater in the site area may not be of drinking water quality, the action levels provide some indication of the severity of the contamination.

Good Chevrolet
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Due to the contaminant concentrations present and the sites proximity to the Bay, GTI recommends, the installation of at least four additional monitoring wells at various locations surrounding the former tank pit. These wells would be used to further define the extent of the dissolved and/or free floating contaminant plume.

(?)
proposed

During drilling, soil samples should be collected at five foot intervals and screened in the field for laboratory analysis. Select soil samples should be analyzed for benzene, toluene, xylene, (BTX) and total hydrocarbons (THC), and total organic lead.

Following monitoring well installation and development, water samples should be collected and analyzed for gasoline constituents.

Well head elevations should be surveyed to provide a datum for monitoring water elevations. Subsequently, a regular monitoring program should be initiated to note water table fluctuations and the presence of any free floating product. Water sampling should also be conducted on a quarterly basis to note any changes in the dissolved concentration of hydrocarbons in each well. Water samples should also be analyzed for total organic lead.

From the information obtained during this subsequent investigation a site sensitivity analysis should be conducted to determine what type of aquifer remediation, if any, is necessary.

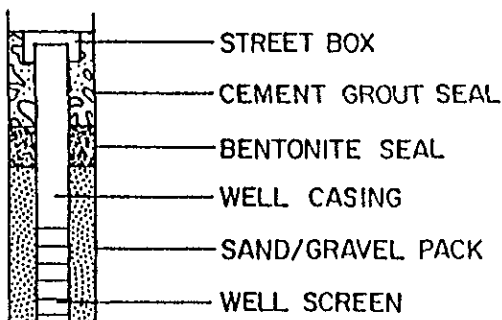
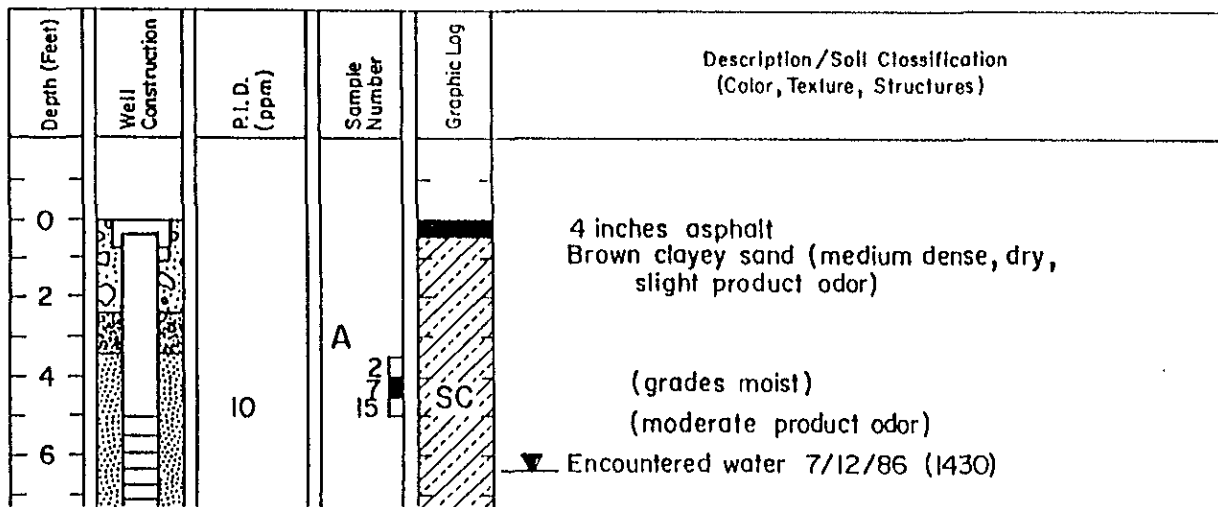
Good Chevrolet
April 29, 1987

CLOSURE

Groundwater Technology, Inc. would like to thank Good Chevrolet for the opportunity to perform this investigation. If you should have questions regarding this information, please contact us.

APPENDIX I

KEY TO BORING LOG



10 ORGANIC VAPOR CONCENTRATION DETERMINED BY PHOTO IONIZATION DETECTOR (P.I.D.) IN PARTS PER MILLION (ppm) FROM SOIL SAMPLES

A SAMPLE IDENTIFICATION

2
7
15 BLOW COUNTS TO DRIVE A SPLIT BARREL SAMPLER USING A 140 lb. HAMMER FALLING 30 INCHES. COUNTS ARE FOR EACH 6 INCH INCREMENT THE SAMPLER IS DRIVEN.

 INTERVAL SAMPLED

 SAMPLE INCREMENT RETAINED FOR LABORATORY ANALYSES

 SOIL CLASSIFICATION GRAPHIC/SYMBOL (SEE UNIFIED SOIL CLASSIFICATION SYSTEM).

 DEPTH TO WATER, DATE, TIME



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Project Good Chevrolet Owner Good Chevrolet
 Location 1630 Park St. Alameda Project Number 20-8208
 Date Drilled 1/15/87 Total Depth of Hole 20 ft. Diameter 7.5 inches
 Surface Elevation _____ Water Level, Initial 14 ft. 24-hrs. _____
 Screen: Dia. .020 Length 15 feet Slot Size .020
 Casing: Dia. 2 inch Length 5 feet Type PVC
 Drilling Company Kvilhaug Drilling Method Hollowstem Auger
 Driller C. Pruner Log by N. Farrar

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0					3 inches Asphalt
2					8 inches base course
4			A 5		Black silty sand (loose, dry, no product odor)
6			12		(grades light brown, medium dense)
8			14	SM	(strong product odor)
10			B 10		
12			19		
14			30		
16			C 10		Encountered water 1/15/87
18			14		(grades no product odor)
20			19		
22					Drilled to 20 feet, installed well
24					



Monitoring Well 2

Drilling Log

Project Good Chevrolet Owner Good Chevrolet
 Location 1630 Park St. Alameda Project Number 20-8208
 Date Drilled 1/15/87 Total Depth of Hole 20 ft. Diameter 7.5 inches
 Surface Elevation _____ Water Level Initial 14 ft. 24-hrs. _____
 Screen: Dia. .020 Length 15 feet Slot Size .020
 Casing: Dia. 2 inch Length 5 feet Type PVC
 Drilling Company Kvilhaug Drilling Method Hollowstem Auger
 Driller C. Pruner Log by N. Farrar

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0					3 inches Asphalt 8 inches base course
2					Brown silty sand (medium dense, dry, no product odor) (grades tan)
4			A 6		
6			6 12	SM	(grades slight product odor)
8					
10			B 10		(grades dense)
12			21 27		(strong product odor)
14					(very slight product odor)
15			C 15		▼ Encountered water 1/15/87
16			20 28		(grades no product odor)
18					
20					Drilled to 20 feet, installed well
22					
24					



Figure 1. Site Location Map

1630 Park Street, Alameda 94501



GOOD CHEVROLET
ALAMEDA, CALIFORNIA



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PARK AVENUE

CHEVROLET
DEALERSHIP BLDG.

(95.52)
MW3

ESTIMATED
FLOW
DIRECTION

TANK
PIT
AREA

(95.52)
MW2

SB4

FENCE

(95.83)
MW1

SB5

LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- () GROUNDWATER ELEVATION (FT.)
- POTENTIOMETRIC SURFACE CONTOUR (FT.)

Figure 3. Potentiometric Surface Map
(8/11/89)



NO SCALE

WOOD CHEVROLET
LAMEDA, CALIFORNIA

3.



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APPENDIX II



Monitoring Well 3

Drilling Log

Project Good Chevrolet Owner Good Chevrolet
 Location 1630 Park St. Alameda Object Number 20-8208
 Date Drilled 1/15/87 Total Depth of Hole 20 ft. Diameter 7.5 inches
 Surface Elevation _____ Water Level, Initial 14 ft. 24-hrs. _____
 Screen: Dia. .020 Length 15 feet Slot Size .020
 Casing: Dia. 2 inch Length 5 feet Type PVC
 Drilling Company Kvilhaug Drilling Method Hollowstem Auger
 Driller G. Pruner Log by N. Farrar

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0					3 inches Asphalt
0.5					8 inches base course
0.5 - 4					Tan silty sand (loose, dry, no product odor)
4 - 6			A	SM	(grades medium dense)
6 - 8					Tan clayey sand (medium dense, dry, no product odor)
8 - 10			B	SC	(grades less clay, strong product odor)
10 - 14					Tan silty sand (dense, dry, slight product odor)
14			C	SM	▼ Encountered water 1/15/87
14 - 20					(grades no product odor)
20					Drilled to 20 feet, installed well



Soil Boring 4

Drilling Log

Project Good Chevrolet Owner Good Chevrolet
 Location 1630 Park St. Alameda Project Number 20-8208
 Date Drilled 1/15/87 Total Depth of Hole 10 ft Diameter 7.5 inch
 Surface Elevation _____ Water Level Initial _____ 24-hrs. _____
 Screen: Dia. _____ Length _____ Slot Size _____
 Casing: Dia. _____ Length _____ Type _____
 Drilling Company Kvilhaug Drilling Method Hollowstem Auger
 Driller C. Pruner Log by N. Farrar

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0					3 inches Asphalt 8 inches base course
2					Tan silty sand (loose, moist, no product odor)
4					
6					
8				SM	
10					Drilled to 10 feet
12					
14					
16					
18					
20					
22					
24					



Soil Boring 5

Drilling Log

Project Good Chevrolet Owner Good Chevrolet
 Location 1630 Park St. Alameda Project Number 20-8208
 Date Drilled 1/15/87 Total Depth of Hole 10.5 ft Diameter 7.5 inch
 Surface Elevation _____ Water Level Initial _____ 24-hrs. _____
 Screen: Dia. _____ Length _____ Slot Size _____
 Casing: Dia. _____ Length _____ Type _____
 Drilling Company Kvilhaug Drilling Method Hollowstem Auger
 Driller C. Pruner Log by N. Farrar

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0					3 inches Asphalt 8 inches base course
2					Tan silty sand (loose, dry, no product odor)
4					
6					(grades more silty)
8					(grades coarser)
10			A 5		(slight product odor)
12					(strong product odor, obtained grab sample)
14					
16					
18					
20					
22					
24					



SEQUOIA Analytical Laboratory

2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Groundwater Technology Laboratory
4080 Pikelane, Suite D
Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

<u>Sample Number</u>	<u>Sample Description</u>	<u>Lead</u> mg/kg-wet wt.
7010960	MW-1 at 10 feet	1.3
7010961	MW-1 at 15 feet	1.3
7010962	MW-2 at 5 feet	0.92
7010963	MW-2 at 10 feet	1.1
7010964	MW-3 at 10 feet	1.1
7010965	MW-3 at 15 feet	0.74
7010966	SB-5 at 10 feet	47

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

sls



SEQUOIA Analytical Laboratory

2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Groundwater Technology Laboratory
4080 Pikelane, Suite D
Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010960

Sample Description


Good Chevrolet, Soil
MW-1 at 10 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	24
Benzene	0.1	2.9
Toluene	0.1	3.6
Xylenes	0.1	1.8

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

SEQUOIA ANALYTICAL LABORATORY


Arthur G. Burton
Laboratory Director

sls



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2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Groundwater Technology Laboratory
4080 Pikelane, Suite D
Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010960

Sample Description

Good Chevrolet, Soil
MW-1 at 10 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS

results in ppb

Aldrin.....	< 10	Endrin.....	< 10
α-BHC.....	< 10	Endrin Aldehyde.....	< 10
β-BHC.....	< 10	Heptachlor.....	< 10
δ-BHC.....	< 10	Heptachlor Epoxide.....	< 10
γ-BHC.....	< 10	Toxaphene.....	< 10
Chlordane.....	< 10	PCB-1016.....	< 10
4,4'-DDD.....	< 10	PCB-1221.....	< 10
4,4'-DDE.....	< 10	PCB-1232.....	< 10
4,4'-DDT.....	< 10	PCB-1242.....	< 10
Dieldrin.....	< 10	PCB-1248.....	< 10
Endosulfan I.....	< 10	PCB-1254.....	< 10
Endosulfan II.....	< 10	PCB-1260.....	< 10
Endosulfan Sulfate.....	< 10		

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Method 8080 of the EPA was used for this analysis.

sls



SEQUOIA Analytical Laboratory

2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Groundwater Technology Laboratory
4080 Pikelane, Suite D
Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010961

Sample Description

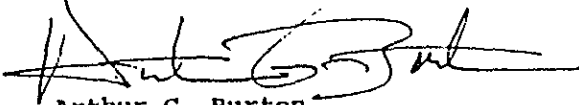
Good Chevrolet, Soil
MW-1 at 15 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

SEQUOIA ANALYTICAL LABORATORY


Arthur G. Burton
Laboratory Director

sls



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Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010961

Sample Description

Good Chevrolet, Soil
MW-1 at 15 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS

results in ppb

Aldrin.....	< 10	Endrin.....	< 10
α-BHC.....	< 10	Endrin Aldehyde.....	< 10
β-BHC.....	< 10	Heptachlor.....	< 10
δ-BHC.....	< 10	Heptachlor Epoxide.....	< 10
γ-BHC.....	< 10	Toxaphene.....	< 10
Chlordane.....	< 10	PCB-1016.....	< 10
4,4'-DDD.....	< 10	PCB-1221.....	< 10
4,4'-DDE.....	< 10	PCB-1232.....	< 10
4,4'-DDT.....	< 10	PCB-1242.....	< 10
Dieldrin.....	< 10	PCB-1248.....	< 10
Endosulfan I.....	< 10	PCB-1254.....	< 10
Endosulfan II.....	< 10	PCB-1260.....	< 10
Endosulfan Sulfate.....	< 10		

SEQUOIA ANALYTICAL LABORATORY

NOTE: Method 8080 of the EPA was used for this analysis.

Arthur G. Burton
Laboratory Director

sls



SEQUOIA Analytical Laboratory

2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Groundwater Technology Laboratory
4080 Pikelane, Suite D
Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010962

Sample Description

Good Chevrolet, Soil
MW-2 at 5 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

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Laboratory Director

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Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number
7010962

Sample Description
Good Chevrolet, Soil
MW-2 at 5 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS results in ppb

Aldrin.....	<	10	Endrin.....	<	10
α-BHC.....	<	10	Endrin Aldehyde.....	<	10
β-BHC.....	<	10	Heptachlor.....	<	10
δ-BHC.....	<	10	Heptachlor Epoxide.....	<	10
γ-BHC.....	<	10	Toxaphene.....	<	10
Chlordane.....	<	10	PCB-1016.....	<	10
4,4'-DDD.....	<	10	PCB-1221.....	<	10
4,4'-DDE.....	<	10	PCB-1232.....	<	10
4,4'-DDT.....	<	10	PCB-1242.....	<	10
Dieldrin.....	<	10	PCB-1248.....	<	10
Endosulfan I.....	<	10	PCB-1254.....	<	10
Endosulfan II.....	<	10	PCB-1260.....	<	10
Endosulfan Sulfate.....	<	10			

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NOTE: Method 8080 of the EPA was used for this analysis.

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Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010963

Sample Description

Good Chevrolet, Soil
MW-2 at 10 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	350
Benzene	0.1	14
Toluene	0.1	22
Xylenes	0.1	23

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

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Date Received: 01/20/87
Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010963

Sample Description

Good Chevrolet, Soil
MW-2 at 10 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS
results in ppb

Aldrin.....	< 10	Endrin.....	< 10
α-BHC.....	< 10	Endrin Aldehyde.....	< 10
β-BHC.....	< 10	Heptachlor.....	< 10
δ-BHC.....	< 10	Heptachlor Epoxide.....	< 10
γ-BHC.....	< 10	Toxaphene.....	< 10
Chlordane.....	< 10	PCB-1016.....	< 10
4,4'-DDD.....	< 10	PCB-1221.....	< 10
4,4'-DDE.....	< 10	PCB-1232.....	< 10
4,4'-DDT.....	< 10	PCB-1242.....	< 10
Dieldrin.....	< 10	PCB-1248.....	< 10
Endosulfan I.....	< 10	PCB-1254.....	< 10
Endosulfan II.....	< 10	PCB-1260.....	< 10
Endosulfan Sulfate.....	< 10		

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NOTE: Method 8080 of the EPA was used for this analysis.

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Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010964

Sample Description

Good Chevrolet, Soil
MW-3 at 10 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	200
Benzene	0.1	9.8
Toluene	0.1	16
Xylenes	0.1	16

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

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Date Sampled: 01/15/87
Date Received: 01/20/87
Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010964

Sample Description

Good Chevrolet, Soil
MW-3 at 10 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS

results in ppb

Aldrin.....	< 10	Endrin.....	< 10
α-BHC.....	< 10	Endrin Aldehyde.....	< 10
β-BHC.....	< 10	Heptachlor.....	< 10
δ-BHC.....	< 10	Heptachlor Epoxide.....	< 10
γ-BHC.....	< 10	Toxaphene.....	< 10
Chlordane.....	< 10	PCB-1016.....	< 10
4,4'-DDD.....	< 10	PCB-1221.....	< 10
4,4'-DDE.....	< 10	PCB-1232.....	< 10
4,4'-DDT.....	< 10	PCB-1242.....	< 10
Dieldrin.....	< 10	PCB-1248.....	< 10
Endosulfan I.....	< 10	PCB-1254.....	< 10
Endosulfan II.....	< 10	PCB-1260.....	< 10
Endosulfan Sulfate.....	< 10		

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NOTE: Method 8080 of the EPA was used for this analysis.

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Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010965

Sample Description

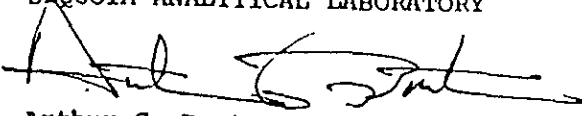
Good Chevrolet, Soil
MW-3 at 15 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

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Date Sampled: 01/15/87
Date Received: 01/20/87
Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010965

Sample Description

Good Chevrolet, Soil
MW-3 at 15 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS

results in ppb

Aldrin.....	<	10	Endrin.....	<	10
α-BHC.....	<	10	Endrin Aldehyde.....	<	10
β-BHC.....	<	10	Heptachlor.....	<	10
δ-BHC.....	<	10	Heptachlor Epoxide.....	<	10
γ-BHC.....	<	10	Toxaphene.....	<	10
Chlordane.....	<	10	PCB-1016.....	<	10
4,4'-DDD.....	<	10	PCB-1221.....	<	10
4,4'-DDE.....	<	10	PCB-1232.....	<	10
4,4'-DDT.....	<	10	PCB-1242.....	<	10
Dieldrin.....	<	10	PCB-1248.....	<	10
Endosulfan I.....	<	10	PCB-1254.....	<	10
Endosulfan II.....	<	10	PCB-1260.....	<	10
Endosulfan Sulfate.....	<	10			

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Arthur G. Burton
Laboratory Director

NOTE: Method 8080 of the EPA was used for this analysis.

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Groundwater Technology Laboratory
4080 Pikelane, Suite D
Concord, CA 94520
Attn: Neal Farrar

Date Sampled: 01/15/87
Date Received: 01/20/87
Date Reported: 02/03/87
Project #20-8208

Sample Number

7010966

Sample Description

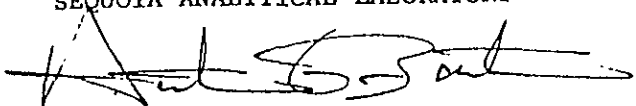
Good Chevrolet, Soil
SB-5 at 10 feet

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons	1	6.5
Benzene	0.1	< 0.1
Toluene	0.1	0.22
Xylenes	0.1	< 0.1

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

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Date Received: 01/20/87
Date Extracted: 01/30/87
Date Reported: 02/03/87
Project #20-8208

Sample Number
7010966

Sample Description
Good Chevrolet, Soil
SB-5 at 10 feet

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS results in ppb

Aldrin.....	< 10	Endrin.....	< 10
α-BHC.....	< 10	Endrin Aldehyde.....	< 10
β-BHC.....	< 10	Heptachlor.....	< 10
δ-BHC.....	< 10	Heptachlor Epoxide.....	< 10
γ-BHC.....	< 10	Toxaphene.....	< 10
Chlordane.....	< 10	PCB-1016.....	< 10
4,4'-DDD.....	< 10	PCB-1221.....	< 10
4,4'-DDE.....	< 10	PCB-1232.....	< 10
4,4'-DDT.....	< 10	PCB-1242.....	< 10
Dieldrin.....	< 10	PCB-1248.....	< 10
Endosulfan I.....	< 10	PCB-1254.....	< 10
Endosulfan II.....	< 10	PCB-1260.....	< 10
Endosulfan Sulfate.....	< 10		

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Method 8080 of the EPA was used for this analysis.

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APPENDIX III



Environmental Laboratories

A division of Groundwater Technology, Inc.

Western Region

4080-C Pike Ln., Concord, CA 94520
 (415) 685-7852
 (800) 544-3422 from inside California
 (800) 423-7143 from outside California

PROJECT: Neal Farrar
 Groundwater Technology, Inc.
 4080 Pike Lane
 Concord, CA. 94520
 PROJECT #: 20-8208-1
 LOCATION: Alameda, CA.

SAMPLED: 1/21/87 BY: S.Thompson
 RECEIVED: 1/21/87 BY: A.Adams
 ANALYZED: 1/22/87 BY: E. Foley
 MATRIX: Water

SIC

TEST RESULTS (ppb)

COMPOUNDS	LAB # I.D.#	72 MW1	73 MW2	74 MW3
<u>Benzene</u>		1148	386.7	1428
<u>Ethylbenzene</u>		1792	285.4	610.5
<u>Toluene</u>		8627	1981	3281
<u>Xylenes</u>		6012	1432	2761
<u>Total BTEX</u>		17589	4085	8081
<u>Chlorobenzene</u>		--	--	--
<u>1,2 DCB</u>		--	--	--
<u>1,3 DCB</u>		--	--	--
<u>1,4 DCB</u>		--	--	--
<u>MEK</u>		--	--	--
<u>MIBK</u>		--	--	--
<u>Total Aliphatics</u>		--	--	--
<u>Aromatics</u>		3443	933.0	2206
<u>Total Hydrocarbons</u>		21022	5018	10287

-- = Not Requested DCB = Dichlorobenzene MEK = Methyl Ethyl Ketone
 MIBK = Methyl Isobutyl Ketone < = Method Detection Limits - Compound below
 this level would not be detected. Sample #73 confirmed on Mass Spectra by
 R. Craven.

METHODS: EPA Method 602.



A Division of Groundwater Technology, Inc.

Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

PROJECT MGR: Neil Farrar
Groundwater Technology, Inc
4080 Pike Lane
Concord, CA. 94520

PROJECT #: 20-8208-2
LOCATION: Alameda, CA.
SAMPLED: 01/28/87 BY: K.Kline
RECEIVED: 01/28/87 BY: A.Adams
ANALYZED: 02/01/87 BY: Guirguis
MATRIX: Water

TEST RESULTS (ppm)

Sally

COMPOUNDS	LAB #	139	140	141
	I.D.#	MW1	MW2	MW3
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Cobalt				
Copper				
Gallium				
Germanium				
Gold				
Iron				
Lead		< 0.02	0.041	< 0.02
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Tungsten				
Vanadium				
Zinc				
Zirconium				

-- = Not Requested. < = Method Detection Limit-Compound below this level would not be detected.

METHODS: Furnace Atomic Absorption (HGA).

GT Environmental Laboratories

A Division of Groundwater Technology, Inc.

Western Region
 4080-C Pike Ln., Concord, CA 94520
 (415) 685-7852
 (800) 544-3422 from inside California
 (800) 423-7143 from outside California

Page 1 of 1

PROJECT MGR: Neil Farrar
 Groundwater Technology, Inc.
 4080 Pike Lane
 Concord, CA 94520

PROJECT #: 20-8208-3
 LOCATION: Alameda, Ca
 SAMPLED: 01/28/87 BY: K. Kline
 RECEIVED: 01/28/87 BY: A. Adams
 ANALYZED: 01/29/87 BY: E. Foley
 MATRIX: Water S. Khanna

EPA 608
 TEST RESULTS (ppb)

COMPOUNDS	LAB #	142	143	144
	L.D.#	MW1	MW2	MW3
Aldrin		---	---	---
a-BHC		---	---	---
b-BHC		---	---	---
d-BHC		---	---	---
γ-BHC		---	---	---
Chlordane		---	---	---
4,4' DDD		---	---	---
4,4' DDE		---	---	---
4,4' DDT		---	---	---
Dieldrin		---	---	---
Endosulfan I		---	---	---
Endosulfan II		---	---	---
Endosulfan sulfate		---	---	---
Endrin		---	---	---
Endrin aldehyde		---	---	---
Heptachlor		---	---	---
Heptachlor epoxide		---	---	---
Toxaphene		---	---	---
PCB-1016	<	0.06	0.06	< 0.06
PCB-1221	<	0.06	0.06	< 0.06
PCB-1232	<	0.06	0.06	< 0.06
PCB-1242	<	0.06	0.06	< 0.06
PCB-1248	<	0.06	0.06	< 0.06
PCB-1254	<	0.06	0.06	< 0.06
PCB-1260	<	0.06	0.06	< 0.06

--- = Not Requested. < = Method Detection Limit Compound below this level would not be detected.

METHODS: EPA Method 608