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ENVIRONMENTAL
CONSULTANTS

July 30, 1993

93 AUG -4 PM 12:45

Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

RE: Results of Groundwater Sampling - Third Quarter at
2425 Encinal, Alameda, California

Dear Mr. Chrissanthos:

The attached report describes the materials and procedures used during groundwater sampling of the monitoring wells located at 2425 Encinal, Alameda, California.

This work was performed to evaluate the hydrocarbon concentrations in groundwater by obtaining samples from existing monitoring wells.

Groundwater samples obtained from each monitoring well were submitted to Geochem Environmental laboratories for petroleum hydrocarbon analysis in accordance with the "Tri-Regional Guidelines for Underground Storage Tank Sites".

The results of the chemical analysis indicated detectable concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline with benzene, toluene, ethylbenzene, and total xylenes (BTEX).

If you have any comments regarding this report, please call me.

Sincerely,

Misty C. Kaltreider

Misty C. Kaltreider
Geologist

cc: Mr. Richard Hiett - Regional Water Quality Control Board
Ms. Juliet Shin - Alameda County Health Care Services - Division of Hazardous Materials

1000 Atlantic Avenue, Suite 110 • Alameda, CA 94501 • (510) 522-8188 • FAX: (510) 865-5731

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QUARTERLY GROUNDWATER SAMPLING

2425 ENCINAL
ALAMEDA, CALIFORNIA

July 1993

Prepared for:
Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

REGISTERED GEOLOGIST
CHRISTOPHER M. PALMER
№ 1262
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Prepared by:

Misty Kaltreider,
Project Geologist

Reviewed by:

Christopher Palmer, CEG
Certified Engineering Geologist

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

1.0 INTRODUCTION

This report presents the procedures and findings of the groundwater investigation conducted by ACC Environmental Consultants, Inc., ("ACC") on behalf of Mr. Steve Chrissanthos and Alameda Cellars, site owner at 2425 Encinal, Alameda, California. The project objective is to evaluate the presence or absence of petroleum hydrocarbons in the groundwater by obtaining samples from the existing monitoring wells.

2.0 BACKGROUND

The site is presently occupied by Alameda Cellars, a commercial liquor store. The property is owned by Mr. Steve Chrissanthos. In March, 1990, two 10,000-gallon gasoline tanks were removed from the above referenced site. Analysis of the soil samples collected from beneath the two gasoline tanks indicated up to 710 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH) as gasoline. Soil samples collected from beneath the diesel tank indicated less than detectable levels of TPH as diesel.

In December 1992, five borings were drilled on-site. Three of the borings were converted into monitoring wells MW-1, MW-2a, and MW-3. Analytical results of the soil collected during drilling and soil sampling indicated a maximum soil concentration of Total Petroleum Hydrocarbons (TPH) as gasoline as 1,365 ppm. Benzene concentration was 18.9 ppm in the same sample.

Initial groundwater samples collected in January, 1993, from the monitoring wells indicated a maximum TPH-gasoline concentration of 5,680 ppb (MW-2a) and a maximum benzene concentration of 1,560 ppb (MW-1).

Additional soil investigation was conducted in May, 1993 to evaluate the extent of contamination in the soil and groundwater. Findings of the additional investigation indicated the lateral extent of hydrocarbon impacted soil did not appear to extend beyond the property boundaries along the northern, western, and eastern sides. However, along the southern side, the impacted soil appears to extend into Park and Encinal Avenues. Field observations made during the additional investigation and soil sample analysis indicated the soil hydrocarbon plume is primarily around the former tank excavation and the former dispenser island. The vertical limit of hydrocarbons in the soil is estimated to occur at the present groundwater table.

Analysis of "grab" groundwater samples collected from borings drilled during the additional investigation indicate the residual hydrocarbons from the former tank excavation and dispenser island is migrating off-site via the groundwater.

3.0 GROUNDWATER SAMPLING

Groundwater elevation measurements are collected from each on-site well monthly. Quarterly groundwater measurements were collected from each on-site well on July 13, 1993.

Prior to groundwater sampling the depth to the surface of the water table was measured from the top of the PVC casing using a Solinst Water Level Meter. Information regarding well elevations and groundwater levels collected monthly are summarized in Table 1.

TABLE 1 - Groundwater Depth Information

Date Sampled	Depth to Groundwater (ft.)	Groundwater Elevation (ft.)
Well No. MW-1	Elevation of Top of Casing-27.61 MSL	
01/09/93	6.75	20.86
02/09/93	6.41	21.20
03/10/93	6.34	21.27
04/12/93	6.52	21.09
05/17/93	7.38	20.23
06/28/93	8.42	19.19
07/13/93	8.68	18.93
Well No. MW-2a	Elevation of Top of Casing-27.98 MSL	
01/09/93	7.06	20.92
02/09/93	6.63	21.35
03/10/93	6.57	21.41
04/12/93	6.77	21.21
05/17/93	7.61	20.37
06/28/93	8.68	19.30
07/13/93	8.94	19.04
Well No. MW-3	Elevation of Top of Casing-27.89 MSL	
01/09/93	6.68	21.21
02/09/93	6.25	21.64
03/10/93	6.18	21.71
04/12/93	6.41	21.48
05/17/93	7.37	20.52
06/28/93	8.47	19.42
07/13/93	8.74	19.15

Notes: All measurements in feet
MSL = Mean Sea Level

After water-level measurements were taken, each on-site well was purged by hand using a designated disposable Teflon bailer for each well. Groundwater pH, temperature and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Three to four well volumes were removed to purge each well. See Exhibit A for worksheets of groundwater conditions monitored during purging.

After the groundwater level had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using the designated disposable Teflon bailer. Two 40 ml VOA vials, without headspace, were filled from the water collected from each monitoring well.

The samples were preserved on ice and submitted to Geochem Environmental Laboratories under chain of custody protocol (see Exhibit B for laboratory results and chain of custody).

4.0 FINDINGS

4.1 Analytical Results - Groundwater

One groundwater sample each from Monitoring Wells MW-1, MW-2a and MW-3 was collected and submitted to Geochem for analysis for TPH as gasoline by EPA test method 5030 and BTEX by EPA test method 602. Copies of the analytical results are provided in Exhibit B and are summarized in Table 2.

TABLE 2
Analytical Results - Groundwater

Well Number	Date Collected	TPH-gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW-1	01/09/93	5,360	1,560.0	1,026.6	641.0	2,706.2
	04/12/93	12,000	750.0	100.0	500.0	1,400.0
	07/13/93	720	119.6	32.7	70.8	262.0
MW-2a	01/09/93	5,680	801.6	598.6	840.2	2,196.1
	04/12/93	12,000	460.0	110.0	240.0	1,600.0
	07/13/93	550	145.2	47.5	126.8	127.4
MW-3	01/09/93	<50	<0.5	<0.5	<0.5	<0.5
	04/12/93	1,500	95.0	30.0	46.0	85.0
	07/13/93	540	18.3	106.2	75.7	128.0

lower conc. resulting probably from deeper water table.

Note: ug/L = parts per billion (ppb)

4.2 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the on-site monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevation was surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located in the curb on the northwest corner of the intersection of Park and Encinal Avenues in Alameda, California.

The groundwater gradient was calculated using the on-site monitoring wells. The location of the wells is shown on Figure 1 - Site Plan. Groundwater elevations were taken from the wells on May 17, June 28, and July 13, 1993 and are illustrated in Figures 2 through 4 respectively. The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum.

The historical groundwater gradient and the direction of groundwater flow on-site is summarized in Table 3.

TABLE 3
Historic Groundwater Gradient

Date Monitored	Gradient (foot/foot)	Direction
01/09/93	0.009	west
02/09/93	0.013	southwest
03/10/93	0.012	west/southwest
04/12/93	0.012	west/southwest
05/17/93	0.0078	south/southwest
06/28/93	0.0076	southwest
07/13/93	0.0058	southwest

5.0 CONCLUSION

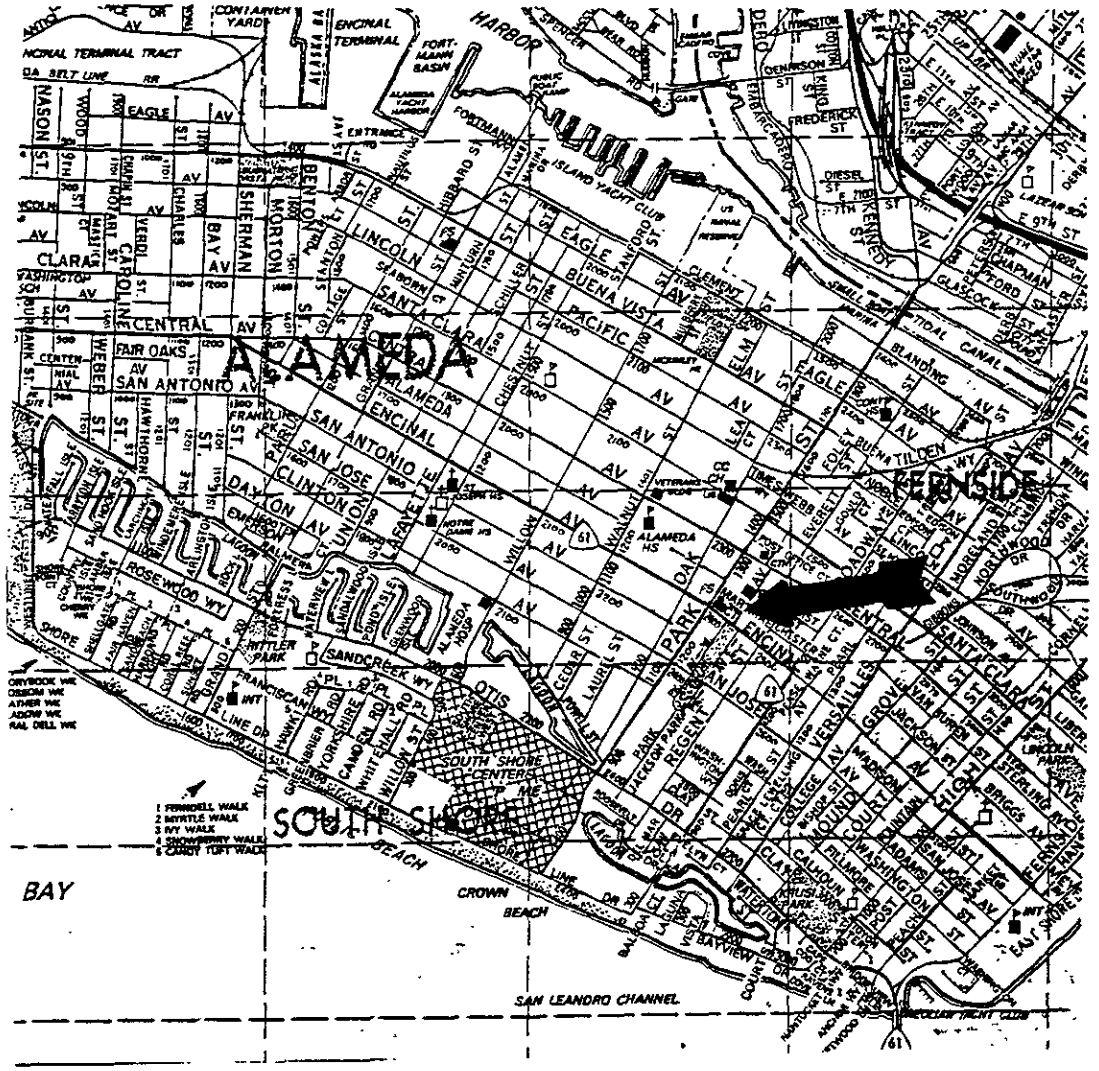
The data and observations discussed herein indicate that groundwater has been impacted due to an unauthorized hydrocarbon release. The analytical parameters used for soil and groundwater sampling performed in December 1992 and January 1993 were in accordance with the "Tri-Regional Water Quality Control Boards Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990, for gasoline tanks.

First quarter sampling and analysis indicated elevated levels of TPH as gasoline with BTEX in the groundwater from monitoring well MW-1 and MW-2a. Groundwater from monitoring well MW-3 has below detectable levels of constituents. Second quarterly sampling and analysis of the groundwater in April indicated an increase in levels of Total Petroleum Hydrocarbons as gasoline in all wells, however, the benzene, toluene, ethylbenzene and xylenes levels have declined in water samples from monitoring wells MW-1 and MW-2a. Constituents detected during this round of sampling appear to be decreasing due to the fluctuating groundwater elevation. Movement of the constituents is aided by the relatively flat groundwater gradient.

6.0 RECOMMENDATIONS

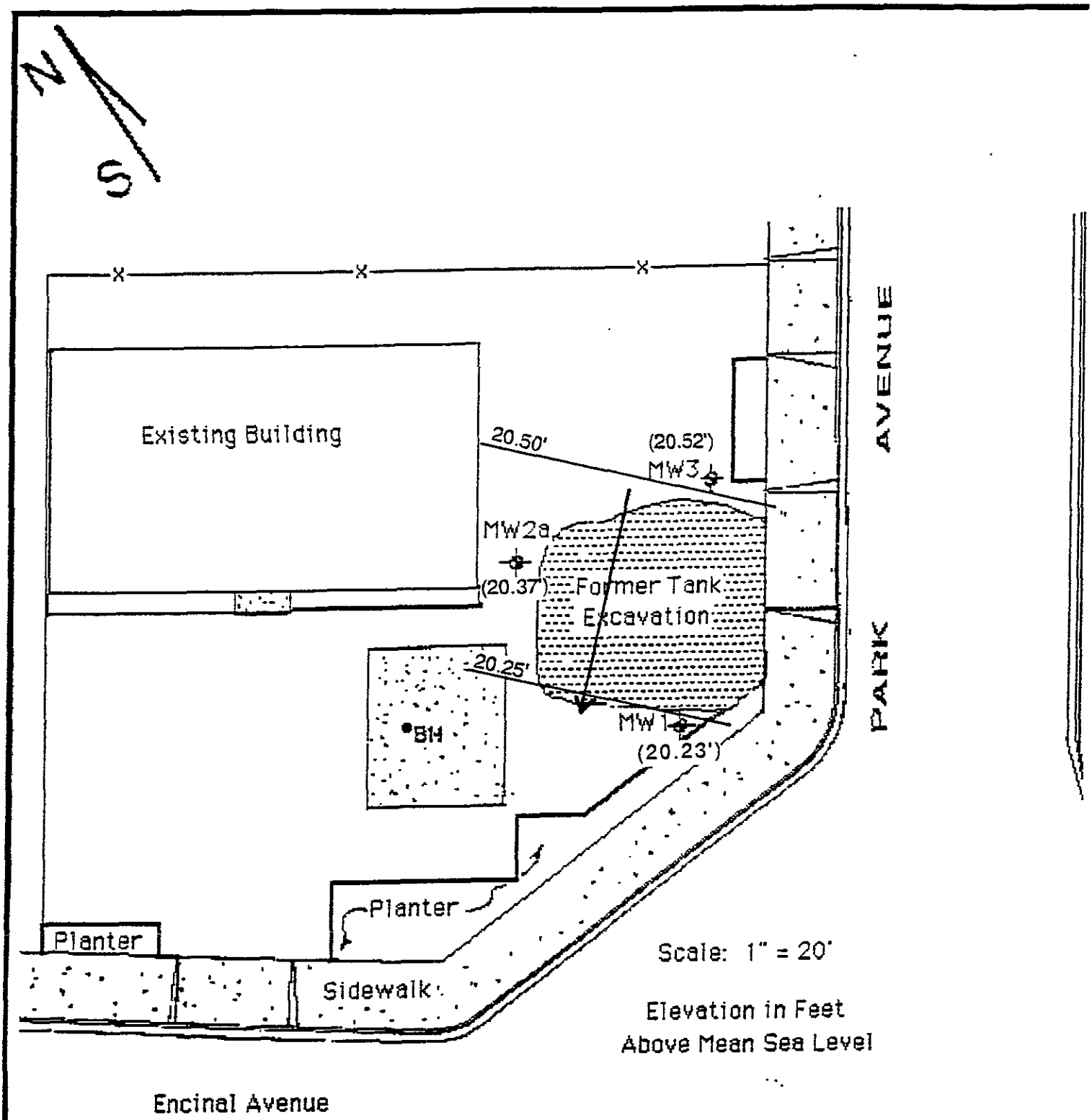
Pursuant to the Tri-Regional Board guidelines, groundwater sampling and monitoring of the on-site wells should continue on a quarterly basis. Further sampling and analysis of the groundwater will help in establishing a trend in the contaminants.

Pursuit to the CCR Title 23, Chapter 16, Articles 5, 7, and 11 of the Underground Storage Tank regulations a Corrective Action Plan is being drafted to determine the method of cleanup. The Corrective Action Plan will identify and evaluate the appropriate corrective actions for the property located at 2425 Encinal Avenue.



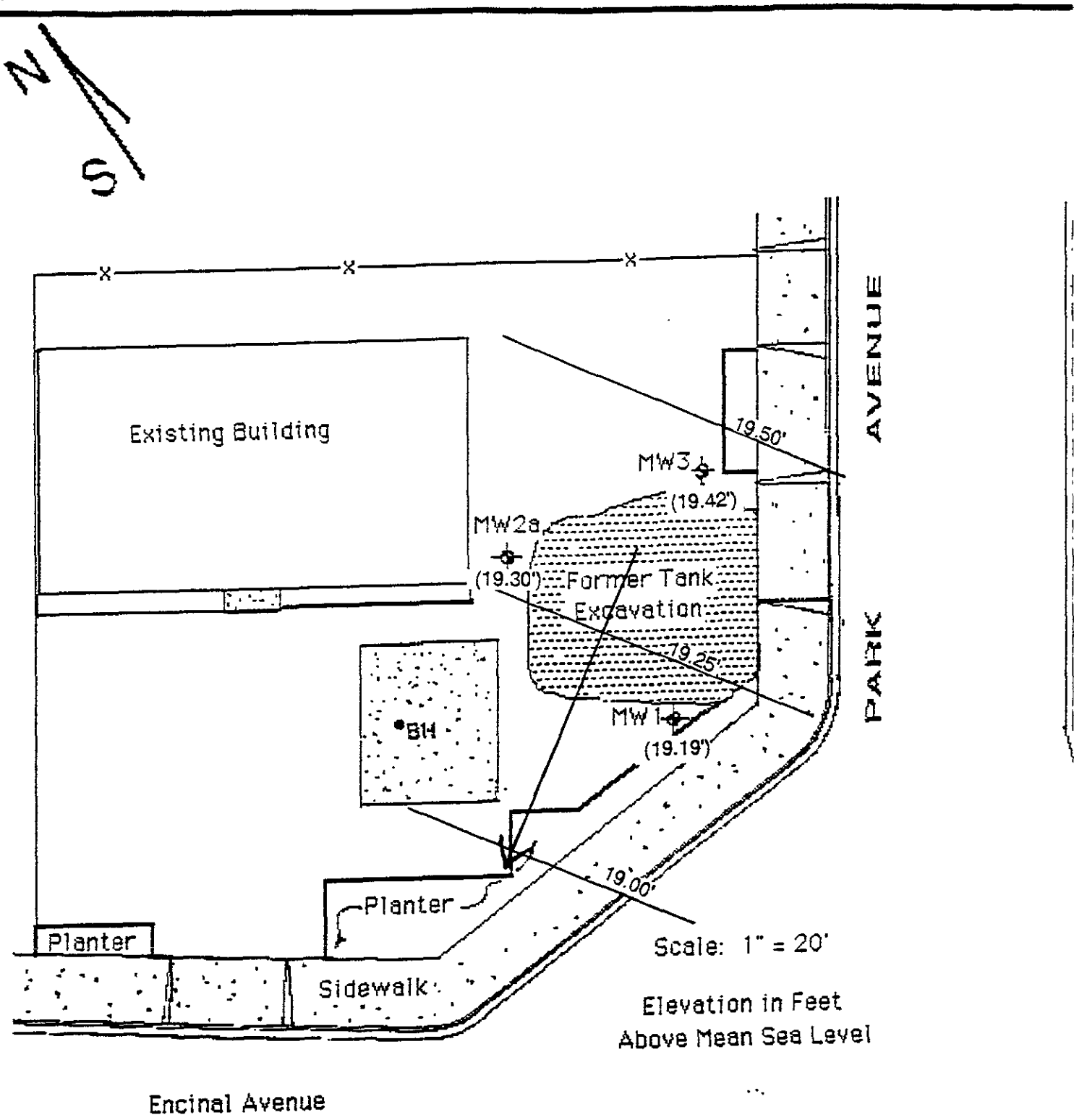
Source: Thomas Brothers

ACC Environmental Consultants, Inc. 1000 Atlantic Avenue, Suite 110 Alameda, California 94501		Location Map 2425 Encinal Avenue Alameda, California	
Project No. 6039-3	Date: 4/12/93	Dn by: MCK	Figure 1



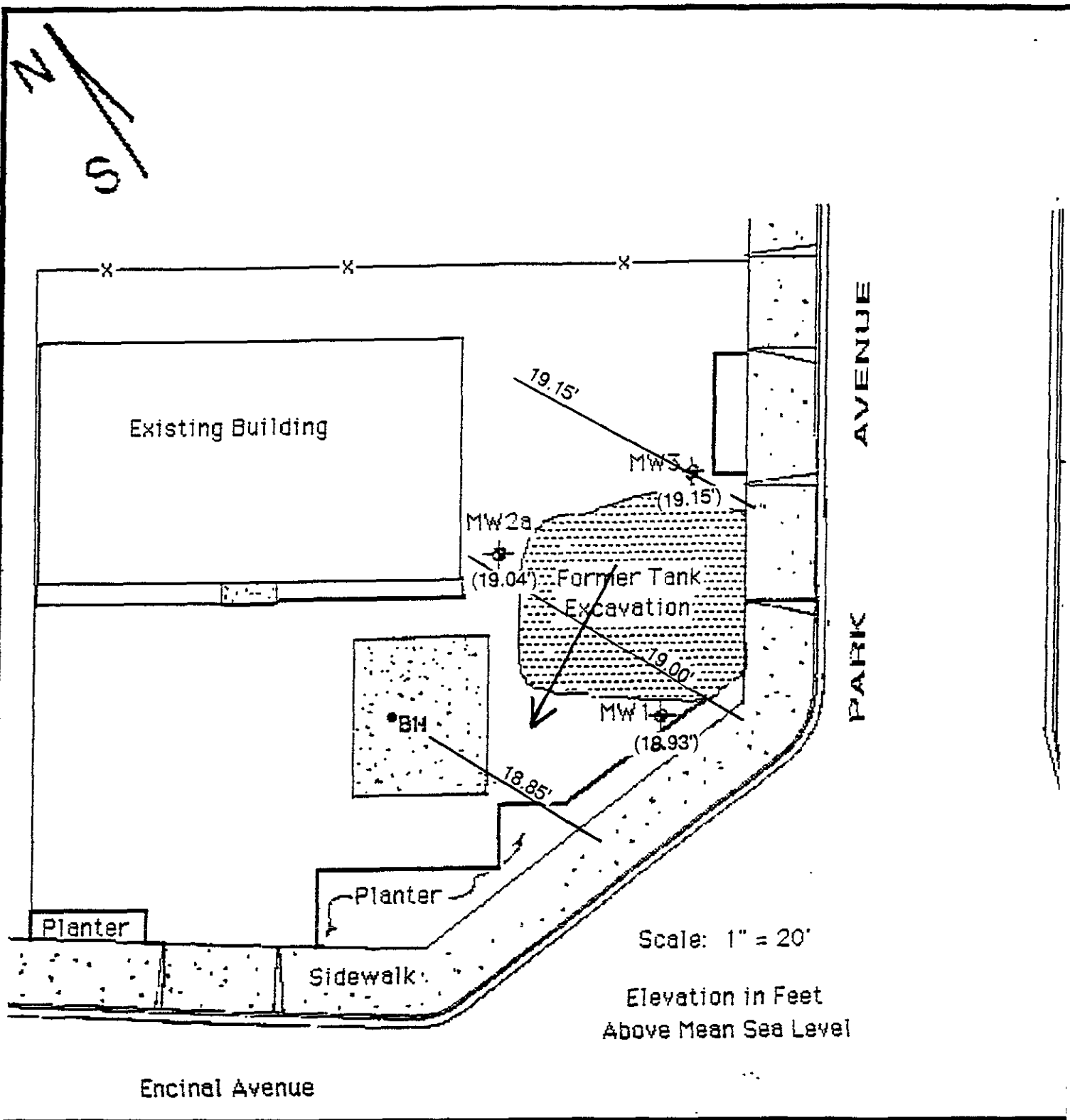
ACC Environmental Consultants, Inc. 1000 Atlantic Avenue, Suite 110 Alameda, California 94501	Groundwater Gradient Alameda Cellars 2425 Encinal Avenue Alameda, California

Project No: 6039-4	Date: 5/17/93	Dn by: MCK	Figure 2



ACC Environmental Consultants, Inc. 1000 Atlantic Avenue, Suite 110 Alameda, California 94501	Groundwater Gradient Alameda Cellars 2425 Encinal Avenue Alameda, California

Project No: 6039-4	Date: 6/28/93	Dn by: MCK	Figure 3



ACC Environmental Consultants, Inc. 1000 Atlantic Avenue, Suite 110 Alameda, California 94501	Groundwater Gradient Alameda Cellars 2425 Encinal Avenue Alameda, California

Project No: 6039-4	Date: 7/13/93	Dn by: MCK	Figure 4

EXHIBIT A

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-1

Job Number: 6039-3

Job Name: 2425 Encinal

Date: 7/13/93

Sampler: Carl Soave

Depth to Water (measured from TOC): 8.68'

Inside Diameter of Casing: 2"

Depth of Boring: 18'

Method of well development/purging: Bailer

Amount of Water Bailed/Pumped from well: 6.0 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 8.85'

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? Yes

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	
product		✓
other, describe		✓

gas

Gallons Removed	pH	EC	Temp
5	7.52	8.80	68.5
10	7.49	8.43	68.5
15	7.50	8.42	68.5
20	7.49	8.50	68.5
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	✓
TPH (diesel)	
TPH (motor oil)	
BTXE	✓
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-~~8~~ 2A

Job Number: 6039-3

Job Name: 2425 Encinal

Date: 7/13/93

Sampler: Carl Soave

Depth to Water (measured from TOC): ~~8.74'~~ 8.94'

Inside Diameter of Casing: 2"

Depth of Boring: 18'

Method of well development/purging: Bailer

Amount of Water Bailed/Pumped from well: ~~6.0 gallons~~ 6.0 gallons

Depth to Water after well development: ——

Depth to water prior to sampling: 9.57'

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? Yes

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	gas
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	7.67	5.73	68.7
10	7.60	5.85	68.7
15	7.54	5.80	68.7
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	✓
TPH (diesel)	
TPH (motor oil)	
BTXE	✓
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-3

Job Number: 6039-3

Job Name: 2425 Encinal

Date: 7/12/93

Sampler: Carl Soave

Depth to Water (measured from TOC): 8.74'

Inside Diameter of Casing: 2"

Depth of Boring: 16'

Method of well development/purging: Bailer

Amount of Water Bailed/Pumped from well: 5 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 9.35'

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? Yes

Water Appearance:

	yes	no	
froth		✓	
irridesence		✓	
oil		✓	
smell	✓		gas
product		✓	
other, describe		✓	

Gallons Removed	pH	EC	Temp
5	7.35	7.87	68.6
10	7.29	7.70	68.6
15	7.35	7.70	68.6
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	✓
TPH (diesel)	
TPH (motor oil)	
BTXE	✓
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

EXHIBIT B

Geochem ENVIRONMENTAL LABORATORIES

Mobile & In-House Laboratories Certified by State of California
Phone: (408) 955-9988 / FAX: (408) 955-9536

ANALYTICAL REPORT

****

Client: ACC Environmental
1000 Atlantic Ave.
Alameda, CA 94501
Attn: Misty Kaltreider

Date Sampled: 07/13/93
Date Received: 07/13/93
Date Analyzed: 07/15/93
Batch:SD-234 Matrix: Water
Conc. Unit ug/kg(ppb)

Project: 2425 Encinal

****

"**ND**" means "not detected" at indicated detection limit.
B:benzene, **T**:toluene, **E**:ethylbenzene & **X**:total xylenes.
Samples received chilled with a chain of custody record.

SAMPLE I.D.	8015M/TPH Gasoline	602 B / T / E / X
DETECTION LIMIT	50 ppb	0.5 ppb
MW-1	720	119.6 / 32.7 / 70.8 / 262.0
MW-2a	550	145.2 / 47.5 / 126.8 / 127.4
MW-3	540	18.3 / 106.2 / 75.7 / 128.0

Reviewed and approved by George Tsai, Laboratory Director July 16, 1993

GEOCHEM Environmental Laboratories
780 Montague Expressway, Suite 404
San Jose, CA 95131
(408) 955-9988 • FAX (408) 955-9538

CHAIN OF CUSTODY RECORD

Date 7/13/93 Page 1 of 1

TESTS REQUIRED

CLIENT	ACC Environmental
ADDRESS	1000 Atlantic Ave, Suite 110 Alameda, CA 94501 fax # (510) 865-5731
PROJECT NAME	2425 Fencina
PROJECT MANAGER	Misty Kaltreider
PHONE NUMBER	(510) 522-8188

SAMPLE I.D.	LOCATION DESCRIPTION	DATE	TIME	MATRIX AIR	MATRIX WATER	MATRIX SOIL	NO. OF CTNR	418.1/TRPH	8010 (601)	8015 E/TPH-diesel	8015 M/TPH-gasoline	8020 (602) BTEX	7420/Total Lead	Organic Lead			Archive
MW-1	MW-1	7/13	1:45		X		2				X	X					
MW-2a	MW-2a	"	~~2:05~~ 12:45		X		2				X	X					
MW-3	MW-3	"	1215		X		2				X	X					

Sampled/Relinquished by: (Carl Soane)	Received by: S.K. Monroe	Date 07/13/93	Time 4:45?
Relinquished by:	Received by:	Date	Time
Relinquished by:	Received by:	Date	Time

Turnaround time: 24 hr. 48 hr. (Normal (3-5 days))

Special Instructions:

GEOCHEM Environme...
780 Montague E...
San Jo...
(408) 955-9988 ... 9538

CHAIN OF CUSTODY RECORD

Date 7/13/93 Page 1 of 1

CLIENT	PROJECT NAME
ACC Environmental	2425 Encinal
ADDRESS 1000 Atlantic Ave, Suite 110 Alameda, CA 94501 Fax # (510) 865-5731	**PROJECT MANAGER** Misty Kaltreider
	PHONE NUMBER (510) 522-8188

SAMPLE I.D.	LOCATION DESCRIPTION	DATE	TIME	MATRIX AIR	MATRIX WATER	MATRIX SOIL	NO. OF CTNR	418.1/TRPH	8010 (601)	8015 E/TPH-diesel	8015 M/TPH-gasoline	8020 (602) BTEX	7420/Total Lead	Organic Lead			Archive
MW-1	MW-1	7/13	1:45		X		2				X	X					
MW-2a	MW-2a	"	~~2:05~~ 12:45		X		2				X	X					
MW-3	MW-3	"	1215		X		2				X	X					

TESTS REQUIRED

Sampled/Relinquished by: (Carl Soone)	Received by: J. Monroe	Date 07/13/93	Time 1145
Relinquished by:	Received by:	Date	Time
Relinquished by:	Received by:	Date	Time
Turnaround time: 24 hr. 48 hr. (Normal (3-5 days))	Special Instructions:		