

93 OCT 13 PM 4: 25

October 5, 1993

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

RE: Quarterly Groundwater Sampling
901 Lincoln Avenue, Alameda, California

Dear Mr. Chrissanthos:

The attached report describes the materials and procedures used during groundwater sampling of the monitoring wells located at 901 Lincoln Avenue, Alameda, California.

This work was performed to evaluate the presence or absence of residual hydrocarbon concentrations in groundwater by obtaining samples from existing monitoring wells.

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

The results of the chemical analysis indicated non-detectable concentrations in monitoring wells MW-2 and MW-3. Sample analysis results from monitoring well MW-1 indicated detectable levels of Total Petroleum Hydrocarbons (TPH) as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

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

Sincerely,



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

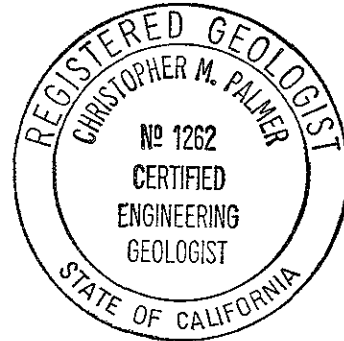
QUARTERLY GROUNDWATER SAMPLING

901 LINCOLN AVENUE
ALAMEDA, CALIFORNIA


September 1993

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

Prepared by:



Prepared by:


Misty Kaltreider,
Project Geologist

Reviewed by:

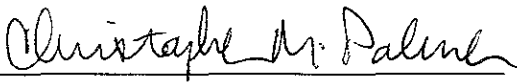

Christopher M. Palmer CEG # 1262
Certified Engineering Geologist

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Appendix B	Chain of Custody Forms and Analytical Test Results

1.0 INTRODUCTION

This report presents the procedures and findings of quarterly groundwater sampling conducted by ACC Environmental Consultants, Inc., ("ACC") on behalf of Mr. Steve Chrissanthos and Alameda Cellars, site owner at 901 Lincoln Avenue, 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 E-Z Liquors, a commercial liquor store. The property is owned by Mr. Steve Chrissanthos. On March of 1990, two 10,000-gallon gasoline tanks and one 2,000-gallon diesel tank 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.

Per request of Alameda County Health Care Services - Hazardous Materials Division, a preliminary Site Assessment was conducted to further evaluate the soil contamination from the gasoline release on-site.

ACC was retained by Mr. Chrissanthos to perform the work requested by the Alameda County Health Care Services.

In December 4, 1992, three monitoring wells were installed on-site. Analytical results of soil collected during drilling indicated 55.96 parts per million (ppm) of TPH as gasoline with benzene, toluene, ethylbenzene, and total xylenes (BTEX) from monitoring well MW-1. Soil samples collected from the other borings indicated constituents below detectable levels.

Initial groundwater samples collected from the on-site monitoring wells on December 15, 1992, indicated below detectable levels of constituents.

In February 24, 1993, ACC performed a soil investigation on the property to evaluate the lateral and vertical extent of soil contamination adjacent to monitoring well MW-1. Analytical results of soil samples collected indicated below detectable levels of hydrocarbon constituents in the soil. It was concluded that hydrocarbon impact on-site is limited to soil around monitoring well MW-1.

3.0 GROUNDWATER SAMPLING

Quarterly groundwater samples are collected from each on-site well. Groundwater measurements are collected from each on-site well monthly. Groundwater samples were collected on September 10, 1993 from monitoring wells MW-1, MW-2, and MW-3.

Prior to groundwater monitoring 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 depths of wells, well elevations and groundwater levels collected monthly is summarized in Table 1.

TABLE 1
Groundwater Depth Information

<u>Date Sampled</u>	<u>Depth to Groundwater (ft)</u>	<u>Groundwater Elevation (ft)</u>
<u>Well No. MW-1</u> Elevation of Top of Casing-18.99 MSL		
12/15/92	10.27	8.72
01/06/93	8.67	10.32
02/09/93	6.98	12.01
03/10/93	6.94	12.05
04/08/93	7.25	11.74
05/17/93	8.67	10.32
06/23/93	9.58	9.41
07/13/93	10.21	8.78
08/10/93	10.78	8.21
09/10/93	11.21	7.78
<u>Well No. MW-2</u> Elevation of Top of Casing-19.03 MSL		
12/15/92	10.14	8.89
01/06/93	8.50	10.53
02/09/93	6.66	12.37
03/10/93	6.53	12.50
04/08/93	6.83	12.20
05/17/93	8.34	10.69
06/23/93	9.36	9.67
07/13/93	9.99	9.04
08/10/93	10.54	8.49
09/10/93	11.08	7.95
<u>Well No. MW-3</u> Elevation of Top of Casing-19.35 MSL		
12/15/92	10.44	8.91
01/06/93	8.91	10.44
02/09/93	7.26	12.09
03/10/93	7.16	12.19
04/08/93	7.49	11.86
05/17/93	9.01	10.34
06/23/93	10.22	9.13
07/13/93	10.58	8.77
08/10/93	11.12	8.23
09/10/93	11.68	7.67

Notes: All measurements in feet
MSL = Mean Sea Level

During sampling, 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. Four well volumes were removed to purge each well. Worksheets of groundwater conditions monitored during purging are attached in Appendix A.

After the groundwater 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 ChromaLab Inc. under chain of custody protocol. Laboratory results with chain of custody forms are attached in Appendix B.

4.0 FINDINGS

4.1 Analytical Results - Groundwater

One groundwater sample from each on-site groundwater monitoring well has been collected quarterly and submitted to ChromaLab for analysis for TPH as gasoline by EPA test method 5030 and BTEX by EPA test method 602. Analysis results from the groundwater samples are illustrated in Table 2. Copies of the analytical results are attached in Appendix B.

TABLE 2
Analytical Results - Groundwater

Well Number	Date Sampled	TPH-gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW-1	12/15/92	<50	<0.5	<0.5	<0.5	<0.5
	03/10/93	100	0.86	<0.5	<0.5	6.3
	06/23/93	6,800	2,500	1,100	100	560
	09/10/93	15,000	4,400	620	850	630
MW-2	12/15/92	<50	<0.5	<0.5	<0.5	<0.5
	03/10/93	<50	<0.5	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5
MW-3	12/15/92	<50	<0.5	<0.5	<0.5	<0.5
	03/10/93	<50	<0.5	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5

Notes:

ug/L = micrograms per liter (ppb)

- Concentrations increase as water table increases.

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 Ninth Street and Pacific Avenue in Alameda, California.

The groundwater gradient was calculated monthly using measurements from the on-site monitoring wells. The location of the wells is shown in Figure 1 - Site Plan.

Groundwater elevations were taken from the wells on July 13, August 10, and September 10, 1993 and are illustrated on Figures 2 through 4, respectively. The gradients were evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum.

Table 3 summarizes the historic groundwater gradient and the direction of groundwater flow on-site.

TABLE 3
Historic Groundwater Gradient

<u>Date Monitored</u>	<u>Gradient (foot/foot)</u>	<u>Direction</u>
12/15/92	0.00175	west-southwest
01/06/93	0.004	northwest
02/09/93	0.008	northwest
03/10/93	0.009	northwest
04/08/93	0.011	northwest
05/17/93	0.008	northwest
06/23/93	0.008	north-northwest
07/13/93	0.0064	northwest
08/10/93	0.0064	northwest
09/10/93	0.0064	northwest

5.0 CONCLUSION

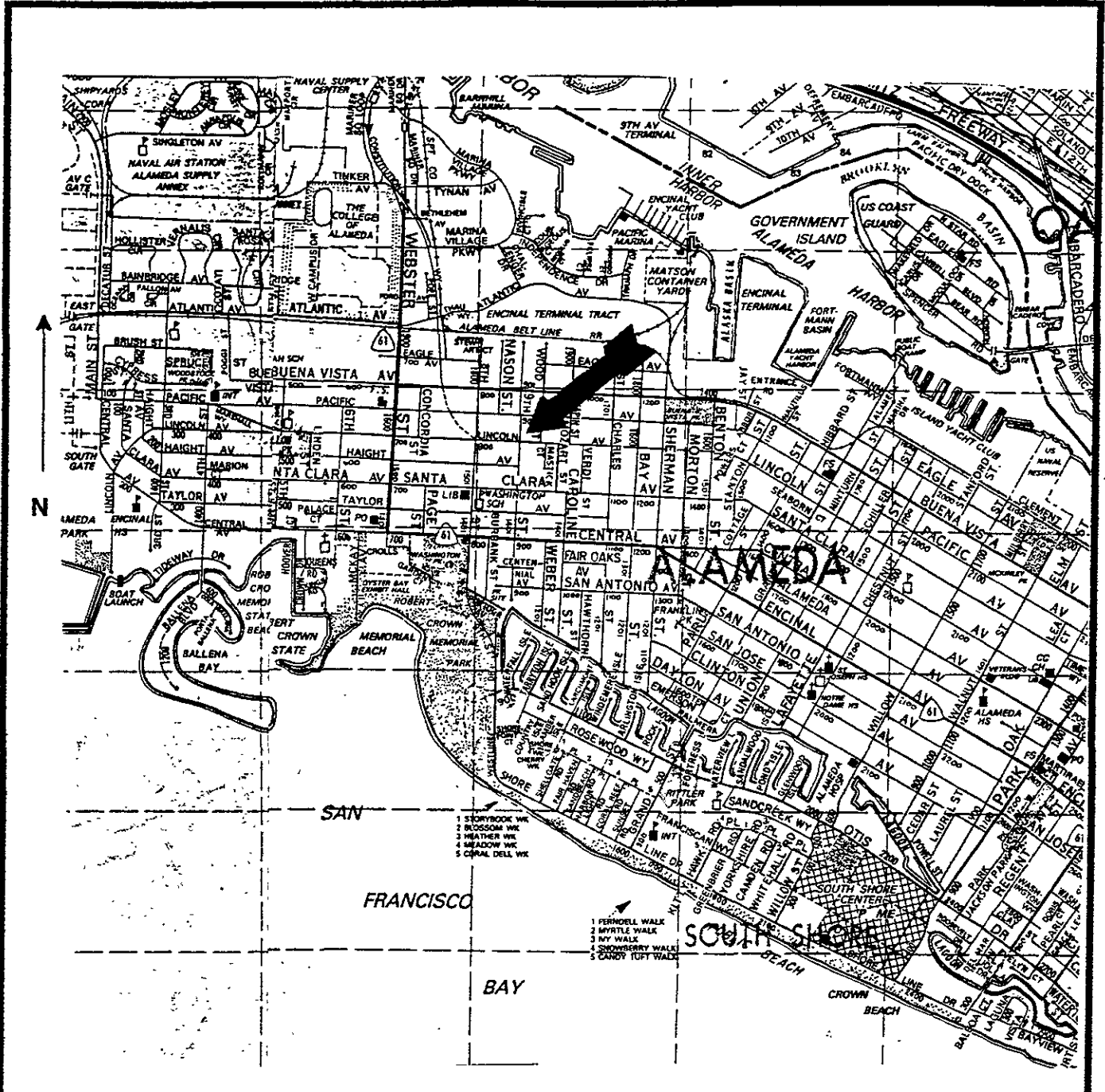
The data and observations discussed herein indicate that groundwater and soil has been impacted due to an unauthorized hydrocarbon release. In December 1992, low levels of Total Petroleum Hydrocarbons (TPH) as gasoline with BTEX were found in the soil sample collected at 11 feet bgs from boring MW-1. Soil staining was also observed in the same boring from 8 to 13 feet below ground surface. Initial sampling and analysis of the groundwater in December 1992 indicated no release had occurred to impact groundwater.

Further soil investigation performed in February 1993, indicated hydrocarbon impact on-site is limited to soil around monitoring well MW-1.

Since December substantial rainfall has increased the elevation of the groundwater. Impacted soil adjacent to monitoring well MW-1 apparently has come into contact with the fluctuating groundwater.

An additional monitoring well is proposed to be installed in October 1993. This well will be located downgradient (northwest) of the former tank excavation to evaluate the extent of groundwater contaminate plume.

Pursuant to the Tri-Regional Board guidelines, monitoring of the on-site wells will be performed monthly and groundwater sampling will continue on a quarterly basis.



(Source: Thomas Bros.)

Vicinity Map

Scale: 1" = 2200'

ACC Environmental Consultants, Inc.
 1000 Atlantic Avenue, Suite 110
 Alameda, California 94501

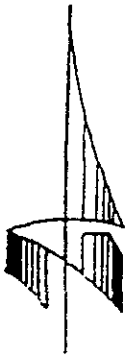
Vicinity Map
 901 Lincoln Ave.
 Alameda, California

Project No. 6039-2b

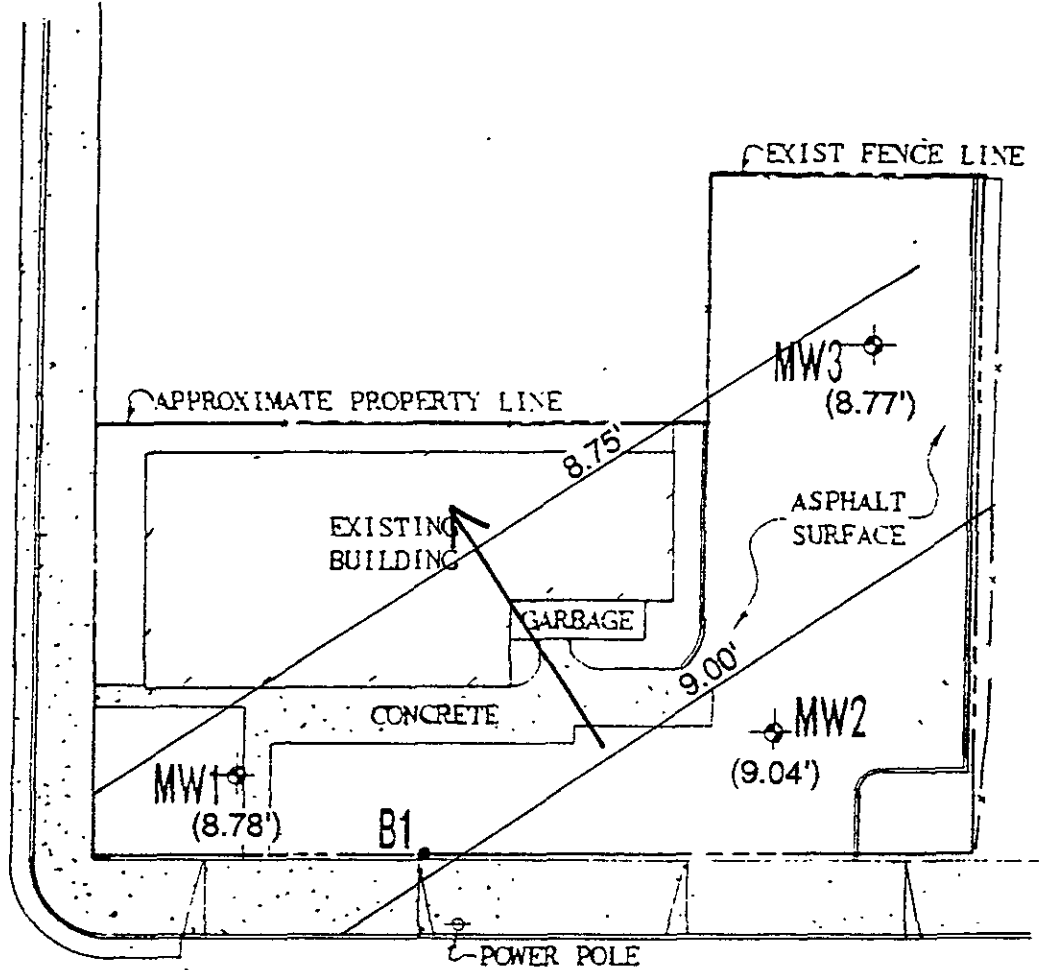
Date: 7/16/93

Dn by: CS

Figure 1



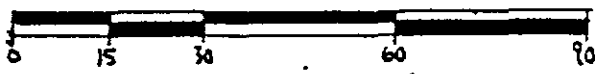
NINTH STREET



LINCOLN AVENUE

Elevations per Feet Above Mean Sea Level

1" = 30'



Graphic Scale

ACC Environmental Consultants, Inc.
 1000 Atlantic Avenue, Suite 110
 Alameda, California 94501

Groundwater Gradient
 Alameda Cellars
 901 Lincoln Avenue
 Alameda, California

Project No.: 6039-2a

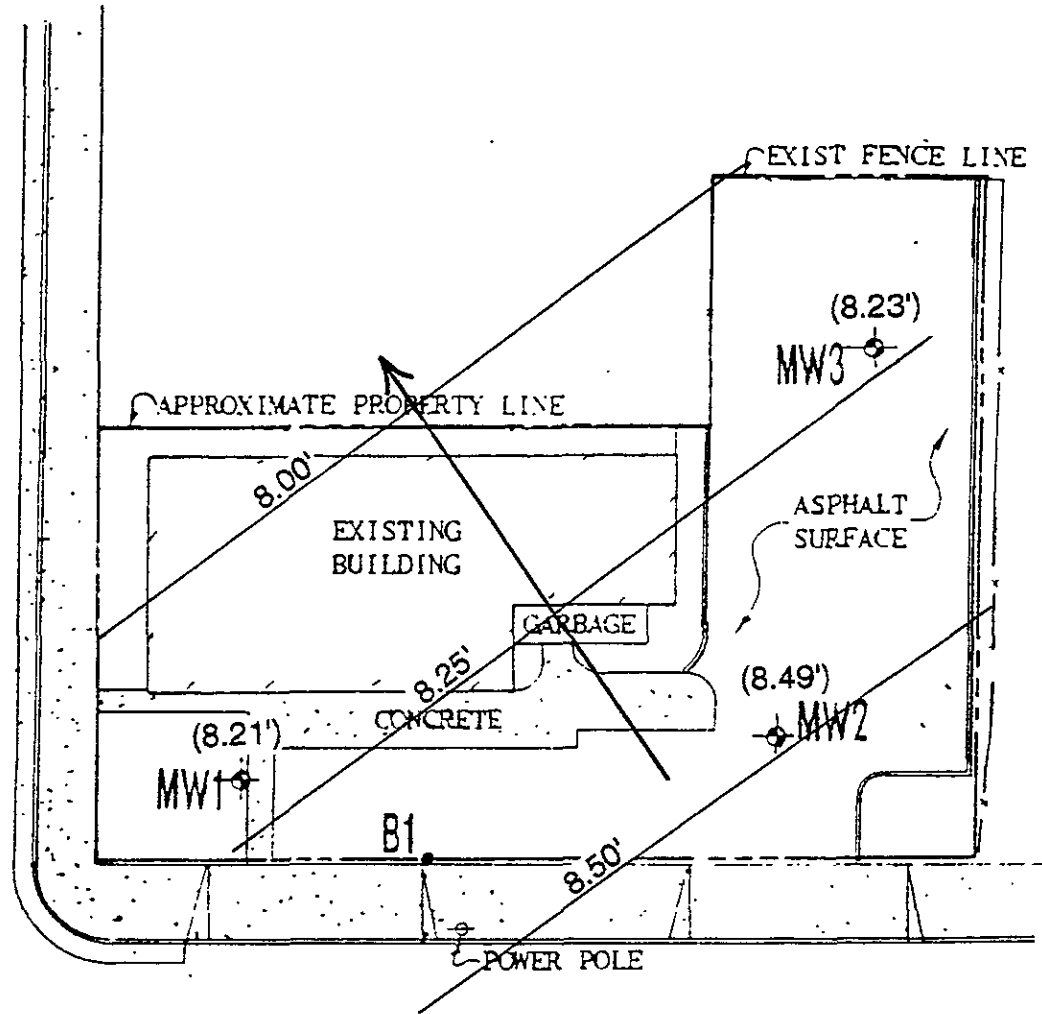
Date: 7/13/93

Dn by: MCK

Figure 2



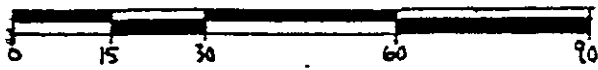
NINTH STREET



LINCOLN AVENUE

Elevations per Feet Above Mean Sea Level

1" = 30'



Graphic Scale

ACC Environmental Consultants, Inc.
 1000 Atlantic Avenue, Suite 110
 Alameda, California 94501

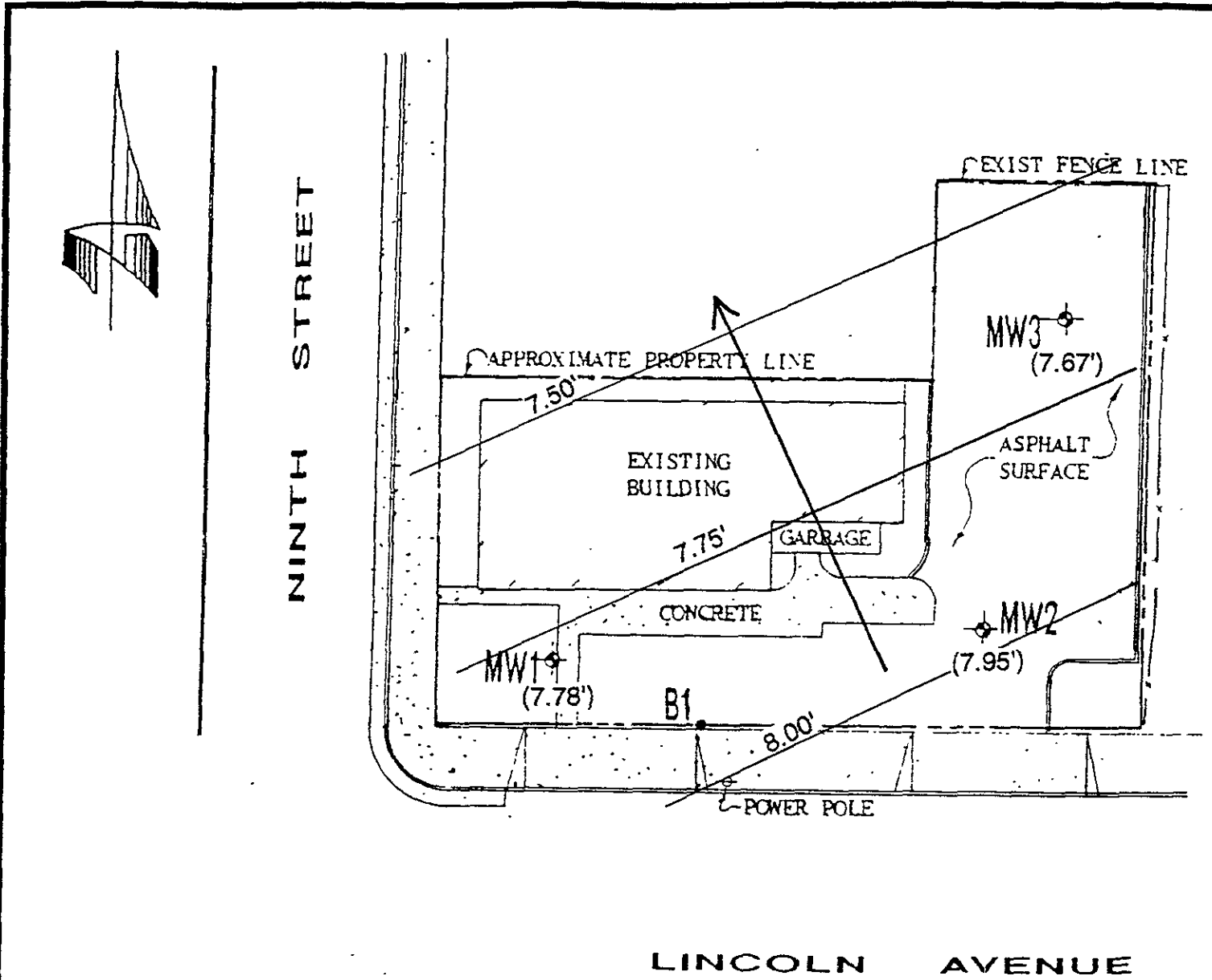
Groundwater Gradient
 Alameda Cellars
 901 Lincoln Avenue
 Alameda, California

Project No.: 6039-2a

Date: 8/10/93

Dn by: MCK

Figure 3



Elevations per Feet Above Mean Sea Level

1" = 30'



Graphic Scale

ACC Environmental Consultants, Inc.
1000 Atlantic Avenue, Suite 110
Alameda, California 94501

Groundwater Gradient
Alameda Cellars
901 Lincoln Avenue
Alameda, California

Project No.: 6039-2a

Date: 9/10/93

Dn by: MCK

Figure 4

APPENDIX A

Well Sampling

Well Development

check one

Well Number: mw-1

Job Number: 16089-22

Job Name: 901 Lincoln

Date: 9/10/93

Sampler: mck

Depth to Water (measured from TOC): 11.21'

Inside Diameter of Casing: 2

Depth of Boring: 13'

Method of well development/purging: bailing

Amount of Water Bailed/Pumped from well: 4 gal.

Depth to Water after well development: —

Depth to water prior to sampling: 11.40'

Bailed water stored on-site ? How ? drummed

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? yes

Water Appearance:

	yes	no
froth		X
irridescence		
oil		
smell	X	
product		X
other, describe		

gasoline

Gallons Removed	pH	EC	Temp
5	7.59	0.46	70.2
10	7.55	0.70	71.2
15	7.23	0.94	70.9
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

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

Well Sampling

Well Development

check one

Well Number: MW-2

Job Number: 1039-2a

Job Name: 901 Lincoln

Date: 9/10/93

Sampler: mck

Depth to Water (measured from TOC): 11.08'

Inside Diameter of Casing: 2

Depth of Boring: 15'

Method of well development/purging: bailing

Amount of Water Bailed/Pumped from well: 4 gallons

Depth to Water after well development: -

Depth to water prior to sampling: 11.20'

Bailed water stored on-site ? How ? drummed

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? yes

Water Appearance:

	yes	no
froth		X
irridescence		X
oil		X
smell		X
product		X
other, describe		X

Gallons Removed	pH	EC	Temp
5	8.76	242	70.0
10	8.72	180	70.1
15	8.54	182	70.1
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	X
TPH (diesel)	
TPH (motor oil)	
BTXE	X
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: 6039-22

Job Name: 901 Lincoln

Date: 9/10/03

Sampler: mch

Depth to Water (measured from TOC): 11.69'

Inside Diameter of Casing: 2

Depth of Boring: 15'

Method of well development/purging: boiling

Amount of Water Bailed/Pumped from well: 4 gallons

Depth to Water after well development: -

Depth to water prior to sampling: 11.90

Bailed water stored on-site ? How ? drummed

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? yes

Water Appearance:

	yes	no
froth		<input checked="" type="checkbox"/>
irridescence		<input checked="" type="checkbox"/>
oil		<input checked="" type="checkbox"/>
smell		<input checked="" type="checkbox"/>
product		<input checked="" type="checkbox"/>
other, describe		<input checked="" type="checkbox"/>

Gallons Removed	pH	EC	Temp
5	8.32	3.11	69.1
10	8.25	3.10	68.7
15	8.10	3.10	68.0
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	<input checked="" type="checkbox"/>
TPH (diesel)	<input type="checkbox"/>
TPH (motor oil)	<input type="checkbox"/>
BTXE	<input checked="" type="checkbox"/>
EPA 624	<input type="checkbox"/>
EPA 625	<input type="checkbox"/>
EPA 608	<input type="checkbox"/>
PCBs only	<input type="checkbox"/>
Metals	<input type="checkbox"/>
Other, specify	<input type="checkbox"/>
Field Blank	<input type="checkbox"/>

APPENDIX B

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

September 16, 1993

ChromaLab File No.: 9309143
Submission #: 9309000143

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Three water samples for Gasoline and BTEX analysis

Project Name: 901 LINCOLN

Project Number: 6039-2a

Date Sampled: Sept. 10, 1993

Date Submitted: Sept. 10, 1993

Date Analyzed: Sept. 15, 1993

RESULTS:

Sample I.D.	Gasoline ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-1	15000	4400	620	850	630
MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	107%	94%	97%	97%	96%
DUP SPIKE RECOVERY	----	96%	99%	98%	96%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/8015	602	602	602	602

ChromaLab, Inc.


Billy Thach
Analytical Chemist


Eric Tam
Laboratory Director

jm

