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CONSULTANTS

93 NOV -8 PM 2:41

November 1, 1993

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

RE: Results of Quarterly Groundwater Sampling
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
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

November 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 M. Palmer, CEG# 1262
Certified Engineering Geologist

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Figure 1	Site Plan
Figure 2	Groundwater Gradient - 5/17/93
Figure 3	Groundwater Gradient - 6/28/93
Figure 4	Groundwater Gradient - 7/13/93
Exhibit A	Notes of Well Sampling
Exhibit B	Chain of Custody Forms and Analytical Test Results

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 October 12, 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
08/10/93	8.25	19.36
09/10/93	8.73	18.88
10/12/93	9.04	18.57
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
08/10/93	8.66	19.32
09/10/93	8.95	19.03
10/12/93	9.36	18.62
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
08/10/93	8.45	19.44
09/10/93	8.52	19.37
10/12/93	9.20	18.69

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
	10/12/93	8,400	420.0	39.0	280.0	880.0
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
	10/12/93	2,000	280.0	17.0	100.0	120.0
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
	10/12/93	3,500	290.0	230.0	210.0	460.0

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 collected from the wells on August 10, September 10, and October 12, 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
08/10/93	0.004	west
09/10/93	0.015	southwest
10/12/93	0.004	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

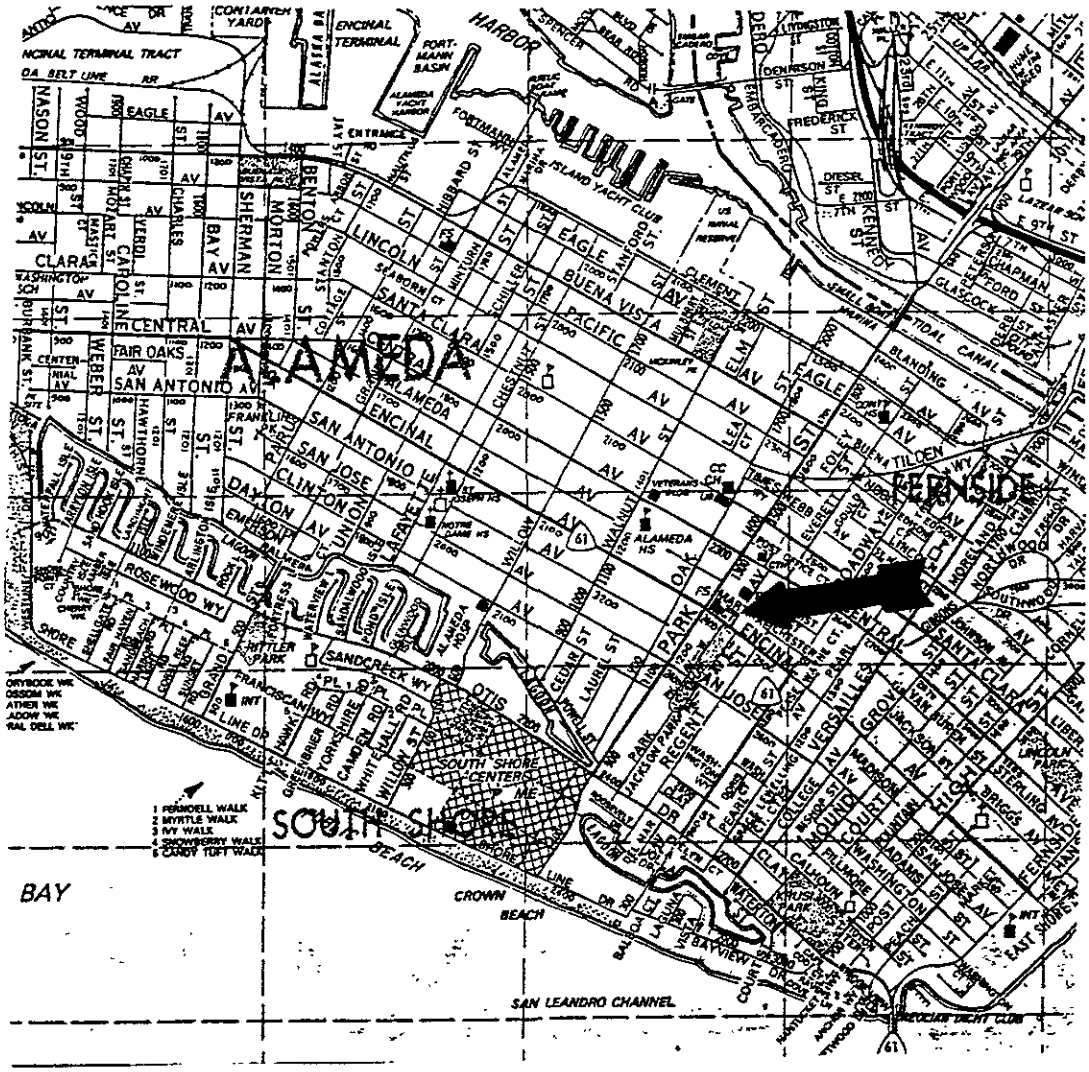
gasoline in all wells, however, the benzene, toluene, ethylbenzene and xylenes levels have declined in water samples from monitoring wells MW-1 and MW-2a. Constituents detected during July 1993 appear decreasing due to the fluctuating groundwater elevation. During October 1993 sampling, constituents in monitoring wells MW-1 and MW-3 have increased while only TPH as gasoline and benzene have increased in monitoring well MW-2a. 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.

Additional groundwater monitoring wells are anticipated to be installed in November or December 1993 to evaluate the extent of groundwater plume.

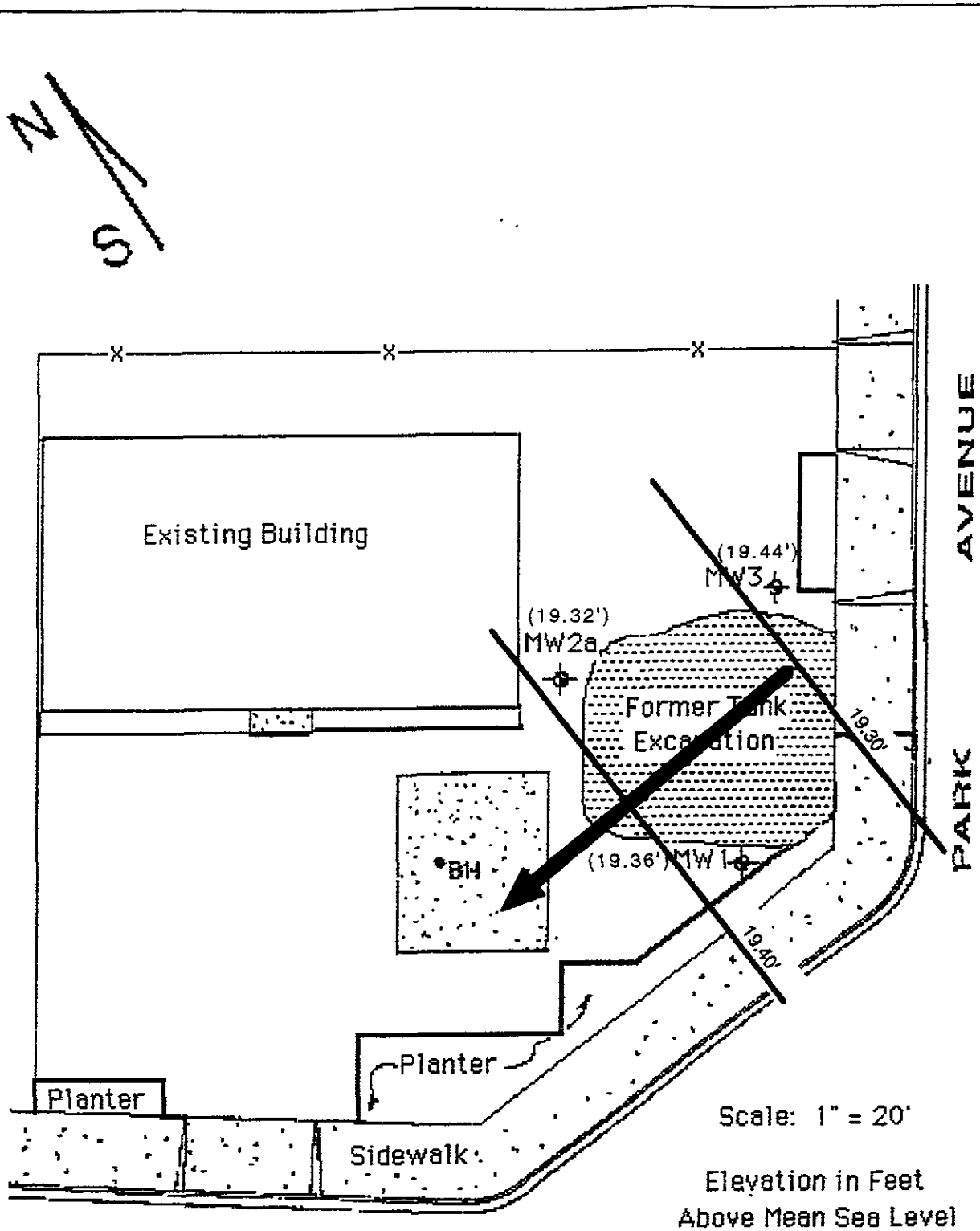
Pursuit to the CCR Title 23, Chapter 16, Articles 5, 7, and 11 of the Underground Storage Tank regulations a Corrective Action Plan is being drafted to determine the method of cleanup. The Corrective Action Plan will identify and evaluate the appropriate corrective actions for the property located at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



N

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



Project # 6039-3	8/10/93	Drawn By: TRF	2425 Encinal Ave. **Potentiometric Surface**

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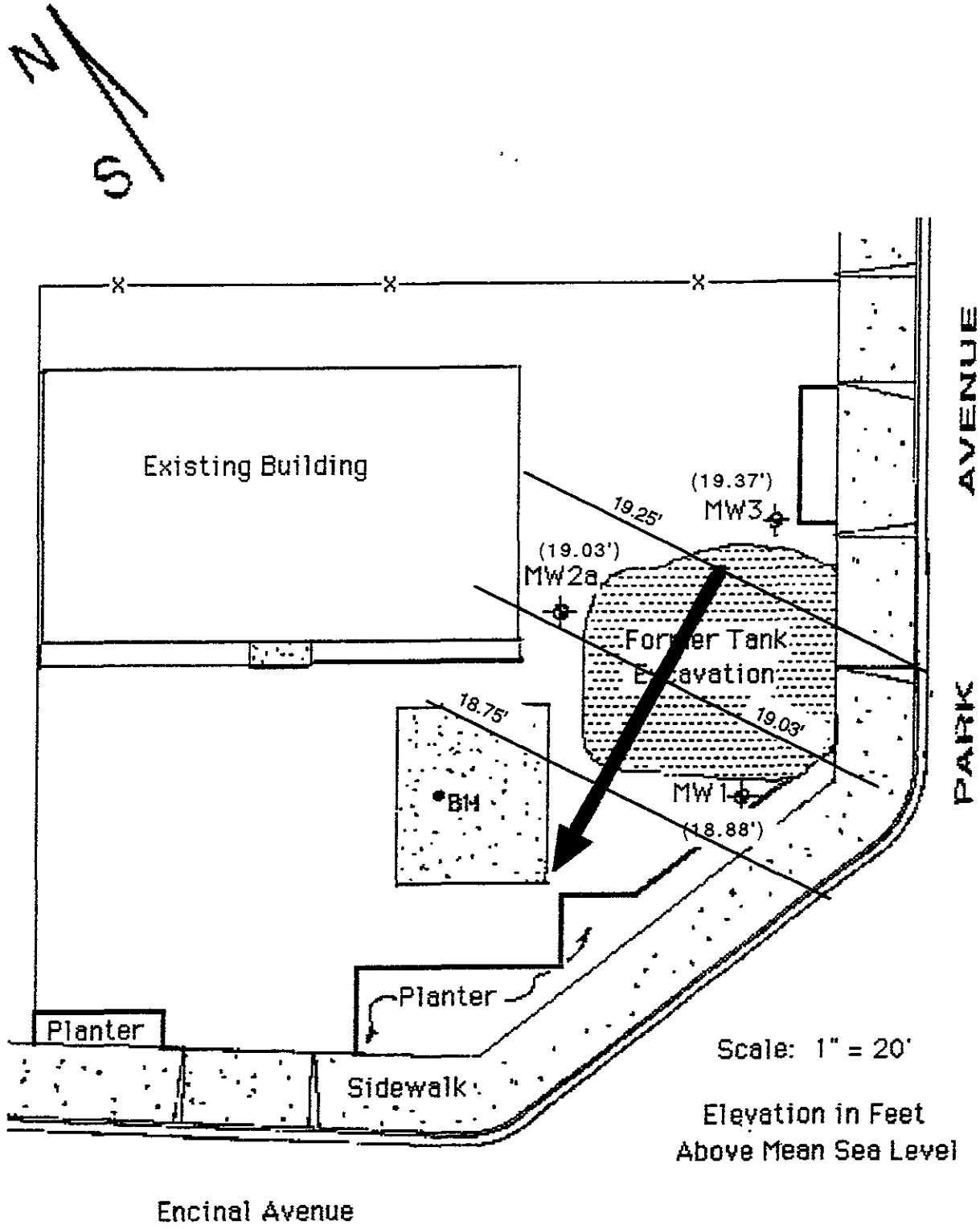

Project # 6039-3	9/10/93	Drawn By: TRF	2425 Encinal Ave. **Potentiometric Surface**

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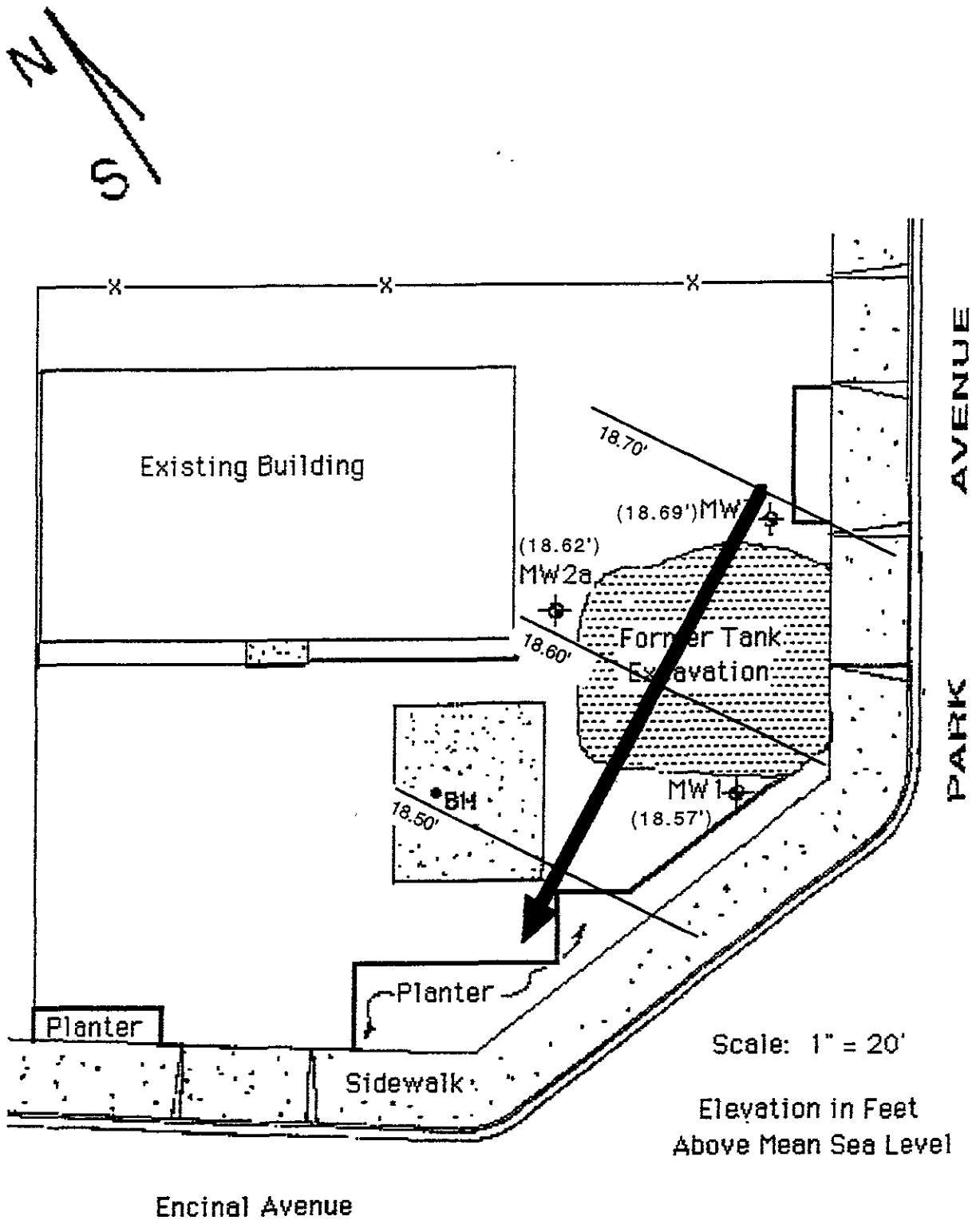

Project # 6039-3	10/12/93	Drawn By: TRF	2425 Encinal Ave. **Potentiometric Surface**

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EXHIBIT A

Well Sampling [✓] Well Development [ ] check one

Well Number: 1

Job Number: _____

Job Name: 2425 Encinal

Date: 10-17-93

Sampler: Fallin

Depth to Water (measured from TOC): 9.04'

Inside Diameter of Casing: 2"

Depth of Boring: 17.67'

Method of well development/purging: bailer

Amount of Water Bailed/Pumped from well: 7 gal

Depth to Water after well development: —

Depth to water prior to sampling: 7.97'

Bailed water stored on-site ? How ? yes, 55 gal 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		✓

Gallons Removed	pH	EC	Temp
5		.79	71.7
10	7.8	.77	71.4
15	8.2	.77	71.3
20	8.0	.77	71.3
25	8.0	.78	71.2
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: 2a

Job Number: _____

Job Name: 2425 Encinal

Date: 10-12-93

Sampler: Fallon

Depth to Water (measured from TOC): 9.36'

Inside Diameter of Casing: 2"

Depth of Boring: 14.46

Method of well development/purging: bailer

Amount of Water Bailed/Pumped from well: 7 gal

Depth to Water after well development: —

Depth to water prior to sampling: 9.35'

Bailed water stored on-site ? How ? Yes, 55gal drums

Number of well volumes removed: 8

TSP wash, distilled rinse, new rope ? New Equipment

Water Appearance:

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

Gallons Removed	pH	EC	Temp
5	8.01	.79	71.7
10	7.75	.691	71.6
15	7.68	.68	71.6
20	7.63	.61	71.7
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: MW3

Job Number: _____

Job Name: 2425 Encinal

Date: 10-12-93

Sampler: Fallin

Depth to Water (measured from TOC): 9.20'

Inside Diameter of Casing: 2"

Depth of Boring: 13.82'

Method of well development/purging: bailing

Amount of Water Bailed/Pumped from well: 7gal

Depth to Water after well development: _____

Depth to water prior to sampling: 9.13'

Bailed water stored on-site ? How ? Yes, 55 gal drums

Number of well volumes removed: 8

TSP wash, distilled rinse, new rope ? TSP Wash/New equipment

Water Appearance:

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

Gallons Removed	pH	EC	Temp
5	7.94	1.06	71.6
10	7.77	1.06	71.3
15	7.76	1.06	71.4
20	7.78	1.05	71.3
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

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

October 19, 1993 ChromaLab File#: 9310138

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL
Submitted: October 12, 1993

re: 3 samples for Gasoline and BTEX analysis.

Matrix: WATER
Sampled on: October 12, 1993 *Analyzed on:* October 13, 1993
Method: EPA 5030/8015/602 *Run#:* 1110

Lab # SAMPLE ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
29073 MW-1	8400	420	39	280	880
29074 MW-2a	2000	280	17	100	120
29075 MW-3	3500	290	230	210	460
DETECTION LIMITS	50	0.5	0.5	0.5	0.5
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK SPIKE RECOVERY(%)	101	94	99	102	103

ChromaLab, Inc.

Jack Kelly
Chemist

Eric Tam
Laboratory Director

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

138/29073-5

ACC Environmental Consultants
1000 Atlantic Ave, Suite 110
Alameda, CA 94501

Lab Name Chromalab

SUBM #: 9310138
CLIENT: ACCENV
DUE: 10/19/93
REF: 13673

CHAIN OF CUSTODY RECORD

Send to Misty

PROJECT NUMBER | PROJECT NAME: 2425 Encinal

SAMPLER(S): (Signature) Falling

ID#	Depth	Date	Time	Water	Soil	Location	# Containers	TPHg	BTEX						Remarks
MW-1		10/12	12:55	X		2425 Encinal	2	X	X						Cold Preserv.
MW-2A		10/12	1:45	X		1	2	X	X						1
MW-3		10/12	12:35	X		1	2	X	X						

Normal Turnaround Time

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
[signature]	10/12	16:05					
Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	Sample Integrity:	
			[signature]	10/12	16:05	COLD / NO HEADSPACE	