AEI CONSULTANTS
Environmental & Civil Engineering Services

3210 Old Tunnel Road, Suite B, Lafayette, CA 94549-4157
Phone: (925) 283-6000 Fax: (925) 283-6121

May 4, 2001

Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

MAY 09 2001

Subject: **Quarterly Groundwater Monitoring**
1450 Fruitvale Avenue
Oakland, California
AEI Project No. 3581

6419

Dear Mr. Chan:

Enclosed is a copy of the Quarterly report for the above referenced property.

Please call me at (925) 283-6000 if you have any questions regarding the results of the recent monitoring or if you would like to discuss additional work at the site.

Sincerely,

Peter McIntyre
Project Geologist

May 4, 2001

QUARTERLY GROUNDWATER MONITORING REPORT

1450 Fruitvale Avenue
Oakland, California

AEI Project No. 3581

Prepared For

Fruitvale / Farnham Associates
C/O Jay-Phases Corporation
10700 MacArthur Boulevard, Suite 200
Oakland, CA 94605

Prepared By

AEI Consultants
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549
(925) 283-6000

AEI

AEI CONSULTANTS
ENVIRONMENTAL & CIVIL ENGINEERING SERVICES

3210 Old Tunnel Road, Suite B, Lafayette, CA 94549-4157
Phone: (925) 283-6000 Fax: (925) 283-6121

May 4, 2001

Mr. Ken Phares
Jay-Phares Corporation
10700 Foothill Boulevard, Suite 200
Oakland, CA 94605

Subject: **Quarterly Groundwater Monitoring and Sampling Report**
Second Quarter 2001
1450 Fruitvale Avenue
Oakland, California 94601
AEI Project No. 3581

Dear Mr. Phares:

AEI Consultants (AEI) has prepared this report on your behalf to document the continued groundwater investigation at the above referenced property (Figure 1: Site Location Map). This investigation has been performed according to the requirements of the Alameda County Health Care Services Agency (ACHCSA) to monitor the groundwater quality around the former fuel storage and dispensing system. This report presents the findings of the third episode of groundwater monitoring and sampling, conducted on April 26, 2001.

Site Description and Background

The property is located on the eastern corner of Fruitvale Avenue and Farnam Street in a residential and commercial area of the City of Oakland. The property is approximately 11,000 square feet in size and is developed with a three-story building that occupies two-thirds of the parcel. The western corner of the parcel is improved with an asphalt parking lot. The property is currently vacant.

The site had reportedly been developed as a gas station in 1950 by Atlantic Richfield Oil Company (currently known as ARCO) and operated until at least 1983. There were four underground storage tanks located along the southern property boundary. The fuel dispenser island was located on the northeast corner of the current parking lot. The gas station was demolished and the existing warehouse was constructed after 1983.

Two soil-boring projects were performed between 1998 and 1999 to determine whether a fuel release had occurred and to what extent soil or groundwater had been impacted. Three groundwater monitoring wells were then installed. Concentrations of TPH as gasoline and benzene have been found in the soil up to 360 mg/kg and 0.59 mg/kg respectively. Based on soil analytical data from the borings and the lack of hydrocarbons detected in sidewall samples from

an exploratory excavation dug in the former tank location, the release appears to have occurred along the product piping or in the former dispenser location.

Summary of Activities

AEI measured the depth to groundwater in the three wells on April 26, 2001. Prior to sampling, the depth from the top of the well casings was measured with an electric water level indicator. The wells were purged and sampled using disposable Teflon bailers. Temperature, pH, and specific conductivity (total dissolved solids) were measured during the purging of the wells. A minimum of 3 well volumes of water was removed during purging. Once the water parameters appeared stable, a water sample was collected. The well locations are shown in Figure 2.

Water was poured from the bailers into 40 ml VOA vials and capped so that neither headspace nor air bubbles were visible within the sample containers. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (State Certification #1644).

The three groundwater samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline (EPA Method 5030/8015), MTBE (EPA Method 8020/602), and benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Method 8020/602).

Field Results

A strong hydrocarbon odor was observed during the sampling of all the three wells. No sheen or free product were encountered during monitoring activities. Groundwater levels for the current monitoring episode ranged from 32.73 to 33.74 feet above Mean Sea Level (MSL). These groundwater elevations were an average of 0.70 feet higher than the previous monitoring episode. The direction of the groundwater flow at the time of measurement was towards the southeast with a calculated gradient of 0.034 ft/ft.

Water table elevation and flow direction data are summarized in Table 1. Water table contours and flow direction are shown in Figure 2. Refer to Appendix A for the Groundwater Monitoring Well Field Sampling Forms.

Groundwater Quality

TPH as gasoline was detected in all three wells, up to 33,000 µg/l. Benzene was also detected in all three wells, up to 3,300 µg/l. The highest concentrations were detected in well MW-3. No concentrations of MTBE were detected above laboratory detection limits in any of the wells. Please refer to Figure 3 for hydrocarbon concentrations in the three wells.

A summary of groundwater quality data is presented in Table 2. Laboratory results and chain of custody documents are included in Appendix B.

Conclusions

Comparison of analytical data with groundwater elevations indicates that as the water table rose, previously unsaturated, impacted soil became saturated, thereby increasing the dissolved hydrocarbon concentrations. The extent of the hydrocarbon plume is not currently defined; however, based on the location of the building and adjacent structures, the placement of additional down-gradient wells may be difficult, although the feasibility of additional investigation should be considered.

Monitoring of the three wells will continue on a quarterly basis, with the next episode scheduled for July 2001.

References

1. Phase I Environmental Site Assessment - July 1998, prepared by Glenfos, Inc.
2. Subsurface Investigation Report – June 11, 1999, prepared by AEI.
3. Subsurface Investigation Report – August 1999, prepared by AEI.
4. Workplan – July 17, 2000
5. Monitoring Well Installation and Sampling Report - November 22, 2000, prepared by AEI.
6. Quarterly Groundwater Monitoring Report – January 29, 2001, prepared by AEI.

Report Limitations and Signatures

This report presents a summary of work completed by AEI Consultants including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices in the environmental engineering and construction field which existed at the time and location of the work.

Sincerely,
AEI Consultants

Peter McIntyre
Project Geologist

Joseph P. Derhake, PE
Principal

Figures

Figure 1	Site Location Map
Figure 2	Well Locations with Hydraulic Gradient
Figure 3	Petroleum Hydrocarbon Concentrations

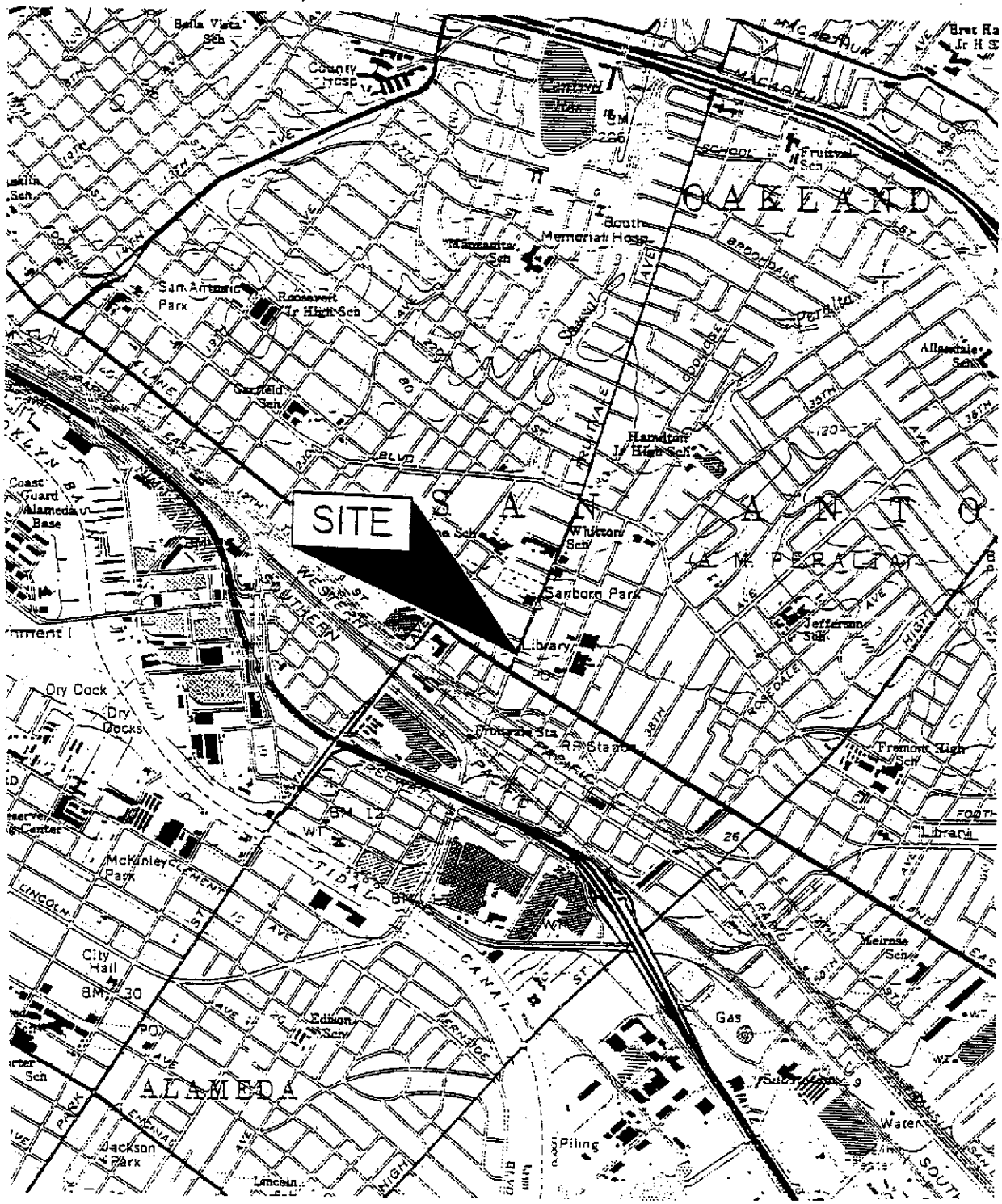
Tables

Table 1	Water Table Data
Table 2	Groundwater Sample Analytical Data

Appendices

Appendix A	Groundwater Monitoring Well Field Sampling Forms
Appendix B	Current Laboratory Analyses With Chain of Custody Documentation

cc: Mr. Barney Chan, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577



N

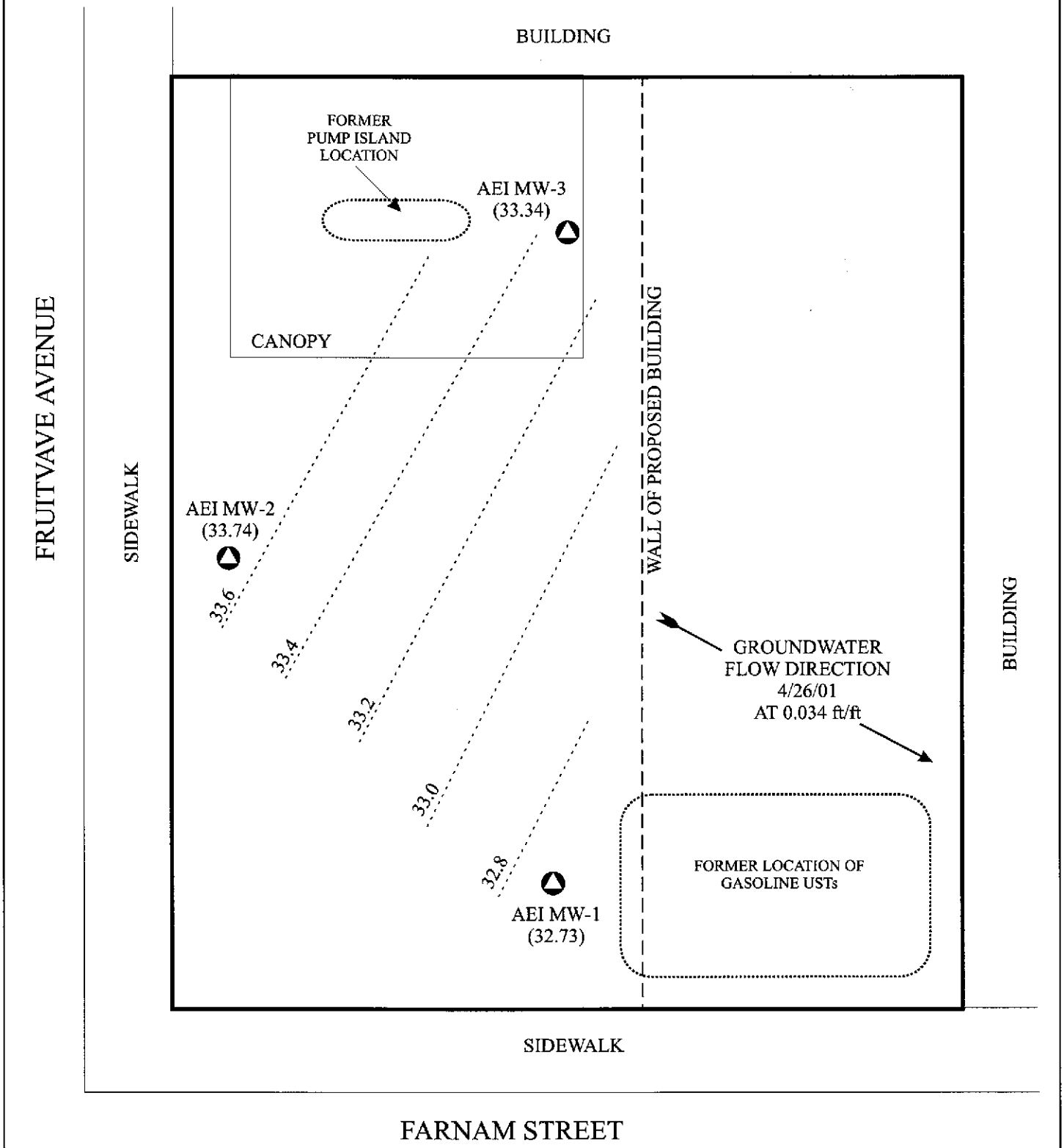
FROM:
USGS OAKLAND EAST QUADRANGLE
1959 PHOTOREVISED 1980

AEI CONSULTANTS

3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

SITE LOCATION MAP

1450 FRUITVALE AVENUE OAKLAND, CALIFORNIA	FIGURE 1



KEY

- WELL LOCATIONS
- 33.1 WATER TABLE CONTOUR (FEET AMSL) 4/26/01

SCALE: 1" = 10'

N

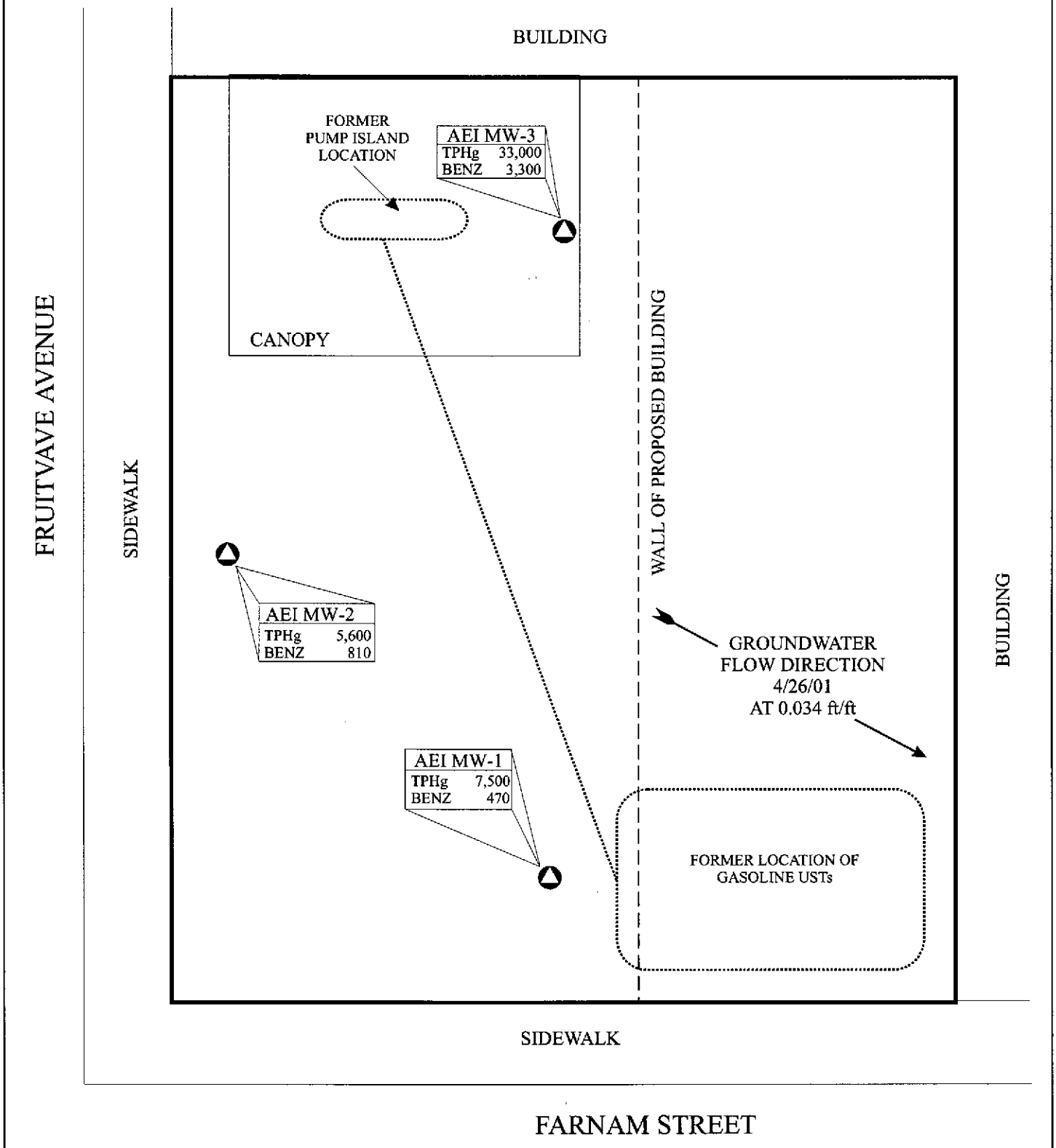
AEI CONSULTANTS

3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

WELL LOCATIONS WITH HYDRAULIC GRADIENT

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 2



KEY

WELL LOCATIONS

TPHg = Total Petroleum Hydrocarbons as gasoline
Benz = Benzene
All samples measured in ug/L
(micrograms per Liter)

SCALE: 1" = 10'

N

AEI CONSULTANTS

3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

WELL LOCATIONS WITH GROUNDWATER SAMPLE ANALYTICAL

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 3

Table 1
Water Table Data

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	10/16/2000	42.13	17.72	24.41
	1/19/2001	42.13	9.15	32.98
	4/26/2001	**42.13**	**9.40**	**32.73**
MW-2	10/16/2000	42.08	14.98	27.10
	1/19/2001	42.08	9.00	33.08
	4/26/2001	**42.08**	**8.34**	**33.74**
MW-3	10/16/2000	42.55	17.98	24.57
	1/19/2001	42.55	10.90	31.65
	4/26/2001	**42.55**	**9.21**	**33.34**

Episode #	Date	Average Water Table (ft msl)	Change from Previous Episode	Flow direction (gradient)
1	10/16/2000	25.36	-	**E/SE (0.116)**
2	1/19/2001	32.57	+7.21	**E/NE (0.043)**
3	4/26/2001	33.27	+0.70	**SE (0.034)**

Notes:
All well elevations are measured from the top of the casings
ft msl = feet above mean sea level

Table 2
Groundwater Sample Analytical Data

Well/Sample ID	Date Collected	Consultant/ Lab	TPHg µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
MW-1	10/16/2000	AEI/MAI	4,500	ND<20	560	14	53	62
	1/19/2001	AEI/MAI	13,000	ND<100	790	46	1,100	210
	4/26/2001	**AEI/MAI**	**7,500**	**<30**	**470**	**23**	**720**	**120**
MW-2	10/16/2000	AEI/MAI	4,600	ND<300	380	3.8	95	33
	1/19/2001	AEI/MAI	4,200	ND<10	450	4.7	120	50
	4/26/2001	**AEI/MAI**	**5,600**	**<20**	**810**	**12**	**210**	**65**
MW-3	10/16/2000	AEI/MAI	12,000	ND<10	570	32	680	1,200
	1/19/2001	AEI/MAI	27,000	ND<200	3,400	110	2,200	2,700
	4/26/2001	**AEI/MAI**	**33,000**	**<200**	**3,300**	**190**	**2,800**	**3,400**
MRL			50.0	5.0	0.5	0.5	0.5	0.5

MRL = Method Reporting Limit
µg/L = micrograms per liter
AEI = AEI Consultants
MAI = McCampbell Analytical, Inc.
TPHg = total petroleum hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether

APPENDIX A

WELL FIELD SAMPLING FORMS

AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM					
Monitoring Well Number: MW-1					
Project Name: Jay Phares				Date of Sampling: 04/26/01	
Job Number: 3581				Name of Sampler: OA	
Project Address: 1450 Fruitvale Avenue					
MONITORING WELL DATA					
Well Casing Diameter (2"/4"/6")				2"	
Seal at Grade -- Type and Condition				Cement, good	
Well Cap & Lock -- OK/Replace				OK	
Elevation of Top of Casing				42.13	
Depth of Well				28.00	
Depth to Water				9.40	
Water Elevation				32.73	
Three Well Volumes (gallons)*					
2" casing: (TD - DTW)(0.16)(3)				8.8	
4" casing: (TD - DTW)(0.65)(3)					
6" casing: (TD - DTW)(1.44)(3)					
Actual Volume Purged (gallons)				9.0	
Appearance of Purge Water				Clear	
GROUNDWATER SAMPLES					
Number of Samples/Container Size				2 VOAs	
Time	Vol Remvd (gal)	Temp (deg c)	pH	Cond (mS)	Comments
11:16 am	1	17.4	7.32	589	
	3	17.3	7.03	553	
	5	17.3	7.00	572	
	7	17.5	6.93	574	
	9	17.9	6.85	547	
COMMENTS (i.e., sample odor, well recharge time & percent, etc.)					
Strong hydrocarbon odor					

TD - Total Depth of Well
DTW - Depth To Water

AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM					
Monitoring Well Number: MW-2					
Project Name: Jay Phares				Date of Sampling: 04/26/01	
Job Number: 3581				Name of Sampler: OA	
Project Address: 1450 Fruitvale Avenue					
MONITORING WELL DATA					
Well Casing Diameter (2"/4"/6")				2"	
Seal at Grade -- Type and Condition				Cement, good	
Well Cap & Lock -- OK/Replace				OK	
Elevation of Top of Casing				42.08	
Depth of Well				28.00	
Depth to Water				8.34	
Water Elevation				33.74	
Three Well Volumes (gallons)*					
2" casing: (TD - DTW)(0.16)(3)				9.43	
4" casing: (TD - DTW)(0.65)(3)					
6" casing: (TD - DTW)(1.44)(3)					
Actual Volume Purged (gallons)				10	
Appearance of Purge Water				Clear	
GROUNDWATER SAMPLES					
Number of Samples/Container Size				2 VOAs	
Time	Vol Remvd (gal)	Temp (deg C)	pH	Cond (mS)	Comments
11:03	2	18.5	6.74	1044	
	4	18.5	6.67	1042	
	6	18.6	6.62	1061	
	8	18.9	6.65	1062	
	10	19.3	6.51	1059	
COMMENTS (i.e., sample odor, well recharge time & percent, etc.)					
Strong HC odor					

TD - Total Depth of Well
DTW - Depth To Water

AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name: Jay Phares	Date of Sampling: 04/26/01
Job Number: 3581	Name of Sampler: OA
Project Address: 1450 Fruitvale Avenue	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement, good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	42.55
Depth of Well	28.00
Depth to Water	9.21
Water Elevation	33.34
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	9.02
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	9
Appearance of Purge Water	Clear

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 VOAs

Time	Vol Remvd (gal)	Temp (deg C)	pH	Cond (mS)	Comments
10:40 am	1	17.8	6.76	1075	
	3	17.9	6.62	1037	
	5	18.0	6.64	1050	
	7	18.0	6.19	1069	
	9	18.4	6.48	1033	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Strong HC odor

TD - Total Depth of Well
DTW - Depth To Water

APPENDIX B

LABORATORY ANALYTICAL AND CHAIN OF CUSTODY DOCUMENTATION

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc.	Client Project ID: #3581	Date Sampled: 04/26/01
3210 Old Tunnel Road, Suite B		Date Received: 04/26/01
Lafayette, CA 94549-4157	Client Contact: Orion Alcalay	Date Extracted: 04/26-04/27/01
	Client P.O:	Date Analyzed: 04/26-04/27/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & 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)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
66209	MW-1	W	7500,a	ND<30	470	23	720	120	116
66210	MW-2	W	5600,a	ND<20	810	12	210	65	115
66211	MW-3	W	33,000,a	ND<200	3300	190	2800	3400	106
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes 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 having broad chromatographic peaks are significant; biologically altered gasoline?; 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 sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

Report To: ORION ALCALAY Bill To:
Company: PEI Consultants
3210 Old Tunnel Rd, Ste B.
Lafayette, CA 94549
Tele: (925) 283-6000 Fax: (925) 283-6121
Project #: 3581 Project Name: Bay Shores
Project Location: Fruitvale Ave, Oakland
Sampler Signature: [signature]

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	pH	TSS	TOC	Specific Conductivity
① MW-1		4/26		2		X					X	X			X																	
② MW-2		↓		↓		↓					↓	↓			↓																	
③ MW-3		↓		↓		↓					↓	↓			↓																	

66209
66210
66211

Relinquished By:	Date:	Time:	Received By:
[signature]	4/26/01	12:49	YenCao @ MAS 4/26/01
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
PRESERVATION APPROPRIATE ✓
CONTAINER ✓

VOAs	O&G	METALS	OTHER
✓			