

R0389

November 8, 2005

Alameda County
NOV 11 2005
Environmental Health

GROUNDWATER MONITORING REPORT
4th Quarter, 2005

1200 East 12th Street
Oakland, California

Project No. 8279

Prepared For

Mr. Lawrence Y.G. Qiu
Quality Auto Service
1200 East 12th Street
Oakland, CA 94601

Prepared By

AEI Consultants
2500 Camino Diablo Blvd., Suite 200
Walnut Creek, CA 94597
(925) 283-6000

AEI



November 8, 2005

Mr. Lawrence Y.G. Qiu
Quality Auto Service
1200 East 12th Street
Oakland, CA 94601

**Subject: Quarterly Groundwater Monitoring Report
4th Quarter, 2005**
1200 East 12th Street
Oakland, California
Project No. 8279

Dear Mr. Qiu:

AEI Consultants (AEI) has prepared this report on behalf of Quality Auto Service to document the activities and results of the ongoing groundwater quality investigation at the property located at 1200 East 12th Street in the City of Oakland, California (see Figure 1). These services were performed at the client's request to comply with a request by Alameda County Healthcare Services Agency (ACHSA) to further investigate a release of petroleum hydrocarbons that occurred at the property. This report presents the findings of the 4th quarter, 2005 episode of groundwater monitoring conducted on October 21, 2005.

Site Description and Background

The subject property (hereafter referred to as the "site" or "property") is located on the northeastern corner of East 12th Street and 12th Avenue. The property is approximately 7,500 square feet in size and is developed with a 9,000 square foot two-story brick building. The building encompasses the entire area of the property, which is currently occupied by Quality Auto Service, an automotive repair facility. The site was previously occupied by a gasoline service station and automotive parts store from 1927 to the mid 1960s and was used by a tire and automotive supplies company, as well as a truck and forklift maintenance facility, from the mid 1960s to the late 1980s.

In 1996, two 500-gallon gasoline underground storage tanks (USTs) were removed from the sidewalk along 12th Avenue. Confirmatory soil samples collected from beneath the USTs indicated elevated levels of total petroleum hydrocarbons as gasoline (TPH-g) at the western end of Tank 2. Further over-excavation was performed in this area and two soil samples were collected for laboratory analysis. TPH-g was detected up to 210 mg/kg.

In September 1999, AEI performed a subsurface investigation at the site in accordance with the requirements of the ACHSA. Soil and groundwater samples were collected from two shallow

soil borings shown on Figures 2 and 3. No significant concentrations of petroleum hydrocarbons were detected in the analyzed soil samples; however, TPH-g and benzene were detected in the groundwater at concentrations up to 6,700 µg/L and 470 µg/L, respectively. Please refer to Table 2 and Table 3 for the soil and groundwater analytical results from this investigation. Based on the groundwater analytical results, Mr. Barney Chan of the ACHSA requested the installation of one groundwater monitoring well to evaluate the groundwater quality and concentrations of BTEX in the dissolved hydrocarbon plume over a period of time. AEI advanced a single soil boring (MW-1) and converted to a monitoring well on May 13, 2004. The results of this investigation are outlined in the *Monitoring Well Installation and Sampling Report*, dated June 9, 2004, prepared by AEI Consultants. Soil sample MW-1 @ 10' collected during the monitoring well installation contained TPH-g, toluene, and total xylenes above laboratory method detection limits at concentrations of 31 mg/kg, 0.024 mg/kg, and 0.021 mg/kg, respectively.

On August 20, 2004, AEI conducted the second quarterly groundwater monitoring event at the subject property. AEI measured water levels and sampled groundwater from monitoring well MW-1. The well location is shown in Figure 2. Groundwater samples were submitted for chemical analyses for TPH-g by EPA Method 8015Cm, and BTEX / MTBE per EPA Method SW8021B. TPH-g was detected in the groundwater samples from MW-1 at a concentration of 540 µg/L. Benzene, toluene, and total xylenes were detected at concentrations of 6.7 µg/L, 1.5 µg/L, and 1.9 µg/L, respectively. Ethyl-benzene was not detected above the laboratory method detection limit of 0.5 µg/L. Historic results of the groundwater analysis are presented in Table 2.

The following report summarizes the findings of the 4th Quarter, 2005 episode of groundwater monitoring conducted on October 21, 2005

Summary of Activities

On October 21, 2005, AEI measured water levels and sampled groundwater from monitoring well MW-1. The well location is shown on Figure 2. First, the well cap was removed and the monitoring well was allowed to equilibrate with atmospheric pressure. The depth to groundwater (from the top of the well casing) was measured with an electric water level indicator. The well was then purged using a battery-powered submersible pump. Approximately three well volumes of water were removed. Temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured. Visual estimates of turbidity were noted during the purging of the well.

Once the groundwater parameters stabilized, and following recovery of the water level, groundwater samples were collected from the well. Sample water was collected from a new disposable polyethylene bailer and placed into four (4) 40 milliliter volatile organic analysis (VOAs) vials. The VOAs were subsequently capped so that neither head space nor air bubbles were visible within the vials. Samples were packed in a pre-chilled cooler of ice. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (Department of Health Services Certification #1644).

Groundwater samples were submitted for chemical analyses for TPH-g by EPA Method 8015Cm, and BTEX / MTBE per EPA Method SW8021B.

Field Results

No sheen or free product was encountered during this monitoring episode, although a slight hydrocarbon odor was noted during well purging and sampling activities. The depth to groundwater at the time of this monitoring event was 11.42 feet below ground surface (bgs), approximately 0.12 feet higher than during the previous monitoring event. Depth to groundwater data is summarized in Table 1. Please refer to Appendix A for the groundwater monitoring well field sampling forms.

Groundwater Quality

TPH-g was detected in the groundwater sample from MW-1 at a concentration of 87 µg/L, which is significantly lower than the 540 µg/L detected in the previous monitoring episode. Benzene was not detected above the laboratory method detection limit of 0.5 µg/L. Low concentrations of ethyl-benzene (1.2 µg/L) and xylenes (1.2 µg/L) were also detected in well MW-1 at concentrations comparable to previous monitoring episodes. No MTBE or Toluene was detected above laboratory method detection limits.

A summary of groundwater analytical data is presented in Table 2. Field monitoring data and sampling forms are presented in Appendix A. Laboratory analytical results and chain of custody documents are included in Appendix B. Groundwater sample analytical data is also presented on Figure 4.

Conclusions

Relatively low concentrations of total petroleum hydrocarbons as gasoline (TPH-g), ethyl-benzene, and xylenes are present in the groundwater beneath the site. Concentrations of petroleum hydrocarbons do not appear to be increasing and are for the most part exhibiting a decreasing trend in concentration.

Per a July 14, 2005 letter from Mr. Jerry Wickman, the ACHSA is not requiring the installation of additional groundwater monitoring wells at this time. However, this is subject to change based on future observations, analytical data, or regulatory requirements. Based on the most recent analytical data, AEI concurs with ACHSA that additional monitoring wells are not needed at this time.

Ongoing Activities

On October 26, 2005, AEI put in a DWR well survey request with the Alameda County Public Works Agency (ACPWA) to obtain copies of well completion reports for wells located within a one mile radius of the subject facility. Mr. James Yoo contacted us regarding this request and

stated that it may take some time for him to compile the requested information due to a backlog of drilling permits that were his current priority. Over the next month, AEI will continue to check back with Mr. Yoo and we expect to have the DWR well survey data by the end of November at the earliest.

AEI is currently in the process of arranging for a utilities survey by Underground Service Alert (USA) and a GeoTracker format well elevation and location survey to be performed by a California Licensed Professional Land Surveyor. The purpose of the utilities survey is to evaluate the potential for these conduits (i.e., utility lines, trench backfill, sewers, storm drains, other piping, ect.) to act as a preferential pathway for subsurface contaminant migration. After AEI arranges for and obtains the results of the utilities survey, the locations and depths for the identified utilities will be indicated on a site map. The GeoTracker format well survey is required pursuant to CCR Sections 2729 and 2729.1 and is to be submitted electronically to the State Water Resources Control Board (SWRCB) GeoTracker system via the internet.

On October 26, 2005, AEI submitted to the SWRCB an *Authorization Form for Electronic Submittal of Data Creating Consultants as Authorized RP Agents* in order to set-up a GeoTracker electronic data file (EDF) account with the SWRCB. Over the next couple months, AEI will continue to setup the GeoTracker database and submit the required analytical data.

AEI will continue to monitor the groundwater quality in MW-1, with the next event tentatively scheduled for February 2006. Please note that the groundwater samples for the next monitoring episode will be analyzed for ethylene dibromide (EDB), ethylene dichloride (EDC), fuel oxygenates, and total petroleum hydrocarbons as diesel (TPH-d) in addition to the parameters analyzed during this monitoring episode.

Previous Reports

1. *Phase II Subsurface Investigation*, October 1, 1999, prepared by AEI Consultants
2. *Monitoring Well Installation and Sampling Report*, June 9, 2004, prepared by AEI Consultants
3. *Groundwater Monitoring Report, 3rd Quarter, 2004*, October 8, 2004, prepared by AEI Consultants

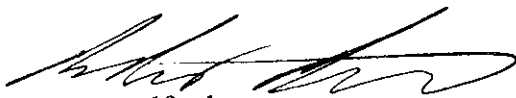
Report Limitations and Signatures


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.

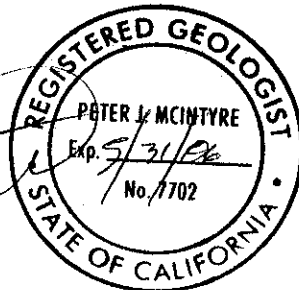
These services were performed in accordance with generally accepted practices in the environmental engineering and construction field that existed at the time and location of the work.

If you have any questions regarding our investigation, please do not hesitate to contact either Peter McIntyre or myself at (925) 283-6000.

Sincerely,
AEI Consultants


Richard Bradford
Senior Staff Engineer


Peter McIntyre, P.G.
Project Manager



Distribution:

Mr. Lawrence Y.G. Qiu
Quality Auto Service
1200 East 12th Street
Oakland, CA 94601

Mr. Jerry Wickham
Alameda County Healthcare Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Figures

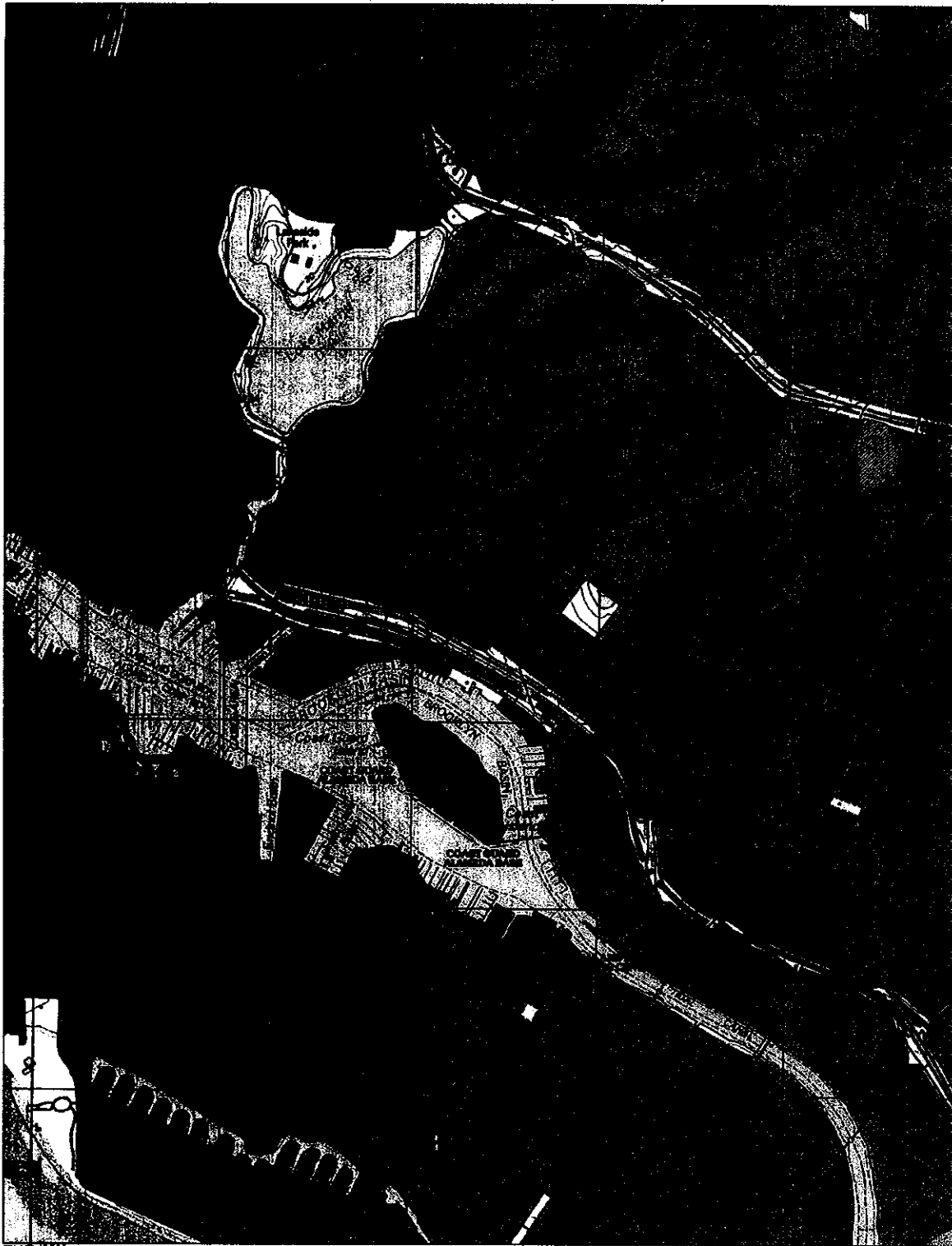
Figure 1 Site Location Map
Figure 2 Site Plan
Figure 3 Site Detail
Figure 4 Groundwater Analyticals

Tables

Table 1 Groundwater Elevation Data
Table 2 Groundwater Sample Analytical Data
Table 3 Soil Sample Analytical Data

Appendix A Monitoring Well Field Sampling Forms
Appendix B Laboratory Analytical and Chain of Custody Documentation

37°47.363' N, 122°14.842' W WGS84, Oakland West, CA



TN MN
15°

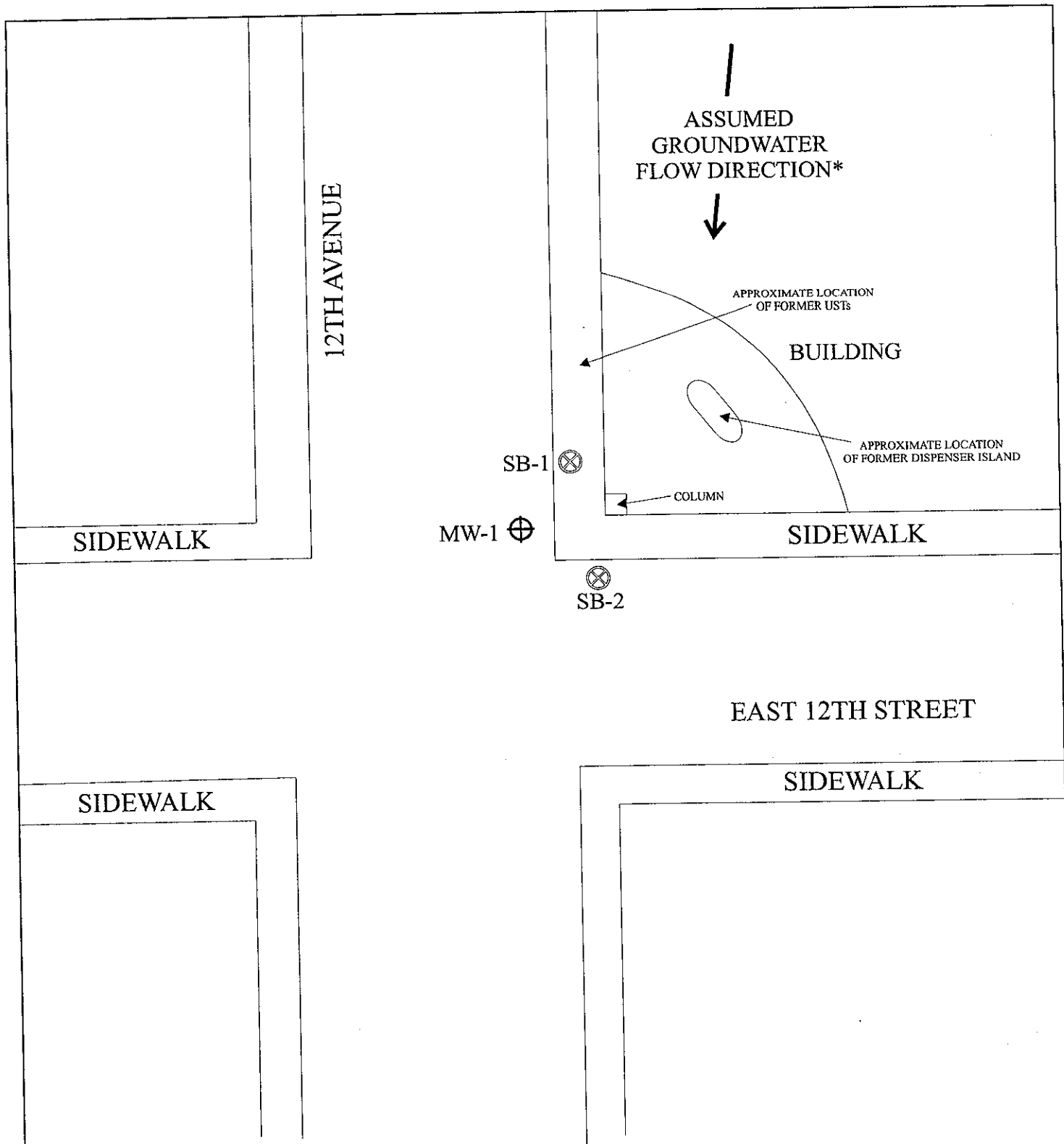
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

AEI CONSULTANTS
2500 CAMINO DIABLO, STE 200, WALNUT CREEK, CA

SITE LOCATION MAP

1200 EAST 12th STREET
OAKLAND, CALIFORNIA

FIGURE 1
PROJECT No. 8279



- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ⊗ PREVIOUS SOIL BORING LOCATIONS (9/18/99)

NOT TO SCALE

*Assumed groundwater flow direction based on topography

AEI CONSULTANTS 2500 CAMINO DIABLO, STE 200, WALNUT CREEK, CA	
SITE PLAN	
1200 EAST 12TH STREET OAKLAND, CALIFORNIA	FIGURE 2

12TH AVENUE

MW-1

SB-1

LOCATION OF
FORMER USTs

BUILDING

BOUNDARY OF OVERHANG

APPROXIMATE LOCATION
OF FORMER DISPENSER
ISLAND

COLUMN

SIDEWALK

SB-2

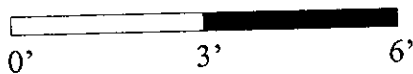
EAST 12TH STREET

⊕ GROUNDWATER MONITORING
WELL LOCATION

⊗ PREVIOUS SOIL BORING
LOCATIONS (9/18/99)



SCALE: 1 in. = 6 ft.



AEI CONSULTANTS
2500 CAMINO DIABLO, STE 200, WALNUT CREEK, CA

SITE DETAIL

1200 EAST 12TH STREET
OAKLAND, CALIFORNIA

FIGURE 3

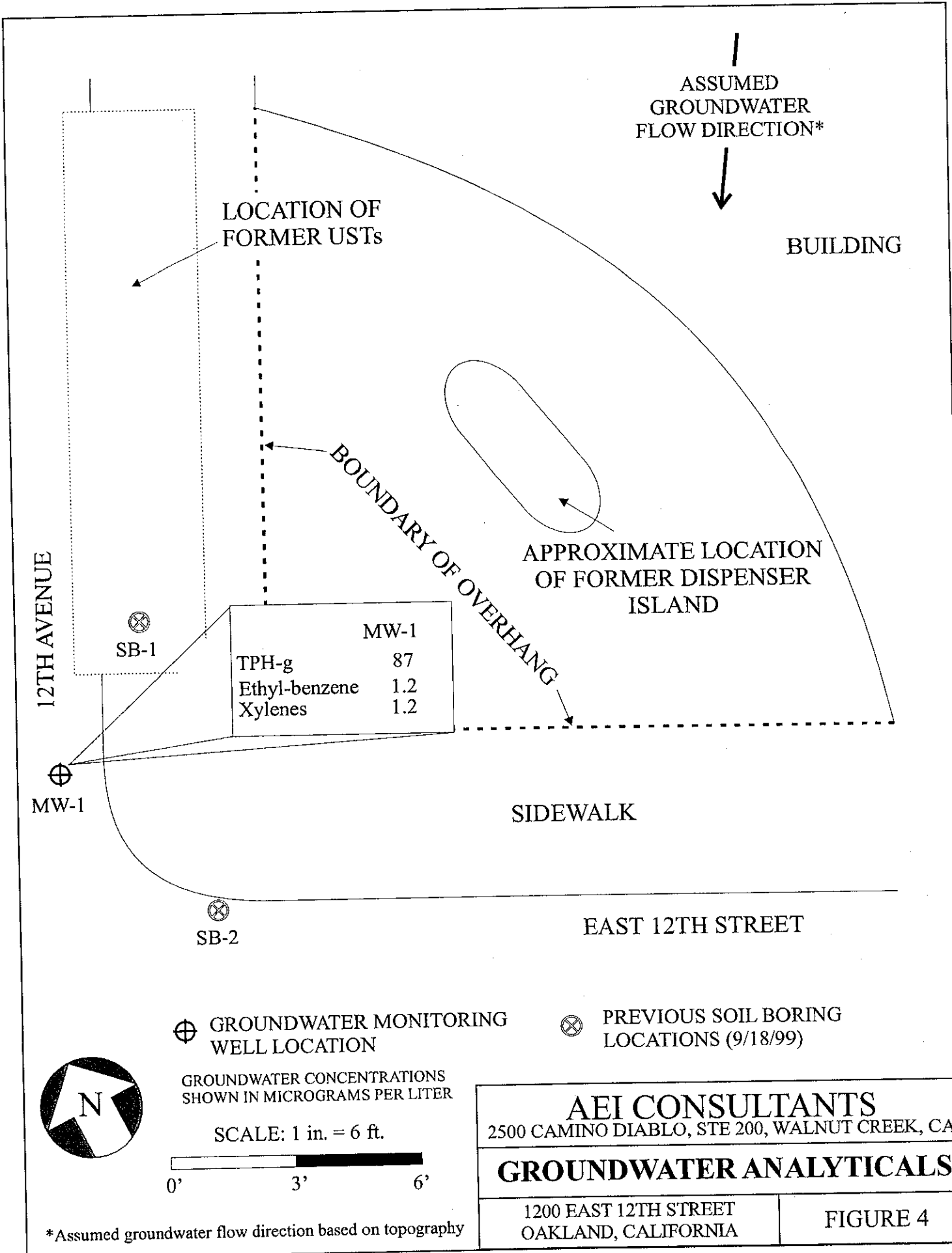


Table 1: Groundwater Elevation Data

**Quality Auto Service
200 East 12th Street, Oakland, CA**

Well ID	Screen Interval (ft bgs)	Date	Depth to Water (ft toc)	Change in feet from previous episode
MW-1	10-20	05/21/04	11.51	-
		08/20/04	11.54	-0.03
		10/21/05	11.42	0.12

Note:

ft bgs = feet below ground surface

ft toc = feet from the top of the well casing

Table 2: Groundwater Sample Analytical Data

**Quality Auto Service
1200 East 12th Street, Oakland, CA**

Well ID	Date	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- Benzene (µg/L)	Xylenes (µg/L)
SB-1 W	09/18/99	6,700	ND	26	6.1	22	130
SB-2 W	09/18/99	3,900	ND	470	9.5	160	57
MW - 1	05/21/04	ND<50	ND<5.0	3.7	1.7	0.9	2.3
	08/20/04	540	ND<5.0	6.7	1.5	ND<0.5	1.9
	10/21/05	87	ND<5.0	ND<0.5	ND<0.5	1.2	1.2
MDL		50	5.0	0.5	0.5	0.5	0.5

Note:

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

µg/L = micrograms per liter or parts per billion (ppb)

na = sample not analyzed

MDL = laboratory method detection limit

*Please refer to Appendix B: Laboratory Analytical Data for more detailed lab information, including dilution factors and reporting limits

Table 3: Soil Sample Analytical Data

**Quality Auto Service
1200 East 12th Street, Oakland, CA**

Well ID	Date	TPH-g (mg/kg)	MTBE (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)
SB-1 14'	09/18/99	ND	ND	ND	ND	ND	ND
SB-2 14'	09/18/99	2.2	ND	0.13	ND	0.07	0.021
MW-1 10'	05/13/04	31	ND	ND	0.024	ND	0.021
MW-1 15'	05/13/04	ND	ND	ND	ND	ND	ND
MDL		1	0.05	0.005	0.005	0.005	0.005

Note:

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

mg/kg = miligrams per kilogram of soil

na = sample not analyzed

MDL = laboratory method detection limit

*Please refer to Appendix B: Laboratory Analytical Data for more detailed lab information, including dilution factors and reporting limits

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name:	Quality Auto Service	Date of Sampling:	10/21/2005
Job Number:	8279	Name of Sampler:	AN
Project Address:	1200 East 12th Street		

MONITORING WELL DATA

Well Casing Diameter (2" / 4" / 6")	2	
Wellhead Condition	OK	▼
Elevation of Top of Casing (feet above msl)	Not Surveyed	
Depth of Well	20.00	
Depth to Water (from top of casing)	11.42	
Water Elevation (feet above msl)	-	
Well Volumes Purged	3	
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	4.1	
Actual Volume Purged (gallons)	8.0	
Appearance of Purge Water	Clears very fast	
Free Product Present?	No	Thickness (ft):

GROUNDWATER SAMPLES

Number of Samples/Container Size				(2) 40-mL VOAs and (1) 1-liter amber bottle			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	2	20.57	6.60	446	0.22	-70.1	
	4	20.40	6.53	487	0.16	-64.1	
	6	20.04	6.60	575	0.12	-50.7	
	8	19.99	6.62	562	0.10	-47.1	

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

slight hydrocarbon odor noted, water initially light grey



McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: QAS	Date Sampled: 10/21/05
		Date Received: 10/21/05
	Client Contact: Peter McIntyre	Date Reported: 11/01/05
	Client P.O.:	Date Completed: 11/01/05

WorkOrder: 0510478

November 01, 2005

Dear Peter:

Enclosed are:

- 1). the results of 1 analyzed sample from your **QAS project**,
- 2). a QC report for the above sample
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0510478

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) ^E	ND	60	98	102	4.02	102	104	2.01	70 - 130	70 - 130
MTBE	ND	10	96.6	101	4.40	97	101	4.49	70 - 130	70 - 130
Benzene	ND	10	89.6	91.9	2.50	90.1	91.5	1.52	70 - 130	70 - 130
Toluene	ND	10	89.2	91.8	2.86	90.4	89.6	0.831	70 - 130	70 - 130
Ethylbenzene	ND	10	91.6	94.6	3.17	92.4	94.9	2.61	70 - 130	70 - 130
Xylenes	ND	30	94.3	95.3	1.05	94.7	95.7	1.05	70 - 130	70 - 130
%SS:	108	10	95	92	2.85	96	97	0.660	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 18704 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0510478-001A	10/21/05	10/29/05	10/29/05 5:18 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.
 % Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.
^E TPH(btex) = sum of BTEX areas from the FID.
 # cluttered chromatogram; sample peak coelutes with surrogate peak.
 N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

McCAMPBELL ANALYTICAL, INC.

110 2ND AVENUE SOUTH, #D7
PACHECO, CA 94553-5560

Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURNOAROUND TIME RUSH 24 HR 48 HR 72 HR 5 DAY
GeoTracker EDF PDF Excel Write On (DW)

DS 10178 081

Report To: *AET* Bill To: *same*
Company: *Peter McIntire*
E-Mail:
Tele: *(925) 293-6000* Fax: ()
Project #: Project Name: *QAS*
Project Location: *1700 E 12th Ave. Oakland*
Sampler Signature: *Adrian Nieto*

Analysis Request														Other	Comments		
SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other			
MW-1		10/21/05	9:55	1	Vogel						XX				X		

Filter Samples for Metals analysis: Yes/No
OFF HOLD PER PM 10/25/05
Sday TAT

Hold

Relinquished By: *Adrian Nieto* Date: *10/21/05* Time: Received By: *Francis Vazquez*
Relinquished By: Date: Time: Received By:
Relinquished By: Date: Time: Received By:

COMMENTS:
ICE/T°
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB
VOAS O&G METALS OTHER
PRESERVATION pH<2

off hold 10/25/05 ; rec'd 10/21

CHAIN-OF-CUSTODY RECORD

McC Campbell Analytical, Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

WorkOrder: 0510478

ClientID: AEL

EDF: YES

Bill to:

Diane
 All Environmental, Inc.
 2500 Camino Diablo, Ste. #200
 Walnut Creek, CA 94597

Requested TAT: 5 days

Report to:

Peter McIntyre
 AEI Consultants
 2500 Camino Diablo, Ste. #200
 Walnut Creek, CA 94597

TEL: (925) 283-6000
 FAX: (925) 283-6121
 ProjectNo: QAS
 PO:

Date Received: 10/21/2005
 Date Printed: 10/25/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)																						
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15								
0510478-001	MW-1	Water	10/21/05	<input type="checkbox"/>	A	A																					

Test Legend:

1 | G-MBTX_W
 6 |
 11 |

2 | PREDF REPORT
 7 |
 12 |

3 |
 8 |
 13 |

4 |
 9 |
 14 |

5 |
 10 |
 15 |

Prepared by: Juanita Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.