

### Technology, Engineering & Construction, Inc.

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#### RECEIVED

September 10, 2008

2:42 pm, Nov 25, 2008

Alameda County Environmental Health

**Mr. Steven Plunkett** Hazardous Materials Specialist Alameda County Health Agency Division of Environmental Protection 1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor Alameda, California 94502

#### SUBJECT: WORK PLAN FOR SOIL AND GROUNDWATER DELINEATION, SOIL BORING INSTALLATION, VAPOR MONITORING POINT INSTALLATION, AND GROUNDWATER MONITORING WELL INSTALLATION

SITE: FORMER OLYMPIAN SERVICE STATION 1435 WEBSTER STREET ALAMEDA, CALIFORNIA FUEL LEAK CASE #RO0000193

Dear Mr. Plunkett,

On behalf of Olympian, TEC Accutite is pleased to submit this workplan to conduct further soil and groundwater delineation, and to install vapor monitoring points, soil borings, and one additional off-site groundwater monitoring well at the above referenced property.

The work plan was prepared with consideration of your comments at the regulatory meeting held September 2, 2008.

If you have any questions or require additional information, please contact the undersigned at (650) 616-1214.

Sincerely, **TEC Accutite** 

talori

Elise Sbarbori Project Geologist

cc:

Mr. Fred Bertetta c/o Ms. Janet Heikel, Olympian, 1300 Industrial Road, Suite 2, San Carlos, California 94070 Mr. Jeff Farrar, P.O. Box 1701, Chico, California 95927 Mr. and Mrs. Charles A. & Ose M. Begley 2592 Pine View Drive, Fortuna, California 95540

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#### 1.0 INTRODUCTION

On behalf of Olympian, TEC Accutite is pleased to submit the following Site Investigation and Remediation Work Plan for the property located at 1435 Webster Street in Alameda, California, hereinafter referred to as the "site." The site is the location of a subsurface release of petroleum hydrocarbons related to the former gasoline underground storage tanks (USTs) that were removed in 1989.

The site background and proposed scope of work are presented below. A vicinity map and site map are provided as Figures 1 and 2, respectively.

#### 2.0 SITE DESCRIPTION

The site is located on the corner of Webster Street and Taylor Avenue in Alameda, California. Prior to 1989, the site was occupied by an Olympian Service Station. Station facilities consisted of two 10,000-gallon gasoline underground storage tanks (USTs), one 7,500-gallon diesel UST, one 500-gallon waste oil UST and two dispenser islands (Figure 2).

The surrounding topography is flat and the site is approximately 20 feet above mean sea level. The site is situated in a mixed commercial and residential area. The site is currently leased by the City of Alameda and being operated as a metered parking lot.

#### 3.0 ENVIRONMENTAL BACKGROUND

A historical timeline of relevant activities at the subject site is presented in Section 3.1; a summary of the current site condition, including the monitoring well network and general chemical of concern (COC) distribution, is presented in Section 3.2

#### 3.1 Site Timeline

- **October 1988** Soil gas analysis performed on site reveals high concentrations of volatile organic chemicals.
- **September 1989** Two 10,000-gallon gasoline USTs, one 7,500-gallon diesel UST and one 500gallon waste oil UST removed by TEC Accutite; Petroleum hydrocarbons detected in soil beneath former tanks.
- January 1991 Approximately 950 cubic yards of soil removed from the former location of the USTs; this soil was bioremediated onsite and returned to the former excavation.
- **January 1993** Three monitoring wells installed onsite (MW-1 through MW-3); no petroleum hydrocarbons detected in soil.
- **February 1999** Four soil borings advanced on- and offsite (B-1 through B-4); petroleum hydrocarbon concentrations detected in soil and groundwater.
- **December 1999** Three monitoring wells installed onsite (MW-4 through MW-6); petroleum hydrocarbons detected in soil.
- **November 2000** Site conceptual model (SCM) completed; potential for benzene vapor-phase migration from hydrocarbon affected groundwater to indoor and ambient air identified as an exposure pathway requiring further evaluation.



- June 2001 Four soil borings advanced (second set of B-1 through B-4); no petroleum hydrocarbons detected in soil; petroleum hydrocarbons detected in groundwater.
- **February 2002** Site-specific risk assessment performed; compounds of concern identified as TPHg and benzene.
- May 2003 Eight soil vapor probes advanced onsite (SV-1 through SV-7); petroleum hydrocarbons detected below their respective Environmental Screening Levels (ESLs).
- **September 2005** Site conceptual model updated; uncertainties identified with onsite benzene vapor concentrations and offsite groundwater conditions.
- June 2006 Eight soil borings advanced (SP-1 through SP-8); petroleum hydrocarbons detected in soil above constituent ESLs.
- **November 2006** Seventeen soil borings advanced (CB-1 through CB-17) to determine excavation limits; Petroleum hydrocarbons detected at concentrations below ESLs and/or laboratory detection limits at depths shallower than 8 feet bsg; onsite soils classified by geotechnical analysis.
- **December 2006** Five soil borings advanced (DB-1 through DB-5); Monitoring wells MW-1 and MW-5 abandoned by pressure grouting.
- **February 2007** Interim remedial action conducted; approximately 993 tons of soil excavated from site and properly disposed; 15,000 gallons of groundwater pumped from open excavation pit, sediment and carbon-filtered, and discharged to sewer under permit.
- March 2007 Two monitoring wells installed onsite (MW-7 and MW-8).
- **July 2007** Thirteen off-site soil borings advanced (B-6 through B-18); off-site plume defined in all directions except crossgradient to the northeast.

#### 3.2 Site Condition

The site currently has six monitoring wells in its network (MW-2 through MW-4 and MW-6 through MW-8). Locations of site monitoring wells are presented in Figure 2. Chemicals of concern (COCs) for the site include petroleum hydrocarbons as gasoline (TPHg), BTEX compounds, and MTBE. The source area was the former USTs, removed in 1989. TEC Accutite continues to monitor all active groundwater monitoring wells associated with the site on a quarterly basis in preparation for applying for site closure.

#### 4.0 SCOPE OF WORK

This work plan outlines the scope of work for the following:

- 1. Advance seven (7) additional offsite borings for complete plume delineation;
- 2. Install four (4) onsite vapor monitoring points to provide ongoing soil gas data for Risk Assessments and/or Site Specific Remedial Goals; and
- 3. Install one (1) additional groundwater monitoring well onsite (near soil boring B-9) to facilitate collection of groundwater data for more specific evaluation of the dissolved plume.



#### 4.1 Task #1 Permitting

Upon approval of this workplan, TEC Accutite will apply for the drilling permit(s) from the Alameda County Public Works Agency to 1) advance seven offsite soil borings, 2) four onsite vapor monitoring points and to 3) install one offsite groundwater monitoring well. TEC Accutite will obtain encroachment permits from the City of Alameda for work on Webster Street, arrange parking closures for the day of work, and coordinate any other required permits or bonds.

#### 4.2 Task #2 Health and Safety Plan

Prior to conducting field activities, a site-specific Health and Safety Plan will be prepared.

#### 4.3 Task #3 Clearing Utilities

The proposed drilling locations will be marked with white paint and Underground Service Alert (USA) will be contacted at least 48 hours prior to conducting fieldwork to identify underground utilities. In addition, TEC Accutite will contract a private underground utility locator to clear all boring locations for possible underground utilities prior to beginning work. The exact boring or monitoring well locations proposed here may be adjusted based on utilities and surface features that would restrict drilling or future sampling.

#### 4.4 Task #4 Vapor Monitoring Point Construction

TEC Accutite will install four soil vapor monitoring points (VMPs) to a depth of approximately 4 feet below surface grade. Three vapor monitoring points (VMP-1 through VMP-3) will be located in the vicinity of monitoring wells MW-3, MW-7, MW-8, respectively, and one point (VMP-4) will be located on the southeast corner of the property (Figure 3). Soil vapor samples from the vapor monitoring points will be utilized to evaluate potential health risk posed by inhalation exposure of contaminant vapors from TPHg, BTEX, and MTBE.

Each vapor monitoring point will be constructed using a hand auger with a diameter of approximately four inches to a depth of approximately 4.5 feet bsg. A six inch long vapor screen will be placed on the end of a length of  $\frac{1}{4}$  inch polyethylene tubing and hung at approximately four ft bsg in the boring. The monitoring point will be backfilled with #  $\frac{2}{12}$  sand from 4.5 feet bsg to 3.5 feet bsg with a hydrated bentonite seal from 3.5 feet bsg to 2.5 feet bsg. A neat cement grout will be used from 2.5 feet bsg to the surface. The vapor monitoring points will then be completed with an eight inch diameter traffic rated Christy box. Figure 4 presents a vapor monitoring point construction schematic.

Field measurements for combustible gases (TPHg and VOCs), oxygen, carbon monoxide, and carbon dioxide will be performed utilizing a PID meter and a Gastech GTCO2 (or similar) field instrument. Soil vapor will be collected from each of the vapor monitoring points (VMP–1 through VMP–4) after purging with a vacuum pump for approximately 2 to 3 minutes, or a minimum of 2 tubing and sand pack volumes.

Vapor samples will be collected in Tedlar bags using a lung sampler. All samples will be properly labeled, placed in a cooler without ice, and shipped to a State of California Certified Laboratory for analysis of TPHg, BTEX, and MTBE by modified EPA method TO-15. The vapor monitoring pointss will be sampled further as part of ongoing pre-closure monitoring as needed and will be added to the regular quarterly monitoring schedule.



#### 4.5 Task #5 Soil Boring Installation

TEC Accutite will advance up to seven (7) soil borings (B-19 through B-23, with the option of 2 additional expansion borings if appropriate) in order to further define offsite dissolved-phase plume dimensions. Temporary well casings will be installed in all locations to obtain grab groundwater samples. Expansion borings will serve as "step-out" borings in the event that PID readings indicate contamination extending beyond the area investigated by soil borings B-19 through B-23. All boring locations are offsite, on Webster Street, as indicated on Figure 3. A traffic safety coordinator will assist with traffic control while all offsite work is being completed.

TEC Accutite will supervise a C-57 licensed subcontractor to drill the soil borings using direct-push technology. TEC Accutite will continuously core each boring to a maximum depth of approximately 15 to 20 ft bsg. Soils will be logged for lithology using the Unified Soil Classification System (USCS) and any staining/odors will also be noted. Soil samples will be retained approximately every two to three feet. A split of each soil sample will be collected and placed in a Ziploc bag, which will be sealed with air space and allowed to volatilize. A PID will be utilized to measure ionizable gases in the Ziploc bags. The PID measurements will be recorded on the boring logs.

A minimum of one selected soil sample (based on PID, lithology and field observations) and one grab groundwater sample from each soil boring will be analyzed for TPHg, BTEX compounds, MTBE, Ethyl tert Butyl Ether (EtBE), Isopropyl ether (DIPE), t-Butyl alcohol (TBA), and tert-amyl methyl ether (TAME) by EPA Method 8260B.

Once the soil and groundwater samples have been collected, the drilling subcontractor will grout in place all borings with neat cement.

#### 4.6 Task #6 Groundwater Monitoring Well Installation

#### 4.6.1 Monitoring Well Installation

TEC Accutite will install one additional offsite groundwater monitoring well in order to monitor groundwater flow and hydrocarbon concentration trends under Webster Street in areas of elevated soil boring concentrations as indicated by historical soil boring B-9. The proposed monitoring wells will be 4 inches in diameter in order to facilitate groundwater extraction at a later time, if needed.

Monitoring well MW-9 will be installed in Webster Street near the eastern property line (near boring B-9) as a down- to cross-gradient control for the site. The hydraulic gradient at this site historically swings on a regular basis and B-9 is a good location for an additional downgradient well. The proposed well location is shown on Figure 3.

TEC Accutite will supervise a C-57 licensed subcontractor to install a 4-inch diameter groundwater monitoring well MW-9 using hollow-stem auger technology. Soils will be logged for lithology using the Unified Soil Classification System (USCS) and any staining and odors will be noted. Soil will be viewed continuously by advancing a macro-core or a split-spoon sampler into undisturbed sediments at the bottom of the boring. A soil sample will be collected for potential laboratory analysis approximately every 2 feet, labeled, and immediately placed on ice in an ice chest. A split of each soil sample will be collected and placed in a Ziploc bag, which will be sealed with air space and allowed to volatilize. A PID will be utilized to measure ionizable gases in the Ziploc bags. Based on PID meter results, lithology, and other field observations, a minimum of one selected soil sample from each well boring will be submitted under chain-of-custody documentation to a California state certified laboratory for analysis of TPHg, BTEX, MTBE, EtBE, DIPE, TBA, and TAME by EPA Method 8260B.

The well will extend to a maximum depth of approximately 20 ft bsg. TEC Accutite will determine the appropriate screened interval based on observed stable groundwater levels.



#### 4.6.2 Monitoring Well Development and Sampling

The monitoring well will be developed at least 3 days after installation. Well development is intended to clear the well casing and surrounding sand pack from construction related materials and naturally occurring fine sands, silts and clays. Well development will be achieved with a submersible pump and/or a surge block. Water levels will be recorded in each monitoring well prior to any well purging activities. Purge water resulting from well development will be properly contained in 55-gallon DOT-rated drums, labeled, and temporarily stored on site pending transportation to an approved disposal or recycling facility.

After well development and prior to sample collection, a minimum of three well casing volumes will be purged from the monitoring well. This volume is contingent upon well stabilization indicated by temperature, conductivity, and pH measurements. Groundwater samples will be collected with disposable bailers. The samples will be immediately placed on ice in an ice chest for delivery under chain of custody to a California State Certified Laboratory to be analyzed for TPHg, BTEX, MTBE, EtBE, DIPE, TBA, and TAME by EPA Method 8260. The well will be added to the regular quarterly monitoring schedule.

#### 4.6.3 Monitoring Well Survey

Monitoring Well MW-9 will be surveyed for elevation control by a State of California licensed surveyor. The survey data will include horizontal and vertical position relative to North American Datum of 1983 (NAD83) and National Geodetic Vertical Datum of 1988 (NGVD88), respectively.

#### 4.7 Task #7 Geotechnical Soil Boring

An additional geotechnical soil sample will be collected during monitoring well MW-9 installation (Figure 3). This sample will be collected utilizing a split spoon sampler in undisturbed soils and used as additional data in the Site Conceptual Model and any future Risk Assessment to determine Site Specific Cleanup Goals, as needed.

The geotechnical sample will be collected from 4 to 5 ft bsg. The sample will be collected in a 2 inch soil tube and will not be stored or transported on ice. The sample will be transported to *PTS Laboratories, Inc.*, of Santa Fe Springs, California, and analyzed for Moisture Content (ASTM D2216), Bulk & Grain Density (API RP40), Total, Effective, Air-filled & Water-filled Porosity (API RP40), Permeability to Air, Vapor and Specific Permeability (API RP40 & ASTM D425M)), Soil Classification (ASTM D4464M) and TOC & FOC (Walkley-Black) parameters.

#### 4.8 Task #8 Waste Disposal

Soil cuttings generated during field activities will be placed in 55-gallon DOT-rated drums and temporarily stored onsite pending characterization, profiling and transportation to an approved disposal facility.

Water generated during field activities will be properly contained in 55-gallon DOT-rated drums, labeled, and temporarily stored on site pending transportation to an approved disposal or recycling facility.

#### 4.9 Task #9 Report Preparation and Regulatory Liaison

TEC Accutite will prepare a detailed report summarizing all field activities and analytical findings of the soil boring environmental investigation, the installation of vapor monitoring points and the additional groundwater monitoring well. Copies of the report will be submitted to Alameda County Environmental Health (ACEH) and the client. All report documents, including boring logs, site maps and laboratory analytical reports, shall be submitted in electronic format to GeoTracker, the webbased geospatial database of California.



#### 5.0 SCHEDULE OF ACTIVITIES

TEC Accutite will begin obtaining access agreements after receiving written approval of this workplan from the Alameda County Health Agency. Upon receipt of all required permits, TEC Accutite will implement the workplan within 90 days and prepare a report documenting the activities within 60 days of completion of all field work.

#### 6.0 LIMITATIONS AND SIGNATURES

Our services consist of professional opinions, conclusions and recommendations made today in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. TEC Accutite's liability is limited to the dollar amount of the work performed.

TEC Accutite would like to thank you in advance for your assistance and prompt attention to this matter. Please feel free to contact Marc Mullaney at mmullaney@tecaccutite.com or (650) 616-1209 if you have any questions or concerns.

Sincerely, TEC ACCUTITE

Marc Mullaney, PG# 7438 Senior Project Manager





TABLES

## Table 1Summary of Historical Soil Analytical ResultsFormer Olympian Service Station1435 Webster AvenueAlameda, California

Sample	Date	Depth	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Pb
Point					Concentrat	ions in part	ts per million (pp	om) (mg/kg	)	
MW-1	6/12/1993	?	ND	ND	ND	ND	ND	ND	NA	NA
MW-2	6/12/1993	?	ND	ND	ND	ND	ND	ND	NA	NA
MW-3	6/12/1993	?	ND	ND	ND	ND	ND	ND	NA	NA
B1	2/11/1999	7.5	0.65	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<1.0
B2	2/11/1999	7.5	<0.5	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	2.0
B3	2/11/1999	6	<0.5	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	1.2
B4	2/11/1999	7.5	<0.5	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	1.2
	11/11/1000	0.5	-0 F	.1.0	-0.005	-0.00F	-0.00F	-0.010	-0.005	
N/N/ 5	11/11/1999	9.5	<0.5	<1.0 200	<0.005	<0.005	<0.005	<0.010	<0.005	
M\\/-6	11/10/1999	9.5	<0.5	~1.0	-0.005	<0.005	~0.005	~0.010	<0.005	
	11/10/1000	0	<0.0	<1.0	<0.000	<0.000	<0.000	<0.010	<0.000	
B1	6/27/2001	9	<0.5		<0.005	<0.005	< 0.005	<0.01	<0.005	
B2	6/27/2001	9	<0.5		<0.005	<0.005	<0.005	<0.01	<0.005	
B3	6/27/2001	9	<0.5		<0.005	<0.005	<0.005	<0.01	<0.005	
B4	6/27/2001	9	<0.5		<0.005	<0.005	<0.005	<0.01	<0.005	
SP-1	6/12/2006	7.5	1600**	9.5 <sup>a</sup>	0.44	5	38	190	<4	
SP-1	6/12/2006	10	1,530	12 <sup>a</sup>	3.5	23	28	150	<4	
SP-2	6/12/2006	7	586***	8.8 <sup>a</sup>	0.033	<1	3.1	13	<2	
SP-2	6/12/2006	10	360***	8.8 <sup>a</sup>	0.4	0.58 <sup>J</sup>	4.9	23	<2	
SP-3	6/12/2006	8	114***	2.4 <sup>a</sup>	<1	2.2	1.7 <sup>J</sup>	9.4	<2	
SP-3	6/12/2006	10	96.3***	5.5 <sup>a</sup>	0.46	1.4 <sup>J</sup>	1.2 <sup>J</sup>	7	<2	
SP-4	6/12/2006	4	0.0308	<2	<0.01	0.01	0.01	0.051	<0.01	
SP-4	6/12/2006	7.5	1,240	29 <sup>a</sup>	0.72	2	12	61	<4	
SP-4	6/12/2006	10	1,410	150 <sup>a</sup>	6.30	45	18	93	<4	
SP-5	6/12/2006	7	758**	42 <sup>a</sup>	0.24	1.7 <sup>J</sup>	4	35	<4	
SP-5	6/12/2006	10	1,100**	68 <sup>a</sup>	0.39	16	23	140	<4	
SP-6	6/12/2006	7	5.83***	64 <sup>a</sup>	0.019 <sup>J</sup>	0.037	0.48	0.71	<0.025	
SP-6	6/12/2006	10	2.78***	3.8 <sup>a</sup>	<0.02	0.0066	0.027	0.053	<0.02	
SP-7	6/12/2006	7.5	1,100***	200 <sup>a</sup>	0.032	0.027	0.066	0.29	<0.02	
SP-7	6/12/2006	10	328***	8.5 <sup>a</sup>	0.019 <sup>J</sup>	2.1 <sup>J</sup>	3.3 <sup>J</sup>	18	<4	
SP-8	6/12/2006	7	3,430	270 <sup>a</sup>	0.21	4.8 <sup>J</sup>	40	160	<20	
SP-8	6/12/2006	10	1,350	160 <sup>a</sup>	<10	20	31	160	<20	
CB-2	11/15/2006	6	<0.5	<2.5*	< 0.01	<0.01	<0.01	<0.01	<0.05	
CB-2	11/15/2006	10	8,800	<120*	<20	190	92	490	<100	
CB-4	11/15/2006	8	< 0.5	<2.5	<0.01	<0.01	< 0.01	<0.01	<0.05	
CB-4	11/15/2006	12	2,100	<120*	<5.0	14	21	52	<25	

## Table 1Summary of Historical Soil Analytical ResultsFormer Olympian Service Station1435 Webster AvenueAlameda, California

Sample	Date	Depth	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Pb
Point			5		Concentrat	ions in part	s per million (pp	om) (mg/kg)	-	
CB-5	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	< 0.01	<0.05	
CB-5	11/15/2006	12	0.7	<2.5*	<0.01	<0.01	0.013	0.067	<0.05	
CB-6	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-6	11/15/2006	12	8,000	<12*	57	190	94	500	<50	
CB-7	11/15/2006	12								11
CB-8	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-8	11/15/2006	10	1,800	<5.0*	<5.0	<5.0	26	150	<25	4.8
CB-9	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-9	11/15/2006	10	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-10	11/15/2006	8	2.2	<2.5*	<0.01	<0.01	0.012	<0.01	< 0.05	
CB-10	11/15/2006	12	2,800	<12*	<10	34	45	200	<50	
CB-11	11/15/2006	8	0.53	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-11	11/15/2006	12	300	<62*	<2.0	3.8	4.8	25	<10	
CB-12	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-12	11/15/2006	12	<0.50	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-14	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-14	11/15/2006	12	1.0	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-16	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-17	11/15/2006	8	<0.5	<2.5	<0.01	<0.01	<0.01	<0.01	<0.05	
CB-17	11/15/2006	12	10,000	<50*	<20	170	120	640	<100	
MW-8	3/9/2007	10	<0.1	<2.5	<.005	<.005	<.005	<.010	<.005	
ESLs:			100	100	0.044	2.9	3.3	2.3	0.023	150
Notes:										
= Not A	nalyzed	? = Depth ι	unknown							
ND = No [	Detection at or	above labo	pratory repor	ting limits						
TPHg = T	otal petroleum	hydrocarb	ons as gasol	ine, EPA I	Method 8015.					
TPHd = Tetra	otal petroleum	hydrocarb	ons as diese	I, EPA Me	thod 8015.					
Benzene,	Ethylbenzene	, Toluene, 2	Xylenes, EP/	A Method	8020.					
MTBE = N	lethyl tert-buty	∕I ether, EP	A Method 80	)20						
Pb = Leac	I, Method 742	0								
* No diese	el pattern prese	ent.								
** Hydroca	arbons respon	ded in gase	oline range, ł	out pattern	n does not ma	tch typical g	asoline (possibly	aged gasoli	ne).	
*** Hydroc	arbons respor	ided in gase	oline range,	but patterr	n does not ma	tch typical g	gasoline (heavy e	nd).		
<sup>a</sup> Sample	chromatogram	n does not r	esemble typ	ical diesel	pattern. Unid	entified light	ter end hydrocarb	ons within th	he diesel rar	nge
quantitated	d as diesel.									

<sup>j</sup> Value should be considered estimated.

# Table 2Summary of Grab Groundwater Analytical ResultsFormer Olympian Service Station1435 Webster AvenueAlameda, California

Sample ID	Date	TPHg	В	Т	E	Х	MTBE	EDB	EDC	Ethanol	ETBE	DIPE	t-Butanol	TAME
						Concen	trations in	n microgra	ams per li	iter (µg/L)				
ES	SL	100	1	40	30	20	5	0.05	0.5	5,000			12	
B-1	6/27/2001	<50	<0.005	3	<0.005	<0.01	4							
B-2	6/27/2001	<50	<0.005	0.9	0.5	2	4							
B-3	6/27/2001	400	<0.005	1	0.6	1	3							
B-4	6/27/2001	96	2	3	0.6	2	2							
B-6	7/11/2007	1,180*	<1.50	<1.32	50.7	<3.26	<1.72	<1.58	<1.58	<220	<1.85	<1.98	<6.60	<1.41
B-7	7/11/2007	250*	8.79	0.52	13.6	<1.16	2.9	<0.565	<0.565	<78.5	<0.659	<0.706	<2.36	<0.502
B-8	7/11/2007	<73.5	<0.534	<0.471	<0.392	<1.16	6.83	<0.565	0.64	<78.5	<0.659	<0.706	<2.36	<0.502
B-9	7/11/2007	400*	2.20	<1.32	<1.10	<3.26	433	<1.58	33.2	<220	<1.85	<1.98	164	<1.41
B-10	7/11/2007	<100	<0.598	<0.528	<0.440	<1.30	66.2	<0.634	5.44	<88.0	<0.739	<0.792	23.5	<0.563
B-11	7/11/2007	<91.5	<0.622	<0.549	<0.458	<1.35	<0.714	<0.659	<0.659	<91.5	<0.769	<0.824	<2.74	<0.586
B-12	7/10/2007	290**	<0.598	<0.528	<0.440	<1.30	<0.686	<0.634	<0.634	<88.0	<0.739	<0.792	<2.64	<0.563
B-13	7/10/2007	<78.5	<0.534	<0.471	<0.392	<1.16	<0.612	<0.565	<0.565	<78.5	<0.659	<0.706	<2.36	<0.502
B-14	7/10/2007	<63.0	<0.394	<0.348	<0.290	<0.858	2.77	<0.418	<0.418	<58.0	<0.487	<0.522	<1.74	<0.371
B-15	7/10/2007	142*	<0.68	<0.68	<0.68	<2.04	<0.68	<0.68	<0.68	<136	<0.68	<0.68	<13.6	<0.68
B-17	7/10/2007	<100	<0.622	<0.549	<0.458	<1.35	<0.714	<0.659	<0.659	<91.5	<0.769	<0.824	<2.74	<0.586
B-18	7/10/2007	<81.5	<0.575	<0.507	<0.422	<1.25	<0.659	<0.608	<0.608	<84.5	<0.710	<0.760	<2.54	<0.541

#### Notes and Abbreviations:

Bold = Concentration at or above respective ESL.

TPHg = Total petroleum hydrocarbons as gasoline, EPA Method 8015.

B T E X = Benzene, Ethylbenzene, Toluene, Xylenes, EPA Method 8260.

MTBE = Methyl tert-butyl ether, EDB = 1,2-Dibromoethane, EDC = 1,2-Dichloroethane, Ethanol, ETBE = Ethyl tert-butyl ether, DIPE = Isopropyl ether,

t-Butanol = t-Butyl alcohol, TAME = tert-Amyl methyl ether, EPA Method 8260.

\* = Hydrocarbons responded in gasoline range, but pattern does not match typical gasoline.

\*\* = The pattern does not match typical gasoline; TPH value includes significant amount of non-target compounds.

<X = Concentration less than respective laboratory reporting limit.

--- = No data available.

Boring B-5 not advanced.

ESL = Environmental Screening Limit of CRWQCB, Table F-1a - (groundwater IS a current or potential drinking water resource), Interm Final - February 2005.

### Table 3 Summary of Historical Groundwater Elevation Data Former Olympian Service Station 1435 Webster Street Alameda, California

Well ID	TOC	Sample	Depth to	Groundwater
	Elevation	Date	Water	Elevation
	(ft msl)		(ft)	(ft msl)
MW-1		6/3/1993	(1)	
	19.53	9/14/1994	11.46	8.07
		12/30/1994	9.22	10.31
		3/26/1995	6.76	12.77
		7/9/1995	8.92	10.61
		7/31/1998	8.30	11.23
		2/11/1999	7.91	11.62
		6/23/1999	9.03	10.50
		12/6/1999	10.86	8.67
		3/16/2000	6.93	12.60
		6/13/2000	8.73	10.80
		9/29/2000	10.18	9.35
		3/22/2001	8.24	11.29
		6/25/2001	9.73	9.80
		9/28/2001	11.06	8.47
		12/26/2001	8.11	11.42
		07/0705	8.69	10.84
		10/19/2005	7.00	9.28
		1/13/2006	7.09	12.44
		5/5/2006	6.40	13.13
		7/19/2006	8.28	11.25
		10/5/2006	9.07	9.80
		ADa		2006
MW-2	19.8	6/3/1993	9.54	10.26
		9/14/1994	11.82	7.98
		12/30/1994	9.46	10.34
		3/26/1995	6.82	12.98
		7/9/1995	9.22	10.58
		7/31/1998	8.56	11.24
		2/11/1999	8.12	11.68
		6/23/1999	9.33	10.47
		12/6/1999	11.20	8.60
		3/16/2000	6.88	12.92
		6/13/2000	8.99	10.81
		9/29/2000	10.40	9.40
		3/22/2001	8.46	11.34
		6/25/2001	10.11	9.69
		9/28/2001	11.40	8.40
		12/26/2001	8.28	11.52
		7/7/2005	8.99	10.81
		10/19/2005	10.63	9.17
		1/13/2006	7.15	12.65
		5/5/2006	6.43	13.37
		7/19/2006	8.57	11.23
		10/5/2006	10.05	9.75
		3/29/2007	8.83	10.97
		6/27/2007	9.86	9.94
		9/19/2007	10.89	8.91
		12/19/2007	10.78	9.02
		3/6/2008	8.48	11.32
		0/10/2000	10.23	9.01



### Table 3 Summary of Historical Groundwater Elevation Data Former Olympian Service Station 1435 Webster Street Alameda, California

Well ID	TOC	Sample	Depth to	Groundwater
	Elevation	Date	Water	Elevation
	(ft msl)		(ft)	(ft msl)
MW-3	19.79	6/3/1993	9.80	9.99
		9/14/1994	12.19	7.60
		12/30/1994	9.72	10.07
		3/26/1995	6.88	12.91
		7/9/1995	9.52	10.27
		7/31/1998	8.40	11.39
		2/11/1999	7.77	12.02
		6/23/1999	9.21	10.58
		12/6/1999	11.12	8.67
		3/16/2000	6.48	13.31
		6/13/2000	8.76	11.03
		9/29/2000	10.20	9.59
		3/22/2001	8.24	11.55
		6/25/2001	10.04	9.75
		9/28/2001	11.34	8.45
		12/26/2001	8.01	11.78
		7/7/2005	8.84	10.95
		10/19/2005	10.58	9.21
		1/13/2006	6.85	12.94
		5/5/2006	6.11	13.68
		7/19/2006	8.41	11.38
		10/5/2006	10.02	9.77
		3/29/2007	9.71	10.08
		6/27/2007	9.82	9.97
		9/19/2007	10.88	8.91
		12/19/2007	10.68	9.11
		3/6/2008	8.30	11.49
		6/18/2008	10.18	9.61
MW-4	19.3	12/6/1999	10.79	8.51
		3/16/2000	6.86	12.44
		6/13/2000	8.18	11.12
		9/29/2000	10.11	9.19
		4/5/2001	8.26	11.04
		6/25/2001	9.68	9.62
		9/28/2001	10.98	8.32
		12/26/2001	8.18	11.12
		7/7/2005	8.77	10.53
		10/19/2005	10.24	9.06
		1/13/2006	(1)	(1)
		5/5/2006	(1)	(1)
		7/19/2006	8.38	10.92
		10/5/2006	9.65	9.65
		3/29/2007	8.55	10.75
		6/27/2007	9.40	9.90
		9/19/2007	10.45	8.85
		12/19/2007	10.35	8.95
		3/6/2008	8.25	11.05
		6/18/2008	9.80	9.50



#### Table 3 Summary of Historical Groundwater Elevation Data Former Olympian Service Station 1435 Webster Street Alameda, California

Well ID	TOC Elevation	Sample Date	Depth to Water	Groundwater Elevation (ft msl)
MW-5	18.00	12/6/1000	10.17	(it iiisi) 8 82
IVIVV-J	10.99	3/16/2000	6.28	12 71
		6/13/2000	7.05	12.71
		0/13/2000	7.95	0.45
		3/23/2000	9.04 7.49	9.45
		5/22/2001 6/25/2001	0.05	0.04
		0/23/2001	9.03	9.94 8.60
		12/26/2001	7 28	11 71
		8/24/2005	7.20	11.71
		10/10/2005	0.51	0.48
		1/13/2006	635	12.40
		5/5/2000	5.64	12.04
		7/10/2006	7 / 1	11.58
		10/5/2006	8 80	10.10
		*****Δha	ndoned 12/27	/2006***********************************
		Aba		12000
MW-6	20.27	12/6/1999	11.46	8.81
		3/16/2000	8.32	11.95
		6/13/2000	9.14	11.13
		9/29/2000	10.81	9.46
		3/22/2001	8.64	11.63
		6/25/2001	10.39	9.88
		9/28/2001	11.70	8.57
		12/26/2001	8.40	11.87
		7/7/2005	9.10	11.17
		10/19/2005	10.88	9.39
		1/13/2006	7.33	12.94
		5/5/2006	6.53	13.74
		7/19/2006	8.64	11.63
		10/5/2006	10.29	9.98
		3/29/2007	9.01	11.26
		6/27/2007	10.14	10.13
		9/19/2007	11.17	9.10
		12/19/2007	10.99	9.28
		3/6/2008	8.65	11.62
		6/18/2008	10.46	9.81
BALA/ 7	40.00	2/20/2007	7.00	44.00
11111-7	18.93	3/29/2007	7.90	11.03
		0/27/2007	0.07	10.06
		9/19/2007	9.00	9.05
		3/6/2008	9.12 7.52	9.2 I 11 /1
		6/18/2008	9.13	9.80
		0/10/2000	9.10	9.00
MW-8	19.33	3/29/2007	8,40	10.93
		6/27/2007	9.33	10.00
		9/19/2007	10.31	9.02
		12/19/2007	10.23	9.10
		3/6/2008	9.14	10.19
		6/18/2008	9.74	9.59
Notes:				
TOC = Top of Ca	asing			
ft msl = Feet refe	erenced to mean	sea level		
= Not Availabl	le	- had more than the set		
(1) = Well not ac	most recent -	obstruction by a park	ea car	
yellow low =	most recent d	ala		



Well ID	Sample	TPHd	TPHg	В	T	E	Х	MTBE	TRPH	DIPE	TBA	1,2-DCA
	Date			Concentrat	ions in mic	rograms pe	r liter (µg/L	.)				
E	ESL	100	100	1.0	40	30	20	5.0			12	0.5
MW-1	6/3/1993											
	9/14/1994	<50	14,000	44	28	25	50		800			
	12/30/1994	<50	4,000	12	9	6.8	30		<500			
	3/26/1995	<50	1,000	21	10	7.1	25		2,100			
	7/9/1995	<50	16,000	57	28	25	53					
	7/31/1998	1,700	4,700	1,300	48	140	150	6,600	<5000			
	2/11/1999	2000	25,000	18,000	1,600	1,400	500	28,000				
	6/23/1999	4,900	42,000	11,000	1,100	1,500	2,300	15,000				
	12/6/1999	4,000	44,000	8,900	3,400	1,900	5,100	11,000				
	3/16/2000	700	5,100	2,400	100	280	460	2,700-				
	6/13/2000	2,800	17,000	5,300	260	720	790	7,000 -				
	9/29/2000	5,200	50,000	11,000	2,900	1,900	4,600	7,200-				
	3/22/2001	1,500	8,600	2,600	750	250	950	3,200 -				
	6/25/2001		18,000	1,200	1,800	970	3,200	1500 -				
	9/28/2001		48,000	5,200	6100	2200	8100	4000				
	12/26/2001		524	216	1.2	8.6	7.4	/21				
	7/7/2005		1,500	190	15	36	29	1,100		<20		50
	10/19/2005		11,000	2,100	45	370	82	4,600		<250	<500	200
	1/13/2006		5,400	680	37	83	41	3,900		<250	<500	180
	5/5/2006		<25	2	<0.5	<0.5	<0.5	2.2		<5.0	<10	<0.5
	7/19/2006		5,000	836	22.3	107	81.8	1,130		<4.2	<84	54.1
	10/5/2006		23,000	3,740	11Z	395	101 101 homelen	6,020		13.5	540 *	219
						well Aba	ndoned 12/	21/2006				
MW-2	6/3/1993	<50	~50	5.8	<0.5	<0.5	<0.5		<500			
	9/14/1994	<50	<50	<0.5	<0.0	<0.5	<0.5		<500			
	12/30/1994	<50	160	1 4	1 4	0.8	5		<500			
	3/26/1995	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5		<500			
	7/9/1995											
	7/31/1998	220	<50	<0.5	<0.5	<0.5	<0.5	73	<500			
	2/11/1999	<50	<50	<0.5	< 0.5	<0.5	< 0.5	75				
	6/23/1999	420	<50	<0.5	<0.5	<0.5	<0.5	96				
	12/6/1999	<110	300	28	45	6	37	210				
	3/16/2000	<50	<50	1	<0.5	0.5	1	3				
	6/13/2000	<50	68	0.8	<0.5	<0.5	<0.5	38				
	9/29/2000	<50	67	0.8	0.5	<0.5	1	86 <sup>2</sup>				
	3/22/2001	<50	<50	1	0.5	<0.5	1	14				
	6/25/2001		<50	<0.5	<0.5	<0.5	<1.0	13				
	9/28/2001		300	4	6	3	10	130				
	12/26/2001		<50	<0.5	<0.5	<0.5	<1.0	<0.5				
	7/7/2005		<50	<0.5	<0.5	<0.5	<1.0	20		<1.0		1.1
	10/19/2005		29	1.4	<0.5 <sup>3</sup>	<0.5	<0.5	19		<5.0	<10	0.95
	1/13/2006		<25	<0.5	<0.5	<0.5	<0.5	<1.0		<5.0	<10	<0.5
	5/5/2006		<25	<0.5	<0.5	<0.5	<0.5	<1.0		<5.0	<10	<0.5
	7/19/2006		<50	<0.5	<0.5	<0.5	<1.5	16.6		<0.5	<10	1.24
	10/5/2006		<50	<0.5	<0.5	<0.5	<1.5	11.9		<0.5	<10	0.750
	3/29/2007		<50	<0.5	<0.5	<0.5	<1.5	3.36		<0.5	<10	<0.5
	6/27/2007		<50	<0.5	<0.5	<0.5	<1.5	10.5		<0.5	<10	0.820
	9/19/2007		52 ⁴	<0.5	<0.5	<0.5	<1.5	18.1		<0.5	<10	0.710
	12/19/2007		<50	<0.5	<0.5	<0.5	<1.5	22.9		<0.5	<10	0.840
	3/6/2008		<50	<0.5	<0.5	<0.5	<1.5	1.02		<0.5	<10	<0.5
	6/18/2008		<50	<0.5	<0.5	<0.5	<1.5	36.9		<0.5	<10	0.880



## Table 4 Summary of Groundwater Monitoring Analytical Results Former Olympian Service Station 1435 Webster Street Alameda, California

Well ID	Sample	TPHd	TPHg	В	Т	E	X	MTBE	TRPH	DIPE	TBA	1,2-DCA
-	Date	100	400	Concentrat	ions in mic	rograms pe	er liter (µg/L	.)				
MW 2	ESL 6/2/1002	100	100	1.0	40	30	20	5.0			12	0.5
10100-3	0/3/1993	<50	<50	<0.5	<0.5	<0.5	<0.5		<500			
	12/30/1994	<50	<50	<0.5	<0.5	<0.5	<0.5		<500			
	3/26/1995	<50	<50	<0.5	<0.5	<0.5	<0.5		<500			
	7/9/1995		<50	<0.0 	<0.0 	<0.5 	<0.5 		<500			
	7/31/1998	<50	<50	< 0.5	<0.5	<0.5	<0.5	<0.5	<5000			
	2/11/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5				
	6/23/1999	<50	<50	< 0.5	<0.5	< 0.5	<0.5	3				
	12/6/1999	<110	<50	3	1	<0.5	1	0.6				
	3/16/2000	<50	<50	<0.5	<0.5	<0.5	<1.0	1				
	6/13/2000	<50	490	0.8	<0.5	<0.5	9	2				
	9/29/2000	<50	57	<0.5	<0.5	<0.5	<1.0	<1.0 <sup>2</sup>				
	3/22/2001	<50	<50	<0.5	<0.5	<0.5	<1.0	2				
	6/25/2001		<50	<0.5	<0.5	<0.5	<1.0	0.8				
	9/28/2001		91	<0.5	<0.5	<0.5	2	2				
	12/26/2001		<50	<0.5	<0.5	<0.5	<1.0	<0.5				
	7/7/2005		<50	<0.5	<0.5	<0.5	<1.0	<0.5		<1.0		<0.5
	10/19/2005		<25	<0.5	< 0.5 <sup>3</sup>	<0.5	<0.5	<1.0		<5.0	<10	<0.5
	1/13/2006		<25	<0.5	<0.5	<0.5	<0.5	<1.0		<5.0	<10	<0.5
	5/5/2006		<25	<0.5	<0.5	<0.5	<0.5	<1.0		<5.0	<10	<0.5
	7/19/2006		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	10/5/2006		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	3/29/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	6/27/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	9/19/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	12/19/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	3/6/2008		<50	< 0.5	< 0.5	< 0.5	<1.5	< 0.5		< 0.5	<10	<0.5
	6/18/2008		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
M\W_4	12/6/1000	160	~50	2	2	0.6	1	140				
141.4.4	3/16/2000	90	<50	0.5	0.5	0.0	2	34				
	6/13/2000	~50	56	<0.5	<0.5	<0.5	~10	1				
	9/29/2000	<50	92	0.7	<0.5	<0.5	3	<10 <sup>2</sup>				
	4/5/2001	<50	51	<0.5	0.5	<0.5	1	$60^{2}$				
	6/25/2001		<50	< 0.5	< 0.5	< 0.5	<1.0	< 0.5				
	9/28/2001		<50	<0.5	<0.5	<0.5	2	2				
	12/26/2001		<50	1.6	1.7	1.6	4.4	2.7				
	7/7/2005		<50	<0.5	<0.5	<0.5	<1.0	<0.5		<1.0		<0.5
	10/19/2005		<25	<0.5	<0.5 <sup>3</sup>	<0.5	<0.5	<1.0		<5.0	<10	<0.5
	1/13/2006	**	*****	*****	******	********Not s	sampled ****	*****	*****	*****	*********	**
	5/5/2006	**:	******	******	**********	*******Not :	sampled ***'	******	**********	********	*********	**
	7/19/2006		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	10/5/2006		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	3/29/2007		<50	<0.5	<0.5	<0.5	<1.5	0.69		<0.5	<10	<0.5
	6/27/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	9/19/2007		<50	<0.5	<0.5	<0.5	<1.5	1.38		<0.5	<10	<0.5
	12/19/2007		63	< 0.5	< 0.5	< 0.5	<1.5	2.20		< 0.5	<10	0.590
	3/6/2008		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
	6/18/2008		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
MW-5	12/6/1000	2 800	30 000	2 200	3 200	Q10	7000	670				
11111-3	3/16/2000	2,000	3 500	2,200	260	210	6300	260				
	6/13/2000	1 100	6,500	2200	360	360	730	480				
	9/29/2000	700 1	3,900	990	120	300	340	390 <sup>-2</sup>				
	3/22/2001	380 1	4,300	780	240	250	530	190				
	6/25/2001		3,100	1000	110	200	320	140				
	9/28/2001		3,000	1200	77	120	170	770				
	12/26/2001		3,240	738	262	218	626	66.4				
	8/24/2005		150	57	3	8	3.9	67		<1.0	18	3.0
	10/19/2005		560	130	3.8	23	9.3	230		<25	<50	11
	1/13/2006		2,300	570	18	120	140	220		<25	<50	14
	5/5/2006		130	35	1.7	7.8	7.4	8		<5.0	<10	0.55
	7/19/2006		210	102	1.54	15.8	3.85	27.6		<0.5	<10	2.06
	10/5/2006		410	105	1.06	9.05	2.24	101		0.640	11.3	6.65
			**:	***********	************	**Well Aba	ndoned 12/	27/2006****	**********	**********	<del>k</del>	
1												



Table 4
Summary of Groundwater Monitoring Analytical Results
Fame an Ohmenian Camina Otatian

Former Olympian Service Station 1435 Webster Street

Alameda, California

Date         Concentrations in micrograms per liter (µg/L)          12         0.5           MW-6         12/6/1999         110         60         1.0         40         30         20         5.0           12         0.5           MW-6         12/6/1999         110         c50         2         2         0.8         8         1           1.0           1.0         0.5           6/13/2000         c50         c50         c50         c50         c50.5         c0.5         c0.5         c1.0         3 </th <th>Well ID</th> <th>Sample</th> <th>TPHd</th> <th>TPHa</th> <th>В</th> <th>Т</th> <th>E</th> <th>Х</th> <th>MTBE</th> <th>TRPH</th> <th>DIPE</th> <th>TBA</th> <th>1.2-DCA</th>	Well ID	Sample	TPHd	TPHa	В	Т	E	Х	MTBE	TRPH	DIPE	TBA	1.2-DCA
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	-	Date		5	Concentrat	ions in mic	rograms pe	r liter (µq/L	.)				, -
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	E	SL	100	100	1.0	40	30	20	5.0			12	0.5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	MW-6	12/6/1999	110	<50	2	2	0.8	8	1				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		3/16/2000	<50	<50	8	8	5	18	<0.5				
9/29/2000         <50         <0.5         <0.5         <1.0         <0.5		6/13/2000	<50	75	0.7	1	0.9	2	0.6				
3/22/2001       -50       66       0.5       <0.5       <0.5       <1.0       3		9/29/2000	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5				
6/25/2001        63       2       ND       ND       1       3             12/26/201        63       2       ND       ND       1       3		3/22/2001	<50	66	0.5	<0.5	<0.5	<1.0	3				
9/28/2001          63         2         ND         ND         1         3               12/26/2001          <50         <0.5         <0.5         <0.5         <1.4         <0.5		6/25/2001		<50	<0.5	<0.5	<0.5	<1.0	4				
12/26/2001        <		9/28/2001		63	2	ND	ND	1	3				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		12/26/2001		<50	<0.5	<0.5	<0.5	1.4	<0.5				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		7/7/2005		<50	<0.5	<0.5	<0.5	<1.0	<0.5		<1.0		<0.5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		10/19/2005		<25	<0.5	<0.5 <sup>3</sup>	<0.5	<0.5	<1.0		<5.0	<10	<0.5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		1/13/2006		<25	<0.5	<0.5	<0.5	<0.5	<1.0		<5.0	<10	<0.5
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		5/5/2006		<25	<0.5	<0.5	<0.5	<0.5	<1.0		<5.0	<10	<0.5
$ \begin{split} & 10/5/2006 & & <50 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 3/29/2007 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 6/27/2007 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 9/19/2007 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 12/19/2007 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 3/6/2008 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 6/18/2008 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & <0.5 & & <0.5 & <10 & <0.5 \\ & 6/27/2007 & & 840 & 50.8 & 9.33 & 2.54 & 162 & 39.9 & & <0.5 & <10 & <0.5 \\ & 6/27/2007 & & 840 & 50.8 & 9.33 & 2.54 & 162 & 39.9 & & <0.5 & <10 & <0.5 \\ & 6/27/2007 & & 191^4 & 0.5 & <0.5 & <1.5 & 49.6 & & <0.5 & <10 & <0.5 \\ & 9/19/2007 & & 54^4 & <0.5 & <0.5 & <0.5 & <1.5 & 11.4 & & <0.5 & <10 & 1.09 \\ & 3/6/2008 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & 11.4 & & <0.5 & <10 & 1.09 \\ & 3/6/2008 & & <50 & <0.5 & <0.5 & <0.5 & <1.5 & 11.4 & & <0.5 & <10 & 1.09 \\ & 3/6/2008 & & <50 & 0.840 & <0.5 & 0.500 & <1.5 & 52.5 & & <0.5 & <15 & 3.5.70 \\ & & & & & & & & & & & & & & & & & & $		7/19/2006		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		10/5/2006		<50	<05	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		3/29/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		6/27/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		9/19/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		12/19/2007		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		3/6/2008		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
MW-7         3/29/2007          840         50.8         9.33         2.54         162         39.9          <0.5		6/18/2008		<50	<0.5	<0.5	<0.5	<1.5	<0.5		<0.5	<10	<0.5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$													
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	MW-7	3/29/2007		840	50.8	9.33	2.54	162	39.9		<0.5	<10	2.26
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		6/27/2007		270	126	<0.5	7.11	<1.5	94.4		0.550	58.4	6.21
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		9/19/2007		191 <sub>.</sub> ⁴	0.5	<0.5	5.38	<1.5	49.6		<0.5	28.5	4.37
3/6/2008        <50		12/19/2007		54 <sup>4</sup>	<0.5	<0.5	<0.5	<1.5	11.4		<0.5	<10	1.09
6/18/2008          <50		3/6/2008		<50	<0.5	<0.5	<0.5	<1.5	4.83		<0.5	<10	0.59
MW-8         4/6/2007          27,000         2,460         1,520         210         1,810         16,000          24.3         1,050         459           6/27/2007          20,000         2,460         382         611         1,040         7,310          11.1         3,400         319           9/19/2007          20,400 <sup>4</sup> 814         16.2         219         21.6         10,300          <4.40         7,080         194           12/19/2007          14,100 <sup>4</sup> 426         10.6         115         22.4         12,700          25.0         864         289           3/6/2008          19,000 <sup>6</sup> 639         19.5         268         152         11,200          <4.4         <88         227           6/18/2008          5,800 <sup>5</sup> 496         11.7         258         24.4         9,730          15.7         468         209		6/18/2008		<50	0.840	<0.5	0.500	<1.5	52.5		<0.5	15.3	5.70
MW-8 $4/6/2007$ $27,000$ $2,460$ $1,520$ $210$ $1,810$ $16,000$ $24.3$ $1,050$ $459$ $6/27/2007$ $20,000$ $2,460$ $382$ $611$ $1,040$ $7,310$ $11.1$ $3,400$ $319$ $9/19/2007$ $20,400^4$ $814$ $16.2$ $219$ $21.6$ $10,300$ $<4.40$ $7,080$ $194$ $12/19/2007$ $14,100^4$ $426$ $10.6$ $115$ $22.4$ $12,700$ $25.0$ $864$ $289$ $3/6/2008$ $19,000^6$ $639$ $19.5$ $268$ $152$ $11,200$ $<4.4$ $<88$ $227$ $6/18/2008$ $5,800^5$ $496$ $11.7$ $258$ $24.4$ $9,730$ $15.7$ $468$ $209$													
6/27/2007 <b>20,000 2,460 382 611 1,040 7,310 11.1 3,400 319</b> $9/19/2007$ <b>20,400 814 16.2 219 21.6 10,300</b> <4.40 <b>7,080 194</b> $12/19/2007$ <b>14,100 426 10.6 115 22.4 12,700 25.0 864 289</b> $3/6/2008$ <b>19,000 6 639 19.5 268 152 11,200</b> <4.4       <88 <b>227 6</b> /18/2008 <b>5.800 496 11.7 258 24.4 9.730 15.7 468 209</b>	MW-8	4/6/2007		27,000	2,460	1,520	210	1,810	16,000		24.3	1,050	459
9/19/2007        20,400 <sup>4</sup> 814       16.2       219       21.6       10,300        <4.40       7,080       194         12/19/2007        14,100 <sup>4</sup> 426       10.6       115       22.4       12,700        25.0       864       289         3/6/2008        19,000 <sup>6</sup> 639       19.5       268       152       11,200        <4.4       <88       227         6/18/2008        5.800 <sup>5</sup> 496       11.7       258       24.4       9.730        15.7       468       209		6/27/2007		20,000	2,460	382	611	1,040	7,310		11.1	3,400	319
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		9/19/2007		20,400 4	814	16.2	219	21.6	10,300		<4.40	7,080	194
3/6/2008 19,000 <sup>6</sup> 639 19.5 268 152 11,200 <4.4 <88 227 6/18/2008 5.800 <sup>5</sup> 496 11.7 258 24.4 9.730 15.7 468 209		12/19/2007		14,100 <sup>4</sup>	426	10.6	115	22.4	12,700		25.0	864	289
6/18/2008 5.800 <sup>5</sup> 496 11.7 258 24.4 9.730 15.7 468 209		3/6/2008		19,000 <sup>6</sup>	639	19.5	268	152	11,200		<4.4	<88	227
		6/18/2008		5,800 <sup>5</sup>	496	11.7	258	24.4	9,730		15.7	468	209

Notes:

TPHd = Total Petroleum Hydrocarbons as Diesel (EPA Method 8015)

TPHg = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015; July 2005 by EPA 8260

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes by EPA Method 8020; July 2005 by EPA 8260

Fuel Additives = Methyl-tert-butyl ether (MTBE), Di-isopropyl ether (DIPE), tert-Butyl alcohol (TBA), 1,2-Dichloroethane (1,2-DCA), (EPA Method 8260B) TRPH = Total Recoverable Petroleum Hydrocarbons

<X = Concentration less than laboratory reporting limit

--- = Not Analyzed <sup>1</sup> = Does not match diesel chromatogram pattern

<sup>2</sup> = Confirmed by EPA Method 8260

<sup>3</sup> = Toluene was detected at concentrations of 1 ppb in sample from well MW-2, 0.74 ppb in sample from well MW-3, 0.9 ppb in sample from well MW-4, and 0.66 ppb in sample from well MW-6. Data were adjusted to non-detect because of the presence of toluene (0.81 ppb) in method blank and the sample results were less than 5 times in the blank (EPA, Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1994).

<sup>4</sup> = Does not match typical gasoline pattern; TPH Gasoline value is primarily due to individual peaks within gasoline quantitative range.

<sup>5</sup> = Does not match typical gasoline pattern; TPH value includes amount of non-target compounds within the gasoline quantitative range.

<sup>6</sup> = TPH value partially due to individual peak (MTBE) within gasoline quantitative range.

ESLs = Environmental Screening Levels (Table F-1a), groundwater is a current or potential drinking water resource (CRWQCB, Interim Final, November 2007).

vellow row = most recent data



FIGURES





S:\1 Environmental. Dept/Active Sites(Olympian)1435 Webster/FIGURES\Well Install\WI 1435 webster 0407.dwg, 4/19/2007 2:42:31 PM





**Boring & Well** 

Locations



4 1435 Webster Street

Alameda, California

Drafted By: LC



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