



TEC Environmental

a division of **Technology, Engineering, & Construction, Inc.**

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May 12, 2011

RECEIVED

3:13 pm, May 18, 2011
Alameda County
Environmental Health

Ms. Barbara Jakub, P.G.
Alameda County Health Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

SUBJECT: PERJURY STATEMENT

SITE: FORMER OLYMPIAN SERVICE STATION
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA 94501
FLC # RO0000193

Dear Ms. Jakub:

I declare under penalty of perjury that the information and/or recommendations contained in the attached proposal or report is true and correct.

Thank you for your cooperation and assistance on this project. If you have any questions, feel free to contact me at (650) 596-8950.

Sincerely,

Fred Bertetta
Responsible Party



TEC Environmental

a division of **Technology, Engineering, & Construction, Inc.**

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May 12, 2011

Ms. Barbara Jakub, P.G.
Alameda County Health Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

SUBJECT: 2011 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

SITE: FORMER OLYMPIAN SERVICE STATION
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA 94501
FLC # RO0000193

Dear Ms. Jakub:

On behalf of Olympian JV, Technology, Engineering & Construction, Inc. is pleased to submit this first semi-annual groundwater monitoring report for the above-referenced site.

Thank you for your cooperation and assistance on this project. If you have any questions or concerns, please contact the undersigned at (650) 616-1214.

Sincerely,
**Technology, Engineering
& Construction, Inc.**

A handwritten signature in black ink that reads 'Elise Sbarbori'.

Elise Sbarbori
Project Manager

cc: Mr. Fred Bertetta c/o Ms. Janet Heikel, Olympian, 1300 Industrial Road, Suite 2, San Carlos, California 94070
Mr. Jeff Farrar, via email
Mr. Ed Firestone, via email
Mr. and Mrs. Charles A. & Ose M. Begley, 2592 Pine View Dr., Fortuna, California 95540

**2011 FIRST SEMI-ANNUAL
GROUNDWATER MONITORING REPORT**

**FORMER OLYMPIAN SERVICE STATION
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA 94501**

FLC #: RO0000193

PREPARED FOR:

**OLYMPIAN JV
AND
ALAMEDA COUNTY HEALTH AGENCY**

PREPARED BY:

**TECHNOLOGY, ENGINEERING & CONSTRUCTION, INC.
PROJECT #: E-480**

SAMPLING DATE:

APRIL 19, 2011

REPORT DATE:

MAY 12, 2011



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A	REGULATORY CORRESPONDENCE
B	FIELD DATA SHEETS
C	LOW FLOW SAMPLING PROTOCOL
D	LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION
E	GEOTRACKER SUBMISSION CONFIRMATIONS

1.0 INTRODUCTION

On behalf of Olympian JV, Technology, Engineering & Construction, Inc. (TEC) conducted the 2011 first semi-annual groundwater monitoring event at the former Olympian Service Station located at 1435 Webster Street, Alameda, California. 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.

This report includes the site environmental background and results of the current groundwater monitoring event. All site groundwater monitoring wells were gauged and sampled in compliance with California Regional Water Quality Control Board Resolution 2009-42 and Alameda County Health Agency (ACHA) directives. Additional analyses were performed for dissolved metals and hexavalent chromium as requested by the ACHA in an email dated April 7, 2011. A copy of the correspondence is included as Attachment A. 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 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 and is currently used as a 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 onsite identified significant concentrations of total hydrocarbons as propane in soil gas. |
| September 1989 | Two 10,000-gallon gasoline USTs, one 7,500-gallon diesel UST and one 500-gallon waste oil UST removed by TEC Accutite; petroleum hydrocarbons detected in soil beneath former tank location. |
| January 1991 | Approximately 950 cubic yards of soil were 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 [B-1 through B-4 (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** SCM updated; uncertainties identified in 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.
- December 2006** Five soil borings advanced (DB-1 through DB-5); onsite soils classified as Class II waste; monitoring wells MW-1 and MW-5 abandoned by pressure grouting.
- February 2007** Interim remedial action conducted; 992.54 tons of soil excavated from site; 15,000 gallons of groundwater pumped from open excavation pit, sediment removed 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.
- 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.
- July 2009** Six off-site soil borings advanced (B-19 through B-24); off-site plume fully defined. One groundwater monitoring well (MW-9) installed in the public right-of-way on Webster Street. Five permanent nested vapor monitoring points installed onsite; no petroleum hydrocarbons detected in onsite soil vapor.
- February 2010** *Updated Site Conceptual Model, Health Risk Assessment, Feasibility Study and Corrective Action Plan* submitted to the Alameda County Health Agency. Hydrogen peroxide injection identified as the most effective remedial alternative.
- March 2011** *Corrective Action Plan Addendum* submitted to the Alameda County Health Agency.

3.2 Site Condition

The site currently has seven groundwater monitoring wells (MW-2 through MW-4 and MW-6 through MW-9) and five dual-completed vapor monitoring points (VMP-1 through VMP-5). Locations of site



monitoring wells are presented in Figure 2. Groundwater monitoring well construction details and activity schedule are presented in Table 1. Chemicals of concern (COCs) for the site include petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and methyl tert-butyl ether (MTBE). The source was the former USTs, which were removed in 1989. TEC continues to monitor all active groundwater monitoring wells associated with the site on a semi-annual basis in preparation for site corrective action. New well MW-9 and priority well MW-4 are monitored quarterly.

4.0 GROUNDWATER MONITORING

TEC conducted the first semi-annual monitoring event on April 19, 2011. Field data sheets from this groundwater sampling event are presented as Attachment B.

4.1 Sampling Methods

Upon arrival to the site, a TEC technician uncapped all active site groundwater monitoring wells (MW-2 through MW-4 and MW-6 through MW-9) and allowed the water level in each well to fully equilibrate prior to measuring the depth to water. Wells were gauged to the nearest 0.01 foot using an electric water level meter and recorded on the well sampling logs.

Following well gauging, the wells were purged and sampled using a carbon dioxide gas-driven portable bladder pump (QED Micropurge) using a low-flow purge and sample protocol. Optimal flow rates ranged from 100 to 140 milliliters per minute. Prior to sampling the first well, and between wells, the pump was decontaminated with phosphate-free detergent and rinsed with potable and de-ionized water. Dedicated well equipment, including bladder pumps, Teflon-lined tubing and compression fittings were used for each well. TEC's standard operating procedures for low-flow sampling are included in Attachment C.

Indicator parameters such as pH, dissolved oxygen, temperature, conductivity, and oxygen reduction potential were monitored using an in-line flow cell system, and recorded on the field data sheets every five minutes. Purging continued until three consecutive parameter readings had stabilized. During this event, the indicator parameters stabilized in each well following approximately 10 to 20 minutes of continuous purging.

Groundwater samples were transferred to laboratory supplied, HCl preserved 40-milliliter volatile organic analysis vials (VOAs) and unpreserved 250-milliliter polyethylene sample containers. The groundwater samples were labeled, placed on ice in an insulated container, and transported to Torrent, a California state-certified laboratory, under chain-of-custody documentation for analysis.

All groundwater samples were analyzed for TPHg, BTEX compounds, fuel oxygenates and lead scavengers by EPA Method 8260B, dissolved metals (Fe, Cr, Se, As) by EPA Method 6020B, hexavalent chromium by EPA Method 7196, and ferrous iron by method SM3500D. The laboratory analytical report and chain-of-custody documentation are presented in Attachment D.

4.2 Electronic Laboratory Data Submittal

The laboratory report was converted into EDF format and uploaded to GeoTracker, California's online geospatial database. Depths to groundwater were uploaded to GeoTracker as a GEO_WELL file. This report was converted into PDF format and uploaded to GeoTracker as a GEO_REPORT file and to the Alameda County FTP site. Attachment E contains the GeoTracker submission confirmations.



4.3 Results

4.3.1 Groundwater Elevation and Flow Direction

The calculated groundwater gradient based on groundwater elevations was toward the southeast at 0.008 feet/foot (ft/ft) during the April 2011 monitoring event. Groundwater elevations are presented in Table 2 and Figure 3.

4.3.2 Petroleum Hydrocarbons in Groundwater

The highest concentrations of petroleum hydrocarbons in groundwater were detected in the sample from well MW-8 (67 ug/L TPHg, 0.83 ug/L ethylbenzene, and 20 ug/L MTBE). All other wells contained non-detectable concentrations of TPHg and BTEX compounds and relatively low concentrations of MTBE ranging from 0.63 to 8.7 ug/L.

Groundwater analytical results are summarized in Table 3 and Figure 4.

4.3.3 Dissolved Metals in Groundwater

Wells MW-3 and MW-4 contained detectable concentrations of total chromium (3.9 ug/L and 5.2 ug/L, respectively) and hexavalent chromium (5.0 ug/L and 6.7 ug/L, respectively). No other wells contained detectable concentrations of chromium or hexavalent chromium.

Arsenic concentrations ranged from 0.46 to 4.4 ug/L in all sampled wells. Selenium was not detected above the laboratory reporting limits.

Ferrous iron was detected in well MW-8 only, at a concentration of 1,200 ug/L. Total iron was detected in well MW-8 at a concentration of 2,100 ug/L; in all other wells, concentrations of total iron ranged from 1.5 to 200 ug/L.

A summary of the dissolved metals analytical results are presented in Table 4.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- For this groundwater monitoring event, average groundwater flow was toward the south at approximately 0.008 ft/ft, within historical precedent for seasonal change in groundwater elevation and gradient.
- During the April 2011 monitoring event, TPHg and ethylbenzene were detected at levels below ESLs in well MW-8; TPHg and BTEX compounds were not detected above laboratory reporting limits in sample from the other 6 monitored wells. The fuel oxygenate MTBE was detected in all sampled wells at concentrations well below the site-specific treatment levels.
- Reported concentrations of COCs in the sample collected from well MW-8 were historically low and approximately two orders of magnitude below the next lowest concentration for each detected analyte. Reported concentrations in well MW-8 have shown a significant declining trend in samples collected during the first and third quarters (Chart 1). The disparity between previous and most recent results from MW-8 may be related to the use of low-flow sampling techniques or may reflect on-going attenuation in the area of well MW-8. The low-flow sampling method targets a depth-specific sampling interval while the use of a submersible pump can introduce significant vertical mixing of the groundwater column within the well due to de-watering. To determine if COC concentrations are affected by different sampling techniques, TEC recommends collecting duplicate samples from well MW-8 both low-flow and standard submersible pump purge and sample techniques prior to beginning proposed remedial action or during the third quarter 2011 monitoring event.

- Chromium was detected in groundwater from wells MW-3 and MW-4 only (located outside of the area targeted for remediation), at concentrations of 3.9 ug/L and 5.2 ug/L, respectively. The chromium was determined by use of EPA Method 6010C, inductively coupled argon plasma spectroscopy, and, therefore, represents the total chromium in the samples, regardless of valence state. Hexavalent (Cr VI) was detected in these same samples using EPA Method 7199, Ion Chromatography. Based on the detected concentrations of hexavalent chromium in those samples (5.0 ug/L and 6.7 ug/L, respectively), it would appear that most or all of the chromium in groundwater at those locations is already in the hexavalent (oxidized) state.

The detected concentrations of hexavalent chromium in each sample exceeded the detected concentrations of total chromium; however, this discrepancy (a constant 22% difference) may be due to differences in the two laboratory methods, sample preparation, standardization or instrumentation.

Based on the non-detectable concentrations of total or hexavalent chromium in groundwater samples collected from the area targeted for remediation (near wells MW-6, MW-7 and MW-8), and because detected chromium in wells MW-3 and MW-4 is in the hexavalent state and at low concentrations, it appears that oxidation of chromium (III) to chromium (VI) and contaminant mobilization or displacement is not of concern even given the proposed remedial action method (in situ oxidation by injection). Therefore, TEC recommends completing the first round of injection and associated sampling as proposed in the TEC-prepared *Corrective Action Workplan* and *Corrective Action Plan Addendum*.

- Pending site corrective action and in accordance with State Water Resources Control Board Resolution 2009-042, TEC recommends that all site monitoring wells be sampled semi-annually; the next monitoring event is scheduled to occur during the third quarter 2011.

6.0 LIMITATIONS

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. Technology, Engineering & Construction Inc.'s liability is limited to the dollar amount of the work performed.

Thank you for your cooperation and assistance with this project. If you have any questions or concerns, please contact the undersigned at (650) 616-1200.

Sincerely,
**Technology, Engineering
& Construction, Inc.**



Elise Sbarbori
Project Manager

Reviewed by:



Paul B. Dotson, PG # 8237
Professional Geologist

TABLES

Table 1
Groundwater Monitoring Well Construction Details and Activity Schedule
Former Olympian Service Station
1435 Webster Street
Alameda, California

Monitoring Well Construction Details									Activity Schedule	
Well ID	Date Installed ¹	Total Depth	Diameter	Top of Screen	Bottom of Screen	Screen Length	Top of Casing ²	Monitoring Status	Gauging	Sampling ³
		(ft bsg)	(inches)	(ft bsg)	(ft bsg)	(feet)	(ft msl)		(semi-annually)	
MW-1	1/1/1993	24	2	6	24	18	19.53	Destroyed		
MW-2	1/1/1993	24	2	6	24	18	19.80	Active	√	√
MW-3	1/1/1993	24	2	6	24	18	19.79	Active	√	√
MW-4	12/1/1999	20	2	5	20	15	19.30	Active	√	√
MW-5	12/1/1999	20	2	5	20	15	18.99	Destroyed		
MW-6	12/1/1999	20	2	5	20	15	20.27	Active	√	√
MW-7	3/9/2007	20	4	10	20	10	18.93	Active	√	√
MW-8	3/9/2007	20	4	10	20	10	19.33	Active	√	√
MW-9	7/13/2009	20	4	5	20	15	18.83	Active	√	√

Notes

ft = feet
bsg = below surface grade
msl = mean sea level

¹ = Well installation date is given as first day of the installation month when exact well installation date is unknown
² = survey performed by Virgil Chavez Land Surveying (PLS #6323)
³ = groundwater samples are routinely analyzed for total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8260TPH, and for benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl-tert-butyl ether (MTBE), di-isopropyl ether (DIPE), tert-butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA) and 1,2- dibromoethane (EDB) by EPA Method 8260B.



Table 2
Summary of Historical Groundwater Elevation Data
Former Olympian Service Station
1435 Webster Street
Alameda, California

Well ID	TOC Elevation (ft msl)	Sample Date	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	19.53	6/3/1993	(1)	---
		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	10.25	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	9.67	9.86
		*****Abandoned 12/27/2006*****		
MW-2	19.80	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
		6/18/2008	10.23	9.57
		9/10/2008	11.36	8.44
		12/10/2008	11.89	7.91
3/4/2009	8.68	11.12		
6/3/2009	9.91	9.89		
8/27/2009	11.16	8.64		
12/10/2009	11.32	8.48		
3/10/2010	7.99	11.81		
6/10/2010	9.13	10.67		
9/22/2010	10.95	8.85		
4/19/2011	7.43	12.37		



Table 2
Summary of Historical Groundwater Elevation Data
Former Olympian Service Station
1435 Webster Street
Alameda, California

Well ID	TOC Elevation (ft msl)	Sample Date	Depth to Water (ft)	Groundwater Elevation (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
		9/10/2008	11.33	8.46
		12/10/2008	11.89	7.90
		3/4/2009	8.40	11.39
		6/3/2009	9.81	9.98
8/27/2009	11.18	8.61		
12/10/2009	11.30	8.49		
3/10/2010	7.78	12.01		
6/10/2010	9.02	10.77		
9/22/2010	10.96	8.83		
4/19/2011	7.22	12.57		
MW-4	19.30	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
		9/10/2008	10.89	8.41
		12/10/2008	11.43	7.87
		3/4/2009	8.47	10.83
		6/3/2009	9.53	9.77
		8/27/2009	10.72	8.58
		12/10/2009	10.85	8.45
3/10/2010	7.87	11.43		
6/10/2010	8.87	10.43		
9/22/2010	10.52	8.78		
4/19/2011	7.43	11.87		



Table 2
Summary of Historical Groundwater Elevation Data
Former Olympian Service Station
1435 Webster Street
Alameda, California

Well ID	TOC Elevation (ft msl)	Sample Date	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-5	18.99	12/6/1999	10.17	8.82
		3/16/2000	6.28	12.71
		6/13/2000	7.95	11.04
		9/29/2000	9.54	9.45
		3/22/2001	7.48	11.51
		6/25/2001	9.05	9.94
		9/28/2001	10.39	8.60
		12/26/2001	7.28	11.71
		8/24/2005	7.87	11.12
		10/19/2005	9.51	9.48
		1/13/2006	6.35	12.64
		5/5/2006	5.64	13.35
		7/19/2006	7.41	11.58
		10/5/2006	8.89	10.10
		*****Abandoned 12/27/2006*****		
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
		9/10/2008	11.64	8.63
		12/10/2008	12.18	8.09
		3/4/2009	8.86	11.41
		6/3/2009	10.07	10.20
		8/27/2009	11.45	8.82
		12/10/2009	11.61	8.66
3/10/2010	8.19	12.08		
6/10/2010	9.30	10.97		
9/22/2010	11.28	8.99		
4/19/2011	7.59	12.68		
MW-7	18.93	3/29/2007	7.90	11.03
		6/27/2007	8.87	10.06
		9/19/2007	9.88	9.05
		12/19/2007	9.72	9.21
		3/6/2008	7.52	11.41
		6/18/2008	9.13	9.80
		9/10/2008	10.29	8.64
		12/10/2008	10.81	8.12
		3/4/2009	7.89	11.04
		6/3/2009	8.70	10.23
		8/27/2009	10.05	8.88
		12/10/2009	10.21	8.72
		3/10/2010	7.16	11.77
		6/10/2010	8.58	10.35
		9/22/2010	9.89	9.04
		4/19/2011	6.58	12.35



Table 2
Summary of Historical Groundwater Elevation Data
Former Olympian Service Station
1435 Webster Street
Alameda, California

Well ID	TOC Elevation (ft msl)	Sample Date	Depth to Water (ft)	Groundwater Elevation (ft msl)
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
		9/10/2008	10.76	8.57
		12/10/2008	11.31	8.02
		3/4/2009	8.59	10.74
		6/3/2009	9.51	9.82
		8/27/2009	10.57	8.76
		12/10/2009	10.72	8.61
		3/10/2010	7.77	11.56
		6/10/2010	8.01	11.32
		9/22/2010	10.39	8.94
4/19/2011	7.36	11.97		
MW-9	18.83	8/27/2009	10.01	8.82
		12/10/2009	10.16	8.67
		3/10/2010	7.31	11.52
		6/10/2010	8.14	10.69
		9/22/2010	9.86	8.97
		4/19/2011	6.86	11.97
Notes:				
TOC = Top of Casing				
ft msl = Feet referenced to mean sea level				
--- = Not Available				
(1) = Well not accessible due to obstruction by a parked car				
yellow row = most recent data				



Table 3
Summary of Groundwater Monitoring Analytical Results
Former Olympian Service Station
1435 Webster Street
Alameda, California

Well ID	Sample Date	TPHd	TPHg	Concentrations in micrograms per liter (µg/L)									
				B	T	E	X	MTBE	TRPH	DIPE	TBA	1,2-DCA	
	<i>ESL</i>	100	100	1.0	40	30	20	5.0	---	---	12	0.5	
	<i>SSTLs</i>	---	---	940	4,300	760	7,100	1,300	---	---	---	---	
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	²	---	---	---	
	6/13/2000	2,800	17,000	5,300	260	720	790	7,000	²	---	---	---	
	9/29/2000	5,200	¹ 50,000	11,000	2,900	1,900	4,600	7,200	²	---	---	---	
	3/22/2001	1,500	¹ 8,600	2,600	750	250	950	3,200	²	---	---	---	
	6/25/2001	---	18,000	1,200	1,800	970	3,200	1,500	²	---	---	---	
	9/28/2001	---	48,000	5,200	6,100	2,200	8,100	4,000	---	---	---	---	
	12/26/2001	---	524	216	1.2	8.6	7.4	721	---	---	---	---	
	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	112	395	161	6,020	---	13.5	546	219		
*****Well Abandoned 12/27/2006*****													
MW-2	6/3/1993	<50	<50	5.8	<0.5	<0.5	<0.5	---	<500	---	---	---	
	9/14/1994	<50	<50	<0.5	<0.5	<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	²	---	---	---	
	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 ³	<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	
	Post excavation	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		
9/10/2008	---	69	⁴ <0.5	<0.5	<0.5	<1.5	24.6	---	<0.5	<10	0.810		
12/10/2008	---	84	⁴ <0.5	<0.5	<0.5	<1.5	30.2	---	<0.5	<10	0.650		
3/4/2009	---	<50	<0.5	<0.5	<0.5	<1.5	3.15	---	<0.5	<10	<0.5		
6/3/2009	---	<55	<0.55	<0.55	<0.55	<1.6	35	---	<0.55	<11	0.55		
8/27/2009	---	<50	<0.5	<0.5	<0.5	<1.5	73	---	<0.5	23	1.1		
3/11/2010	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<30	<0.5		
9/22/2010	---	<50	<0.5	<0.5	<0.5	<1.5	44	---	<0.5	<5.0	1.3		
4/19/2011	---	<50	<0.5	<0.5	<0.5	<1.5	2.4	---	<0.5	<5.0	--		



Table 3
Summary of Groundwater Monitoring Analytical Results
Former Olympian Service Station
1435 Webster Street
Alameda, California

Well ID	Sample Date	TPHd	TPHg	Concentrations in micrograms per liter (µg/L)								1,2-DCA	
				B	T	E	X	MTBE	TRPH	DIPE	TBA		
ESL		100	100	1.0	40	30	20	5.0	---	---	12	0.5	
SSTLs		---	---	940	4,300	760	7,100	1,300	---	---	---	---	
MW-6	12/6/1999	110	<50	2	2	0.8	8	1	---	---	---	---	
	3/16/2000	<50	<50	8	8	5	18	<0.5	---	---	---	---	
	6/13/2000	<50	75	0.7	1	0.9	2	0.6	---	---	---	---	
	9/29/2000	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	---	---	---	---	
	3/22/2001	<50	66	0.5	<0.5	<0.5	<1.0	3	---	---	---	---	
	6/25/2001	---	<50	<0.5	<0.5	<0.5	<1.0	4	---	---	---	---	
	9/28/2001	---	63	2	ND	ND	1	3	---	---	---	---	
	12/26/2001	---	<50	<0.5	<0.5	<0.5	1.4	<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 ³	<0.5	<0.5	<1.0	<0.5	<5.0	<10	<0.5	
	1/13/2006	---	<25	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<10	<0.5	
	5/5/2006	---	<25	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<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	
9/10/2008	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<10	<0.5		
12/10/2008	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<10	<0.5		
3/4/2009	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<10	<0.5		
6/3/2009	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<10	<0.5		
8/27/2009	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<10	<0.5		
3/11/2010	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<30	<0.5		
9/22/2010	---	<50	<0.5	<0.5	<0.5	<1.5	<0.5	---	<0.5	<5.0	<0.5		
4/19/2011	---	<50	<0.5	<0.5	<0.5	<1.5	0.63	---	<0.5	<5.0	---		
MW-7	3/29/2007	---	840	50.8	9.33	2.54	162	39.9	---	<0.5	<10	2.26	
	6/27/2007	---	270	126	<0.5	7.11	<1.5	94.4	---	0.550	58.4	6.21	
	9/19/2007	---	191	4	0.5	<0.5	5.38	<1.5	49.6	---	<0.5	28.5	
	12/19/2007	---	54	4	<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	4.83	---	<0.5	<10	0.59	
	6/18/2008	---	<50	0.840	<0.5	0.500	<1.5	52.5	---	<0.5	15.3	5.70	
	9/10/2008	---	55	4	<0.5	<0.5	<1.5	15.3	---	<0.5	<10	1.98	
	12/10/2008	---	<50	<0.5	<0.5	<0.5	<1.5	2.43	---	<0.5	<10	<0.5	
	3/4/2009	---	<50	<0.5	<0.5	<0.5	<1.5	0.530	---	<0.5	<10	<0.5	
	6/3/2009	---	<50	0.62	<0.5	<0.5	<1.5	5.2	---	<0.5	<10	<0.5	
	8/27/2009	---	<50	<0.5	<0.5	<0.5	<1.5	4.8	---	<0.5	<10	0.55	
	3/11/2010	---	<50	<0.5	<0.5	<0.5	<1.5	0.73	---	<0.5	<30	<0.5	
	9/22/2010	---	<50	<0.5	<0.5	<0.5	<1.5	3.9	---	<0.5	<5.0	0.64	
	4/19/2011	---	<50	<0.5	<0.5	<0.5	<1.5	2.0	---	<0.6	<5.0	---	
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	5	639	19.5	268	152	11,200	---	<4.4	<88	227
	6/18/2008	---	5,800	4	496	11.7	258	24.4	9,730	---	15.7	468	209
	9/10/2008	---	9,900	4	299	11.1	73.0	13.6	11,600	---	27.1	1,670	240
	12/10/2008	---	6,900	4	477	3.98	57.9	22.6	11,600	---	23.1	634	287
	3/4/2009	---	8,500	4	168	1.35	17.3	8.59	8,190	---	7.00	2,050	238
	6/3/2009	---	11,000	5	490	3.90	57	16	14,000	---	<0.5	<10	310
	8/27/2009	---	5,400	5	340	8.3	67	37	8,900	---	21	2,900	300
	3/11/2010	---	7,900	5	660	3.7	100	28.3	5,800	---	18	1,100	150
	9/22/2010	---	4,700	4	1,100	<44	230	<132	5,700	---	<44	470	120
4/19/2011	---	67	6	<0.5	<0.5	0.83	<1.5	20	---	<0.5	<5.0	---	
MW-9	8/27/2009	---	<50	<0.5	<0.5	<0.5	<1.5	12	---	<0.5	<10	0.76	
	12/10/2009	---	<50	<0.5	0.50	<0.5	<1.5	4.8	---	<0.5	<5.0	<0.5	
	3/10/2010	---	<50	<0.5	<0.5	<0.5	<1.5	3.8	---	<0.5	<30	<0.5	
	6/10/2010	---	<50	<0.5	<0.5	<0.5	<1.5	7.4	---	<0.5	<5.0	0.6	
	9/22/2010	---	<50	<0.5	<0.5	<0.5	<1.5	1.6	---	<0.5	<5.0	<0.5	
4/19/2011	---	<50	<0.5	<0.5	<0.5	<1.5	8.7	---	<0.5	<5.0	---		

Notes:
TPHd = Total Petroleum Hydrocarbons as Diesel (EPA Method 8015)
TPHg = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015; after July 2005 by EPA 8260
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes by EPA Method 8020; after 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) by EPA Method 8260B
TRPH = Total Recoverable Petroleum Hydrocarbons
<X = Concentration less than laboratory reporting limit
--- = Not Analyzed
¹ = Does not match diesel chromatogram pattern
² = Confirmed by EPA Method 8260
³ = 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).
⁴ = TPH Gasoline value is primarily due to individual peaks / non-target compounds within gasoline quantitative range.
⁵ = TPH value partially due to individual peak (MTBE) within gasoline quantitative range.
⁶ = Does not match pattern of reference gasoline standard; hydrocarbons in the range of C5-C12 quantified as gasoline.
ESLs = Environmental Screening Levels (Table F-1a), groundwater is a current or potential drinking water resource (CRWQCB, Interim Final, November 2007, revised May 2008).
SSTLs = site-specific treatment levels calculated in the Updated Site Conceptual Model, Health Risk Assessment, Feasibility Study, and Corrective Action Plan (TEC 2010).
bold = constituent exceeds SSTL
yellow row = most recent data



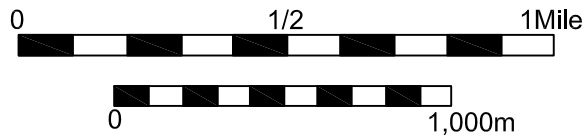
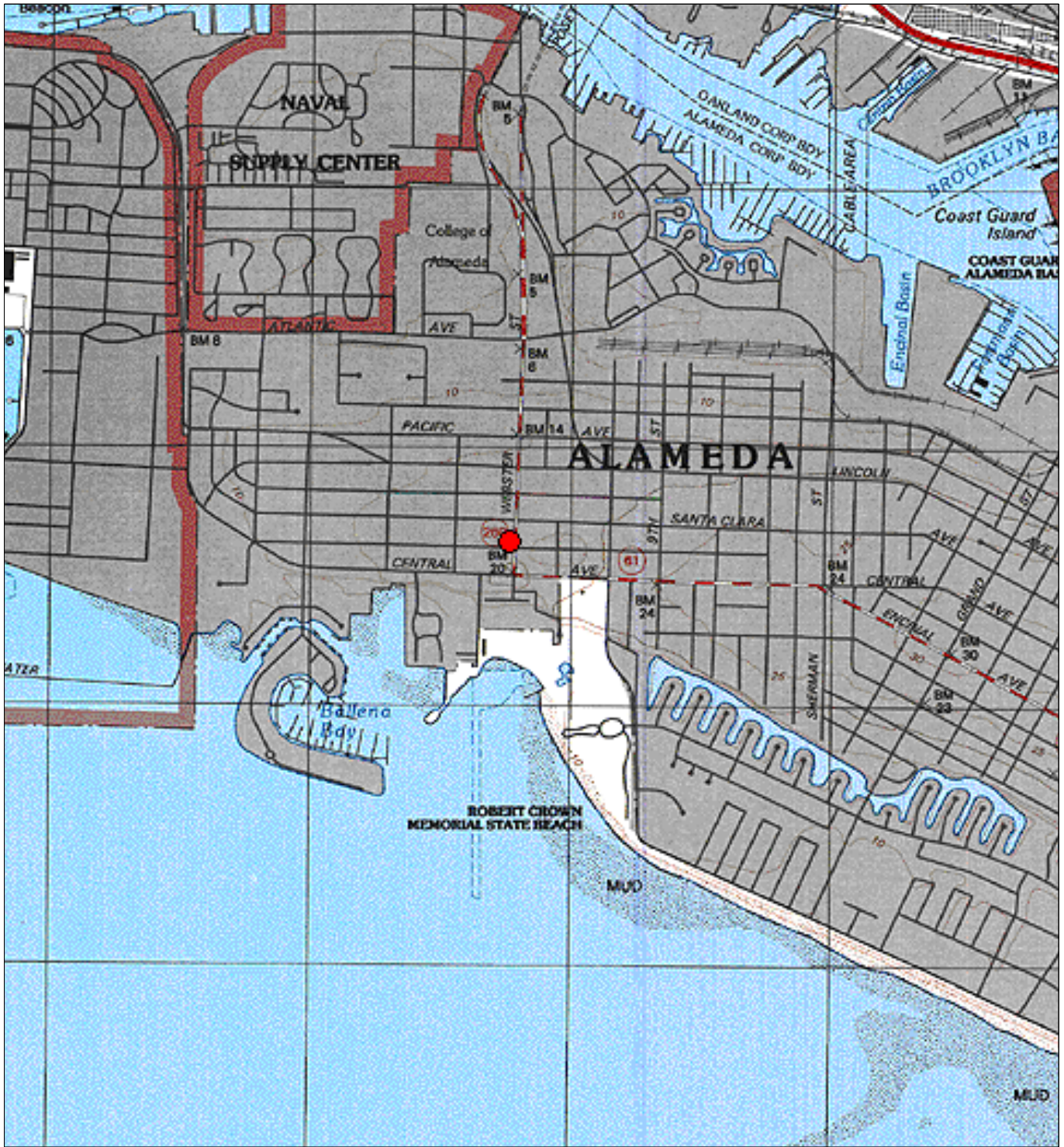
Table 4
Summary of Groundwater Analytical Results: Metals
 1435 Webster Street
 Alameda, California

Sample ID	Date Sampled	Fe	Fe(II)	Cr	Cr(VI)	As	Se
		concentrations in micrograms per liter (mg/L)					
MW-2	4/19/2011	25	<100	<0.5	<0.5	1.1	<1.0
MW-3	4/19/2011	200	<100	3.9	5.0	0.46	<1.0
MW-4	4/19/2011	9.3	<100	5.2	6.7	0.69	<1.0
MW-6	4/19/2011	9.9	<100	<0.5	<0.5	1.1	<1.0
MW-7	4/19/2011	1.5	<100	<0.5	<0.5	1.4	<1.0
MW-8	4/19/2011	2,100	1,200	<0.5	<0.5	4.4	<1.0
MW-9	4/19/2011	4.8	<100	<0.5	<0.5	1.7	<1.0

Notes:
 Fe, Cr, As, Se = dissolved iron, chromium, arsenic and selenium by EPA Method 6020.
 Cr(VI) = hexavalent chromium by method SW7199.
 Fe(II) = ferrous iron by method H8146



FIGURES



● Site Location

Map By: TOPO!

Date: 3/17/2009

Drafted By: AK

SITE
1435 Webster Street
Alameda, California



262 Michelle Court
So. San Francisco, CA 94080
Main: (650) 616-1200
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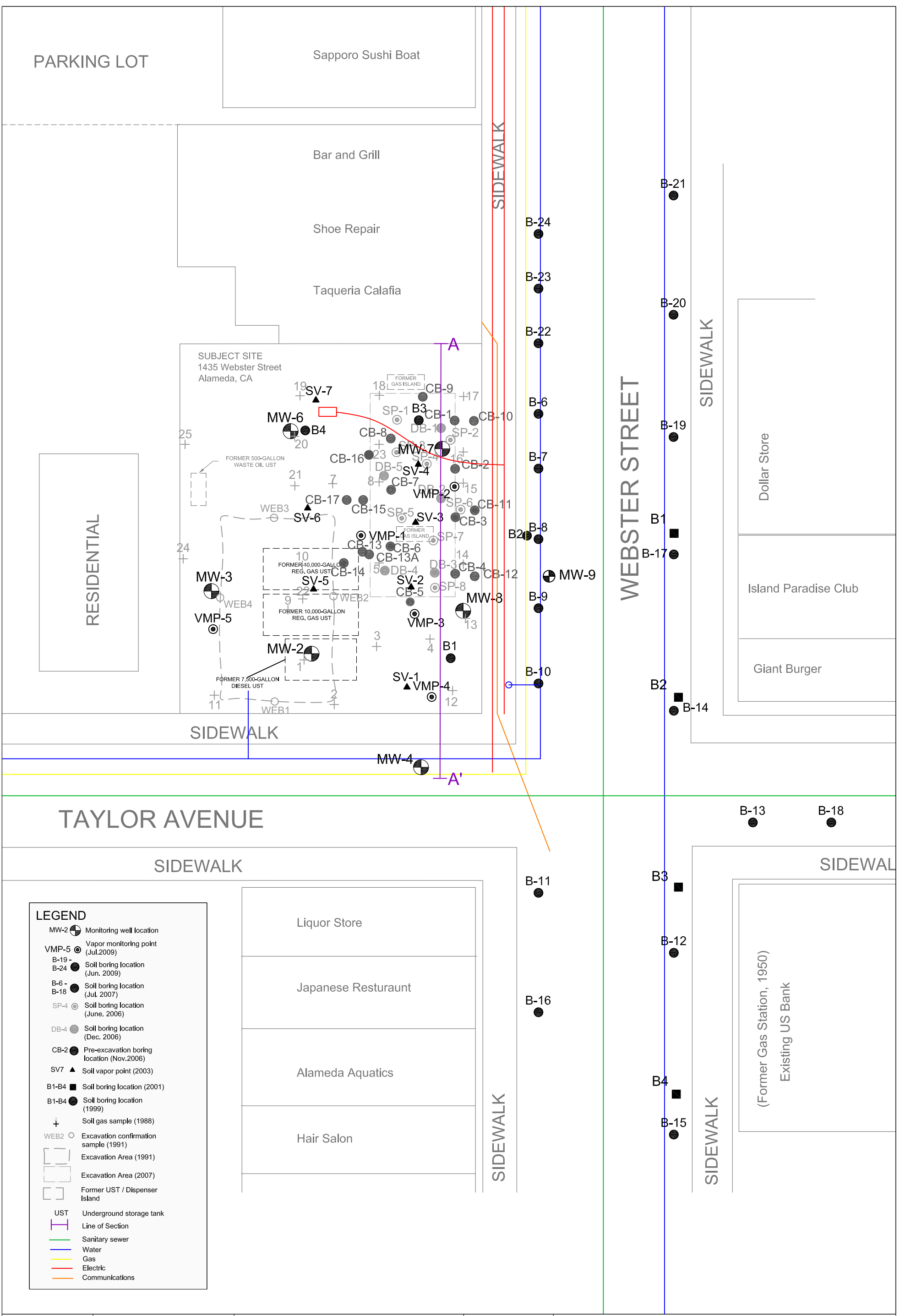
FIGURE

1

TITLE

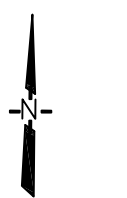
Vicinity Map

S:\1 Environmental_Development\Shelby\1435 Webster Alameda\1435 Webster Alameda\1435 Webster Alameda.dwg, 2/28/2011 2:20:07 PM, E:\shelby_tec\acurite



LEGEND

- MW-2 Monitoring well location
- VMP-5 Vapor monitoring point (Jul. 2009)
- B-19 - B-24 Soil boring location (Jun. 2009)
- B-6 - B-18 Soil boring location (Jul. 2007)
- SP-4 Soil boring location (June, 2006)
- DB-4 Soil boring location (Dec. 2006)
- CB-2 Pre-excavation boring location (Nov. 2006)
- SV7 Soil vapor point (2003)
- B1-B4 Soil boring location (2001)
- B1-B4 Soil boring location (1999)
- + Soil gas sample (1988)
- WEB2 Excavation confirmation sample (1991)
- Excavation Area (1991)
- Excavation Area (2007)
- Former UST / Dispenser Island
- UST Underground storage tank
- Line of Section
- Sanitary sewer
- Water
- Gas
- Electric
- Communications



0 15 30 SCALE (ft)
Revision: 0
Date: 2/28/2011
Drafted By: ES

TEC
ACCURITE




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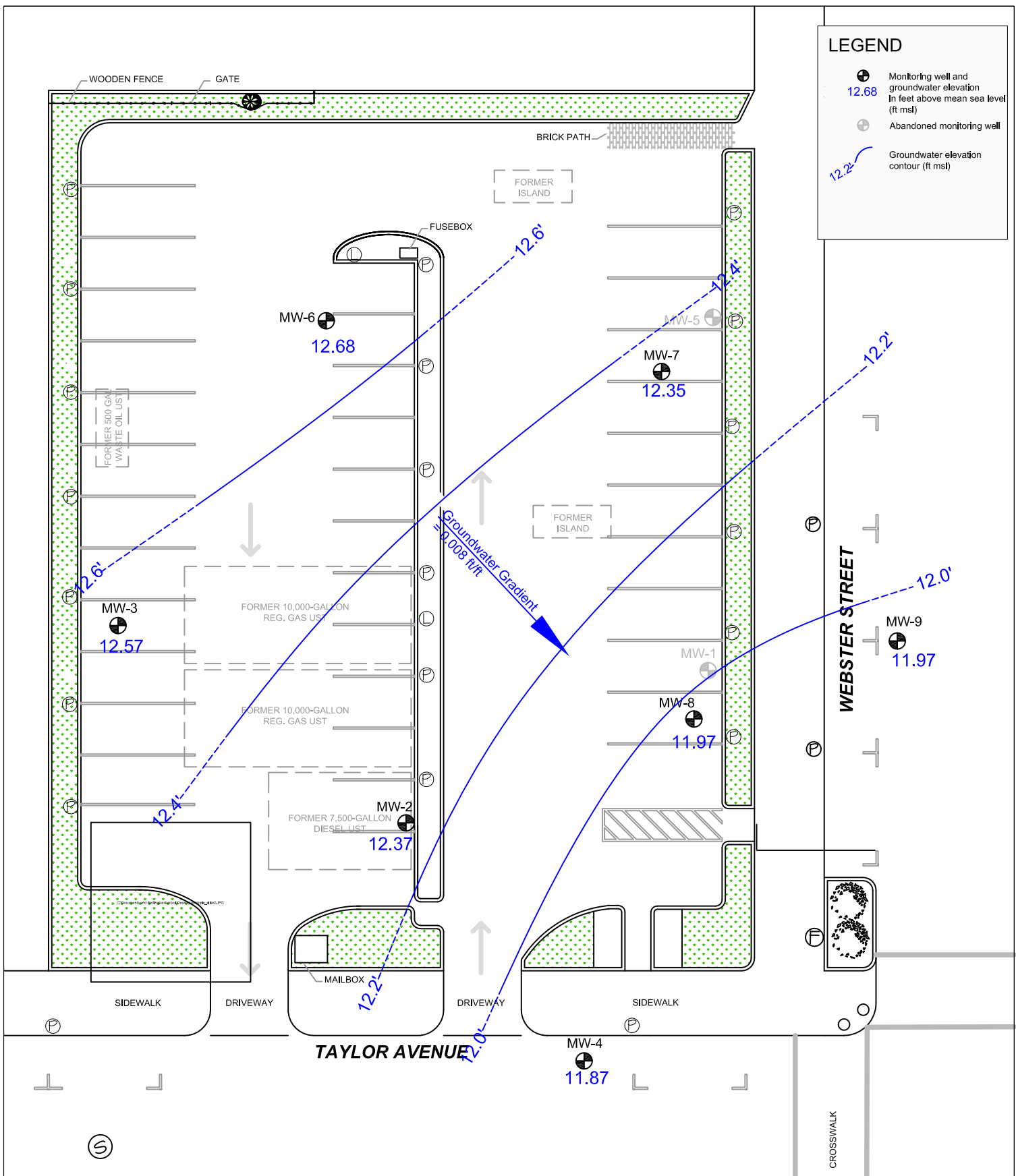
SITE
1435 Webster
Alameda, California

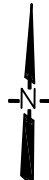
FIGURE
2

Site Map

LEGEND

-  Monitoring well and groundwater elevation in feet above mean sea level (ft msl)
-  Abandoned monitoring well
-  Groundwater elevation contour (ft msl)





0 10 20
SCALE (ft)

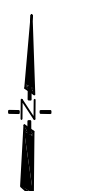
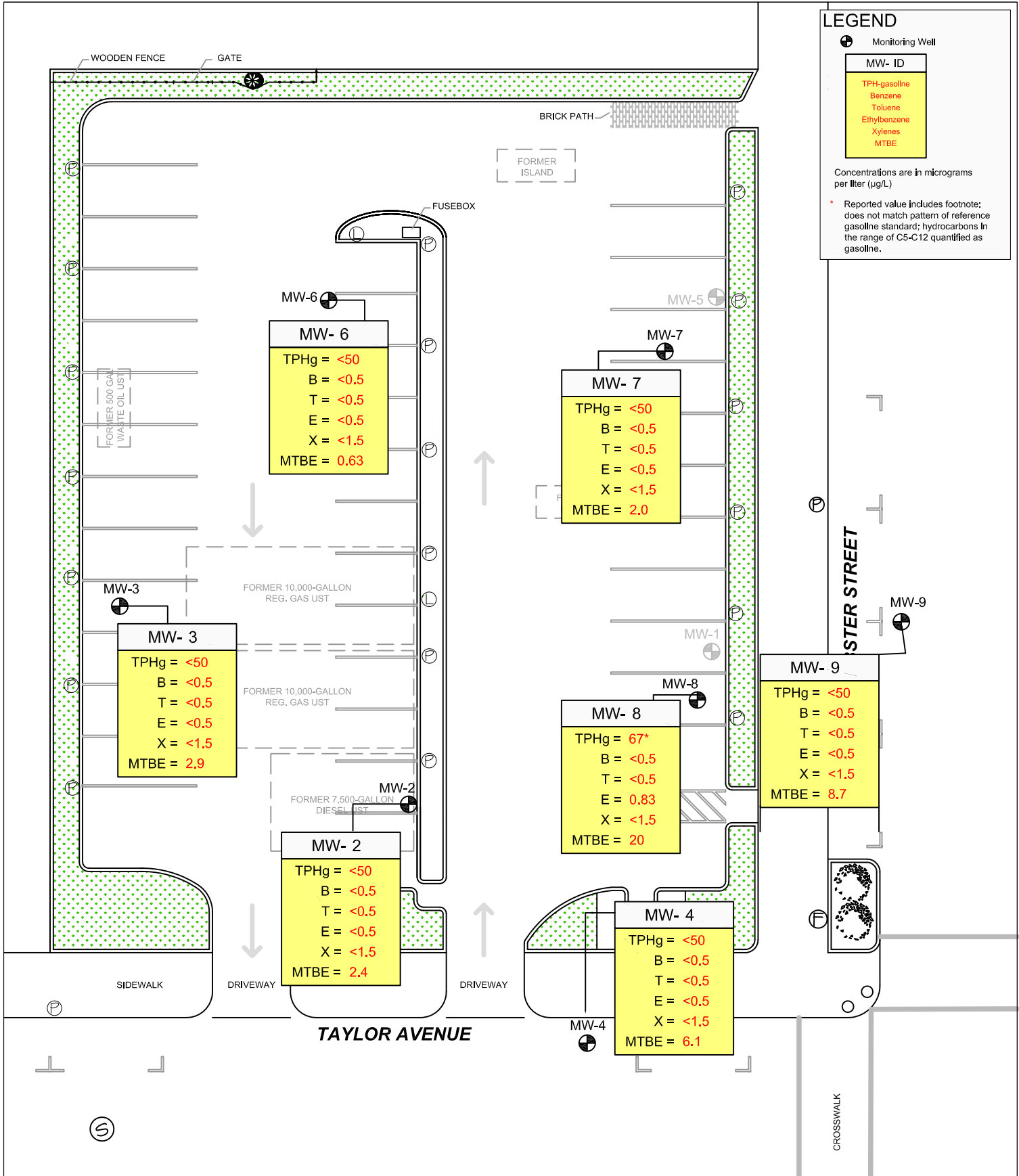
Revision:
Date: 10/7/2010
Drafted By: ES

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SITE
1435 Webster Street
Alameda, California

FIGURE
3

Groundwater Gradient Map
April 19, 2011



Revision:
Date: 4/28/2011
Drafted By: ES



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SITE
1435 Webster Street
Alameda, California

FIGURE
4

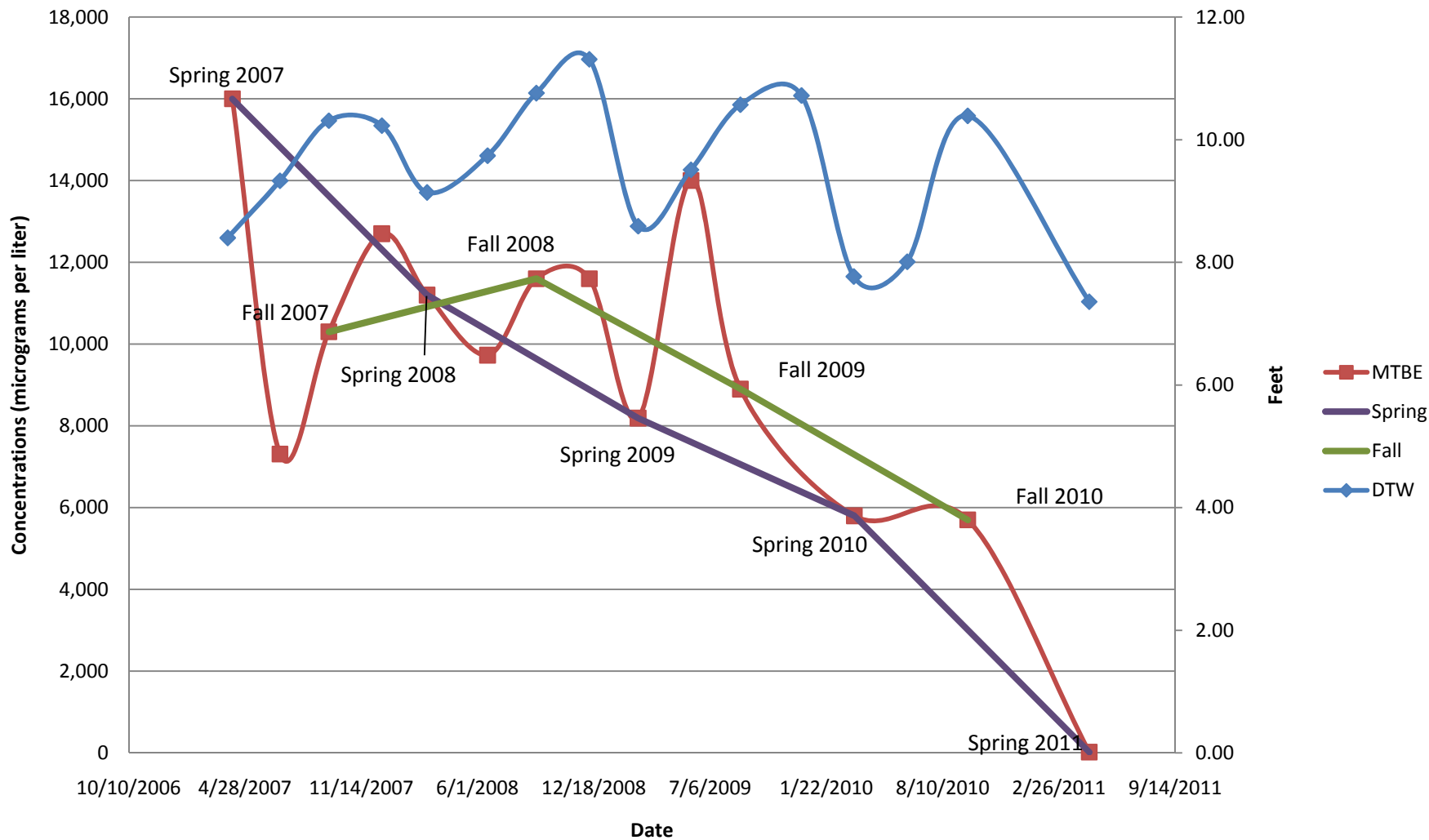
**Petroleum Hydrocarbons
in Groundwater**

April 2011

CHART

Chart 1

MTBE Concentration Trends and Depth to Water
1435 Webster Avenue, Alameda, California



ATTACHMENT A

CORRESPONDENCE

From: [Jakub, Barbara, Env. Health](#)
To: ["janeth@ogpinc.net"](mailto:janeth@ogpinc.net); ["jeff@main-main.com"](mailto:jeff@main-main.com);
cc: [Elise Sbarbori](#);
Subject: RO193, CAP addendum and baseline sampling
Date: Thursday, April 07, 2011 3:53:25 PM

Dear Ms. Heikel and Mr. Farrar,

I spoke with the consultant for the site, Elise Sbarbori, today about the recently submitted CAP Addendum. I requested that an evaluation of the pre-ISCO injection chromium levels be made before I approve the CAP and also requested that the baseline monitoring be performed during this monitoring event that way any modifications to the selected remedial option could be made before implementation. My understanding is that the sampling will be performed this month and the results should be available for review in approximately one month. I will hold off on further review of the CAP Addendum until I receive the results of the monitoring and subsequent evaluation of whether a contingency plan for Chromium is needed or if it is advisable to use a different remediation method.

Regards,

Barbara Jakub, P.G.
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Pky.
Alameda, CA 94502
Direct: 510-639-1287
Fax: 510-337-9335

PDF copies of case files can be downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>

ATTACHMENT B

FIELD DATA SHEETS



TEC ACCUTITE Well Data Sheet

Date: 4/19/11	Site Name: 1435 Webster	Project #: E-480-1-11	Sampler: BD
Event: SAMP / MAP	Site Address: Alameda	Client: Olympian	

WELL ID	TIME	MEASUREMENT					WELL DIAMETER	COMMENTS (i.e. pressurized or maintenance req.)
		DTP	PT	DTW	Historic DTB <small>date: 6/3/09</small>	Today's DTB		
MW-2	0835			7.43	19.42		2"	underwater
MW-3	0832			7.22	21.85		2"	
MW-4	0836			7.43	19.76		2"	
MW-6	0833			7.59	19.34		2"	
MW-7	0837			6.58	19.81		4"	
MW-8	0838			7.36	20.03		4"	pressurized
MW-9	0855			6.86	19.94		4"	

Abbreviations:

TEC Accutite Micro-Purging Field Data Sheet

Project Name: <u>1435 Wobbs Rd</u>	Purged by: <u>BD</u>	Well ID: <u>MW-2</u>
Client Name: <u>Olympian</u>	Sampled by: <u>BD</u>	Sample ID: <u>MW-2</u>
Site Location: <u>Alameda</u>	QA/QC Sample: <u>---</u>	
Date Purged: <u>4/19/11</u>	Start (2400hr): <u>1108</u>	End (2400hr): <u>1131</u>
Date Sampled: <u>4/19/11</u>	Well Head PID (ppm): <u>---</u>	Initial DTW (ft bgs): <u>7.45</u>
Casing Diameter (inch): <u>2"</u>	Well Integrity: <u>GOOD</u>	
Depth to Bottom (ft): <u>19.42</u>	Depth of Pump Intake (ft.) (zone of interest): <u>~15.00</u>	
Type of Purge Pump: <u>bladder</u>	Optimal Purge Rate (ml/min.): <u>170</u>	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
4/19/11	1114	1.80	17.66	638	6.22	6.62	152.4	clear	7.47
	1119	1.40	17.58	624	4.91	6.61	151.7	"	"
	1124	2.06	17.54	624	4.80	6.60	151.5	"	"
	1129	2.60	17.56	625	4.71	6.60	150.9	"	"

Sample Information

Sample DTW (ft): <u>7.47</u>	Sample Turbidity: <u>low</u>
Sampled with: <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Sample Time: <u>1131</u>
Odor: <u>none</u>	Sample Flow Rate (ml/min.): <u><100</u>
Sample Container/Preservative: <u>3VOA/HEI, 1 poly/none, 1 amber (125ml)/none</u>	
Lab Analysis: <u>8260, dissolved metals, hex. chrome, ferrous iron</u>	

Notes:

GUIDE: DTW = Depth to Water
 Lower pump and water level meter slowly into groundwater to reduce disturbing it.
 Don't let water table drop more than 0.3 feet while micro-purging.
 Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
 Parameters are stable when at least 3 consecutive readings within following ranges:

± 3% °C for Temp.	± 3% for conductivity	± 10% or ± 0.2 mg/l for DO
± 0.1 for pH units	± 20 mV or ORP	10% for turbidity where applicable

TEC Accutite Micro-Purging Field Data Sheet

Project Name: 1435 Webster	Purged by: BD	Well ID: MW-3
Client Name: Olympian	Sampled by: BD	Sample ID: MW-3
Site Location: Alameda		QA/QC Sample: ---
Date Purged: 4/19/11	Start (2400hr): 0946	End (2400hr): 1015
Date Sampled: 4/19/11	Well Head PID (ppm): ---	Initial DTW (ft bgs): 7.12
Casing Diameter (inch): 2"	Well Integrity: good	
Depth to Bottom (ft): 21.85	Depth of Pump Intake (ft.) (zone of interest): ~15.00	
Type of Purge Pump: bladder	Optimal Purge Rate (ml/min.): 120	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
4/19/11	0953	80	17.65	549	6.88	6.72	153.2	clear	7.28
	0958	1.40	17.76	546	6.48	6.70	152.4	"	"
	1003	2.00	17.85	545	6.29	6.66	152.2	"	"
	1008	2.60	17.95	543	6.21	6.65	152.4	"	"
	1013	3.20	18.04	537	6.10	6.65	152.5	"	"

Sample Information

Sample DTW (ft): 7.28	Sample Turbidity: low
Sampled with: <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Sample Time: 1015
Odor: none	Sample Flow Rate (ml/min.): <100
Sample Container/Preservative: 3 vials (HCl), 1 125ml amber/none, 1 poly/none	
Lab Analysis: 8260, dissolved metals, hex. chrome, ferrous iron	

Notes:

GUIDE: DTW = Depth to Water
 Lower pump and water level meter slowly into groundwater to reduce disturbing it.
 Don't let water table drop more than 0.3 feet while micro-purging.
 Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
 Parameters are stable when at least 3 consecutive readings within following ranges:
 ± 3% °C for Temp. ± 3% for conductivity ± 10% or ± 0.2 mg/l for DO
 ± 0.1 for pH units ± 20 mV or ORP 10% for turbidity where applicable

TEC Accutite Micro-Purging Field Data Sheet

Project Name: <u>435 Webster</u>	Purged by: <u>BR</u>	Well ID: <u>MW-4</u>
Client Name: <u>Olympian</u>	Sampled by: <u>BR</u>	Sample ID: <u>MW-4</u>
Site Location: <u>Alameda</u>	QA/QC Sample: ---	
Date Purged: <u>4/19/11</u>	Start (2400hr): <u>1142</u>	End (2400hr): <u>1207</u>
Date Sampled: <u>4/19/11</u>	Well Head PID (ppm): ---	Initial DTW (ft bgs): <u>7.22</u>
Casing Diameter (inch): <u>2"</u>	Well Integrity: <u>Good</u>	
Depth to Bottom (ft): <u>19.76</u>	Depth of Pump Intake (ft.) (zone of interest): <u>~12.00</u>	
Type of Purge Pump: <u>bladder</u>	Optimal Purge Rate (ml/min.): <u>100</u>	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
<u>4/19/11</u>	<u>1150</u>	<u>1.00</u>	<u>18.10</u>	<u>595</u>	<u>7.31</u>	<u>6.71</u>	<u>155.8</u>	<u>clear</u>	<u>7.35</u>
	<u>1155</u>	<u>1.30</u>	<u>18.20</u>	<u>583</u>	<u>6.51</u>	<u>6.70</u>	<u>151.5</u>	<u>"</u>	<u>7.31</u>
	<u>1200</u>	<u>1.80</u>	<u>18.35</u>	<u>585</u>	<u>6.43</u>	<u>6.71</u>	<u>151.6</u>	<u>"</u>	<u>7.39</u>
	<u>1205</u>	<u>2.30</u>	<u>18.37</u>	<u>586</u>	<u>6.33</u>	<u>6.70</u>	<u>152.1</u>	<u>"</u>	<u>7.40</u>

Sample Information

Sample DTW (ft): <u>7.40</u>	Sample Turbidity: <u>low</u>
Sampled with: <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Sample Time: <u>1207</u>
Odor: <u>None</u>	Sample Flow Rate (ml/min.): <u>400</u>
Sample Container/Preservative: <u>3 vials/HCl, 1 poly/none, 1 amber (125ml)/none</u>	
Lab Analysis: <u>8200, dissolved metals, hex. Chrome, ferrous iron</u>	

Notes:

GUIDE: DTW = Depth to Water
 Lower pump and water level meter slowly into groundwater to reduce disturbing it.
 Don't let water table drop more than 0.3 feet while micro-purging.
 Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
 Parameters are stable when at least 3 consecutive readings within following ranges:
 ± 3% °C for Temp. ± 3% for conductivity ± 10% or ± 0.2 mg/l for DO
 ± 0.1 for pH units ± 20 mV or ORP 10% for turbidity where applicable

**TEC Accutite
Micro-Purging Field Data Sheet**

Project Name: <u>1435 Webster</u>	Purged by: <u>BD</u>	Well ID: <u>MW-6</u>
Client Name: <u>Olympian</u>	Sampled by: <u>BD</u>	Sample ID: <u>MW-6</u>
Site Location: <u>Alameda</u>		QA/QC Sample: <u>---</u>
Date Purged: <u>4/19/11</u>	Start (2400hr): <u>1026</u>	End (2400hr): <u>1055</u>
Date Sampled: <u>4/19/11</u>	Well Head PID (ppm): <u>---</u>	Initial DTW (ft bgs): <u>7.48</u>
Casing Diameter (inch): <u>2"</u>	Well Integrity: <u>good</u>	
Depth to Bottom (ft): <u>19.34</u>	Depth of Pump Intake (ft.) (zone of interest): <u>~12.60</u>	
Type of Purge Pump: <u>bladder</u>	Optimal Purge Rate (ml/min.): <u>120</u>	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
4/19/11	1033	1.80	18.32	842	6.83	6.52	152.4	clear	7.65
	1038	1.30	18.36	847	6.09	6.56	151.9	"	"
	1043	1.80	18.37	847	5.89	6.51	152.0	"	"
	1048	2.30	18.36	849	5.75	6.52	152.0	"	"
	1053	2.80	18.33	835	5.68	6.52	152.3	"	"

Sample Information

Sample DTW (ft): <u>7.65</u>	Sample Turbidity: <u>low</u>
Sampled with: <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Sample Time: <u>1055</u>
Odor: <u>none</u>	Sample Flow Rate (ml/min.): <u><100</u>
Sample Container/Preservative: <u>3VOAS/HCl, 1 poly/none, 1 amber (125ml)/none</u>	
Lab Analysis: <u>8260, dissolved metals, hex. chrome, ferrous iron</u>	

Notes:

GUIDE: DTW = Depth to Water
 Lower pump and water level meter slowly into groundwater to reduce disturbing it.
 Don't let water table drop more than 0.3 feet while micro-purging.
 Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
 Parameters are stable when at least 3 consecutive readings within following ranges:
 ± 3% °C for Temp. ± 3% for conductivity ± 10% or ± 0.2 mg/l for DO
 ± 0.1 for pH units ± 20 mV or ORP 10% for turbidity where applicable

**TEC Accutite
Micro-Purging Field Data Sheet**

Project Name: <u>1435 Webster</u>	Purged by: <u>BD</u>	Well ID: <u>MW-7</u>
Client Name: <u>Olympian</u>	Sampled by: <u>BD</u>	Sample ID: <u>MW-7</u>
Site Location: <u>Alameda</u>		QA/QC Sample: <u>---</u>
Date Purged: <u>4/19/11</u>	Start (2400hr): <u>1250</u>	End (2400hr): <u>1313</u>
Date Sampled: <u>4/19/11</u>	Well Head PID (ppm): <u>---</u>	Initial DTW (ft bgs): <u>6.39</u>
Casing Diameter (inch): <u>4"</u>	Well Integrity: <u>Good</u>	
Depth to Bottom (ft): <u>19.81</u>	Depth of Pump Intake (ft.) (zone of interest): <u>~15.00</u>	
Type of Purge Pump: <u>bladder</u>	Optimal Purge Rate (ml/min.): <u>170</u>	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (μS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
<u>4/19/11</u>	<u>1300</u>	<u>0.80</u>	<u>20.22</u>	<u>2019</u>	<u>4.69</u>	<u>6.21</u>	<u>151.1</u>	<u>clear</u>	<u>6.49</u>
	<u>1305</u>	<u>1.50</u>	<u>19.90</u>	<u>2034</u>	<u>4.70</u>	<u>6.22</u>	<u>150.5</u>	<u>"</u>	<u>"</u>
	<u>1310</u>	<u>2.20</u>	<u>19.67</u>	<u>2038</u>	<u>4.68</u>	<u>6.23</u>	<u>150.1</u>	<u>"</u>	<u>"</u>

Sample Information

Sample DTW (ft): 6.49
Sampled with: Pump Bailer
Odor: None
Sample Container/Preservative: 3VOAS/HCl, 1 poly/none, 1 amber (125 ml)/none
Lab Analysis: 8260, dissolved metals, hex. chrome, Ferrous iron

Sample Turbidity: low
Sample Time: 1313
Sample Flow Rate (ml/min.): 100

Notes:

GUIDE: DTW = Depth to Water
Lower pump and water level meter slowly into groundwater to reduce disturbing it.
Don't let water table drop more than 0.3 feet while micro-purging.
Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
Parameters are stable when at least 3 consecutive readings within following ranges:
± 3% °C for Temp. ± 3% for conductivity ± 10% or ± 0.2 mg/l for DO
± 0.1 for pH units ± 20 mV or ORP 10% for turbidity where applicable

**TEC Accutite
Micro-Purging Field Data Sheet**

Project Name: 1435 Webster	Purged by: RD	Well ID: MW-8
Client Name: Olympian	Sampled by: BD	Sample ID: MW-8
Site Location: Alameda		QA/QC Sample: ---
Date Purged: 4/19/11	Start (2400hr): 1328	End (2400hr): 1352
Date Sampled: 4/19/11	Well Head PID (ppm): ---	Initial DTW (ft bgs): 6.67
Casing Diameter (inch): 4"	Well Integrity: good	
Depth to Bottom (ft): 20.03	Depth of Pump Intake (ft.) (zone of interest): ~15.00	
Type of Purge Pump: bladder	Optimal Purge Rate (ml/min.): 120	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
4/19/11	1334	.80	19.21	1105	5.79	6.38	129.4	clear	6.79
	1339	1.40	19.10	1041	4.09	6.35	123.9	"	"
	1344	2.00	18.94	999	3.95	6.33	118.2	"	"
	1349	2.60	18.90	991	3.88	6.33	116.2	"	"

Sample Information

Sample DTW (ft): 6.79	Sample Turbidity: low
Sampled with: <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Sample Time: 1352
Odor: moderate	Sample Flow Rate (ml/min.): <100
Sample Container/Preservative: 3 vials/HCl, 1 poly/none, 1 amber (125ml)/none	
Lab Analysis: 8260, dissolved metals, hex. chrome, ferrous iron	

Notes:

GUIDE: DTW = Depth to Water
 Lower pump and water level meter slowly into groundwater to reduce disturbing it.
 Don't let water table drop more than 0.3 feet while micro-purging.
 Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
 Parameters are stable when at least 3 consecutive readings within following ranges:

± 3% °C for Temp.	± 3% for conductivity	± 10% or ± 0.2 mg/l for DO
± 0.1 for pH units	± 20 mV or ORP	10% for turbidity where applicable

**TEC Accutite
Micro-Purging Field Data Sheet**

Project Name: 1435 Webster	Purged by: BD	Well ID: MW-9
Client Name: Olympian	Sampled by: BD	Sample ID: MW-9
Site Location: Alameda		QA/QC Sample: ---
Date Purged: 4/19/11	Start (2400hr): 0900	End (2400hr):
Date Sampled: 4/19/11	Well Head PID (ppm): ---	Initial DTW (ft bgs): 6.78
Casing Diameter (inch): 4"	Well Integrity: good	
Depth to Bottom (ft): 19.94	Depth of Pump Intake (ft.) (zone of interest): ~12.00	
Type of Purge Pump: bladder	Optimal Purge Rate (ml/min.): 120	

Field Measurements

Date (mm/dd/yy)	Time (2400hr)	Volume (liters)	Temp. (deg. C)	Conduct. (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Color (visual)	DTW (ft)
4/19/11	0906	.80	17.40	843	9.14	6.74	152.9	clear	6.88
	0911	1.40	17.74	834	8.75	6.78	152.0	"	6.91
	0916	2.00	17.92	832	8.70	6.77	152.0	"	"
	0921	2.60	18.00	845	8.59	6.77	152.5	"	"

Sample Information

Sample DTW (ft): 6.91	Sample Turbidity: low
Sampled with: <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Sample Time: 0923
Odor: none	Sample Flow Rate (ml/min.): <100
Sample Container/Preservative: 3 vials/HCl, 1 amber (105 mL) none, 1 poly/none	
Lab Analysis: 8260, dissolved metals, hex chrome, ferrous iron	

Notes:

GUIDE: DTW = Depth to Water
 Lower pump and water level meter slowly into groundwater to reduce disturbing it.
 Don't let water table drop more than 0.3 feet while micro-purging.
 Ideal purge rate is between 150 & 500 ml/min and ideal sample flow rate is 100 ml/min.
 Parameters are stable when at least 3 consecutive readings within following ranges:

± 3% °C for Temp.	± 3% for conductivity	± 10% or ± 0.2 mg/l for DO
± 0.1 for pH units	± 20 mV or ORP	10% for turbidity where applicable

ATTACHMENT C

LOW FLOW SAMPLING PROTOCOL

STANDARD OPERATING PROCEDURE FOR LOW FLOW PURGING AND SAMPLING OF GROUNDWATER MONITORING WELLS

This procedure is designed for taking representative groundwater samples from monitoring wells. The groundwater samples will be collected using low flow (minimal drawdown) purging and sampling methods as discussed in U.S. EPA, Ground Water Issue, Publication Number EPN540IS-951504, April 1996 by Puls, R.W. and M.J. Barcelona - "Low-Flow (Minimal Drawdown) Ground-water Sampling Procedures". This procedure is also similar to the ASTM D 6771-02 "Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigation". This practice does not address sampling of wells containing either light or dense non-aqueous-phase liquids (LNAPLs or DNAPLs); wells with LNAPL or DNAPL will not be sampled by the low flow purging and sampling method.

OBJECTIVE

The objective is to purge and sample the well so that the water that discharged from the pump, and subsequently collected, is representative of the formation water from an aquifer or shallow water bearing zone of interest.

WELL PREPARATION

Monitoring wells will be purged with an electronically controlled submersible bladder pump. The pump will be slowly lowered to the middle of, or slightly above, the screened interval. The submersible pump will be decontaminated before each use in each well with phosphate-free detergent, rinsing with potable water and rinsing with deionized water.

INITIAL PUMP FLOW TEST PROCEDURES

If possible, the optimum flow rate for each well will be established during well development or redevelopment or in advance of the actual purging and sampling event. The monitoring well will be gauged for depth to water prior to the installation of the bladder pump and before pumping of any water from the well. The measurement will be documented on a groundwater monitoring field data sheet. After pump installation, and confirmation that the static water level has returned to its original level (as determined prior to pump installation), the bladder pump will be started at a discharge rate between 0.1 to 0.5 liters per minute without any in-line flow cell connected. The water level in the well casing will be monitored continuously for any change from the original measurement. If significant drawdown is observed, the pump's flow rate will be incrementally reduced until the static water level drawdown ceases and stabilizes. Total drawdown from the initial (static) water level should not exceed 0.3 feet. Once the specific well's optimum flow rate, without an in-line flow cell connected, has been determined and documented, the in-line flow cell system will be connected to the well discharge. Control settings may require adjustment to achieve the well's optimum flow rate with the in-line flow cell connected. (Due to the system's back-pressure, the flow rate may decrease by 10-20%). All control settings shall be documented on the field data sheet as specific to that particular well's ID and will be utilized for its subsequent purging and sampling events.

PURGE AND SAMPLING EVENTS

Prior to the initiation of the bladder pump, the static water level will be measured, documented, and the bladder pump will be initiated, as described above. When the optimum pump flow rate has been established, the static water level drawdown has stabilized within the required range, and at least one

pump system volume (Flow cell volume + bladder volume + discharge tubing volume) has been purged, field measurements will be recorded for pH, temperature (T), conductivity (Ec), oxygen reduction potential (ORP), and dissolved oxygen (DO) using the in-line flow cell. All water chemistry field measurements will be documented on the gauging sheet. Measurements will be taken every three to five minutes until stabilization has been achieved. Stabilization is achieved after all parameters have stabilized for three consecutive readings. In lieu of measuring all five parameters, a minimum subset would include temperature, pH, conductivity and turbidity or dissolved oxygen. Three consecutive measurements indicating stability should be within:

- Temperature $\pm 3\%$ of reading (minimum of + 0.2 C) (with a maximum of $\pm 10\%$)
- pH ± 0.1 pH units, minimum
- Conductivity $\pm 3\%$
- Dissolved Oxygen (DO) ± 0.2 mg/L or $\pm 10\%$ of reading whichever is greater
- Redox (ORP) ± 20 mv

Equipment List:

The following equipment is needed to conduct low flow purging and sampling:

- Bladder pump temporarily or permanently installed within the well's screened interval
- Pump controller and air source
- In-line flow cell and meter(s) with connection fittings and tubing to measure water quality
- Water Level Probe or installed dedicated water level measurement system
- Sample containers appropriate for the analytical requirements prepared by the laboratory
- Field Measurement documentation forms
- Graduated cylinder or measuring cup
- 5 gallon bucket(s) for containerizing purge water
- Labeled 55 gallon drum(s) for storing purge water
- Stopwatch
- Sufficient cleaning and decontamination supplies

PROCEDURE

1. Regularly calibrate all field instruments per the instrument manufacturer's instructions. Record calibration data on the proper field instruments calibration documentation form.
2. Proceed to the first well scheduled to be sampled (typically the least contaminated). Make notes in the field log book describing the well condition and activity in the vicinity of the well. Decontaminate the portable water gauging probe, if necessary, by washing with phosphate-free detergent, rinsing with potable water and rinsing with deionized water.
3. Open the well boxes and remove the locking caps. Allow the liquid levels within the wells to equilibrate with ambient barometric conditions.
4. Measure the depth to water from the surveyed reference mark on the wellhead and record the measurement on the field datasheet. Lock the water level meter in place so that the level can be monitored during purging and sampling. When placing the probe in the well, take precautions to not disturb or agitate the water.
5. Connect the compressed air source's airline to the pump controller's "AIR IN" connection (If utilizing a gas-engine operated compressor, locate the compressor at least 25 feet, down wind from the wellhead), and connect the pump controller "AIR OUT" air-line to the bladder pump's air supply fitting at the wellhead.
6. Connect the pump discharge line to the in-line flow cell's "IN" fitting.
7. Connect the flow cell's "OUT" line and secure to drain the purge water into the purge water collection container.
8. Lower the bladder pump into the well to the middle of, or slightly above, the screened interval. When placing the pump in the well, take precautions to not disturb or agitate the water. Lock the pump in place.

9. Start the air supply to the pump. Set the pump controller settings to equal or less than the documented settings for the specific well. Modify the settings, as necessary to achieve the well's optimum flow rate. Connect the well discharge to the in-line flow cell and modify the flow rate as necessary.
10. Monitor the water level and confirm that the water level drawdown has stabilized within the well's allowable limits. Measure and record the depth to the pump intake, depth to groundwater when purging is terminated, and the depth to groundwater when the sample is collected.
11. After a single pump-system's volume (flow cell volume + bladder volume + discharge tubing volume) has been adequately purged, read and record water quality field measurements every three to five minutes.
12. Once three successive readings are taken within the limits listed above, disconnect the flow cell, and its tubing, from the pump discharge line before collecting samples. Decrease the pump rate to 100 milliliters per minute or less by lowering the controller's air pressure setting prior to collecting samples for volatiles. Place the samples in a cooler with sufficient ice.
13. Once samples for volatiles have been collected, re-establish pump flow rate to the optimal purge flow rate and collect remaining samples, if necessary.
14. When all sample containers have been filled, make a final measurement of the well's static water level and record the measurement on the field datasheet.
15. Measure and record total purge volume collected. Consolidate generated purge water.
16. Remove and decontaminate the Portable Water Level Probe with phosphate-free detergent, rinsing with potable water and rinsing with deionized water.
17. Disconnect the controller air supply to the pump.
18. Secure the pump's discharge adapter in the wellhead, if appropriate.
19. Secure the wellhead cover and secure with its lock, if appropriate. Move equipment to next well to be sampled.
20. At the end of the sampling event, clean and decontaminate the in-line flow cell and other equipment with phosphate-free detergent, rinsing with potable water and rinsing with deionized water.

ATTACHMENT D

LABORATORY REPORT AND
CHAIN-OF-CUSTODY DOCUMENTATION





Tec Accutite
262 Michelle Ct
South San Francisco, California 94080
Tel: (650) 616-1200
Fax: (650) 616-1244
Email: tecaccutite@gmail.com
RE: 1435 Webster

Work Order No.: 1104091

Dear Brian Doherty:

Torrent Laboratory, Inc. received 7 sample(s) on April 19, 2011 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

Patti Sandrock

April 26, 2011

Date



Date: 4/26/2011

Client: Tec Accutite

Project: 1435 Webster

Work Order: 1104091

CASE NARRATIVE

No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.



Sample Result Summary

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11

Date Reported: 04/26/11

MW-2

1104091-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	25	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	1.1	ug/L
MTBE	SW8260B	1	0.38	0.50	2.4	ug/L

MW-3

1104091-002

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	200	ug/L
Chromium (Dissolved)	SW6020	1	0.12	0.50	3.9	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	0.46	ug/L
Hexavalent Chromium	SW7199	1	0.42	0.50	5.0	ug/L
MTBE	SW8260B	1	0.38	0.50	2.9	ug/L

MW-4

1104091-003

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	9.3	ug/L
Chromium (Dissolved)	SW6020	1	0.12	0.50	5.2	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	0.69	ug/L
Hexavalent Chromium	SW7199	1	0.42	0.50	6.7	ug/L
MTBE	SW8260B	1	0.38	0.50	6.1	ug/L



Sample Result Summary

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11

Date Reported: 04/26/11

MW-6

1104091-004

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	9.9	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	1.1	ug/L
MTBE	SW8260B	1	0.38	0.50	0.63	ug/L

MW-7

1104091-005

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	1.5	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	1.4	ug/L
MTBE	SW8260B	1	0.38	0.50	2.0	ug/L

MW-8

1104091-006

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	2100	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	4.4	ug/L
MTBE	SW8260B	1	0.38	0.50	20	ug/L
Ethyl Benzene	SW8260B	1	0.15	0.50	0.83	ug/L
Ferrous Iron	H8146	1	0.1	0.1	1.2	mg/L
TPH(Gasoline)	8260TPH	1	22	50	67	ug/L



Sample Result Summary

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11

Date Reported: 04/26/11

MW-9

1104091-007

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Iron (Dissolved)	SW6020	1	1.0	1.0	4.8	ug/L
Arsenic (Dissolved)	SW6020	1	0.11	0.30	1.7	ug/L
MTBE	SW8260B	1	0.38	0.50	8.7	ug/L



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-2	Lab Sample ID:	1104091-001A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 11:31		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	25		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	ND		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	1.1		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	ND		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/20/11	1	0.38	0.50	2.4		ug/L	404662	NA
tert-Butanol	SW8260B	NA	04/20/11	1	1.5	5.0	ND		ug/L	404662	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/20/11	1	0.36	0.50	ND		ug/L	404662	NA
ETBE	SW8260B	NA	04/20/11	1	0.40	0.50	ND		ug/L	404662	NA
Benzene	SW8260B	NA	04/20/11	1	0.33	0.50	ND		ug/L	404662	NA
TAME	SW8260B	NA	04/20/11	1	0.32	0.50	ND		ug/L	404662	NA
Toluene	SW8260B	NA	04/20/11	1	0.19	0.50	ND		ug/L	404662	NA
Ethyl Benzene	SW8260B	NA	04/20/11	1	0.15	0.50	ND		ug/L	404662	NA
m,p-Xylene	SW8260B	NA	04/20/11	1	0.20	1.0	ND		ug/L	404662	NA
o-Xylene	SW8260B	NA	04/20/11	1	0.13	0.50	ND		ug/L	404662	NA
(S) Dibromofluoromethane	SW8260B	NA	04/20/11	1	61.2	131	97.3		%	404662	NA
(S) Toluene-d8	SW8260B	NA	04/20/11	1	75.1	127	82.7		%	404662	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/20/11	1	64.1	120	98.2		%	404662	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	ND		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/20/11	04/20/11	1	22	50	ND		ug/L	404662	2452
(S) 4-Bromofluorobenzene	8260TPH	4/20/11	04/20/11	1	34	114	92.3		%	404662	2452



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-3	Lab Sample ID:	1104091-002A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 10:15		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	200		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	3.9		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	0.46		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	5.0		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/20/11	1	0.38	0.50	2.9		ug/L	404662	NA
tert-Butanol	SW8260B	NA	04/20/11	1	1.5	5.0	ND		ug/L	404662	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/20/11	1	0.36	0.50	ND		ug/L	404662	NA
ETBE	SW8260B	NA	04/20/11	1	0.40	0.50	ND		ug/L	404662	NA
Benzene	SW8260B	NA	04/20/11	1	0.33	0.50	ND		ug/L	404662	NA
TAME	SW8260B	NA	04/20/11	1	0.32	0.50	ND		ug/L	404662	NA
Toluene	SW8260B	NA	04/20/11	1	0.19	0.50	ND		ug/L	404662	NA
Ethyl Benzene	SW8260B	NA	04/20/11	1	0.15	0.50	ND		ug/L	404662	NA
m,p-Xylene	SW8260B	NA	04/20/11	1	0.20	1.0	ND		ug/L	404662	NA
o-Xylene	SW8260B	NA	04/20/11	1	0.13	0.50	ND		ug/L	404662	NA
(S) Dibromofluoromethane	SW8260B	NA	04/20/11	1	61.2	131	103		%	404662	NA
(S) Toluene-d8	SW8260B	NA	04/20/11	1	75.1	127	82.3		%	404662	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/20/11	1	64.1	120	98.6		%	404662	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	ND		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/20/11	04/20/11	1	22	50	ND		ug/L	404662	2452
(S) 4-Bromofluorobenzene	8260TPH	4/20/11	04/20/11	1	34	114	90.9		%	404662	2452



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-4	Lab Sample ID:	1104091-003A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 12:07		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	9.3		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	5.2		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	0.69		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	6.7		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/20/11	1	0.38	0.50	6.1		ug/L	404662	NA
tert-Butanol	SW8260B	NA	04/20/11	1	1.5	5.0	ND		ug/L	404662	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/20/11	1	0.36	0.50	ND		ug/L	404662	NA
ETBE	SW8260B	NA	04/20/11	1	0.40	0.50	ND		ug/L	404662	NA
Benzene	SW8260B	NA	04/20/11	1	0.33	0.50	ND		ug/L	404662	NA
TAME	SW8260B	NA	04/20/11	1	0.32	0.50	ND		ug/L	404662	NA
Toluene	SW8260B	NA	04/20/11	1	0.19	0.50	ND		ug/L	404662	NA
Ethyl Benzene	SW8260B	NA	04/20/11	1	0.15	0.50	ND		ug/L	404662	NA
m,p-Xylene	SW8260B	NA	04/20/11	1	0.20	1.0	ND		ug/L	404662	NA
o-Xylene	SW8260B	NA	04/20/11	1	0.13	0.50	ND		ug/L	404662	NA
(S) Dibromofluoromethane	SW8260B	NA	04/20/11	1	61.2	131	94.7		%	404662	NA
(S) Toluene-d8	SW8260B	NA	04/20/11	1	75.1	127	84.9		%	404662	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/20/11	1	64.1	120	96.8		%	404662	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	ND		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/20/11	04/20/11	1	22	50	ND		ug/L	404662	2452
(S) 4-Bromofluorobenzene	8260TPH	4/20/11	04/20/11	1	34	114	89.7		%	404662	2452



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-6	Lab Sample ID:	1104091-004A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 10:55		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	9.9		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	ND		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	1.1		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	ND		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/20/11	1	0.38	0.50	0.63		ug/L	404662	NA
tert-Butanol	SW8260B	NA	04/20/11	1	1.5	5.0	ND		ug/L	404662	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/20/11	1	0.36	0.50	ND		ug/L	404662	NA
ETBE	SW8260B	NA	04/20/11	1	0.40	0.50	ND		ug/L	404662	NA
Benzene	SW8260B	NA	04/20/11	1	0.33	0.50	ND		ug/L	404662	NA
TAME	SW8260B	NA	04/20/11	1	0.32	0.50	ND		ug/L	404662	NA
Toluene	SW8260B	NA	04/20/11	1	0.19	0.50	ND		ug/L	404662	NA
Ethyl Benzene	SW8260B	NA	04/20/11	1	0.15	0.50	ND		ug/L	404662	NA
m,p-Xylene	SW8260B	NA	04/20/11	1	0.20	1.0	ND		ug/L	404662	NA
o-Xylene	SW8260B	NA	04/20/11	1	0.13	0.50	ND		ug/L	404662	NA
(S) Dibromofluoromethane	SW8260B	NA	04/20/11	1	61.2	131	92.7		%	404662	NA
(S) Toluene-d8	SW8260B	NA	04/20/11	1	75.1	127	83.4		%	404662	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/20/11	1	64.1	120	108		%	404662	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	ND		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/20/11	04/20/11	1	22	50	ND		ug/L	404662	2452
(S) 4-Bromofluorobenzene	8260TPH	4/20/11	04/20/11	1	34	114	84.1		%	404662	2452



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-7	Lab Sample ID:	1104091-005A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 13:13		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	1.5		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	ND		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	1.4		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	ND		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/20/11	1	0.38	0.50	2.0		ug/L	404662	NA
tert-Butanol	SW8260B	NA	04/20/11	1	1.5	5.0	ND		ug/L	404662	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/20/11	1	0.36	0.50	ND		ug/L	404662	NA
ETBE	SW8260B	NA	04/20/11	1	0.40	0.50	ND		ug/L	404662	NA
Benzene	SW8260B	NA	04/20/11	1	0.33	0.50	ND		ug/L	404662	NA
TAME	SW8260B	NA	04/20/11	1	0.32	0.50	ND		ug/L	404662	NA
Toluene	SW8260B	NA	04/20/11	1	0.19	0.50	ND		ug/L	404662	NA
Ethyl Benzene	SW8260B	NA	04/20/11	1	0.15	0.50	ND		ug/L	404662	NA
m,p-Xylene	SW8260B	NA	04/20/11	1	0.20	1.0	ND		ug/L	404662	NA
o-Xylene	SW8260B	NA	04/20/11	1	0.13	0.50	ND		ug/L	404662	NA
(S) Dibromofluoromethane	SW8260B	NA	04/20/11	1	61.2	131	94.5		%	404662	NA
(S) Toluene-d8	SW8260B	NA	04/20/11	1	75.1	127	79.0		%	404662	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/20/11	1	64.1	120	90.8		%	404662	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	ND		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/20/11	04/20/11	1	22	50	ND		ug/L	404662	2452
(S) 4-Bromofluorobenzene	8260TPH	4/20/11	04/20/11	1	34	114	86.0		%	404662	2452



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-8	Lab Sample ID:	1104091-006A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 13:52		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	2100		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	ND		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	4.4		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	ND		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/21/11	1	0.38	0.50	20		ug/L	404678	NA
tert-Butanol	SW8260B	NA	04/21/11	1	1.5	5.0	ND		ug/L	404678	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/21/11	1	0.36	0.50	ND		ug/L	404678	NA
ETBE	SW8260B	NA	04/21/11	1	0.40	0.50	ND		ug/L	404678	NA
Benzene	SW8260B	NA	04/21/11	1	0.33	0.50	ND		ug/L	404678	NA
TAME	SW8260B	NA	04/21/11	1	0.32	0.50	ND		ug/L	404678	NA
Toluene	SW8260B	NA	04/21/11	1	0.19	0.50	ND		ug/L	404678	NA
Ethyl Benzene	SW8260B	NA	04/21/11	1	0.15	0.50	0.83		ug/L	404678	NA
m,p-Xylene	SW8260B	NA	04/21/11	1	0.20	1.0	ND		ug/L	404678	NA
o-Xylene	SW8260B	NA	04/21/11	1	0.13	0.50	ND		ug/L	404678	NA
(S) Dibromofluoromethane	SW8260B	NA	04/21/11	1	61.2	131	94.9		%	404678	NA
(S) Toluene-d8	SW8260B	NA	04/21/11	1	75.1	127	79.4		%	404678	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/21/11	1	64.1	120	85.9		%	404678	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	1.2		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/21/11	04/21/11	1	22	50	67	x	ug/L	404678	2459
(S) 4-Bromofluorobenzene	8260TPH	4/21/11	04/21/11	1	34	114	103		%	404678	2459

NOTE: x - Does not match pattern of reference Gasoline standard. Hydrocarbons in the range of C5-C12 quantified as Gasoline.



SAMPLE RESULTS

Report prepared for: Brian Doherty
Tec Accutite

Date Received: 04/19/11
Date Reported: 04/26/11

Client Sample ID:	MW-9	Lab Sample ID:	1104091-007A
Project Name/Location:	1435 Webster	Sample Matrix:	Groundwater
Project Number:			
Date/Time Sampled:	04/19/11 / 9:23		
Tag Number:	1435 Webster		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Iron (Dissolved)	SW6020	NA	04/21/11	1	1.0	1.0	4.8		ug/L	404667	NA
Chromium (Dissolved)	SW6020	NA	04/21/11	1	0.12	0.50	ND		ug/L	404667	NA
Arsenic (Dissolved)	SW6020	NA	04/21/11	1	0.11	0.30	1.7		ug/L	404667	NA
Selenium (Dissolved)	SW6020	NA	04/21/11	1	0.083	1.0	ND		ug/L	404667	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Hexavalent Chromium	SW7199	NA	04/20/11	1	0.42	0.50	ND		ug/L	404702	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
MTBE	SW8260B	NA	04/20/11	1	0.38	0.50	8.7		ug/L	404662	NA
tert-Butanol	SW8260B	NA	04/20/11	1	1.5	5.0	ND		ug/L	404662	NA
Diisopropyl ether (DIPE)	SW8260B	NA	04/20/11	1	0.36	0.50	ND		ug/L	404662	NA
ETBE	SW8260B	NA	04/20/11	1	0.40	0.50	ND		ug/L	404662	NA
Benzene	SW8260B	NA	04/20/11	1	0.33	0.50	ND		ug/L	404662	NA
TAME	SW8260B	NA	04/20/11	1	0.32	0.50	ND		ug/L	404662	NA
Toluene	SW8260B	NA	04/20/11	1	0.19	0.50	ND		ug/L	404662	NA
Ethyl Benzene	SW8260B	NA	04/20/11	1	0.15	0.50	ND		ug/L	404662	NA
m,p-Xylene	SW8260B	NA	04/20/11	1	0.20	1.0	ND		ug/L	404662	NA
o-Xylene	SW8260B	NA	04/20/11	1	0.13	0.50	ND		ug/L	404662	NA
(S) Dibromofluoromethane	SW8260B	NA	04/20/11	1	61.2	131	99.7		%	404662	NA
(S) Toluene-d8	SW8260B	NA	04/20/11	1	75.1	127	83.6		%	404662	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	04/20/11	1	64.1	120	98.9		%	404662	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ferrous Iron	H8146	NA	04/19/11	1	0.1	0.1	ND		mg/L	404705	NA

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	4/20/11	04/20/11	1	22	50	ND		ug/L	404662	2452
(S) 4-Bromofluorobenzene	8260TPH	4/20/11	04/20/11	1	34	114	89.2		%	404662	2452



MB Summary Report

Work Order:	1104091	Prep Method:	5030	Prep Date:	04/20/11	Prep Batch:	2452
Matrix:	Water	Analytical Method:	8260TPH	Analyzed Date:	04/20/11	Analytical Batch:	404662
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	22	50	46	
(S) 4-Bromofluorobenzene			93.9	

Work Order:	1104091	Prep Method:	5030	Prep Date:	04/21/11	Prep Batch:	2459
Matrix:	Water	Analytical Method:	8260TPH	Analyzed Date:	04/21/11	Analytical Batch:	404678
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	22	50	37	
(S) 4-Bromofluorobenzene			115	

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/20/11	Analytical Batch:	404662
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	0.41	0.50	ND	
Chloromethane	0.41	0.50	ND	
Vinyl Chloride	0.37	0.50	ND	
Bromomethane	0.37	0.50	ND	
Trichlorofluoromethane	0.34	0.50	ND	
1,1-Dichloroethene	0.29	0.50	ND	
Freon 113	0.38	0.50	ND	
Methylene Chloride	0.18	5.0	ND	
trans-1,2-Dichloroethene	0.31	0.50	ND	
MTBE	0.38	0.50	ND	
tert-Butanol	1.5	5.0	ND	
Diisopropyl ether (DIPE)	0.36	0.50	ND	
1,1-Dichloroethane	0.28	0.50	ND	
ETBE	0.40	0.50	ND	
cis-1,2-Dichloroethene	0.33	0.50	ND	
2,2-Dichloropropane	0.37	0.50	ND	
Bromochloromethane	0.34	0.50	ND	
Chloroform	0.29	0.50	ND	
Carbon Tetrachloride	0.26	0.50	ND	



MB Summary Report

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/20/11	Analytical Batch:	404662
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
1,1,1-Trichloroethane	0.32	0.50	ND		
1,1-Dichloropropene	0.40	0.50	ND		
Benzene	0.33	0.50	ND		
TAME	0.32	0.50	ND		
1,2-Dichloroethane	0.28	0.50	ND		
Trichloroethylene	0.38	0.50	ND		
Dibromomethane	0.21	0.50	ND		
1,2-Dichloropropane	0.37	0.50	ND		
Bromodichloromethane	0.23	0.50	ND		
2-Chloroethyl vinyl ether	0.91	2.0	ND		
cis-1,3-Dichloropropene	0.30	0.50	ND		
Toluene	0.19	0.50	ND		
Tetrachloroethylene	0.15	0.50	ND		
trans-1,3-Dichloropropene	0.20	0.50	ND		
1,1,2-Trichloroethane	0.20	0.50	ND		
Dibromochloromethane	0.21	0.50	ND		
1,3-Dichloropropane	0.18	0.50	ND		
1,2-Dibromoethane	0.19	0.50	ND		
Chlorobenzene	0.14	0.50	ND		
Ethyl Benzene	0.15	0.50	ND		
1,1,1,2-Tetrachloroethane	0.10	0.50	ND		
m,p-Xylene	0.20	1.0	ND		
o-Xylene	0.13	0.50	ND		
Styrene	0.20	0.50	ND		
Bromoform	0.45	1.0	ND		
Isopropyl Benzene	0.28	0.50	ND		
Bromobenzene	0.39	0.50	ND		
1,1,2,2-Tetrachloroethane	0.26	0.50	ND		
n-Propylbenzene	0.30	0.50	ND		
2-Chlorotoluene	0.33	0.50	ND		
1,3,5-Trimethylbenzene	0.20	0.50	ND		
4-Chlorotoluene	0.32	0.50	ND		
tert-Butylbenzene	0.29	0.50	ND		
1,2,3-Trichloropropane	0.59	1.0	ND		
1,2,4-Trimethylbenzene	0.33	0.50	ND		
sec-Butyl Benzene	0.24	0.50	ND		
p-Isopropyltoluene	0.25	0.50	ND		
1,3-Dichlorobenzene	0.31	0.50	ND		
1,4-Dichlorobenzene	0.37	0.50	ND		
n-Butylbenzene	0.32	0.50	ND		
1,2-Dichlorobenzene	0.39	0.50	ND		



MB Summary Report

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/20/11	Analytical Batch:	404662
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
1,2-Dibromo-3-Chloropropane	0.45	1.0	ND		
Hexachlorobutadiene	0.22	0.50	ND		
1,2,4-Trichlorobenzene	0.48	1.0	ND		
Naphthalene	0.57	1.0	ND		
1,2,3-Trichlorobenzene	0.52	1.0	ND		
Ethanol	100	100	ND	TIC	
(S) Dibromofluoromethane			88.3		
(S) Toluene-d8			85.4		
(S) 4-Bromofluorobenzene			91.7		

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW6020	Analyzed Date:	04/21/11	Analytical Batch:	404667
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Iron (Dissolved)	1.0	1.0	ND		
Chromium (Dissolved)	0.12	0.50	ND		
Arsenic (Dissolved)	0.11	0.30	0.27		
Selenium (Dissolved)	0.083	1.0	ND		



MB Summary Report

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/21/11	Analytical Batch:	404678
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	0.41	0.50	ND		
Chloromethane	0.41	0.50	ND		
Vinyl Chloride	0.37	0.50	ND		
Bromomethane	0.37	0.50	ND		
Trichlorofluoromethane	0.34	0.50	ND		
1,1-Dichloroethene	0.29	0.50	ND		
Freon 113	0.38	0.50	ND		
Methylene Chloride	0.18	5.0	ND		
trans-1,2-Dichloroethene	0.31	0.50	ND		
MTBE	0.38	0.50	ND		
tert-Butanol	1.5	5.0	ND		
Diisopropyl ether (DIPE)	0.36	0.50	ND		
1,1-Dichloroethane	0.28	0.50	ND		
ETBE	0.40	0.50	ND		
cis-1,2-Dichloroethene	0.33	0.50	ND		
2,2-Dichloropropane	0.37	0.50	ND		
Bromochloromethane	0.34	0.50	ND		
Chloroform	0.29	0.50	ND		
Carbon Tetrachloride	0.26	0.50	ND		
1,1,1-Trichloroethane	0.32	0.50	ND		
1,1-Dichloropropene	0.40	0.50	ND		
Benzene	0.33	0.50	ND		
TAME	0.32	0.50	ND		
1,2-Dichloroethane	0.28	0.50	ND		
Trichloroethylene	0.38	0.50	ND		
Dibromomethane	0.21	0.50	ND		
1,2-Dichloropropane	0.37	0.50	ND		
Bromodichloromethane	0.23	0.50	ND		
2-Chloroethyl vinyl ether	0.91	2.0	ND		
cis-1,3-Dichloropropene	0.30	0.50	ND		
Toluene	0.19	0.50	ND		
Tetrachloroethylene	0.15	0.50	ND		
trans-1,3-Dichloropropene	0.20	0.50	ND		
1,1,2-Trichloroethane	0.20	0.50	ND		
Dibromochloromethane	0.21	0.50	ND		
1,3-Dichloropropane	0.18	0.50	ND		
1,2-Dibromoethane	0.19	0.50	ND		
Chlorobenzene	0.14	0.50	ND		
Ethyl Benzene	0.15	0.50	ND		
1,1,1,2-Tetrachloroethane	0.10	0.50	ND		
m,p-Xylene	0.20	1.0	ND		



MB Summary Report

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/21/11	Analytical Batch:	404678
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
o-Xylene	0.13	0.50	ND		
Styrene	0.20	0.50	ND		
Bromoform	0.45	1.0	ND		
Isopropyl Benzene	0.28	0.50	ND		
Bromobenzene	0.39	0.50	ND		
1,1,2,2-Tetrachloroethane	0.26	0.50	ND		
n-Propylbenzene	0.30	0.50	ND		
2-Chlorotoluene	0.33	0.50	ND		
1,3,5-Trimethylbenzene	0.20	0.50	ND		
4-Chlorotoluene	0.32	0.50	ND		
tert-Butylbenzene	0.29	0.50	ND		
1,2,3-Trichloropropane	0.59	1.0	ND		
1,2,4-Trimethylbenzene	0.33	0.50	ND		
sec-Butyl Benzene	0.24	0.50	ND		
p-Isopropyltoluene	0.25	0.50	ND		
1,3-Dichlorobenzene	0.31	0.50	ND		
1,4-Dichlorobenzene	0.37	0.50	ND		
n-Butylbenzene	0.32	0.50	ND		
1,2-Dichlorobenzene	0.39	0.50	ND		
1,2-Dibromo-3-Chloropropane	0.45	1.0	ND		
Hexachlorobutadiene	0.22	0.50	ND		
1,2,4-Trichlorobenzene	0.48	1.0	ND		
Naphthalene	0.57	1.0	ND		
1,2,3-Trichlorobenzene	0.52	1.0	ND		
Ethanol	100	100	ND	TIC	
(S) Dibromofluoromethane			81.2		
(S) Toluene-d8			85.1		
(S) 4-Bromofluorobenzene			89.6		

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW7199	Analyzed Date:	04/20/11	Analytical Batch:	404702
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	0.42	0.50	ND		



MB Summary Report

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	H8146	Analyzed Date:	04/19/11	Analytical Batch:	404705
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Ferrous Iron	0.1	0.1	ND		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1104091	Prep Method:	5030	Prep Date:	04/20/11	Prep Batch:	2452
Matrix:	Water	Analytical Method:	8260TPH	Analyzed Date:	04/20/11	Analytical Batch:	404662
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	22	50	46	227.27	108	112	3.82	52.4 - 127	30	
(S) 4-Bromofluorobenzene			93.9	11.36	101	70.8		58.4 - 133		

Work Order:	1104091	Prep Method:	5030	Prep Date:	04/21/11	Prep Batch:	2459
Matrix:	Water	Analytical Method:	8260TPH	Analyzed Date:	04/21/11	Analytical Batch:	404678
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	22	50	37	227.27	122	90.5	29.6	52.4 - 127	30	
(S) 4-Bromofluorobenzene			115	11.36	112	120		58.4 - 133		

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/20/11	Analytical Batch:	404662
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.29	0.50	ND	17.04	103	100	2.76	61.4 - 129	30	
Benzene	0.33	0.50	ND	17.04	98.2	99.3	1.31	66.9 - 140	30	
Trichloroethylene	0.38	0.50	ND	17.04	105	99.9	5.54	69.3 - 144	30	
Toluene	0.19	0.50	ND	17.04	95.8	97.9	2.36	76.6 - 123	30	
Chlorobenzene	0.14	0.50	ND	17.04	93.6	97.1	3.38	73.9 - 137	30	
(S) Dibromofluoromethane			ND	11.36	82.7	87.1		61.2 - 131		
(S) Toluene-d8			ND	11.36	83.8	86.6		75.1 - 127		
(S) 4-Bromofluorobenzene			ND	11.36	112	118		64.1 - 120		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW6020	Analyzed Date:	04/21/11	Analytical Batch:	404667
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Iron (Dissolved)	1.0	1.0	ND	50	116	117	1.00	80 - 120	20	
Chromium (Dissolved)	0.12	0.50	ND	50	96.0	91.6	4.67	80 - 120	20	
Arsenic (Dissolved)	0.11	0.30	0.27	50	93.9	92.0	2.14	80 - 120	20	
Selenium (Dissolved)	0.083	1.0	ND	50	108	104	3.98	80 - 120	20	

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	04/21/11	Analytical Batch:	404678
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.29	0.50	ND	17.04	91.4	86.4	5.80	61.4 - 129	30	
Benzene	0.33	0.50	ND	17.04	90.0	76.5	15.9	66.9 - 140	30	
Trichloroethylene	0.38	0.50	ND	17.04	108	89.3	18.4	69.3 - 144	30	
Toluene	0.19	0.50	ND	17.04	108	92.8	15.1	76.6 - 123	30	
Chlorobenzene	0.14	0.50	ND	17.04	115	97.8	16.7	73.9 - 137	30	
(S) Dibromofluoromethane			ND	11.36	74.1	77.6		61.2 - 131		
(S) Toluene-d8			ND	11.36	79.8	81.7		75.1 - 127		
(S) 4-Bromofluorobenzene			ND	11.36	83.2	82.1		64.1 - 120		

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW7199	Analyzed Date:	04/20/11	Analytical Batch:	404702
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	0.42	0.50	ND	10	96.6	95.2	1.49	90 - 110	15	



MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	SW7199	Analyzed Date:	04/20/11	Analytical Batch:	404702
Spiked Sample:	1104091-001A						
Units:	ug/L						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	0.42	0.50	0	10	110	113	2.75	85 - 115	20	



Duplicate QC Summary Report

Work Order:	1104091	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Water	Analytical Method:	H8146	Analyzed Date:	04/19/11	Analytical Batch:	404705
Units:						Lab Sample ID:	1104091-001A-Dup

<u>Parameters</u>	<u>MDL</u>	<u>PQL</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>% RPD</u>	
Ferrous Iron	0.1	0.1	0.020	0.040	66.7	

Raw values are used in quality control assessment.



Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit (PQL) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - mg/L and mg/Kg (equivalent to PPM - parts per million in liquid and solid), ug/L and ug/Kg (equivalent to PPB - parts per billion in liquid and solid), ug/m³ , mg.m³ , ppbv and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Wipe (concentration found on the surface of a single Wipe usually taken over a 100cm ² surface)

LABORATORY QUALIFIERS:

<p>B - Indicates when the analyte is found in the associated method or preparation blank</p> <p>D - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p>E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.</p> <p>H- Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p>J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p>NA - Not Analyzed</p> <p>N/A - Not Applicable</p> <p>NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added</p> <p>R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p>S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative</p> <p>X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.</p>



Sample Receipt Checklist

Client Name: Tec Accutite

Date and Time Received: 4/19/2011 16:40

Project Name: 1435 Webster

Received By: NG

Work Order No.: 1104091

Physically Logged By: NG

Checklist Completed By: NG

Carrier Name: Gold Bullet Courier

Chain of Custody (COC) Information

Chain of custody present? Yes
Chain of custody signed when relinquished and received? Yes
Chain of custody agrees with sample labels? Yes
Custody seals intact on sample bottles? Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler? Not Present
Shipping Container/Cooler In Good Condition? Yes
Samples in proper container/bottle? Yes
Samples containers intact? Yes
Sufficient sample volume for indicated test? Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes
Container/Temp Blank temperature in compliance? Yes Temperature: 7 °C
Water-VOA vials have zero headspace? Yes
Water-pH acceptable upon receipt?

pH Checked by:

pH Adjusted by:



Login Summary Report

Client ID:	TL5132	Tec Accutite	QC Level:
Project Name:	1435 Webster		TAT Requested: 5+ day:0
Project # :			Date Received: 4/19/2011
Report Due Date:	4/26/2011		Time Received: 16:40
Comments:	5 DAY TAT!! 7 waters rec'd @ 7°C for Ferrous Iron, Hex Chrome, Dissolved Metals (Fe, Cr, Se, As), TPHG, BTEX/Oxys! Report to Brian. Need EDF!		
Work Order # :	1104091		

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
1104091-001A	MW-2	04/19/11 11:31	Water	06/03/11			W_8260Pet EDF W_6020_D W_Ferrous Iron W_7199CrVI W_GCMS-GRO	
Sample Note: TPHg,BTEX,Oxys,6020 Diss (Fe,Cr,Se,As),Cr6,Ferrous iron for all samples.								
1104091-002A	MW-3	04/19/11 10:15	Water	06/03/11			W_8260Pet W_GCMS-GRO W_7199CrVI W_Ferrous Iron W_6020_D	
1104091-003A	MW-4	04/19/11 12:07	Water	06/03/11			W_8260Pet W_7199CrVI W_Ferrous Iron W_6020_D W_GCMS-GRO	
1104091-004A	MW-6	04/19/11 10:55	Water	06/03/11			W_8260Pet W_7199CrVI W_Ferrous Iron W_GCMS-GRO W_6020_D	
1104091-005A	MW-7	04/19/11 13:13	Water	06/03/11			W_8260Pet W_6020_D W_Ferrous Iron W_7199CrVI W_GCMS-GRO	
1104091-006A	MW-8	04/19/11 13:52	Water	06/03/11			W_8260Pet W_6020_D W_GCMS-GRO	



Login Summary Report

Client ID:	TL5132	Tec Accutite	QC Level:
Project Name:	1435 Webster		TAT Requested: 5+ day:0
Project # :			Date Received: 4/19/2011
Report Due Date:	4/26/2011		Time Received: 16:40
Comments:	5 DAy TAT!! 7 waters rec'd @ 7'C for Ferrous Iron, Hex Chrome, Dissolved Metals (Fe, Cr, Se, As), TPHG, BTEX/Oxys! Report to Brian. Need EDF!		
Work Order # :	1104091		

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
1104091-007A	MW-9	04/19/11 9:23	Water	06/03/11			W_7199CrVI W_Ferrous Iron W_8260Pet W_GCMS-GRO W_Ferrous Iron W_7199CrVI W_6020_D	



262 Michelle Court
 South San Francisco, CA 94080
 Ph No.: (650)616 1200, Fax No.: (650)616 1244

CHAIN OF CUSTODY

Lab Work Order #: 1104091

Project Name: 1435 Webster		Report to: <u>Brian</u>		Analysis Required						Turn-around Time (work days)								
Project Address: 1435 Webster St. Alameda, CA		Bill to: TEC Accutite (650) 616-1200		8260 TPHg BTEX oxygenates	6020B Dissolved metals (including Fe, Cr, Se, As)	7196 Hex. Chromium	SM3500D Ferrous Iron					ASAP	1 Day	2 Days	3 Days			
Global ID: T0600100766		PO #: <u>18962</u>										5 Days	10 Days	Other:	Sample Type			
Sampler: BD Date: <u>4/19/11</u>				ground water														
Field Point ID		Sample Matrix		Container Type		Sample Date & Time		Report Format										
								EDF										
								Remarks										
MW-2	MW-2	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>1131</u>	✓	✓	✓	✓							Run to ESLs	<u>001A</u>	
MW-3	MW-3	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>1015</u>	✓	✓	✓	✓							* Please check hold times *	<u>002A</u>	
MW-4	MW-4	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>1207</u>	✓	✓	✓	✓								<u>003A</u>	
MW-6	MW-6	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>1055</u>	✓	✓	✓	✓								<u>004A</u>	
MW-7	MW-7	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>1313</u>	✓	✓	✓	✓								<u>005A</u>	
MW-8	MW-8	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>1357</u>	✓	✓	✓	✓								<u>006A</u>	
MW-9	MW-9	W	5	VOAs w/ HCl, poly, amber	<u>4/19/11</u> <u>0923</u>	✓	✓	✓	✓								<u>007A</u>	
<i>Temp: 7°C</i>																		

Relinquished by: <u>Brian Doherty</u>	Date: <u>4/19/11</u>	Time: <u>1505</u>	Received by: <u>CA</u>	Date: <u>4/19/11</u>	Time: <u>15:05</u>
Relinquished by: <u>CA</u>	Date: <u>4/19/11</u>	Time: <u>1640</u>	Received by: <u>NAVIN G. S. Ghodasara</u>	Date: <u>4/19/11</u>	Time: <u>16:40</u>

GB

ATTACHMENT E

GEOTRACKER SUBMISSION CONFIRMATIONS



STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

<u>Submittal Type:</u>	EDF - Monitoring Report - Semi-Annually
<u>Submittal Title:</u>	2011 SAMR1 Monitoring Report
<u>Facility Global ID:</u>	T0600100766
<u>Facility Name:</u>	OLYMPIAN #112
<u>File Name:</u>	TEC Accutite 1104091 1435 Webster EDF.zip
<u>Organization Name:</u>	TEC Accutite
<u>Username:</u>	TEC-OLYMPIAN
<u>IP Address:</u>	67.126.45.211
<u>Submittal Date/Time:</u>	5/10/2011 10:59:02 AM
<u>Confirmation Number:</u>	8660537004

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UPLOADING A GEO_WELL FILE

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<u>Submittal Type:</u>	GEO_WELL
<u>Submittal Title:</u>	2011 SA1 Monitoring Report
<u>Facility Global ID:</u>	T0600100766
<u>Facility Name:</u>	OLYMPIAN #112
<u>File Name:</u>	GEO_WELL.zip
<u>Organization Name:</u>	TEC Accutite
<u>Username:</u>	TEC-OLYMPIAN
<u>IP Address:</u>	67.126.45.211
<u>Submittal Date/Time:</u>	5/10/2011 11:03:24 AM
<u>Confirmation Number:</u>	6680741667

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