TEC Environmental
a division of **Technology, Engineering, & Construction, Inc.**
292 Michelle Court * So. San Francisco, CA 94080-6201 * www.tecenvironmental.com
Tel: (650) 616-1200 * Fax: (650) 616-1244 * Contractor's Lic. #762034

March 9, 2011

RECEIVED

3:57 pm, Mar 11, 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.**
262 Michelle Court • So. San Francisco, CA 94080-6201 • www.tecenvironmental.com
Tel: (650) 616-1200 • Fax: (650) 616-1244 • Contractor's Lic. #762034

March 8, 2011

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

SUBJECT: **CORRECTIVE ACTION PLAN ADDENDUM**

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 corrective action plan addendum 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.

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, P.O. Box 1701, Chico, California 95927
Mr. Ed Firestone, 775 Guinda Street, Palo Alto, California 94301
Mr. and Mrs. Charles A. & Ose M. Begley, 2592 Pine View Dr., Fortuna, California 95540

CORRECTIVE ACTION PLAN
ADDENDUM

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-496

REPORT DATE:

MARCH 8, 2011

TEC ENVIRONMENTAL

TABLE OF CONTENTS

1.0 INTRODUCTION

On behalf of Olympian JV, Technology, Engineering & Construction, Inc. (TEC) has completed this response to comments requested by the Alameda County Environmental Health Department (ACEHD) in response to the TEC-prepared Updated Site Conceptual Model, Health Risk Assessment, Feasibility Study, and Corrective Action Plan (CAP), date February 23, 2010. The ACEHD requested a cost comparision and estimated time frames for presented remedial options, including in-situ chemical oxidation (ISCO), dual-phase extraction (DPE) and monitored natural attenuation (MNA). In addition, ACEHD requested an updated preferential pathway study and a remediation performance monitoring schedule for proposed ISCO activities.

2.0 EVALUATION OF REMEDIAL OPTIONS

The CAP presented 3 feasible remedial alternatives for the site, including ISCO, DPE and MNA. A brief discussion of costs and time frame are presented below for each alternative and a summary is presented in Table 1.

2.1 Oxidizer Injection

The CAP concluded that ISCO would provide the fastest and least expensive alternative for remediating residual petroleum hydrocarbons at the site and to reach proposed clean-up goals. TEC estimates the cost to complete 2 rounds of chemical injection and complete pre- and post-injection monitoring would be approximately $88,000. If necessary, a third round of injection would cost an additional $37,000. Assuming proposed clean-up goals can be reached following two rounds of injection, the estimated time frame to reach clean-up goals would be 4 months. An additional year of rebound monitoring would be required following completion of injection activities.

2.2 Dual Phase Extraction/In-Situ Air Sparging

Based on anticipated installation and equipment rental/operating costs, TEC concluded that DPE would be the next most feasible alternative for reaching clean-up goals. A DPE system with in-situ air sparging (IAS), including treatment unit, trenching, additional well installation, three months of operation and system decommissioning, would cost approximately $113,000. Based on the estimated mass of residual petroleum hydrocarbons in the subsurface, TEC believes that the DPE/IAS system would require approximately three months of opertation to reach clean-up goals. However, assuming clean-up goals are not met within the first three months of operation, each additional month of operation would cost $16,000. The estimated time to reach clean-up goals using a DPE/IAS system would be at least 7 months. As with ISCO, an additional year of rebound monitoring would be required.

2.3 Monitored Natural Attenuation

Monitored natural attenuation ranked last in the proposed remedial alternatives due to the extensive time frame required to reach clean-up goals and cost. Based on an estimated minimum of 20 years to reach proposed clean-up goals, MNA would be in excess of $160,000.

2.0 PREFERENTIAL PATHWAYS

TEC contacted City of Alameda Public Works, East Bay Muncipal Utility District and Pacific Gas & Electric. In addition, TEC contracted California Utility Surveys of San Ramon, California to conduct a subsurface utility survey to identify the exact locations of utilities and laterals at the site and within 10 feet of the site in the public right of way.

Using the information provided by these sources, TEC has identified the following utilities in the site vicinity:

- City of Alameda
    - high voltage electric line is located 4 feet from the east property line at less than 3.5 ft bsg;
    - low voltage street lighting approximately 8 feet from the east property line at 2 to 3 ft bsg. This line powers lighting at the site and enters from the main line near the northeast corner of the property. The line traverses the site toward the southwest as shown on Figure 4;
    - sanitary sewer lateral located 40 feet from the east property line at 6 ft bsg; and
    - stormwater near the site flows along surface features (street gutter) before entering a storm drain located north of the site, near the intersection of Webster Street and Santa Clara Avenue.
- EBMUD – water line located approximately 20 feet from the east property line and 5 feet from the south property line. A truncated lateral is located near the southwest corner of the property. All water lines are located at a depth of 3.5 ft bsg
- PG&E – a natural gas supply line is located approximately 8 feet from the east property line at less than 3 ft bsg.
- A telephone/communication line is located 5.5 feet from the east property line at a depth of 2 to 3 ft bsg.

The locations of all identified utilities have been included on the site map, geologic cross section, and the map of proposed injection locations, included as Figures 2, 3 and 4 of this addendum report.

In addition to the utilities listed above, various shallow (less than 1 ft bsg) landscape irrigation lines were observed along the perimeter of the property.

Based on the proposed injection depth of 10 to 15 ft bsg and utilities located adjacent to the site have total depths of less than or equal to 3 ft bsg, it does not appear that chemical injection will endanger any underground utilities near the site nor will the utilities provide a preferential pathway for injected material. Target injection depths are depicted on the Figure 3.

3.0 GROUNDWATER AND VAPOR CONTAMINANT PLUME MONITORING

A performance monitoring schedule, including baseline sampling, injection events, co-injection sampling, co-injection monitoring, interim sampling, confirmation sampling, and proposed analyses, was presented in the CAP in Sections *7.2 Remediation Activities* and *7.3 Monitoring and Verification*. The sampling schedule has been modified to reduce costs and is presented in Table 2. The proposed modifications include elimination of soil vapor sampling during baseline sampling; target COCs were not detected during two rounds of soil vapor sampling. Additionally, TEC selected a limited number of monitoring points which will be representative of remedial progress, yet cost-effective, and reduced the number of soil and soil vapor samples originally proposed. Following completion of remedial action, all site groundwater wells should be monitored quarterly for at least one year to ensure hydrocarbon concentrations remain below cleanup goals (rebound monitoring).

4.0 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

Expires 2/29/2012

TABLES

Table 1
Costs and Timeframes of Remedial Alternatives
Former Olympian Service Station
1435 Webster Street
Alameda, California

DPE Cost Detail		Cost	Time
System Installation			
Project Management		$ 9,600.00	
Equipment installation		$ 5,000.00	
Electric service - City of Alameda		$ 5,000.00	
Air permit - CARB		$ 5,000.00	
Sewer permit		$ 2,000.00	
Subcontractor - well installation (DPE and IAS)		$ 10,000.00	
	subtotal	**$ 36,600.00**	**3 months**
Trench and Piping			
Crew		$ 4,500.00	
backhoe		$ 1,000.00	
piping		$ 500.00	
paving		$ 2,000.00	
fence		$ 3,000.00	
carbon		$ 6,000.00	
Manifiolds		$ 3,000.00	
	subtotal	**$ 20,000.00**	**2 weeks**
Operation & Maintenance - 3 months			
Project Management			
DPE/IAS system rental		$ 22,500.00	
Visits		$ 4,200.00	
Electricity		$ 1,500.00	
Sampling		$ 8,000.00	
	subtotal	**$ 36,200.00**	**3 months**
System Decommissioning			
Project Management		$ 9,600.00	
Equipment removal and system decommissioning		$ 5,000.00	
Subcontractor - remediation well abandonment		$ 3,000.00	
Confirmation Sampling		$ 3,000.00	
	subtotal	**$ 20,600.00**	**1 month**
	Grand Total	**$ 113,400.00**	**7+ months**
Costs for additional O&M (per month)		$ 15,900.00	
Additional DPE O&M Costs (beyond initial 3 months)			
Month 4		**$ 129,300.00**	
Month 5		**$ 145,200.00**	
Month 6		**$ 161,100.00**	

TEC ENVIRONMENTAL

Table 1
Costs and Timeframes of Remedial Alternatives
Former Olympian Service Station
1435 Webster Street
Alameda, California

ISCO Cost Detail		Cost	Time
Drilling and Injection			
Project Management		$ 2,400.00	
Permitting and USA - staff geo/eng		$ 600.00	
drilling permits - Alameda County		$ 300.00	
Subcontractor - drilling		$ 10,000.00	
drilling - project geologist		$ 5,300.00	
utility vehicle		$ 300.00	
drilling permits - Alameda County		$ 300.00	
		$ 5,000.00	
Subcontractor - chemical oxidant (transport and materials)			
	Sub-total	**$ 24,200.00**	2 months
Sampling			
Pre-injection baseline sampling			
Technician/equipment		$ 2,700.00	
Subcontractor - laboratory analysis		$ 3,400.00	
Injection sampling			
Technician/equipment		$ 2,700.00	
Subcontractor - laboratory analysis		$ 3,900.00	
Post-injection verification sampling			
Technician/equipment		$ 2,700.00	
Subcontractor - laboratory analysis		$ 11,300.00	2 months
	Sub-total	**$ 26,700.00**	
1st Round Injection and sampling		**$ 50,900.00**	**2 months**
2nd Round Injection and sampling		**$ 36,900.00**	**2 months**
	Grand Total	**$ 87,800.00**	**4 months**
Cost for 3rd Round Injection and Sampling		$ 36,900.00	
Total for 3 Rounds of Injection and Sampling		**$ 124,700.00**	

TEC ENVIRONMENTAL

Table 1
Costs and Timeframes of Remedial Alternatives
Former Olympian Service Station
1435 Webster Street
Alameda, California

MNA Cost Detail	Cost	Time
Annual Monitoring and Report		
20 Annual Groundwater monitoring and reporting events	**$ 160,000.00**	**20 Years**

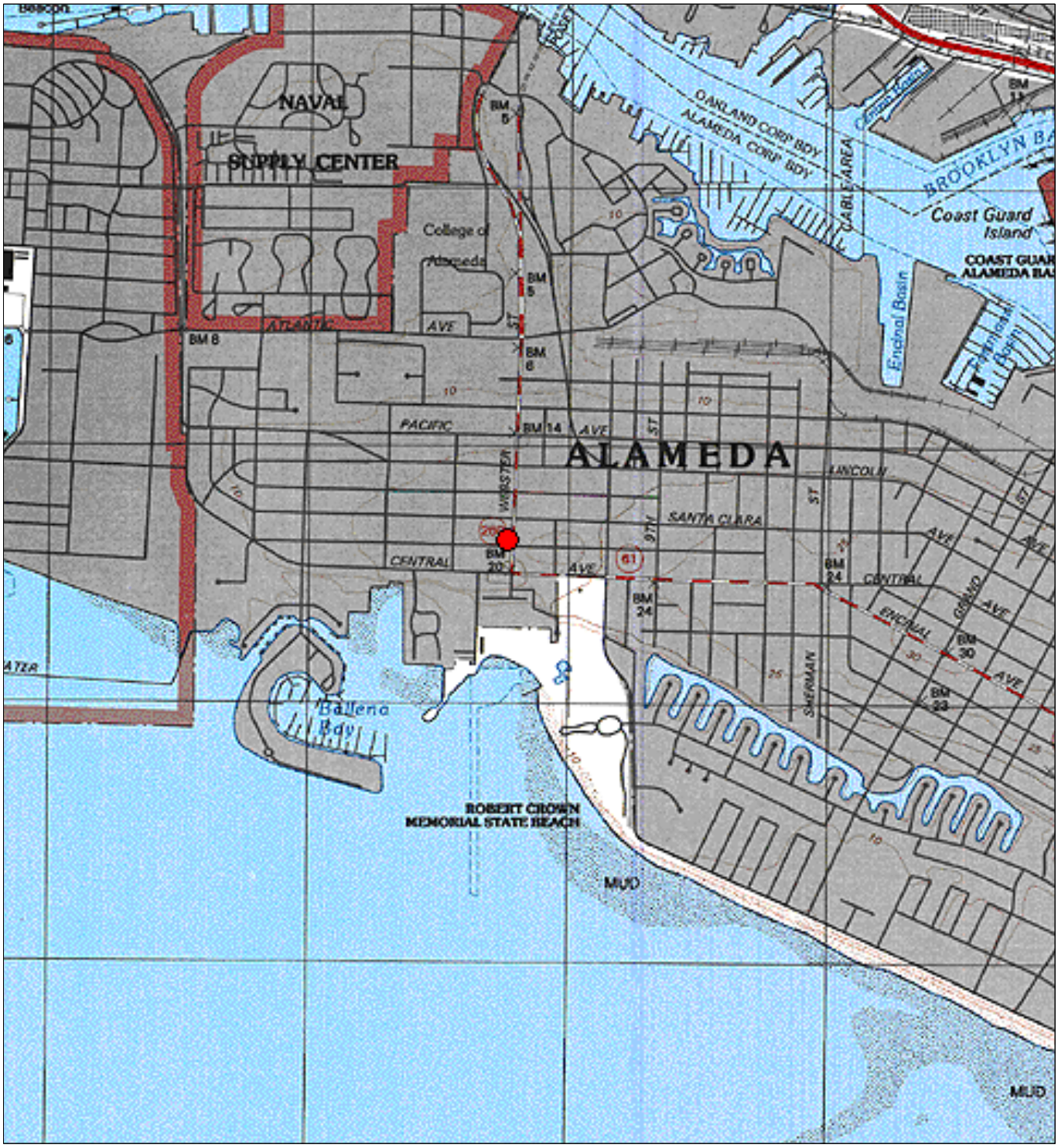
TEC ENVIRONMENTAL

Table 2
Proposed Sampling Schedule for Assessment of Remedial Progress
Former Olympian Service Station
1435 Webster Street
Alameda, California

Week	Event	Sampling points / monitoring points	Analyses	Method
1	Baseline sampling	All groundwater monitoring wells (MW-2 through MW-4, MW-6 through MW-9)	TPHg, BTEX, oxygenates dissolved metals including Fe, Cr, Se, As hexavalent chromium ferrous iron	8260B 6020B 7196 SM3500D
1	Injection, Round 1	Soil borings (I-A1 through I-A5, I-B1 through I-B6, I-C1 through I-C4): soil samples; 1-2 samples each location	TPHg, BTEX, oxygenates	8260B
		Soil borings (I-A1 through I-A5, I-B1 through I-B6, I-C1 through I-C4): grab groundwater samples	TPHg, BTEX, oxygenates	8260B
		Injection parameters	pH, temperature and pressure	field measurement
		Groundwater Monitoring (MW-2, MW-4, MW-6 through MW-9)	pH, temperature, ORP, DO, conductivity	field measurement
		Vapor Monitoring (VMP-1 through VMP-4)	LEL	field measurement
3	Progress Monitoring	All groundwater monitoring wells (MW-2 through MW-4, MW-6 through MW-9)	TPHg, BTEX, oxygenates dissolved metals including Fe, Cr, Se, As hexavalent chromium ferrous iron	8260B 6020B 7196 SM3500D
		All soil vapor monitoring points (VMP-1 through VMP-5)	TPHg, BTEX, oxygenates	TO-3, TO-15
6	Injection, Round 2	Soil borings (I-A6 through I-A10, I-B7 through I-B11, I-C5 through I-C10): soil samples; 2 samples each location	TPHg, BTEX, oxygenates	8260B
		Soil borings (I-A6 through I-A10, I-B7 through I-B11, I-C5 through I-C10): grab groundwater samples	TPHg, BTEX, oxygenates	8260B
		Injection parameters	pH, temperature and pressure	field measurement
		Groundwater Monitoring (MW-2, MW-4, MW-6 through MW-9)	pH, temperature, ORP, DO, conductivity	field measurement
		Vapor Monitoring (VMP-1 through VMP-4)	LEL	field measurement
8	Post-injection Monitoring (Contingency Progress Monitoring if additional round of injection required)	All groundwater monitoring wells (MW-2 through MW-4, MW-6 through MW-9)	TPHg, BTEX, oxygenates dissolved metals including Fe, Cr, Se, As hexavalent chromium ferrous iron	8260B 6020B 7196 SM3500D
		All soil vapor monitoring points (VMP-1 through VMP-5)	TPHg, BTEX, oxygenates	TO-3, TO-15
11	Verification Sampling (Contingency Injection, Round 3)	Soil borings I-A10 through I-A12, I-B12 through I-B14 and I-C9 through I-C11), soil samples	TPHg, BTEX, oxygenates	8260B
		Soil borings I-A10 through I-A12, I-B12 through I-B14 and I-C9 through I-C11), grab groundwater sampling	TPHg, BTEX, oxygenates	8260B
	Verification Monitoring (completed 60 days after final injection event)	All groundwater monitoring wells (MW-2 through MW-4, MW-6 through MW-9)	TPHg, BTEX, oxygenates dissolved metals including Fe, Cr, Se, As hexavalent chromium ferrous iron	8260B 6020B 7196 SM3500D

FIGURES

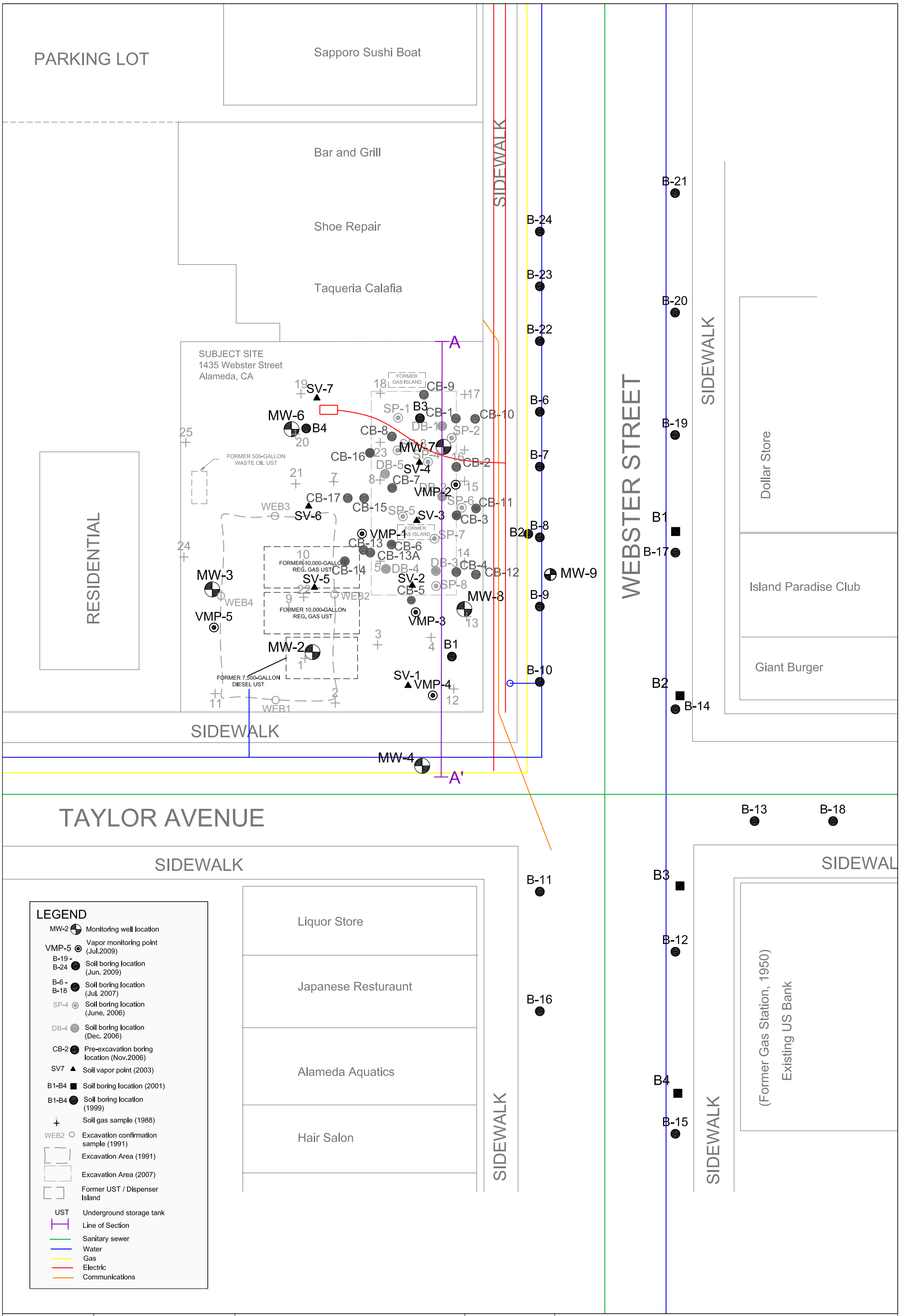
S:\1 Environmental, Dept\Active Sites\Olympian\1435 Webster, Alameda\FIGURES\QMRs\2009 3 1stQMR 1435 Webster 322-1-09.dwg, 3/17/2009 10:52:25 AM, aharris



0 1/2 1Mile

0 1,000m

N	Site Location Map By: TOPO! Date: 3/17/2009 Drafted By: AK	**SITE** 1435 Webster Street Alameda, California TEC ACCUTITE 262 Michelle Court So. San Francisco, CA 94080 Main: (650) 616-1200 Fax: (650) 616-1244	**FIGURE** **1**	**TITLE** **Vicinity Map**



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

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SITE
1435 Webster
Alameda, California

FIGURE
2

Site Map

A

A'

PL

PL

SUBJECT SITE: 1435 Webster Street, Alameda, CA

Sidewalk

Taylor Ave.

B-22 (proj. 33' W)
CB-10 (proj. 13' W)
MW-6 (proj. 50' E)
CB-16 (proj. 25' E)
MW-7
VMP-2 (proj. 5' W)
CB-15 (proj. 27' E)
VMP-1 (proj. 27' E)
CB-12 (proj. 11' W)
MW-9 (proj. 37' W)
CB-5 (proj. 10' E)
MW-8 (proj. 8' W)
VMP-3 (proj. 9' E)
VMP-4 (proj. 3' E)
MW-4 (proj. 6' E)

Electric

Electric (proj. 17' W)
Water (proj. 35' W)
Gas (proj. 30' W)
Sewer (proj. 75' W)

Target injection depths 10 - 15 ft bsg

Target Area A (proj. 30 ft E)

Target Area B (proj. 12 ft W)

Target Area C (proj. 9 ft E)

0 12 ft

6 ft

SCALE

LEGEND

SW, well graded gravelly sand

SP, poorly graded sand, <5% fines

SM, silty sand with >10% clay and SC, clayey sand

SM, silty sand

PL Property line

2007 Excavation Boundary

Asphalt

Concrete

Targeted Injection Area

NR No recovery

TPHg
benzene
MTBE

Soil sample and contaminant concentrations in mg/kg

TPHg
benzene
MTBE

Groundwater sample and contaminant concentrations in ug/L (grab samples in italics) 8/27/2009

Groundwater elevation, 8/27/2009

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Revision:	2
Date:	1/21/2010
Drafted By:	ES

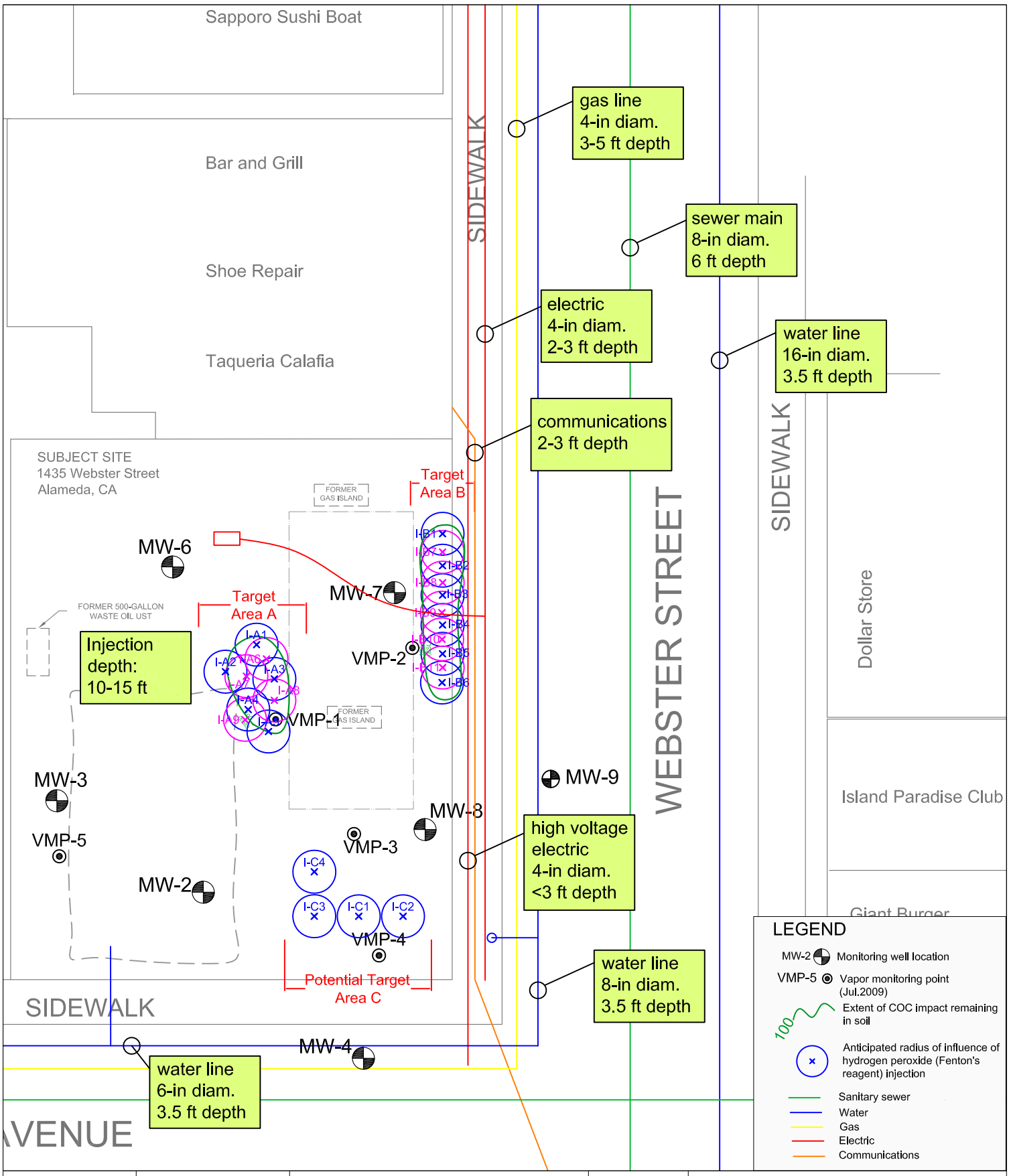
SITE

1435 Webster Street
Alameda, California

FIGURE

3

Geologic Cross Section
A-A'



N

0 15 30
SCALE (ft)

Revision: 1
Date: 2/28/2011
Drafted By: ES

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SITE
1435 Webster Street
Alameda, California

FIGURE 4

Proposed Targeted Injection Areas and Utility Map