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ENVIRONMENTAL ENGINEERING, INC.
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April 23, 2013

Ms. Karel Detterman
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Site Location: 6501 Shattuck Avenue, Oakland, CA
Fuel Leak Case No. RO0003066

Dear Ms. Detterman:

SOMA's "First Quarter 2013 Groundwater Monitoring Report" for the subject site has been uploaded to the State's GeoTracker database and Alameda County's FTP site for your review.

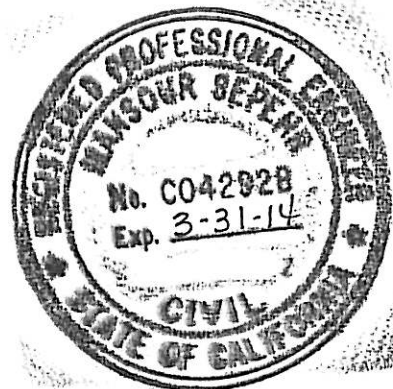
Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 734-6400, if you have questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Mansour Sepehr", written over a horizontal line.

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist

cc: Mr. Athan Magganas w/report enclosure



**First Quarter 2013
Groundwater Monitoring Report**

**6501 Shattuck Avenue
Oakland, California**

April 23, 2013

Project 5031

Prepared for

**Bruder LLC
2550 Appian Way, Suite 201
Pinole, California, 94564**

PERJURY STATEMENT

Site Location: 6501 Shattuck Avenue, Oakland, California
First Quarter 2013 Groundwater Monitoring Report

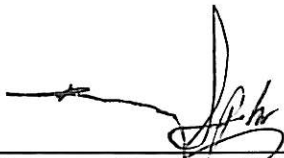
"I declare under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge".

 MANAGER BRUDER LLC

Bruder LLC
Athan Magganäs, Property Manager
2550 Appian Way, Suite 201
Pinole, California 94564

CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this document for Bruder LLC, at the request of Bruder LLC property owner Mr. Athan Magganas, for the property located at 6501 Shattuck Avenue in Oakland, California to comply with requirements of the Alameda County Environmental Health Department (ACEH) for the First Quarter 2013 groundwater monitoring event.



Mansour Sepehr, PhD, PE
Principal Hydrogeologist



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1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report on behalf of Bruder LLC property owner, Mr. Athan Magganas, for the site located at 6501 Shattuck Ave., Oakland, California. The site is located at the northwest quadrant of the intersection of Shattuck Avenue and 65th Street near the common municipal limits of Oakland and Berkeley, approximately 3.25 miles north-northeast of the downtown Oakland commercial district. Former underground storage tank (UST) locations and site features are shown in Figure 2.

This report summarizes results of the First Quarter 2013 groundwater monitoring event conducted at the site on March 25, 2013. It includes physical and chemical properties and biodegradation parameters measured in the field for each groundwater sample and laboratory analytical results for groundwater samples.

1.1 Previous Activities

According to the Phase I Environmental Site Assessment Report dated January 26, 2007, prepared for the site by RGA Environmental, the site was redeveloped from a single-family residential property to a service station in 1933. The total period of operation of the service station could not be precisely determined from available historical sources, but based on the City Directory Abstract, the service station appears to have been converted to a repair shop and used car sales facility during the mid-1980s. The facility has operated as East Bay Smog Center and Auto Repair since 2000.

In September 2009, Controlled Environmental Services (CES) obtained permits for removal of six steel USTs located at the subject site. According to the report prepared by CES, dated October 23, 2009, two 1,000-gallon gasoline USTs, three 2,000-gallon gasoline USTs, and one 500-gallon waste oil UST were removed.

In June 2011, SOMA advanced six soil borings, B-4 through B-9, and collected soil and groundwater samples for analysis of TPHs and VOCs. Based on results of soil and groundwater investigation conducted in the vicinity of the former USTs, it was determined that petroleum-hydrocarbon contamination still exists in soil and groundwater beneath the site.

In October 2011, remedial excavation was conducted at the site. A total of 770 tons of PHC-impacted soils were excavated and disposed of off-site at Potrero Hills Landfill. The excavated area was backfilled and compacted with pre-tested clayey backfill material. Confirmation soil sampling indicated that all shallow residual PHC soil contamination has been removed from the area in the vicinity of former USTs.

1.2 Summary of Field Activities and Laboratory Analysis

1.2.1 Field Activities

On March 25, 2013, three monitoring wells (MW-1, MW-2, and MW-3) were measured for depth to groundwater. Additional field measurements and groundwater samples were collected from all three wells. Properties measured in the field were Dissolved oxygen (DO), pH, temperature, electrical conductivity (EC), turbidity, and oxidation and reduction potential (ORP). This monitoring event was conducted in accordance with procedures and guidelines of Alameda County Environmental Health Department (ACEHD).

To evaluate the state of biodegradation processes in the subsurface, biodegradation parameters such as dissolved oxygen (DO), turbidity, and oxidation reduction potential (ORP) were measured.

Figure 2 shows well locations. Appendix A details groundwater monitoring procedures followed during this event.

Purged groundwater was temporarily stored on-site in a 55-gallon drum.

1.2.2 Laboratory Analysis

Curtis and Tompkins Laboratories, a California state-certified laboratory, analyzed groundwater samples for the following: TPH-g, TPH as diesel (TPH-d), and TPH as motor Oil (TPH-mo); Full list of VOCs by EPA Method 8260 (including BTEX (benzene, toluene, ethylbenzene, and total xylenes), and MtBE). TPH-g, TPH-d, and TPH-mo were analyzed using EPA Method 8015B.

2. RESULTS

Results of field measurements and laboratory analyses for the groundwater monitoring event conducted on March 25, 2013 follow below.

2.1 Field Measurements

Monitoring wells MW-1 through MW-3 were measured for depth to groundwater (Table 1). Depths ranged from 4.48 feet in MW-1 to 7.65 feet in MW-2. Groundwater elevations ranged from 122.67 feet in MW-2 to 126.35 feet in MW-3.

Figure 3 displays the groundwater elevation contour map. The groundwater flow direction is northwesterly at a gradient of approximately 0.074 feet/feet. Since the

previous monitoring event (December 2012), Groundwater flow direction has remained northwesterly and the gradient has decreased slightly. Appendix B shows field measurements, biodegradation parameter measurements and gradient calculations.

The more positive the redox potential of an electron acceptor, the more energetically favorable is the reaction utilizing that electron acceptor. The most energetically preferred electron acceptor for redox reactions is DO. Negative redox potentials indicate that contaminants in the groundwater are conducive to anaerobic biodegradation. Positive redox potentials are more energetically favorable in utilizing electron acceptors during chemical reactions. This promotes the removal of organic mass from the contaminated groundwater by indigenous bacteria in the subsurface during the release of the transfer of electrons. Evaluating the distribution of electron acceptors can provide evidence of where, and to what extent, hydrocarbon biodegradation is occurring.

Once stabilization of the existing aquifer was achieved, upon terminating the purge cycle at each well, DO and ORP readings were as follows: DO ranged from 0.61 mg/L in MW-3 to 0.96 mg/L in MW-2. ORP showed positive redox potentials in MW-1, MW-2 and MW-3.

2.2 Laboratory Analysis

Groundwater analytical data for this monitoring event is shown in Table 1. Appendix C includes the laboratory report and chain of custody form.

TPH-g, TPH-d, TPH-mo, and all VOCs were below laboratory reporting-limit in MW-1, MW-2, and MW-3, except for 1,2-DCA which was detected in MW-1 at a low level of 1.00 µg/L. Figure 4 shows a map of 1,2-DCA concentrations in groundwater. Since the previous monitoring event (Fourth Quarter 2012), TPH-g has decreased from 76 µg/L to below laboratory reporting-limit in MW-2 and 1,2-DCA has slightly increased from 0.90 µg/L to 1.00 µg/L in MW-1.

3. CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations based on results of First Quarter 2013 groundwater monitoring are summarized below.

- In general, the groundwater flow direction is northwesterly at a gradient of 0.074 feet/feet.
- All contaminant concentrations were below laboratory reporting-limits in all monitoring wells except MW-1, where 1,2-DCA was detected at a low level of 1.00 µg/L. Since the previous monitoring event (Fourth Quarter 2012), 1,2-DCA has slightly increased in MW-1 and TPH-g has decreased in MW-2.

- SOMA recommends conducting one more round of groundwater monitoring in order to complete four quarterly groundwater monitoring events at the site as previously recommended in the Remedial excavation report dated January 9, 2012.

4. REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of site conditions. It includes analytical results produced by Curtis and Tompkins, Laboratories for the current groundwater monitoring event. Quantities and locations of wells were selected to provide the required information, but may not be completely representative of entire site conditions. All conclusions and recommendations are based on results of laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that services were provided in accordance with generally accepted environmental engineering and consulting practices at the time of this sampling.

Figures

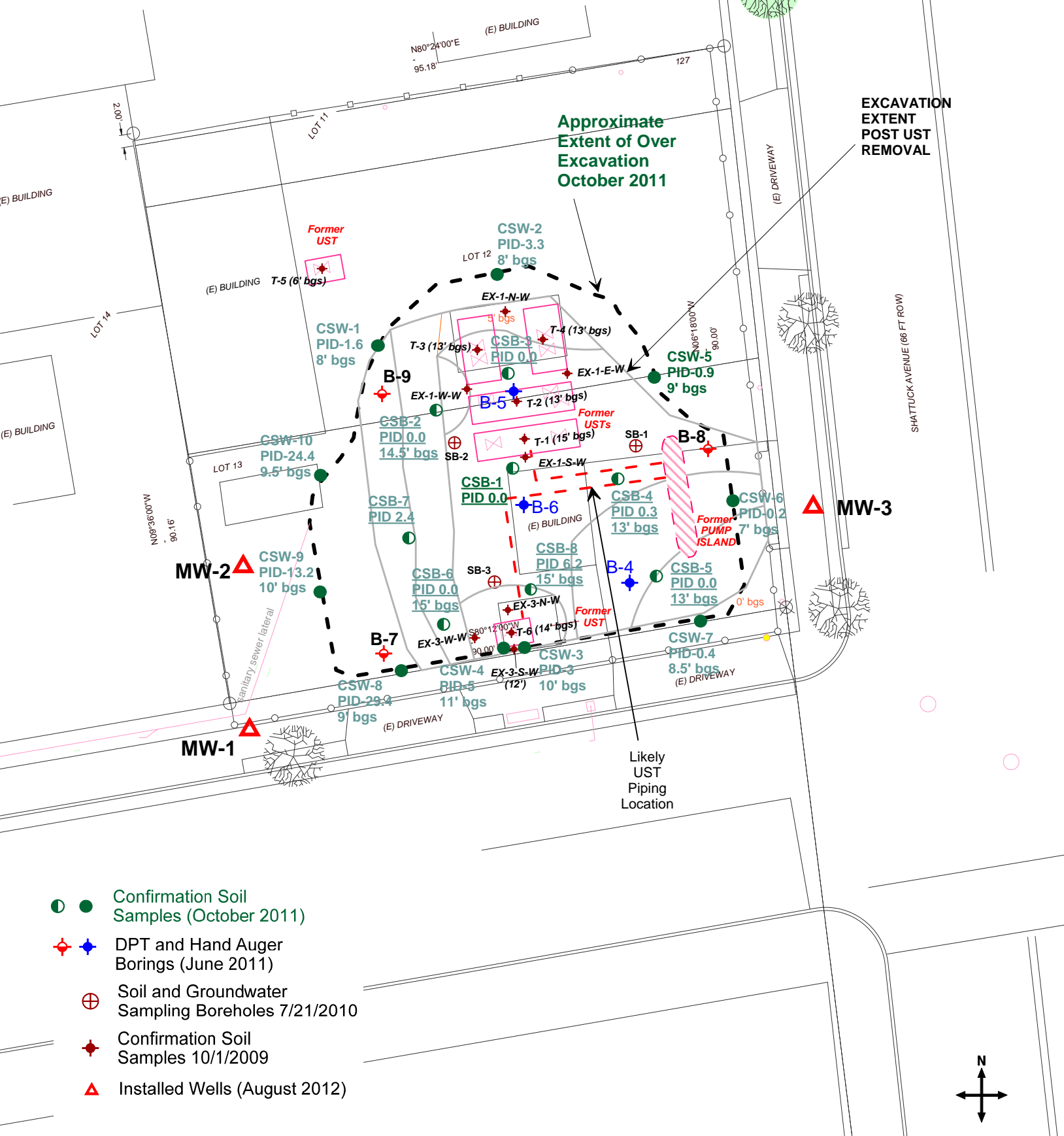


Imagery ©2011 GeoEye, I

Figure 1: Site vicinity map.

2996 SHATTUCK AVENUE-
groundwater flow predominantly
westerly, DTW 2.3-8.5' bgs

6407 TELEGRAPH-
groundwater flow southwest,
DTW 5-8' bgs



- Confirmation Soil Samples (October 2011)
- ◆ DPT and Hand Auger Borings (June 2011)
- ⊕ Soil and Groundwater Sampling Boreholes 7/21/2010
- ◆ Confirmation Soil Samples 10/1/2009
- ▲ Installed Wells (August 2012)

approximate scale in feet

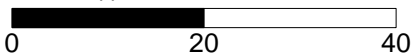
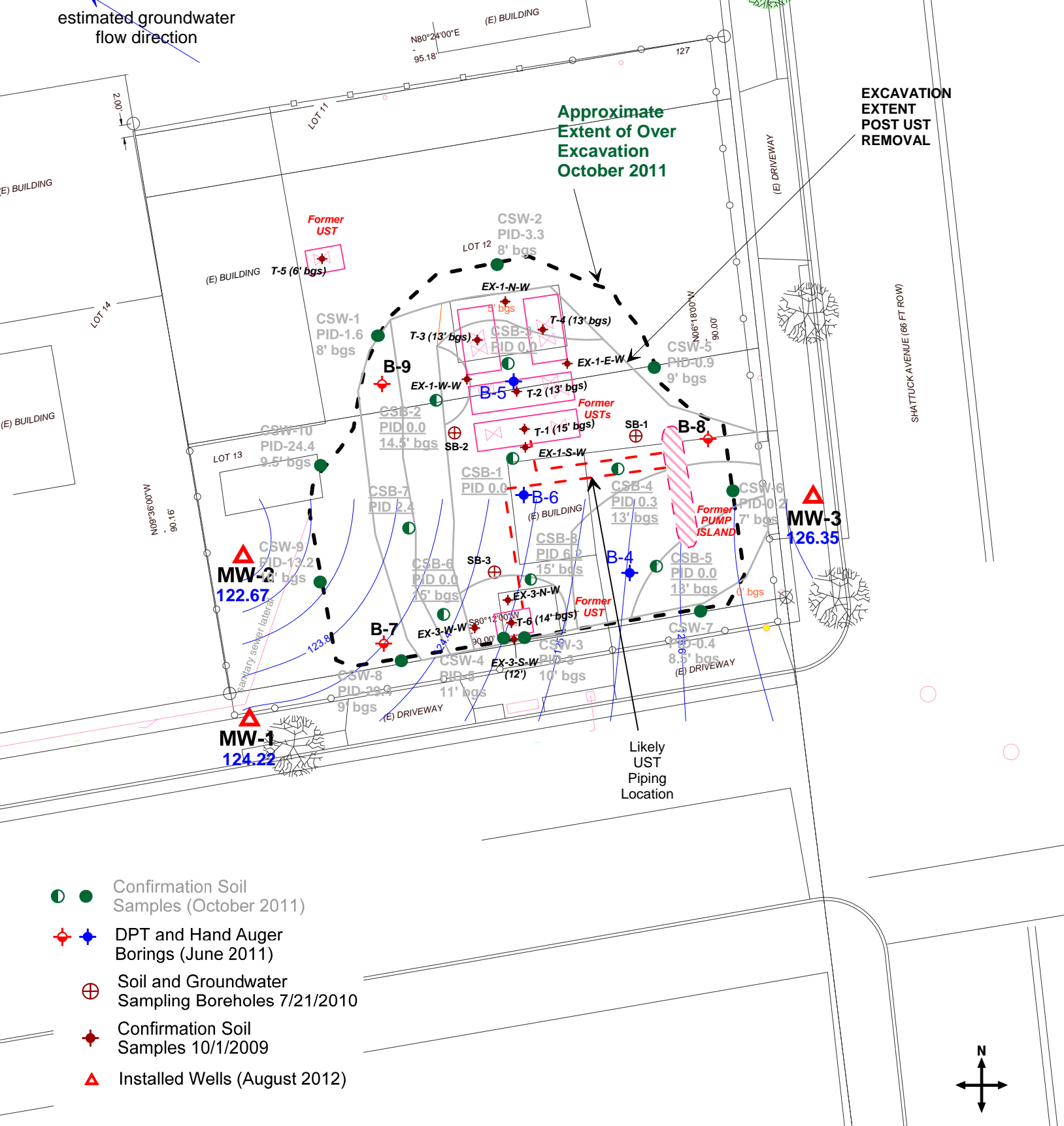


Figure 2: Site map showing excavation extent, locations of former USTs, soil borings and groundwater monitoring wells

2996 SHATTUCK AVENUE-
groundwater flow predominantly
westerly, DTW 2.3-8.5' bgs

6407 TELEGRAPH-
groundwater flow southwest,
DTW 5-8' bgs

estimated groundwater
flow direction



- Confirmation Soil Samples (October 2011)
- ◆ DPT and Hand Auger Borings (June 2011)
- ⊕ Soil and Groundwater Sampling Boreholes 7/21/2010
- ◆ Confirmation Soil Samples 10/1/2009
- ▲ Installed Wells (August 2012)

approximate scale in feet

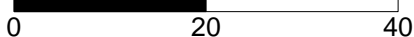
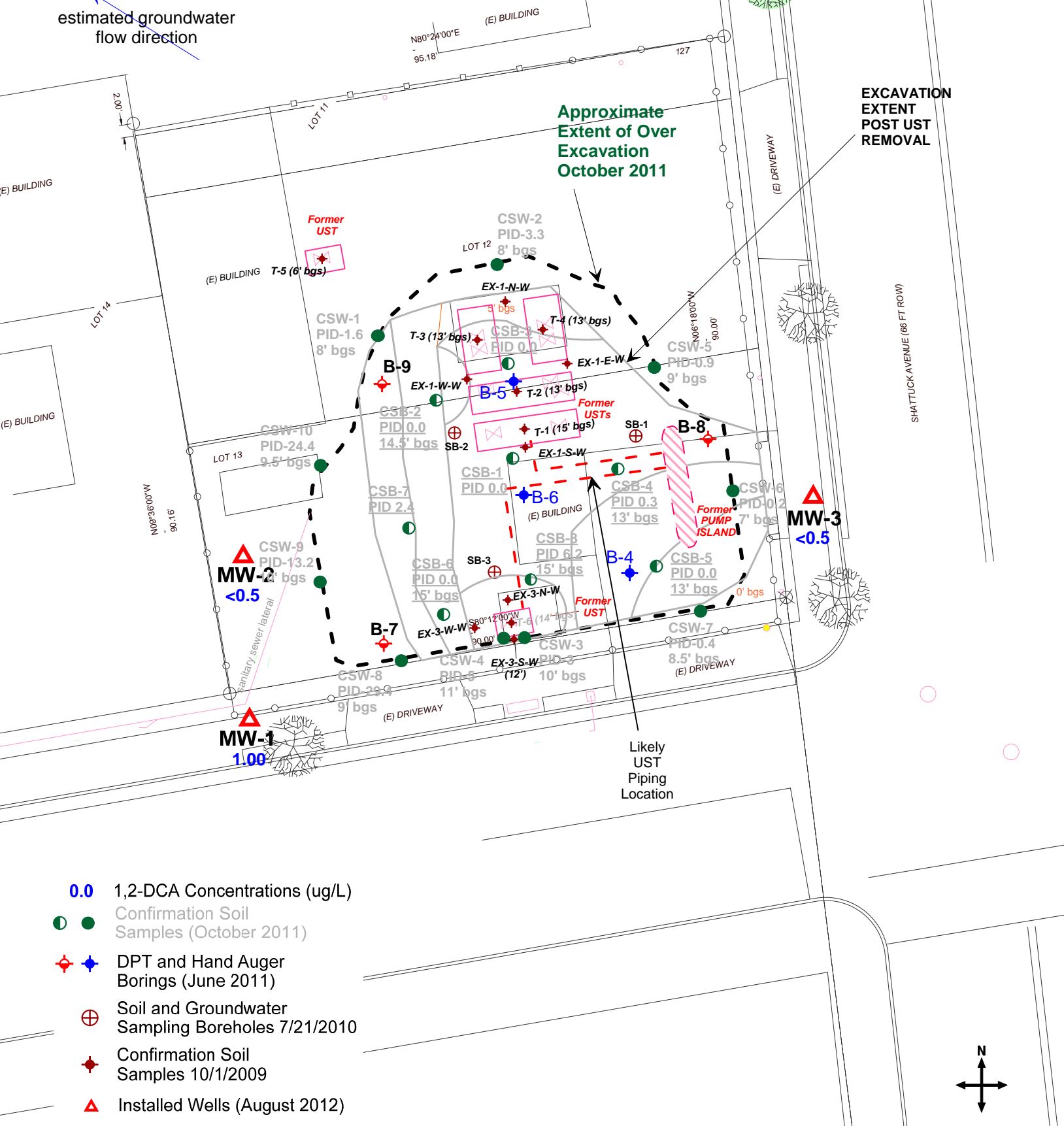


Figure 3: Groundwater elevation contour map in feet,
March 25, 2013

2996 SHATTUCK AVENUE-
groundwater flow predominantly
westerly, DTW 2.3-8.5' bgs

6407 TELEGRAPH-
groundwater flow southwest,
DTW 5-8' bgs

estimated groundwater
flow direction



- 0.0 1,2-DCA Concentrations (ug/L)
- Confirmation Soil Samples (October 2011)
- ◆ DPT and Hand Auger Borings (June 2011)
- ⊕ Soil and Groundwater Sampling Boreholes 7/21/2010
- ◆ Confirmation Soil Samples 10/1/2009
- ▲ Installed Wells (August 2012)

Figure 4: Map showing 1,2-DCA concentrations in groundwater, March 25, 2013

Tables

Table 1
Groundwater Analytical Results
6501 Shattuck Ave, Oakland, CA

Monitoring Well	Date	Top of Casing Elevation (Ft.)	Depth to Groundwater (Ft.)	Groundwater Elevation	TPH-g µg/L	TPH-d µg/L	TPH-mo µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MtBE µg/L	1,2-DCA µg/L	EDB µg/L
MW-1	9/11/2012	128.70	6.14	122.56	<50	<52	<310	<0.5	<0.5	<0.5	<0.5	<0.5	1.30	<0.5
	12/20/2012	128.70	2.94	125.76	<50	<51	<310	<0.5	<0.5	<0.5	<0.5	<0.5	0.90	<0.5
	3/25/2013	128.70	4.48	124.22	<50	<56	<330	<0.5	<0.5	<0.5	<0.5	<0.5	1.00	<0.5
MW-2	9/11/2012	130.32	7.81	122.51	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/20/2012	130.32	6.61	123.71	76 ^Y	<51	<310	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/25/2013	130.32	7.65	122.67	<50	<57	<340	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	9/11/2012	131.34	7.89	123.45	<50	<53	<320	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/20/2012	131.34	4.55	126.79	<50	<51	<310	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/25/2013	131.34	4.99	126.35	<50	<58	<350	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Note:

< : Below Laboratory Reporting Limit (Method Detection Limit)

All other VOCs were below laboratory-reporting limits in groundwater samples

Appendix A

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Water Level Measurements

Prior to measurement of groundwater depth at each well, equalization with the surrounding aquifer must be achieved. Initially, the well cap is removed and the pressure is allowed to dissipate, creating a more stable water table level within the well. After about 10-15 minutes, once the water level in the well stabilizes, the depth to groundwater is measured from the top of the casing to the nearest 0.01 foot using an electric sounder.

Purging and Field Measurements

Prior to sample collection, each well is purged using a battery-operated, 2-inch-diameter pump (Model ES-60 DC). During purging, groundwater is measured for parameters such as dissolved oxygen (DO), pH, temperature, electrical conductivity (EC), and oxygen-reduction potential (ORP) using a Hanna HI-9828 multi-parameter instrument. Turbidity is measured using a Hanna HI-98703 portable turbidimeter. The equipment is calibrated at the Site using standard solutions and procedures provided by the manufacturer.

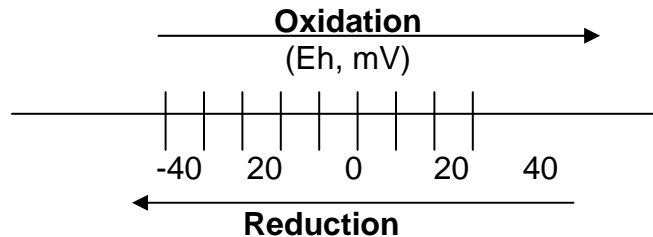
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater EC is directly related to the concentration of total dissolved solids (TDS) in solution.

There is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. The main purpose for checking the turbidity level is to provide a general overview of the extent of the suspended solids in the groundwater.

ORP is the measure of the potential for an oxidation or reduction process to occur. In the oxidation process, a molecule or ion loses one or several electrons. In the reduction process, a molecule or ion gains one or several electrons. The unit of the redox potential is the volt or millivolt. The most important redox reaction in petroleum-contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O₂ in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of O₂ replenishment in subsurface environments is limited, DO can be entirely consumed when the oxidation of only a small amount of petroleum hydrocarbons occurs.

Oxidation of petroleum hydrocarbons can still occur when all the dissolved O₂ in the groundwater is consumed; however, the oxidizing agents (i.e., the constituents that undergo reduction) now become NO₃⁻, MnO₂, Fe (OH)₃, SO₄²⁻

and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process advances far enough, the environment may become so strongly reduced that the petroleum hydrocarbons undergo anaerobic degradation, resulting in the production of methane and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below.



Purging of wells continues until the parameters for DO, pH, temperature, EC, turbidity, and redox stabilize, or three casing volumes are purged.

Once stabilization occurs, the groundwater samples are also tested on-site for ferrous iron (Fe^{+2}), nitrate (NO_3^-), and sulfate (SO_4^{-2}) concentrations.

Fe^{+2} , NO_3^- , and SO_4^{-2} are measured colorimetrically using the Hach Colorimeter Model 890, a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

Sampling

For sampling purposes, after purging a disposable polyethylene bailer is used to collect sufficient samples from each monitoring well for laboratory analyses. Groundwater samples are transferred into 40-mL VOA vials and preserved with hydrochloric acid. The vials are sealed to prevent air bubbles from developing within the headspace. For TPH-d analysis, groundwater samples are collected using 1-L or 500-mL, amber, nonpreserved glass containers. Samples are placed in an ice-filled cooler and maintained at 4°C. A chain of custody form for all samples is prepared to accompany the samples, which are promptly delivered to a California state-certified analytical laboratory.

Appendix B

Tables of elevations and coordinates on wells, Field
Measurements of Physical, Chemical and Biodegradation
Parameters of the Groundwater Samples and Groundwater
Gradient Calculations

**TABLE OF ELEVATIONS & COORDINATES
ON MONITORING WELLS**

SOMA ENVIRONMENTAL ENGINEERING
6501 SHATTUCK AVENUE
OAKLAND, CA 94609

WELL ID #	NORTHING (FT.) / LATITUDE (D.DEG.)	EASTING (FT.) / LONGITUDE (D.DEG.)	ELEVATION (FT.)	DESCRIPTION
MW-1	2136901.934	6051727.243	128.70	2"PVC NOTCH NORTH SIDE
	N37.850339023	W122.266261635	129.19	SET PUNCH NORTH SIDE RIM
			129.22	CONC NORTH SIDE
MW-2	2136927.936	6051726.241	130.32	2" PVC NOTCH NORTH SIDE
	N37.850410368	W122.266266804	130.79	SET PUNCH NORTH SIDE RIM
			130.58	GRND NORTH SIDE
MW-3	2136937.443	6051817.078	131.34	2" PVC NOTCH NORTH SIDE
	N37.85044118	W122.26595287	131.72	SET PUNCH NORTH SIDE RIM
			131.73	CONC NORTH SIDE

HORIZONTAL AND VERTICAL CONTROL:

COORDINATE VALUES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83.
ELEVATIONS ARE NAVD 88 DATUM.

BASE STATIONS USED:

HT2918 BERKELEY H J HEINZ CO TOWER
NORTHING 2,138,045.28, EASTING 6,045,147.46
GPS BASE200 MW-3 PUNCH NORTH SIDE
NORTHING 2,136,937.769, EASTING 6,051,817.025, ELEVATION=131.724

BENCH MARK USED: CITY OF OAKLAND BM

MONUMENT 32 FEET AT THE NORTHWEST CORNER OF THE INTERSECTION OF SHATTUCK AVENUE
AND ALCATRAZ AVENUE. ELEVATION=125.685'

EQUIPMENT USED: TRIMBLE GPS-R8 & TS S6, TOPCON AT-G2 LEVEL

Edgis Land Surveying
Land Surveying and Mapping
1374 Garland Avenue, Clovis, CA 93612
Phone (559) 803-2679 Fax (559) 222-2580
email: edgis@aol.com



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-1
 Casing Diameter: 2 inch
 Depth of Well: 24.29 ft
 Top of Casing Elevation: 128.70 ft
 Depth to Groundwater: 4.48 ft
 Groundwater Elevation: 124.22 ft
 Water Column Height: 19.81 ft
 Purged Volume: 6 gallons

Project No.: 5031
 Address: 6501 Shattuck Avenue
 Oakland, CA
 Date: March 25, 2013
 Sampler: Lizzie Hightower

Purging Method: Bailer

Pump Geotek

Sampling Method: Bailer

Pump Geotek

Color: No

Yes Describe V. Slightly Cloudy

Sheen: No

Yes Describe

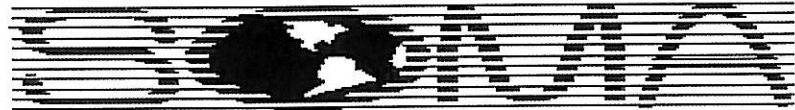
Odor: No

Yes Describe

Field Measurements:

Time	Volume (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. NTU	ORP
13:48	Started purging well						
13:54	1	1.09	6.74	17.35	752	64.2	+195.1
14:00	2	0.99	6.64	17.09	748	36.9	+135.1
14:12	4	0.80	6.79	16.92	733	22.7	+153.7
14:18	5	0.79	6.78	16.87	735	17.1	+160.7
14:24	6	0.70	6.80	16.86	738	12.6	+164.9
14:28	sampled						

Notes:



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Well No.: MW-2
 Casing Diameter: 2 inch
 Depth of Well: 24.64 ft
 Top of Casing Elevation: 130.32 ft
 Depth to Groundwater: 7.65 ft
 Groundwater Elevation: 122.67 ft
 Water Column Height: 16.99 ft
 Purged Volume: 0 gallons

Project No.: 5031
 Address: 6501 Shattuck Avenue
 Oakland, CA
 Date: March 25, 2013
 Sampler: Lizzie Hightower

Purging Method: Bailer Pump Geotech
 Sampling Method: Bailer Pump Geotech
 Color: No Yes Describe Cloudy
 Sheen: No Yes Describe
 Odor: No Yes Describe

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
11:07	Started purging well						
11:13	1	1.74	6.62	16.30	747	117	+138.9
11:19	2	1.23	6.77	16.09	745	67.7	+142.2
11:31	4	1.08	6.77	15.73	751	50.2	+164.9
11:36	5	0.97	6.79	15.68	761	45.2	+163.7
11:41	6	0.96	6.82	15.61	773	39.4	+166.6
11:45	Sampled						

Notes:



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Well No.: MW-3
 Casing Diameter: 2 inch
 Depth of Well: 24.80 ft
 Top of Casing Elevation: 131.34 ft
 Depth to Groundwater: 4.99 ft
 Groundwater Elevation: 126.35 ft
 Water Column Height: 19.81 ft
 Purged Volume: 6 gallons

Project No.: 5031
 Address: 6501 Shattuck Avenue
 Oakland, CA
 Date: March 25, 2013
 Sampler: Lizzie Hightower

Purging Method: Bailer Pump Geotech
 Sampling Method: Bailer Pump Geotech
 Color: No Yes Describe Cloudy
 Sheen: No Yes Describe
 Odor: No Yes Describe

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
12:11	Started purging well						
12:17	1	0.82	7.13	17.17	594	337	+183.9
12:23	2	0.77	7.12	16.88	594	493	+182.1
12:35	4	0.76	7.10	16.51	596	75.4	+182.5
12:41	5	0.73	7.11	16.56	599	46.6	+183.0
12:47	6	0.61	7.13	16.58	603	39.1	+182.1
12:51	sampled						

Notes:



EPA On-line Tools for Site Assessment Calculation

Hydraulic Gradient – Magnitude and Direction

Gradient Calculation from fitting a plane to as many as thirty points

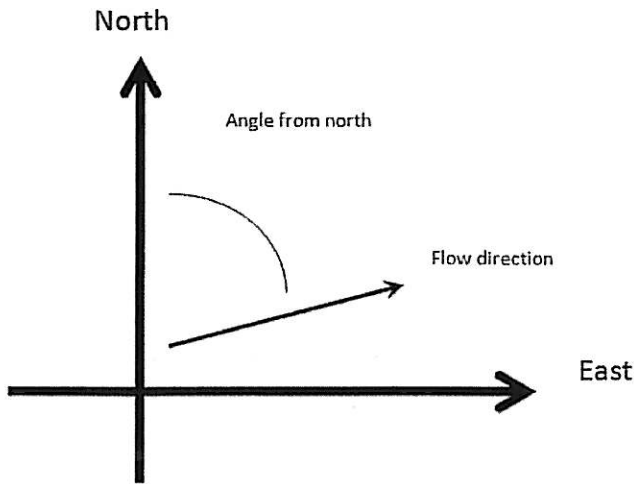
$$\begin{aligned}
 a x_1 + b y_1 + c &= h_1 \\
 a x_2 + b y_2 + c &= h_2 \\
 a x_3 + b y_3 + c &= h_3 \\
 &\dots \\
 a x_{30} + b y_{30} + c &= h_{30}
 \end{aligned}$$

where (x_i, y_i) are the coordinates of the well and h_i is the head

$i = 1, 2, 3, \dots, 30$

The coefficients a , b , and c are calculated by a least-squares fitting of the the data to a plane

The gradient is calculated from the square root of $(a^2 + b^2)$ and the angle from the arctangent of a/b or b/a depending on the quadrant



Inputs

Site Name

Date

Calculation basis

Coordinates

I.D.	x-coordinate	y-coordinate	head ft
1) MW-1	6775.3007444	4740.6539623	124.22
2) MW-2	6774.2827557	4766.8671708	122.67
3) MW-3	6865.1382454	4776.029069	126.35

- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)
- 11)
- 12)
- 13)
- 14)
- 15)
- 16)
- 17)

- 18)
- 19)
- 20)
- 21)
- 22)
- 23)
- 24)
- 25)
- 26)
- 27)
- 28)
- 29)
- 30)

<http://www.epa.gov/athens/learn2model/part-two/onsite/gradient4plus-ns.html>

Results

Number of Points Used in Calculation	3
Max. Difference Between Head Values	1.122
Gradient Magnitude (i)	0.07368
Flow direction as degrees from North (positive y axis)	321.1
Coefficient of Determination (R ²)	1.00

WCMS

Last updated on Thursday, January 10, 2013

Appendix C

Laboratory Report and Chain of Custody Form



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 244019
ANALYTICAL REPORT**

SOMA Environmental Engineering Inc. 6620 Owens Dr. Pleasanton, CA 94588	Project : 5032 Location : 6501 Shattuck Ave., Oakland Level : II
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<u>Sample ID</u>	<u>Lab ID</u>
MW-1	244019-001
MW-2	244019-002
MW-3	244019-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Tracy Babjar
Project Manager
(510) 204-2226

Date: 03/29/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: 244019
Client: SOMA Environmental Engineering Inc.
Project: 5032
Location: 6501 Shattuck Ave., Oakland
Request Date: 03/25/13
Samples Received: 03/25/13

This data package contains sample and QC results for three water samples, requested for the above referenced project on 03/25/13. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):

Low recoveries were observed for gasoline C7-C12 in the MS/MSD for batch 196686; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

No analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

C&T LOGIN # 244019

Sampler: Lizzie Hightower

Project No: 5032

Report To: Joyce Bobek

Project Name: 6501 Shattuck Ave., Oakland

Company: SOMA Environmental

Turnaround Time: Standard

Telephone: 925-734-6400

Fax: 925-734-6401

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative			
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE
	MW-1	<u>3/25/13 14:28</u>		*		4 VOAS, 2- 500 mL Amber	*			*
	MW-2	<u>↓ 11:45</u>		*		4 VOAS, 2- 500 mL Amber	*			*
	MW-3	<u>↓ 12:51</u>		*		4 VOAS, 2- 500 mL Amber	*			*

TPH-g, TPH-d, TPH-mo 8015	VOCs (Full List) 8260																		
*	*																		
*	*																		
*	*																		

Notes: **EDF OUTPUT REQUIRED**
Silica-gel clean-up required

RELINQUISHED BY:
Lizzie Hightower 3/25/13
15:30 DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY:
Pat Humphrey 3/25/13 15:50
DATE/TIME

DATE/TIME

DATE/TIME

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 244619 Date Received 3/25/13 Number of coolers 1
Client SDMA Project 5032

Date Opened 3/25/13 By (print) EL (sign) [Signature]
Date Logged in [Signature] By (print) [Signature] (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... YES (circle) on cooler on samples NO
How many Name Date

2B. Were custody seals intact upon arrival? YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe)

- Bubble Wrap, Cloth material, Foam blocks, Cardboard, Bags, Styrofoam, None, Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C)

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are there any missing / extra samples? YES NO

11. Are samples in the appropriate containers for indicated tests? YES NO

12. Are sample labels present, in good condition and complete? YES NO

13. Do the sample labels agree with custody papers? YES NO

14. Was sufficient amount of sample sent for tests requested? YES NO

15. Are the samples appropriately preserved? YES NO N/A

16. Did you check preservatives for all bottles for each sample? YES NO N/A

17. Did you document your preservative check? YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? YES NO N/A

21. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

Blank lines for handwritten comments.

Total Volatile Hydrocarbons

Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5032	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	196686
Units:	ug/L	Sampled:	03/25/13
Diln Fac:	1.000	Received:	03/25/13

Field ID:	MW-1	Lab ID:	244019-001
Type:	SAMPLE	Analyzed:	03/26/13

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	76-128

Field ID:	MW-2	Lab ID:	244019-002
Type:	SAMPLE	Analyzed:	03/26/13

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	76-128

Field ID:	MW-3	Lab ID:	244019-003
Type:	SAMPLE	Analyzed:	03/26/13

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	90	76-128

Type:	BLANK	Analyzed:	03/25/13
Lab ID:	QC681322		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	76-128

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5032	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC681324	Batch#:	196686
Matrix:	Water	Analyzed:	03/25/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	951.9	95	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	105	76-128

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5032	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	196686
MSS Lab ID:	244000-001	Sampled:	03/22/13
Matrix:	Water	Received:	03/22/13
Units:	ug/L	Analyzed:	03/25/13
Diln Fac:	1.000		

Type: MS Lab ID: QC681325

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	5,553	2,000	6,990	72 *	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	108	76-128

Type: MSD Lab ID: QC681326

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	7,010	73 *	76-120	0	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	122	76-128

*= Value outside of QC limits; see narrative
 RPD= Relative Percent Difference

Total Extractable Hydrocarbons			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	5032	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/25/13
Units:	ug/L	Received:	03/25/13
Diln Fac:	1.000	Prepared:	03/25/13
Batch#:	196689		

Field ID: MW-1 Analyzed: 03/27/13
 Type: SAMPLE Cleanup Method: EPA 3630C
 Lab ID: 244019-001

Analyte	Result	RL
Diesel C10-C24	ND	56
Motor Oil C24-C36	ND	330

Surrogate	%REC	Limits
o-Terphenyl	94	62-133

Field ID: MW-2 Analyzed: 03/27/13
 Type: SAMPLE Cleanup Method: EPA 3630C
 Lab ID: 244019-002

Analyte	Result	RL
Diesel C10-C24	ND	57
Motor Oil C24-C36	ND	340

Surrogate	%REC	Limits
o-Terphenyl	89	62-133

Field ID: MW-3 Analyzed: 03/27/13
 Type: SAMPLE Cleanup Method: EPA 3630C
 Lab ID: 244019-003

Analyte	Result	RL
Diesel C10-C24	ND	58
Motor Oil C24-C36	ND	350

Surrogate	%REC	Limits
o-Terphenyl	87	62-133

Type: BLANK Analyzed: 03/26/13
 Lab ID: QC681330 Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	86	62-133

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	5032	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	196689
Units:	ug/L	Prepared:	03/25/13
Diln Fac:	1.000	Analyzed:	03/26/13

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC681331

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,331	93	59-120

Surrogate	%REC	Limits
o-Terphenyl	104	62-133

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC681332

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,023	81	59-120	14	46

Surrogate	%REC	Limits
o-Terphenyl	90	62-133

RPD= Relative Percent Difference

Purgeable Organics by GC/MS

Lab #: 244019	Location: 6501 Shattuck Ave., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5032	Analysis: EPA 8260B
Field ID: MW-1	Batch#: 196701
Lab ID: 244019-001	Sampled: 03/25/13
Matrix: Water	Received: 03/25/13
Units: ug/L	Analyzed: 03/26/13
Diln Fac: 1.000	

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	1.0	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 244019	Location: 6501 Shattuck Ave., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5032	Analysis: EPA 8260B
Field ID: MW-1	Batch#: 196701
Lab ID: 244019-001	Sampled: 03/25/13
Matrix: Water	Received: 03/25/13
Units: ug/L	Analyzed: 03/26/13
Diln Fac: 1.000	

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	117	77-134
1,2-Dichloroethane-d4	108	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 244019	Location: 6501 Shattuck Ave., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5032	Analysis: EPA 8260B
Field ID: MW-2	Batch#: 196701
Lab ID: 244019-002	Sampled: 03/25/13
Matrix: Water	Received: 03/25/13
Units: ug/L	Analyzed: 03/26/13
Diln Fac: 1.000	

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 244019	Location: 6501 Shattuck Ave., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5032	Analysis: EPA 8260B
Field ID: MW-2	Batch#: 196701
Lab ID: 244019-002	Sampled: 03/25/13
Matrix: Water	Received: 03/25/13
Units: ug/L	Analyzed: 03/26/13
Diln Fac: 1.000	

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	118	77-134
1,2-Dichloroethane-d4	108	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 244019	Location: 6501 Shattuck Ave., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5032	Analysis: EPA 8260B
Field ID: MW-3	Batch#: 196701
Lab ID: 244019-003	Sampled: 03/25/13
Matrix: Water	Received: 03/25/13
Units: ug/L	Analyzed: 03/26/13
Diln Fac: 1.000	

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 244019	Location: 6501 Shattuck Ave., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5032	Analysis: EPA 8260B
Field ID: MW-3	Batch#: 196701
Lab ID: 244019-003	Sampled: 03/25/13
Matrix: Water	Received: 03/25/13
Units: ug/L	Analyzed: 03/26/13
Diln Fac: 1.000	

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	121	77-134
1,2-Dichloroethane-d4	114	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	90	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5032	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196701
Units:	ug/L	Analyzed:	03/26/13
Diln Fac:	1.000		

Type: BS Lab ID: QC681386

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	15.53	124	61-137
Benzene	12.50	13.74	110	78-125
Trichloroethene	12.50	12.49	100	77-122
Toluene	12.50	13.16	105	79-123
Chlorobenzene	12.50	12.61	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	115	77-134
1,2-Dichloroethane-d4	109	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	91	80-120

Type: BSD Lab ID: QC681387

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	15.01	120	61-137	3	24
Benzene	12.50	13.52	108	78-125	2	20
Trichloroethene	12.50	12.47	100	77-122	0	20
Toluene	12.50	12.76	102	79-123	3	20
Chlorobenzene	12.50	12.21	98	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	113	77-134
1,2-Dichloroethane-d4	108	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	92	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5032	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC681388	Batch#:	196701
Matrix:	Water	Analyzed:	03/26/13
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	244019	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5032	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC681388	Batch#:	196701
Matrix:	Water	Analyzed:	03/26/13
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	123	77-134
1,2-Dichloroethane-d4	111	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	93	80-120

ND= Not Detected

RL= Reporting Limit