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**ENVIRONMENTAL ENGINEERING, INC.**  
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May 8, 2013

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

Subject: Freedom Food and Gas (Formerly Freedom ARCO Mini-Mart)  
Site Address: 15101 Freedom Avenue, San Leandro, California  
**STID 4473/RO0000473**

Dear Ms. Roe:

SOMA's "First Quarter 2013 Groundwater Monitoring and Remediation Progress Report" for the subject property 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. Mohammad Pazdel w/report enclosure

**First Quarter 2013  
Groundwater Monitoring and  
Remediation Progress Report**

**Freedom Food and Gas  
15101 Freedom Avenue  
San Leandro, California**

**May 8, 2013**

**Project 2551/2553**

**Prepared for**

**Mr. Mohammad Pazdel  
1770 Pistacia Court  
Fairfield, California**

## PERJURY STATEMENT

Site Location: 15101 Freedom Avenue, San Leandro, California

"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".

A handwritten signature in black ink, reading "M. Pazdel", written over a horizontal line.

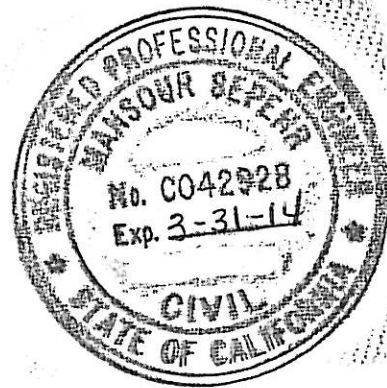
Mohammad Pazdel  
1770 Pistacia Court  
Fairfield, California 94533  
Responsible Party

## CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this report on behalf of the responsible party, Mr. Mohammad Pazdel, for property located at 15101 Freedom Avenue, San Leandro, California, to comply with Alameda County Health Care Services requirements 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 the responsible party, Mr. Mohammad Pazdel, for property located at 15101 Freedom Avenue, San Leandro, California. The site is located in an area of primarily residential properties and adjacent commercial areas (Figure 1). The property was formerly owned by Mr. Mohammad Pazdel. In late 2009, the property was sold to DDH, LLC, Assignee and in early 2010 it was sold to Mr. Mohammad Mashhoon. Under the new management, the site is currently operational with the business name “Freedom Food and Gas” (formerly “Freedom Arco Mini-Mart”).

This report summarizes results of the First Quarter 2013 groundwater monitoring event conducted on March 27 and 28, 2013. It includes physical and chemical properties measured in the field and laboratory analysis results for each groundwater sample. It also presents the remediation progress report for First Quarter 2013, which includes operation of a groundwater extraction and treatment system. During this reporting period, no multi-phase extraction (MPE) events were conducted.

## 1.1 Field Activities

In March 2013, SOMA’s field crew conducted a groundwater monitoring event in accordance with procedures and guidelines of Alameda County Health Care Services (ACHCS) and the California Regional Water Quality Control Board (CRWQCB). Figure 2 shows well locations.

On March 27, 2013, the following wells were measured for depth to groundwater: five on-site monitoring wells (MW-1 to MW-5) and two off-site wells (MW-6 and MW-7) in the First water-bearing zone (WBZ); two extraction wells (EX-1 and EX-2), two MPE wells (MPE-1 and MPE-2), and three on-site monitoring wells (MW-1D, MW-3D, and MW-4D) in the Second WBZ. On March 27 and 28, 2013, additional field measurements and groundwater samples were collected from all monitoring and MPE wells. Grab groundwater samples were also collected from the two extraction wells. Properties measured include pH, temperature, and electrical conductivity (EC).

A natural attenuation study was conducted during this event to determine whether petroleum hydrocarbons in groundwater are biodegrading. Dissolved oxygen (DO) and oxidation reduction potential (ORP) measurements were taken for all monitoring and MPE wells.



## 1.2 Laboratory Analysis

Curtis & Tompkins Laboratories, a California state-certified laboratory, analyzed groundwater samples for the following: total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, total xylenes (collectively termed BTEX); methyl tertiary-butyl ether (MtBE); and gasoline oxygenates, ethanol and lead scavengers. Samples were prepared using EPA Method 5030B and analyzed using EPA Method 8260B.

## 2. RESULTS

Following are results of field measurements and laboratory analysis for the First Quarter 2013 groundwater monitoring event.

### 2.1 Field Measurements, First WBZ Wells

Table 1 presents calculated groundwater elevations and depths to groundwater for each monitoring well. Depths to groundwater ranged from 14.30 feet in MW-7 to 23.15 feet in MW-1. No Free-Product (FP) was observed during this monitoring event. Appendix A includes the procedure for FP measurement.

Corresponding groundwater elevations ranged from 29.52 feet in MW-6 to 31.31 feet in MW-1. Groundwater elevations at extraction wells EX-1 and EX-2 were 26.66 feet and 26.26 feet, respectively.

Figure 3 displays the contour map of groundwater elevations. As illustrated, groundwater flows towards extraction wells, at a gradient of 0.008 feet/feet. Since the previous monitoring event (Fourth Quarter 2012) the gradient has not changed. Groundwater gradient calculations are attached in Appendix B.

Upon equalization with the surrounding aquifer at each well location, when the purge cycle was terminated, DO in the First WBZ ranged from 0.84 mg/L in MPE-2 to 3.01 mg/L in MW-7. ORP showed negative redox potentials in MW-1 through MW-6, MPE-1 and MPE-2. Negative redox potentials indicate that contaminants in groundwater are conducive to anaerobic biodegradation. ORP showed positive redox potentials in MW-7. 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.

Field measurements taken during this monitoring event are included in Appendix B (Table A).

## 2.2 Laboratory Analysis, First WBZ Wells

Appendix C includes the laboratory report and chain-of-custody form for this monitoring event.

Table 1 presents TPH-g, BTEX, and MtBE analysis results for the current and historical groundwater monitoring events.

TPH-g ranged from 69 µg/L in EX-1 to 61,000 µg/L in MPE-1. Since the previous monitoring event (Fourth Quarter 2012), TPH-g increased in MW-2 and MW-3, decreased in MW-1, MW-4 through MW-7, MPE-1, MPE-2, EX-1 and EX-2.

Figure 4 displays the contour map of TPH-g concentrations in groundwater. As illustrated, the highest TPH-g impact is in the southern portion of the site and in the vicinity of the dispenser islands around MPE-1.

The following BTEX concentrations were observed:

- Benzene was below laboratory-reporting limits in MW-2 and MW-7. Detectable benzene concentrations ranged from 4.1 µg/L in EX-1 to 6,600 µg/L in MPE-1.
- Toluene was below laboratory-reporting limits in MW-1, MW-2, MW-4, MW-5, MW-6, MW-7, EX-1, and MPE-2. Detectable toluene concentrations ranged from 8.2 µg/L in MW-3 to 4,500 µg/L in MPE-1.
- Ethylbenzene was detected in concentrations ranging from 1.8 µg/L in MW-7 to 2,200 µg/L in MPE-1.
- Total xylenes were below laboratory-reporting limits in MW-2, MW-4, and MW-7. Detectable concentrations ranged from 10 µg/L in EX-1 to 9,400 µg/L in MPE-1.

Figure 5 displays the contour map of benzene in groundwater. The highest benzene impact is in the southern portion of the site and in the vicinity of the dispenser islands around MPE-1. Since the previous monitoring event (Fourth Quarter 2012), benzene has increased in MW-1, MW-3, MW-4, MW-6 and MPE-2, decreased in MW-5, EX-1, EX-2, and MPE-1.

MtBE was below the laboratory-reporting limit in MW-2, MW-6, and MPE-2. Detectable MtBE ranged from 1.8 µg/L in EX-1 to 1,500 µg/L in MPE-1. Figure 6 displays the contour map of MtBE concentrations in groundwater. The highest MtBE impact is in the southern portion of the site and in the vicinity of the dispenser islands around MPE-1 where MtBE concentration is significantly higher than in other wells. Since the previous monitoring event (Fourth Quarter 2012), MtBE has increased in MW-1, MW-3, MW-4, MW-7, and MPE-1 and decreased in MW-5, MW-6, EX-1, EX-2, and MPE-2.

As shown in Table 1, MtBE increased and TPH-g, benzene, toluene, ethylbenzene, and total xylenes decreased in more impacted well MPE-1 since the previous monitoring event (Fourth Quarter 2012).

Table 2 shows analysis results for gasoline oxygenate and lead scavenger concentrations for the current as well as historical events.

The following gasoline oxygenate and lead scavenger concentrations were observed:

- In MW-1 through MW-3, MW-5 through MW-7, EX-1, EX-2, and MPE-2, all gasoline oxygenates and lead scavengers were below laboratory-reporting limits.
- Tertiary-butyl alcohol (TBA) was detected in MW-4 at 2,500 µg/L and was below laboratory-reporting limit in remaining wells. Figure 7 shows the map of TBA concentrations in First WBZ wells.
- Methyl tertiary-amyl ether (TAME) was detected in MW-5 at 3.1 µg/L and MPE-1 at 890 µg/L, and was below the laboratory-reporting limit in remaining wells. Figure 7 displays the map of TAME concentrations in First WBZ wells.
- Ethyl tertiary-butyl ether (ETBE) was detected in MW-4 at 29 µg/L and was below laboratory-reporting limits in remaining wells. Figure 7 displays the map of ETBE concentrations in First WBZ wells.
- 1,2-dichloroethane (1,2-DCA), Isopropyl ether (DIPE), 1,2-dibromoethane (EDB), and ethanol were below laboratory-reporting limits in all groundwater samples. Analysis results for ethanol are shown in Appendix C.

### **2.3 Field Measurements, Second WBZ Wells**

Table 1 presents calculated groundwater elevations and depths to groundwater for each Second WBZ monitoring well. Depths to groundwater ranged from 21.98 feet in MW-4D to 23.34 feet in MW-1D. Corresponding groundwater elevations ranged from 31.08 feet in MW-1D to 31.23 feet in MW-3D.

Figure 8 displays the contour map of groundwater elevations in the Second WBZ. Groundwater flows northwesterly similar to the previous monitoring event (Fourth Quarter 2012), at a gradient of 0.0021 feet/feet. The groundwater gradient increased since the previous monitoring event. Groundwater gradient calculations are attached in Appendix B.

Upon equalization with the surrounding aquifer at each well location, when the purge cycle was terminated, DO in the Second WBZ ranged from 1.45 mg/L in MW-1D to 2.11 mg/L in MW-2D. ORP showed negative redox potential in MW-1D and positive potentials in MW-3D and MW-4D. 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. Negative redox potentials indicate that contaminants in groundwater are conducive to anaerobic biodegradation.

Field measurements taken during this monitoring event are included in Appendix B.

## **2.4 Laboratory Analysis for Second WBZ Wells**

Appendix C includes the laboratory report and chain-of-custody form for this monitoring event.

Table 1 presents TPH-g, BTEX, and MtBE analysis results for the current and historical groundwater monitoring events.

TPH-g and BTEX were below laboratory-reporting limits in all second WBZ wells similar to the previous monitoring event (Fourth Quarter 2012).

MtBE was below the laboratory-reporting limit in MW-1D and was detected in MW-3D and MW-4D at 4.4 µg/L and 2.1 µg/L, respectively. Since the previous monitoring event (Fourth Quarter 2012), MtBE has remained the same in MW-3D and increased in MW-4D. Figure 9 shows the map of MtBE concentrations in Second WBZ.

Table 2 shows analysis results for gasoline oxygenate and lead scavenger concentrations for the current as well as historical events.

All gasoline oxygenate, lead scavenger, and ethanol concentrations were below laboratory-reporting limits in Second WBZ wells.

## **3. OPERATION OF TREATMENT SYSTEM**

SOMA installed a groundwater treatment system at the site in December 2009. The system includes two extraction wells (EX-1 and EX-2), trenching containing influent and effluent lines and electrical conduits, and the treatment system compound. During system operation, extracted groundwater is pumped from extraction wells through underground piping to a fenced treatment compound, adjacent to the existing service station building.

In the treatment compound, groundwater is treated using granular activated carbon (GAC) and subsequently discharged to the sanitary sewer. Two GAC vessels are connected in series. The first unit (1,000 gallons) serves as the primary treatment unit, and the second (55 gallons) provides an additional safety

buffer prior to discharge. Effectiveness of the GAC units is monitored by collection and analysis of samples from the system discharge, including a sample collected from water that has passed only through the first GAC unit. When analytical results indicate that the first GAC unit is no longer effectively treating groundwater, the vessel will be removed from the treatment line and refurbished with new carbon. Since the system began discharging, approximately 2,196,239 gallons of groundwater have been treated and discharged at the site (as of March 21, 2013).

The treatment system operates under discharge permit issued by Oro Loma Sanitary District (OLSD) in May 2009. This discharge permit was most recently renewed in May 2012. Treated groundwater has been discharging to the OLSD sewer since December 9, 2009. Figure 10 shows the schematic diagram of the groundwater treatment system. Treatment system effluent is sampled monthly to comply with OLSD discharge permit requirements. Table 3 includes analytical results and operational history of the treatment system. As shown in Table 4, as of October 23, 2012, cumulative masses of TPH-g and BTEX extracted from groundwater were approximately 21.63 pounds, 0.99 pounds, 0.23 pounds, 0.46 pounds, and 3.22 pounds, respectively. Appendix D includes laboratory analytical results.

#### **4. MULTI-PHASE EXTRACTION EVENTS**

No MPE events were performed during First Quarter 2013. The overall estimated total mass of VOCs extracted by previous MPE events is 806 pounds. This includes the following: 106 pounds, November 2007 pilot test; 243 pounds, October 2009 event; 72 pounds, November 2009 event; 97 pounds, December 2009 event; 17 pounds, February 2010 event; 11 pounds, March 2010 event; 30 pounds, June 2010 event; 30 pounds, August 2010 event; 79 pounds, October 2010 event; 27 pounds, April 2011 event; and 94 pounds, August 2011 event. Figure 11 shows the cumulative mass of VOCs removed in pounds.

#### **5. CONCLUSIONS AND RECOMMENDATIONS**

First Quarter 2013 groundwater monitoring and previous MPE events results are summarized below.

- Groundwater flows towards extraction wells in the First WBZ and northwesterly in the Second WBZ.
- The highest hydrocarbon concentrations were observed in the southern portion of the site and in the vicinity of the dispenser islands around MPE extraction well MPE-1. TPH-g concentrations in MPE-1 and MPE-2 were significantly higher than in other site wells.

- Since the previous quarterly monitoring event (Fourth Quarter 2012), TPH-g increased in MW-2 and MW-3, decreased in MW-1, MW-4 through MW-7, MPE-1, MPE-2, EX-1 and EX-2.
- In the Second WBZ, TPH-g and BTEX were below laboratory-reporting limits, and MtBE was below laboratory-reporting limit in MW-1D. Since the previous monitoring event (Fourth Quarter 2012), MtBE remained the same in MW-3D and increased in MW-4D.
- The total hydrocarbon removed by MPE operation which ended in August 2011 was estimated to be 806 pounds.

Based on results of this monitoring event and previous MPE events, SOMA recommends the following action items:

- Continue quarterly groundwater monitoring to increase understanding of seasonal variations in groundwater quality conditions.

Other ongoing activities: Based on ACHCS directive dated April 22, 2013, SOMA is currently conducting an extended MPE event at the site. SOMA is also preparing an Updated Site Conceptual Model and Data Gap Work Plan as requested by ACHCS.

## **6. REPORT LIMITATIONS**

This report is the summary of work done by SOMA, including observations and descriptions of site conditions. It includes analysis results produced by Curtis & Tompkins Laboratories for the current groundwater monitoring event. Quantities and locations of wells were selected to provide the required information, but may not be representative of entire site conditions. All conclusions and recommendations are based on laboratory analysis results. 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 practices in the environmental engineering and consulting field at the time of this sampling.

# Figures

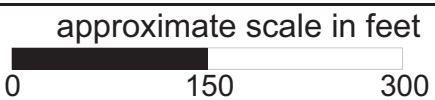
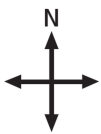
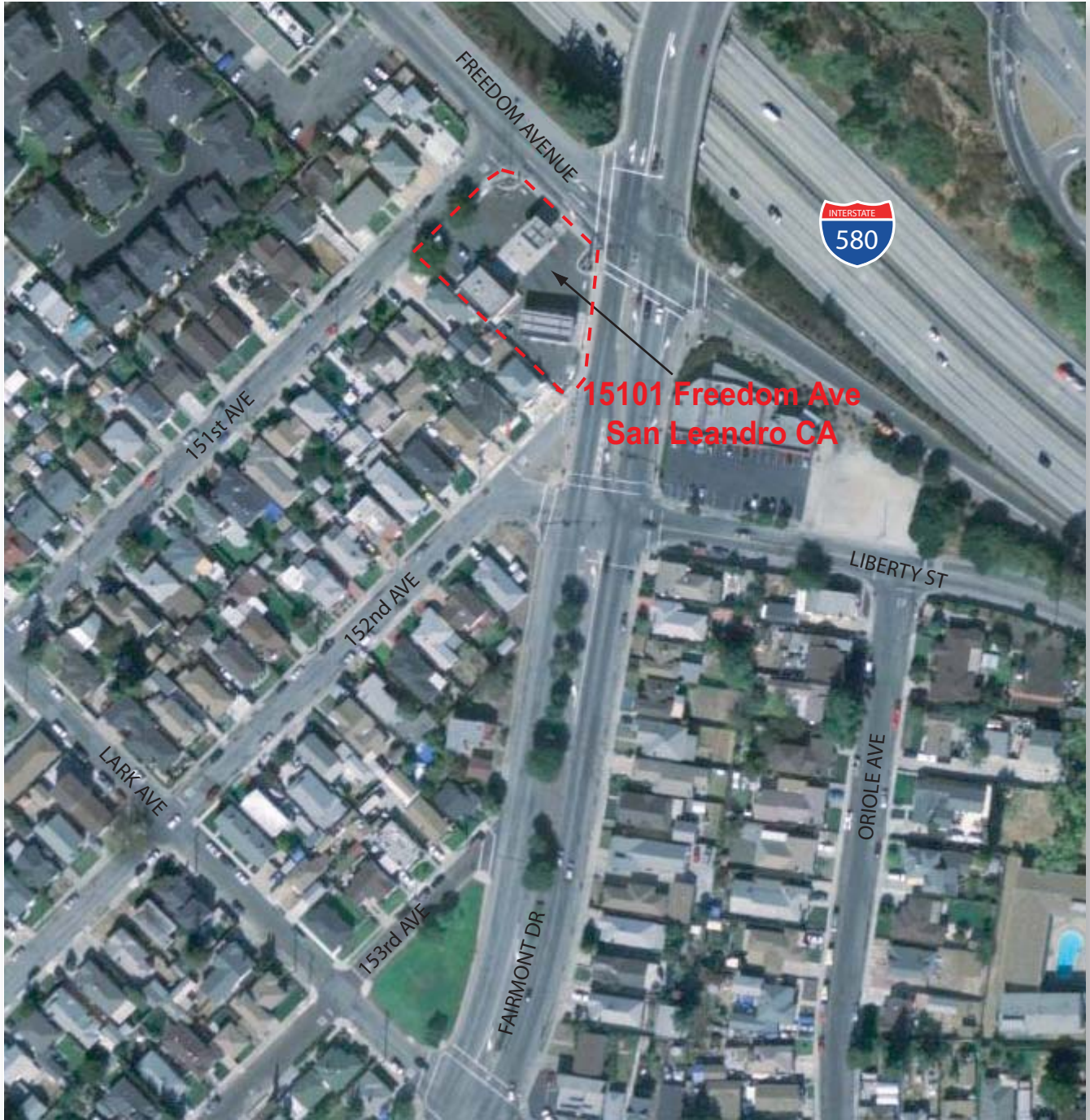
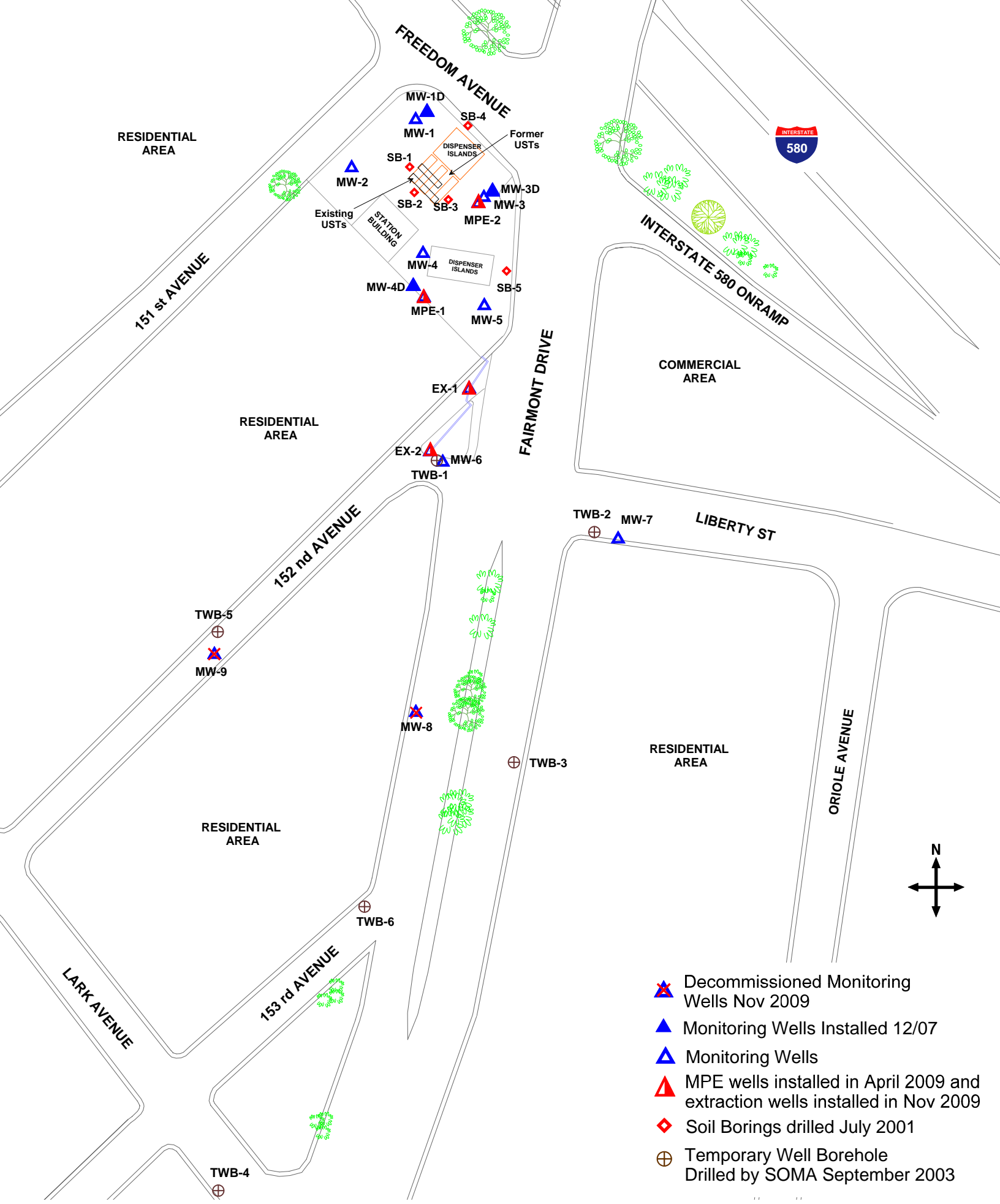








Figure 1: Site vicinity map.





-  Decommissioned Monitoring Wells Nov 2009
-  Monitoring Wells Installed 12/07
-  Monitoring Wells
-  MPE wells installed in April 2009 and extraction wells installed in Nov 2009
-  Soil Borings drilled July 2001
-  Temporary Well Borehole Drilled by SOMA September 2003

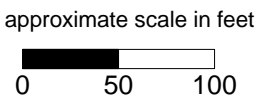
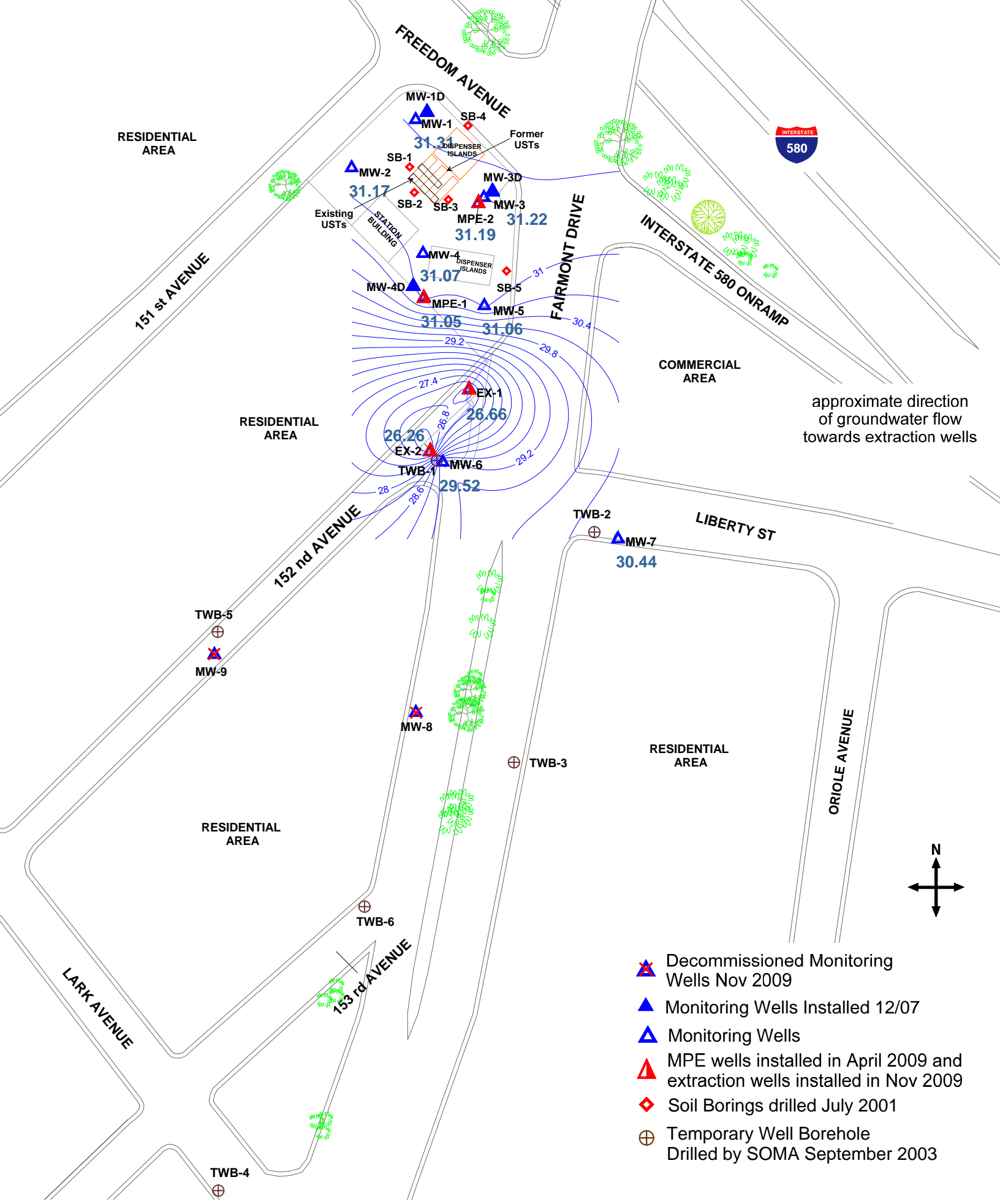


Figure 2: Site map showing locations of groundwater monitoring wells, soil borings, and extraction wells.





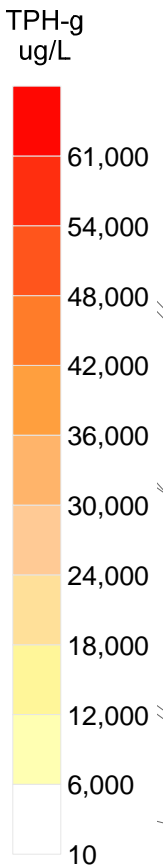
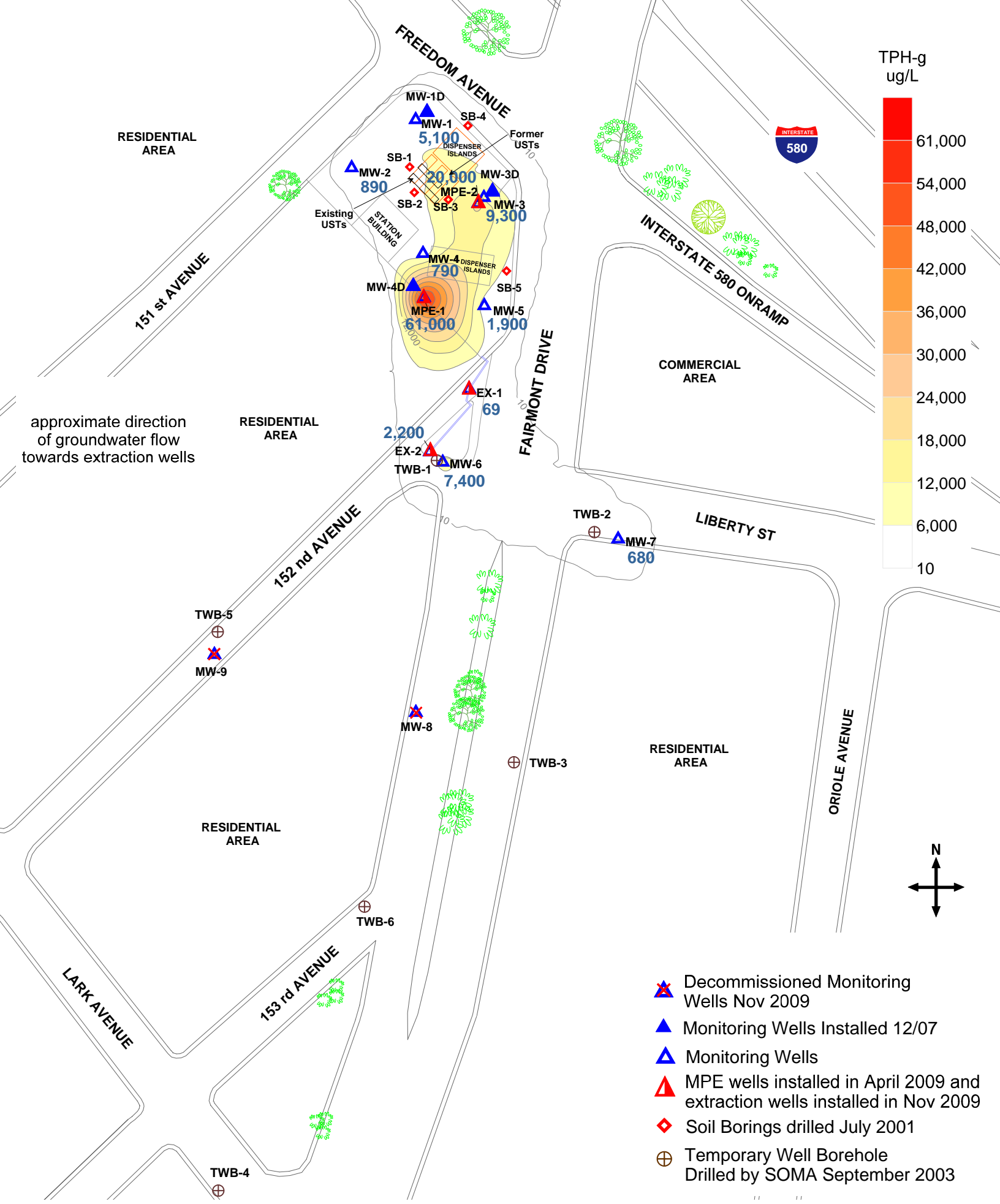
approximate direction of groundwater flow towards extraction wells

- Decommissioned Monitoring Wells Nov 2009
- Monitoring Wells Installed 12/07
- Monitoring Wells
- MPE wells installed in April 2009 and extraction wells installed in Nov 2009
- Soil Borings drilled July 2001
- Temporary Well Borehole Drilled by SOMA September 2003

approximate scale in feet  
 0 50 100

Figure 3: Groundwater Elevation Contour Map in Feet, First WBZ, March 27, 2013





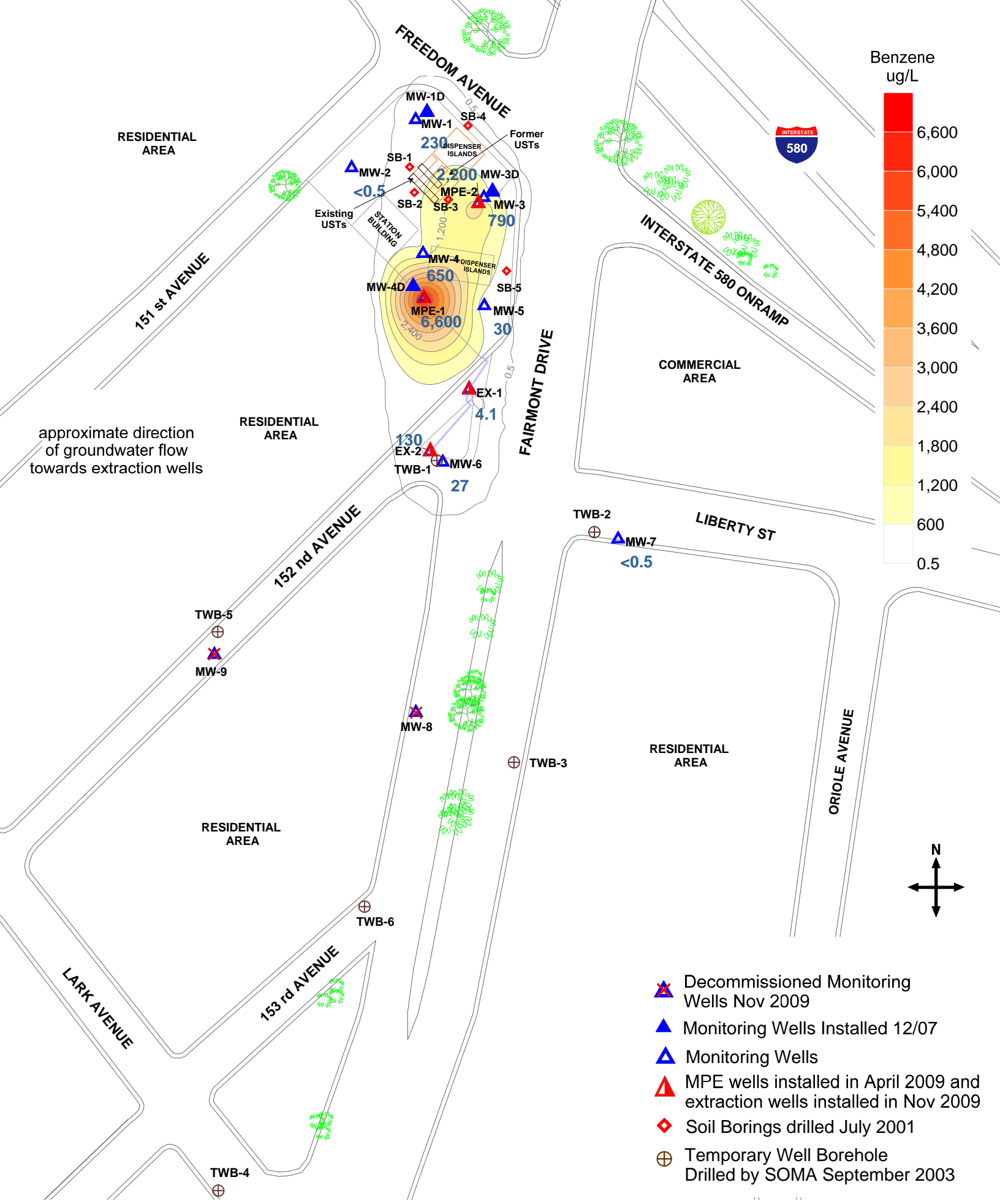
- Decommissioned Monitoring Wells Nov 2009
- Monitoring Wells Installed 12/07
- Monitoring Wells
- MPE wells installed in April 2009 and extraction wells installed in Nov 2009
- Soil Borings drilled July 2001
- Temporary Well Borehole Drilled by SOMA September 2003

approximate scale in feet

0 50 100

Figure 4: Contour Map of TPH-g Concentrations in Groundwater, First WBZ, March 27 and 28, 2013





approximate scale in feet  
 0 50 100

Figure 5: Contour Map of Benzene Concentrations in Groundwater, First WBZ, March 27 and 28, 2013



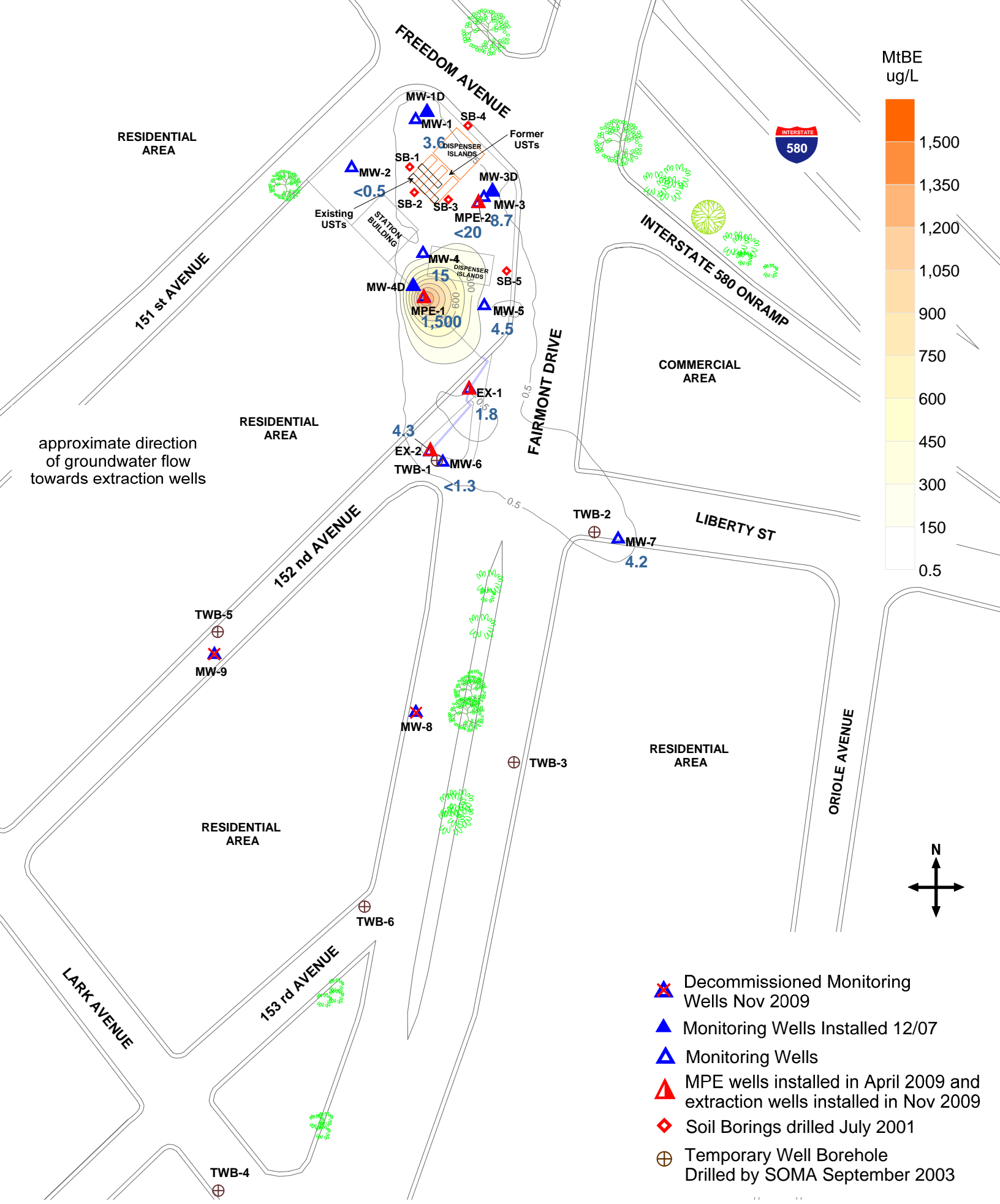
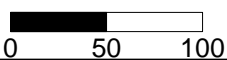
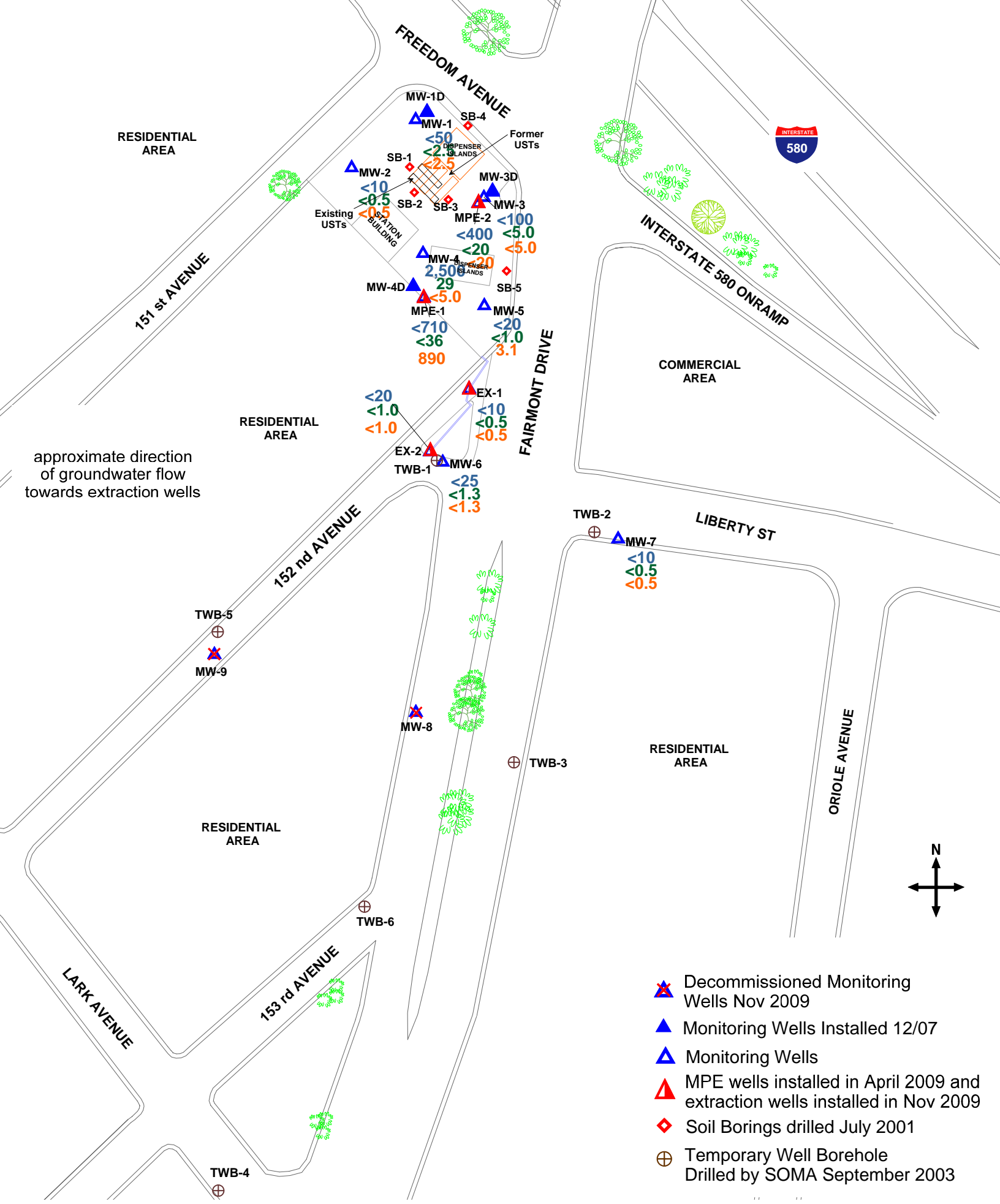


Figure 6: Contour Map of MtBE Concentrations in Groundwater, First WBZ, March 27 and 28, 2013

approximate scale in feet





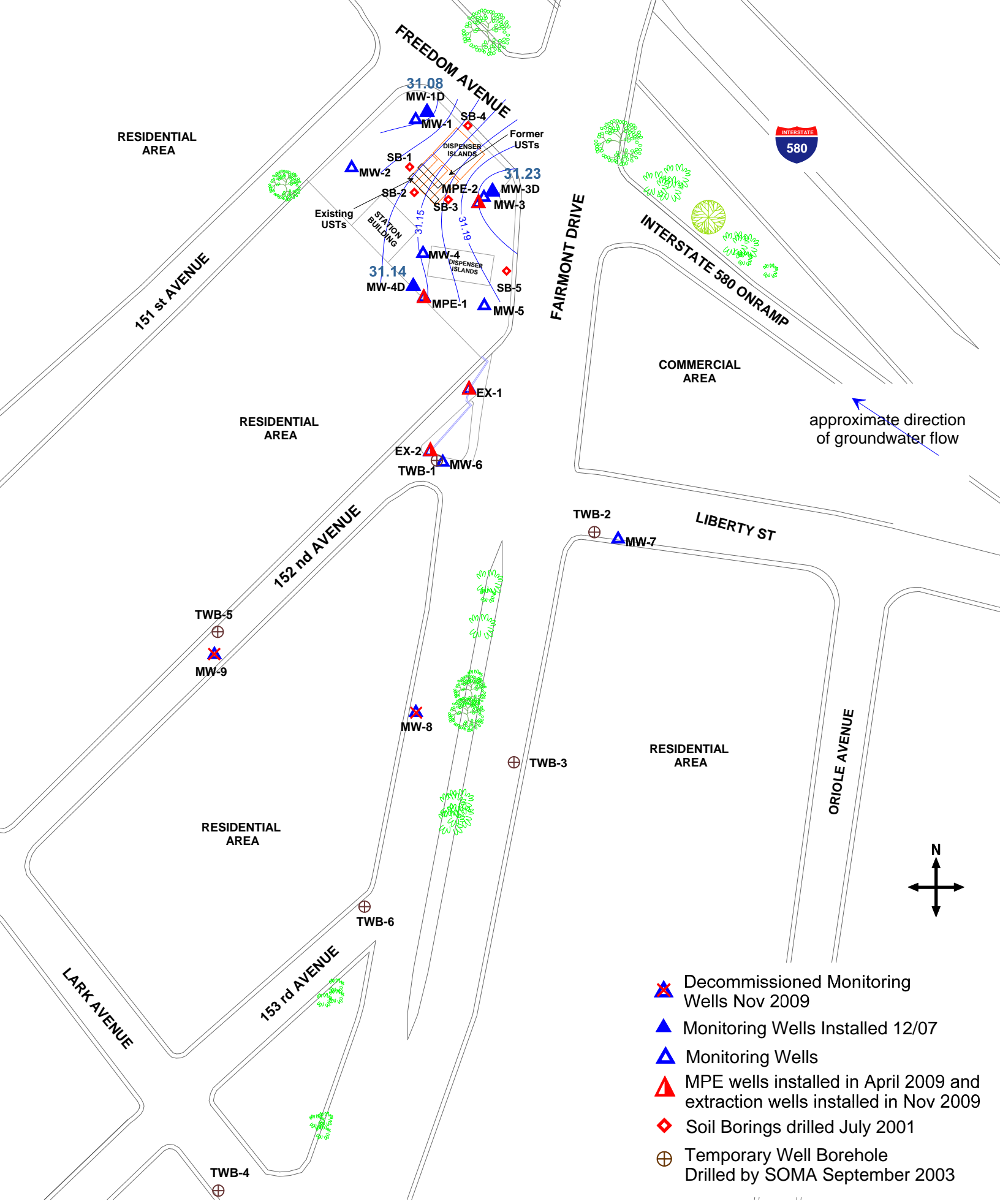


approximate direction  
of groundwater flow  
towards extraction wells

approximate scale in feet  
0 50 100

Figure 7: Map of TBA, ETBE, and TAME Concentrations in Groundwater, First WBZ, March 27 and 28, 2013

- Decommissioned Monitoring Wells Nov 2009
- Monitoring Wells Installed 12/07
- Monitoring Wells
- MPE wells installed in April 2009 and extraction wells installed in Nov 2009
- Soil Borings drilled July 2001
- Temporary Well Borehole Drilled by SOMA September 2003



RESIDENTIAL AREA

151 st AVENUE

FREEDOM AVENUE



FAIRMONT DRIVE

INTERSTATE 580 ONRAMP

COMMERCIAL AREA

approximate direction of groundwater flow

RESIDENTIAL AREA

152 nd AVENUE

LIBERTY ST

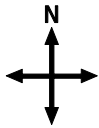
TWB-5  
MW-9

MW-8

TWB-3

RESIDENTIAL AREA

ORIOLE AVENUE



RESIDENTIAL AREA

TWB-6

- Decommissioned Monitoring Wells Nov 2009
- Monitoring Wells Installed 12/07
- Monitoring Wells
- MPE wells installed in April 2009 and extraction wells installed in Nov 2009
- Soil Borings drilled July 2001
- Temporary Well Borehole Drilled by SOMA September 2003

approximate scale in feet

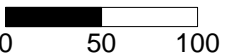
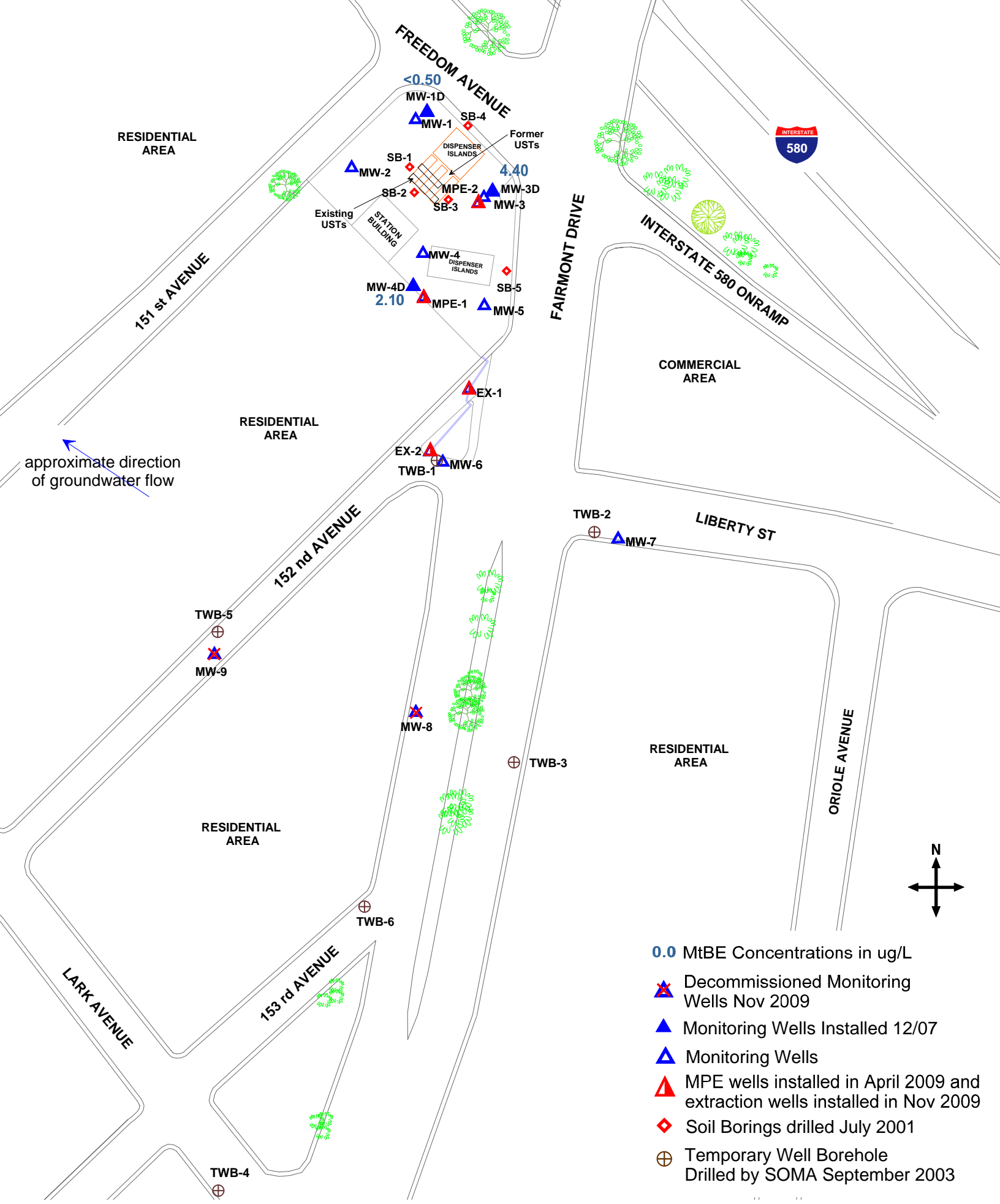


Figure 8: Groundwater Elevation Contour Map in Feet, Second WBZ, March 27, 2013





approximate direction of groundwater flow

- 0.0 MtBE Concentrations in ug/L
- Decommissioned Monitoring Wells Nov 2009
  - Monitoring Wells Installed 12/07
  - Monitoring Wells
  - MPE wells installed in April 2009 and extraction wells installed in Nov 2009
  - Soil Borings drilled July 2001
  - Temporary Well Borehole Drilled by SOMA September 2003

approximate scale in feet

0 50 100

Figure 9: Map Showing Concentrations of MtBE in Groundwater, Second WBZ, March 27 and 28, 2013





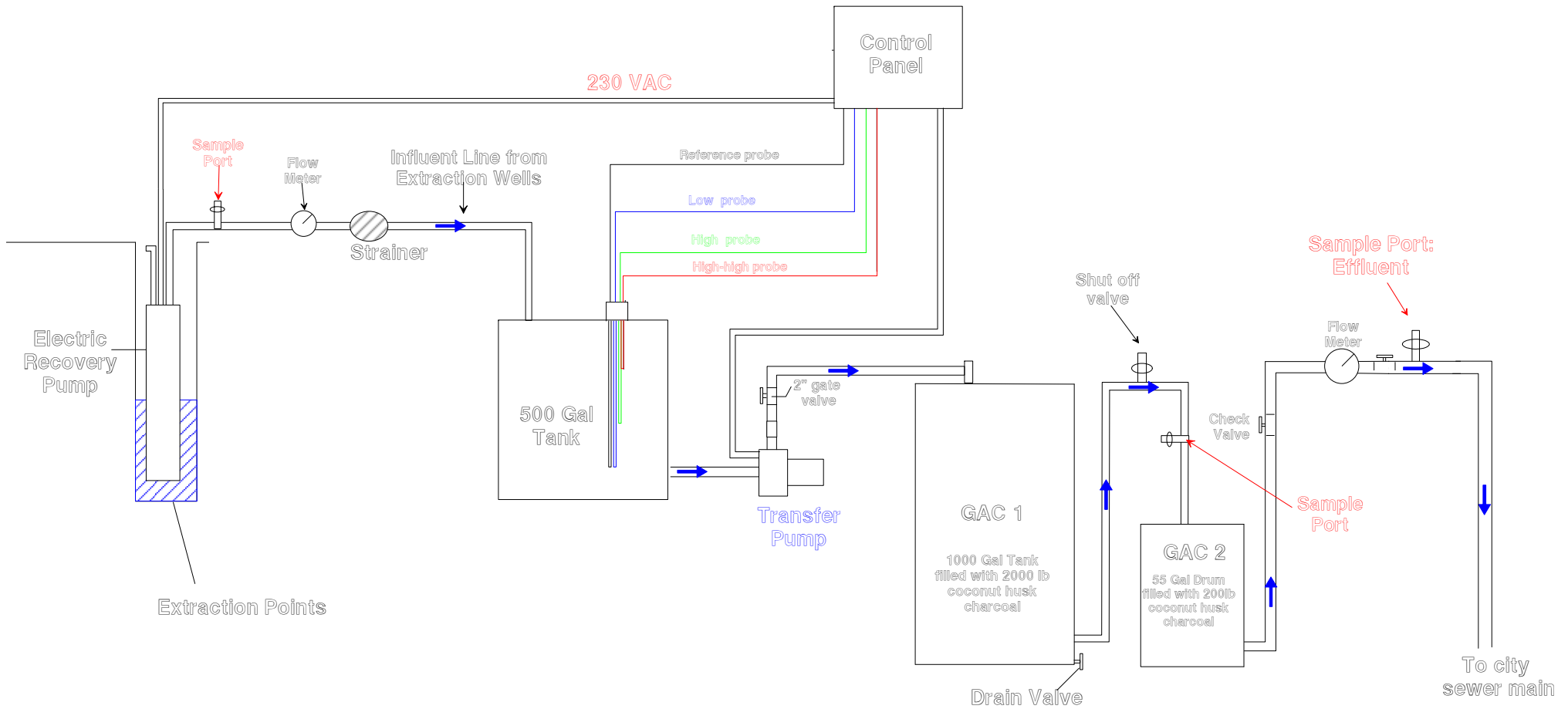


Figure 10: Schematic diagram of Groundwater Remediation System

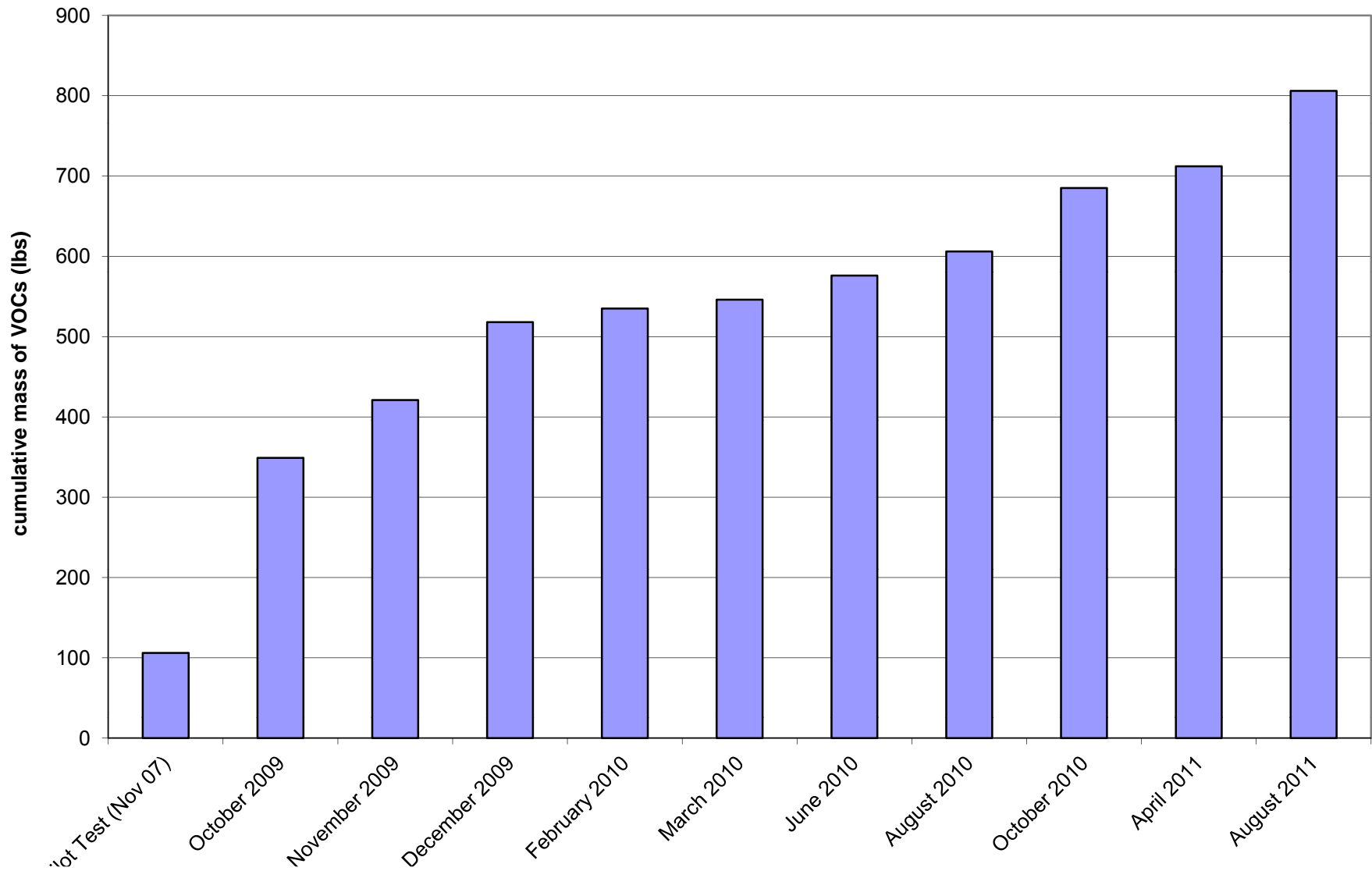


Figure 11: Cumulative mass of VOCs removed

# Tables

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
<b>1st WBZ</b>											
<b>MW-1</b>	5/10/2002	51.71	22.85	-	28.86	5,700	360	4.5	340	450	2
	8/8/2002	51.71	23.31	-	28.40	9,100	590	2.6	830	362	<1.3
	11/8/2002	51.71	23.58	-	28.13	7,900	570	3.1	680	392	< 1.0
	2/21/2003	51.71	22.62	-	29.09	2,900	160	1.6 C	170	211	<0.5
	5/28/2003	51.71	22.43	-	29.28	1,700	55	<0.5	90	115	2.00
	8/12/2003	51.71	21.30	-	30.41	2,600	2.5	<0.5	190	130	<0.5
	10/9/2003	51.71	23.49	-	28.22	9,200	560.0	2.7 C	670	648	<1.0
	1/15/2004	51.71	22.43	-	29.28	5,500	190	<1.0	220	124.4	<0.5
	5/25/2004	51.71	22.94	-	28.77	8,000	400	1.50	420	393	3.40
	9/21/2004	54.46	23.49	-	30.97	9,300	580	9.30	690	683	4.60
	12/14/2004	54.46	23.01	-	31.45	7,360	337	<4.3	731	633	<4.3
	3/11/2005	54.46	21.48	-	32.98	2,510	45.2	<0.5	23.2	39.63	2.80
	6/15/2005	54.46	22.42	-	32.04	1,690	36.3	<2.0	59.5	28.73	2.01
	8/26/2005	54.46	23.00	-	31.46	7,310	318	<8.60	475	316	5.15
	11/11/2005	54.46	21.40	-	33.06	9,640	341	<8.6	467	329.7	6.04
	2/9/2006	54.46	21.81	-	32.65	775	14	<2.0	12.6	10.32	4.01
	5/9/2006	54.46	21.68	-	32.78	444	7.80	<2.0	12.1	6.31	1.75
	8/10/2006	54.46	22.79	-	31.67	5,090	324	<8.60	108	59.9	8.24
	10/26/2006	54.46	23.19	-	31.27	6,950	556	<4.0	190	136.09	8.61
	1/25/2007	54.46	22.82	-	31.64	2,640	196	<2.0	105	25.5	7.92
4/26/2007	54.46	22.67	-	31.79	861	95.5	<2.0	17	6.36	4.00	
7/25/2007	54.46	23.25	-	31.21	4,520	412	<4.0	182	77.9	7.48	
10/23/2007	54.46	23.42	-	31.04	3,900	117	<2.0	87.1	23.87	4.54	

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-1 cont	1/22/2008	54.46	22.59	-	31.87	2,260	81.3	<2.0	17.5	<2.0	4.23
	4/16/2008	54.46	22.89	-	31.57	2,320	248	<2.0	54.1	37.3	<0.5
	7/3/2008	54.46	23.33	-	31.13	5,240	414	<2.0	168	94	6.56
	10/15/2008	54.46	23.76	-	30.70	4,500 <sup>Y</sup>	260	<1.0	150	130	3.40
	1/7/2009	54.46	23.25	-	31.21	4,800	140	<1.3	48	32	1.70
	4/14/2009	54.46	22.52	-	31.94	1,800 <sup>Y</sup>	78	<0.5	35	18	2.50
	8/27/2009	54.46	23.6	-	30.86	4,500	330	<2.0	97	42	4.60
	12/2/2009	54.46	23.43	-	31.03	3,800 <sup>Y</sup>	250	<2.0	110	25	2.50
	3/17/2010	54.46	22.32	-	32.14	1,100	33	<0.50	46	18	1.70
	6/3/2010	54.46	22.88	-	31.58	10,000	330	4.3	680	841.5	5.20
	9/2/2010	54.46	23.28	-	31.18	8,900	440	<5.0	510	310	<5.0
	12/2/2010	54.46	23.21	-	31.25	7,400	250	<3.1	390	180	<3.1
	3/4/2011	54.46	21.95	-	32.51	2,400	67	<0.5	45	8.4	2.20
	5/20/2011	54.46	22.8	-	31.66	9,500	260	6.2	970	480	<3.6
	9/9/2011	54.46	22.81	-	31.65	6,400	220	<1.3	380	160	2.30
	12/2/2011	54.46	21.97	-	32.49	4,700 <sup>x</sup>	96	<1.7	310	200	<3.3
	3/2/2012	54.46	22.82	-	31.64	6,800	320	<2.5	430	120	<2.5
	6/7/2012	54.46	22.92	-	31.54	5,600	130	<2.5	360	160	2.9
	9/21/2012	54.46	23.56	-	30.90	8,000	300	<2.5	410	340	2.6
	12/14/2012	54.46	22.77	-	31.69	5,900	130	<2.5	320	97	<2.5
<b>3/28/2013</b>	<b>54.46</b>	<b>23.15</b>	<b>N</b>	<b>31.31</b>	<b>5,100</b>	<b>230</b>	<b>&lt;2.5</b>	<b>280</b>	<b>48</b>	<b>3.6</b>	
MW-2	5/10/2002	49.66	22.83	-	26.83 *	3,100	67	8	250	215	56
	8/8/2002	49.66	21.41	-	28.25	2,700	4.6	<0.5	310	140	<0.5
	11/8/2002	49.66	21.79	-	27.87	3,400	4.6	< 0.5	310	160	< 0.5
	2/21/2003	49.66	20.51	-	29.15	890	1.7 C	0.80 C	68	38.92 C	<0.5
	5/28/2003	49.66	20.33	-	29.33	2,700	5.2 C	<0.5	120	140	1.2
	8/12/2003	49.66	23.18	-	26.48*	8,500	640	<2.5	560	659	<0.8
	10/9/2003	49.66	21.71	-	27.95	3100 H	4.3 C	<0.5	210	160	<0.5

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-2 cont.	1/15/2004	49.66	20.31	-	29.35	660 H	1.5 C	<0.5	8.9	25	<0.5
	5/25/2004	49.66	21.09	-	28.57	4,500	5.1 C	<0.5	190	230	0.70
	9/21/2004	52.41	21.71	-	30.70	370	0.76 C	<0.5	25	16	0.50
	12/14/2004	52.41	21.20	-	31.21	880	1.0	<0.5	66	52	<0.5
	3/11/2005	52.41	19.15	-	33.26	564	<0.5	<0.5	21	11.9	<0.5
	6/15/2005	52.41	20.30	-	32.11	2,040	1.2	<2.0	78.2	22	<0.5
	8/26/2005	52.41	20.97	-	31.44	1,500	0.930	<2.00	87.6	21	0.86
	11/11/2005	52.41	25.30	-	27.11	2,140	1.08	<2.0	104	29	0.79
	2/9/2006	52.41	19.41	-	33.00	1,410	<0.5	<2.0	99.6	21.4	0.72
	5/9/2006	52.41	19.41	-	33.00	1,100	<0.5	<2.0	86.5	17	<0.5
	8/10/2006	52.41	20.8	-	31.61	3,180	2.87	<2.0	88.9	24.8	<0.50
	10/26/2006	52.41	21.22	-	31.19	1,200	<0.5	<2.0	23.5	4.79	0.6
	1/25/2007	52.41	20.89	-	31.52	623	0.64	<2.0	42.4	4.37	0.66
	4/26/2007	52.41	20.65	-	31.76	169	<0.5	<2.0	15.2	2.3	<0.5
	7/25/2007	52.41	21.43	-	30.98	276	0.78	<2.0	22.1	4.04	<0.5
	10/23/2007	52.41	21.59	-	30.82	535	<0.5	<2.0	18	5.11	<0.5
	1/22/2008	52.31	20.45	-	31.86	132	<0.5	<2.0	12.2	<2.0	<0.5
	4/15/2008	52.41	20.89	-	31.52	852	<0.5	<2.0	27.2	4.78	<0.5
	7/2/2008	52.41	21.5	-	30.91	98.3	<0.5	<2.0	2.76	<2.0	<0.5
	10/15/2008	52.41	22.06	-	30.35	1,400 <sup>Y</sup>	<0.5	<0.5	60	17	<0.5
	1/7/2009	52.41	21.35	-	31.06	93	<0.5	<0.5	2.1	0.74	<0.5
	4/13/2009	52.41	20.52	-	31.89	480 <sup>Y</sup>	<0.5	<0.5	20	5.5	<0.5
	8/27/2009	52.41	21.85	-	30.56	130	<0.5	<0.5	2.5	0.61	<0.5
	12/1/2009	52.41	21.59	-	30.82	760 <sup>Y</sup>	<0.5	<0.5	14	1.5	<0.5
	3/17/2010	52.41	20.11	-	32.30	480	<0.5	<0.5	30	6.9	<0.5
	6/3/2010	52.41	21	-	31.41	690	<0.5	<0.5	14	2.6	<0.5
9/2/2010	52.41	21.42	-	30.99	470	<0.5	<0.5	7.6	1	<0.5	
12/2/2010	52.41	21.44	-	30.97	470	<0.5	<0.5	7.6	3.3	<0.5	

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**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-2 cont.	3/4/2011	52.41	19.65	-	32.76	240	<0.5	<0.5	6.6	0.8	<0.5
	5/20/2011	52.41	20.75	-	31.66	310	<0.5	<0.5	4.8	<0.5	<0.5
	9/9/2011	52.41	21.05	-	31.36	1,000	<0.5	<0.5	12	0.76	<0.5
	12/2/2011	52.41	20.14	-	32.27	900 <sup>x</sup>	<2.9	<1.7	14	1.9	<3.3
	3/2/2012	52.41	19.98	-	32.43	880	<0.5	<0.5	5.3	0.58	<0.5
	6/7/2012	52.41	21.04	-	31.37	720	<0.5	<0.5	7.9	0.79	<0.5
	9/21/2012	52.41	21.78	-	30.63	1,400	<0.5	<0.5	11	<0.5	<0.5
	12/14/2012	52.41	20.71	-	31.70	760	<0.5	<0.5	10	1.5	<0.5
	<b>3/28/2013</b>	<b>52.41</b>	<b>21.24</b>	<b>N</b>	<b>31.17</b>	<b>890</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>4.3</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-3	5/10/2002	51.16	22.28	-	28.88	44,000	6,000	900	1,500	6,200	2,400
	8/8/2002	51.16	22.88	-	28.28	40,000	5,800	1,100	1,600	6,500	1,300
	11/8/2002	51.16	23.19	-	27.97	47,000	5,300	1,200	2,200	8,600	1,000
	2/21/2003	51.16	22.02	-	29.14	39,000	5,500	1,500	2,000	8,600	1,300
	5/28/2003	51.16	21.89	-	29.27	52,000	7,300	3,000	2,800	12,700	2,100
	8/12/2003	51.16	22.66	-	28.50	31,000	6,100	860	1,500	6,900	1,200
	10/9/2003	51.16	23.06	-	28.10	41,000	6,100	1,100	2,200	10,200	960
	1/15/2004	51.16	21.85	-	29.31	51,000	4,100	1,100	2,000	8,400	590
	5/25/2004	51.16	22.55	-	28.61	65,000	4,300	1,300	2,500	10,500	720
	9/21/2004	53.91	23.08	-	30.83	42,000	4,900	890	2,200	8,700	480
	12/14/2004	53.91	22.52	-	31.39	35,151	4,066	972	2,942	13,032	491
	3/11/2005	53.91	20.90	-	33.01	42,600	3,040	1,100	1,530	6,670	968
	6/15/2005	53.91	21.85	-	32.06	84,100	5,110	2,160	3,030	8,800	2,670
	8/26/2005	53.91	22.49	-	31.42	43,500	3,630	1,080	2,500	6,830	1,440
	11/11/2005	53.91	22.81	-	31.10	47,700	4,240	520	2,170	6,320	1,390
	2/9/2006	53.91	21.12	-	32.79	44,500	5,070	1360	1,920	4,840	3,280
5/9/2006	53.91	21.09	-	32.82	48,100	2,510	1,140	1,950	5,030	2,210	
8/10/2006	53.91	22.26	-	31.65	42,100	3,450	869	1,760	5,650	3,570	
10/26/2006	53.91	22.73	-	31.18	33,400	4,800	331	1,170	3,510	4,790	

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**15101 Freedom Avenue, San Leandro, CA**

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MW-3 cont.	1/25/2007	53.91	22.34	-	31.57	19,300	4,820	167	1,540	3,740	3,430
	4/26/2007	53.91	22.24	-	31.67	30,700	2,350	158	1,470	4,320	1,330
	7/25/2007	53.91	22.83	-	31.08	34,900	5,400	364	2,080	6,360	1,980
	10/23/2007	53.91	23.01	-	30.9	22,600	4,070	<86	1,120	3,095	970
	1/22/2008	53.96	22.04	-	31.92	22,100	1,280	453	1,330	3,520	490
	4/16/2008	53.91	22.4	-	31.51	20,700	2,790	182	860	3,389	263
	7/3/2008	53.91	22.9	-	31.01	48,500	3,760	346	3,130	12,980	573
	10/16/2008	53.91	23.36	-	30.55	50,000	3,900	300	3,100	11,000	460
	1/8/2009	53.91	22.82	-	31.09	54,000	2,600	180	2,500	8,800	220
	4/13/2009	53.91	22.06	-	31.85	49,000	2,900	170	2,100	8,100	490
	8/27/2009	53.91	23.11	-	30.80	43,000	2,500	160	1,900	7,000	210
	12/2/2009	53.91	23.00	-	30.91	30,000	2,100	180	1,600	5,600	91
	3/17/2010	53.91	21.90	-	32.01	24,000	970	81	1,100	3,700	38
	6/3/2010	53.91	22.49	-	31.42	31,000	1,200	110	1,300	4,400	34
	9/2/2010	53.91	22.76	-	31.15	26,000	1,100	81	1,200	3,810	26
	12/2/2010	53.91	22.86	-	31.05	18,000	830	47	780	2,360	14
	3/4/2011	53.91	21.44	-	32.47	18,000	410	32	850	2,480	16
	5/20/2011	53.91	22.36	-	31.55	12,000	710	24	620	1,460	11
	9/9/2011	53.91	22.44	-	31.47	11,000	1,100	26	580	1,430	7.8
	12/2/2011	53.91	21.60	-	32.31	5,100 <sup>x</sup>	280	12	370	740	<1.7
3/2/2012	53.91	22.39	-	31.52	13,000	440	23	690	1,570	<5.0	
6/7/2012	53.91	22.50	-	31.41	9,000	290	9.3	520	900	<5.0	
9/21/2012	53.91	23.17	-	30.74	12,000	710	26	630	1,230	8.2	
12/14/2012	53.91	22.32	-	31.59	8,500	350	8.7	550	1,003	<5	
	<b>3/28/2013</b>	<b>53.91</b>	<b>22.69</b>	<b>Y</b>	<b>31.22</b>	<b>9,300</b>	<b>790</b>	<b>8.2</b>	<b>760</b>	<b>974</b>	<b>8.7</b>
MW-4	5/10/2002	50.54	21.78	-	28.76	880	25	1.0C	110	52	12,000
	8/8/2002	50.54	22.50	-	28.04	3,800	70	<5.0	300	115	4,800
	11/8/2002	50.54	22.81	-	27.73	5,100	150	10	460	258	2,400



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MW-4 cont.	2/21/2003	50.54	21.48	-	29.06	3,200	98	66	220	360	6,600
	5/28/2003	50.54	21.24	-	29.30	6,200	140	46	200	790	2,300
	8/12/2003	50.54	22.32	-	28.22	7,500	180	57	220	1450	1,900
	10/9/2003	50.54	22.74	-	27.80	5,800	250	32	300	970	7,800
	1/15/2004	50.54	21.19	-	29.35	5,900	270	17 C	150	640	7,300
	5/25/2004	50.54	22.03	-	28.51	9,100	210	51	200	1190	1800
	9/21/2004	53.31	22.76	-	30.55	5,200	290	12	370	600	7300
	12/14/2004	53.31	21.99	-	31.32	8,937	538	114	416	2379	5021
	3/11/2005	53.31	20.01	-	33.30	12,300	225	39.6	80.1	1465	3870
	6/15/2005	53.31	21.25	-	32.06	7,690	114	32.6	77.1	555	1150
	8/26/2005	53.31	22.03	-	31.28	8,850	175	24.6	150	851	1380
	11/11/2005	53.31	22.43	-	30.88	9,990	356	<43	196	700	3,640
	2/9/2006	53.31	20.31	-	33.00	6,850	205	<43	67.2	255.2	5,120
	5/9/2006	53.31	20.33	-	32.98	1,290	18.1	<8.6	12.9	25.87	799
	8/10/2006	53.31	21.74	-	31.57	7,830	118	<8.60	25.3	174.6	919
	10/26/2006	53.31	22.29	-	31.02	1,540	81.9	<43	96	46.4	3,610
	1/25/2007	53.31	21.86	-	31.45	4,370	163	<8.6	85.1	269.1	1,050
	4/26/2007	53.31	21.63	-	31.68	4,380	140	<8.6	67	276.8	576
	7/25/2007	53.31	22.49	-	30.82	4,970	220	<8.60	198	241.5	1,040
	10/23/2007	53.31	22.69	-	30.62	4,200	267	<8.6	147	155.5	1,220
	1/22/2008	53.36	21.39	-	31.97	2,180	133	<22.0	43.1	32.2	1,800
	4/15/2008	53.31	21.9	-	31.41	4,240	90.4	<22.0	107	380	674
	7/2/2008	53.31	22.55	-	30.76	2,300	193	<22.0	212	183	4,050
	10/16/2008	53.31	23.13	-	30.18	8,900	320	3.7	430	1,160	450
	1/8/2009	53.31	22.42	-	30.89	19,000	430	44	590	3,380	440
	4/13/2009	53.31	21.51	-	31.80	21,000	400	38	450	2,880	330
8/27/2009	53.31	22.94	-	30.37	16,000	960	64	560	2,120	290	
12/2/2009	53.31	22.36	-	30.95	4,400	480	6	170	640	110	

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MW-4 cont.	3/17/2010	53.31	21.39	-	31.92	14,000	260	6	230	1,220	93
	6/3/2010	53.31	22.23	-	31.08	18,000	240	4	310	770	41
	9/2/2010	53.31	22.51	-	30.80	1,800	800	<3.6	150	25	33
	12/2/2010	53.31	22.71	-	30.60	3,800	1,500	<10	200	115	29
	3/3/2011	53.31	20.64	-	32.67	2,400	28	<0.71	28	17	3
	5/19/2011	53.31	21.84	-	31.47	1,800	27	<0.5	29	11.2	4.8
	9/8/2011	53.31	22.11	-	31.20	3,600	300	2.6	270	68.5	59
	12/1/2011	53.31	21.38	-	31.93	1,400 <sup>x</sup>	370	<0.84	110	30.6	110
	3/2/2012	53.31	22.02	-	31.29	3,100	780	<2.0	150	59.6	50
	6/7/2012	53.31	22.24	-	31.07	2,000	290	<2.5	66	23	29
	9/21/2012	53.31	22.87	-	30.44	2,900	820	<2.5	75	17	72
	12/14/2012	53.31	21.84	-	31.47	840	48	<0.5	14	4.5	2.5
	<b>3/28/2013</b>	<b>53.31</b>	<b>22.24</b>	<b>N</b>	<b>31.07</b>	<b>790</b>	<b>650</b>	<b>&lt;5.0</b>	<b>26</b>	<b>&lt;5.0</b>	<b>15</b>
MW-5	5/10/2002	47.79	19.02	-	28.77	25,000	1,000	1200	1,100	3,060	1,800
	8/8/2002	47.79	19.80	-	27.99	18,000	1,000	660	950	1,720	1,500
	11/8/2002	47.79	20.14	-	27.65	16,000	1,300	380	930	1,550	1,200
	2/21/2003	47.79	18.70	-	29.09	12,000	390	71	770	1,100	860
	5/28/2003	47.79	18.52	-	29.27	9,100	210	31	560	790	600
	8/12/2003	47.79	19.54	-	28.25	12,000	660	75	660	1,110	1,000
	10/9/2003	47.79	20.06	-	27.73	15,000	1,000	130	1,000	1,430	1,700
	1/15/2004	47.79	18.42	-	29.37	9,900	450 C	16	500	431	1,100
	5/25/2004	47.79	19.30	-	28.49	9,200	380	24	490	536	720
	9/21/2004	50.53	20.15	-	30.38	10,000	980	71	560	770	1200
	12/14/2004	50.53	19.30	-	31.23	10,502	587	64	1040	1133	1015
	3/11/2005	50.53	17.20	-	33.33	8,390	407	<5.5	83	42.5	1530
	6/15/2005	50.53	18.54	-	31.99	9,350	147	18.3	435	146.2	573
	8/26/2005	50.53	19.31	-	31.22	9,500	261	<22	726	321.3	749
11/11/2005	50.53	19.75	-	30.78	10,000	443	41.5	527	278.5	1,430	

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**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-5 cont.	2/9/2006	50.53	17.58	-	32.95	7,640	237	<22	187	50.2	2,050
	5/9/2006	50.53	17.54	-	32.99	8,360	111	<8.6	300	75.84	566
	8/10/2006	50.53	19.02	-	31.51	16,100	250	<22	455	187.4	1,590
	10/26/2006	50.53	19.61	-	30.92	10,100	430	<22	375	192.6	3,060
	1/25/2007	50.53	19.19	-	31.34	3,960	340	<22	323	150.1	1,740
	4/26/2007	50.53	18.89	-	31.64	4,590	187	<8.6	307	116.5	861
	7/25/2007	50.53	19.81	-	30.72	6,490	419	21.8	413	223.2	913
	10/23/2007	50.53	19.98	-	30.55	6,120	550	11	284	141.4	433
	1/22/2008	50.18	18.69	-	31.49	9,810	572	22	574	184.1	126
	4/15/2008	50.18	19.16	-	31.02	8,890	335	15.1	477	397.5	136
	7/3/2008	50.53	19.88	-	30.65	13,100	949	34.4	875	825.5	176
	10/16/2008	50.53	20.45	-	30.08	11,000	870	25	820	668	160
	1/8/2009	50.53	19.72	-	30.81	12,000	490	21	690	456	76
	4/13/2009	50.53	18.81	-	31.72	9,000 <sup>Y</sup>	200	11	390	198	44
	8/27/2009	50.53	21.30	-	29.23	7,400	610	15	320	185	66
	12/2/2009	50.53	20.00	-	30.53	8,400 <sup>Y</sup>	400	12	540	296	45
Pre-MPE	3/17/2010	50.53	18.73	-	31.80	4,800	120	8.7	120	107	14
	6/4/2010	50.53	19.60	-	30.93	7,200	160	5.7	190	149.2	24
	9/2/2010	50.53	19.82	-	30.71	9,200	110	12	270	318	35
	12/2/2010	50.53	20.10	-	30.43	9,100	170	6.7	350	442	23
	3/4/2011	50.53	18.00	-	32.53	2,600	18	0.62	54	18.1	3
	5/20/2011	50.53	19.18	-	31.35	4,000	91	8.5	110	106	33
	8/4/2011	50.53	NM	-	NC	3,000	23	0.95	92	43.7	5.4
	9/9/2011	50.53	19.41	-	31.12	4,200	120	2.8	140	61.1	22
	12/2/2011	50.53	18.59	-	31.94	6,900 <sup>x</sup>	96	12	220	104	32
	3/2/2012	50.53	19.30	-	31.23	5,400	43	1.8	110	85	7
	6/7/2012	50.53	19.45	-	31.08	3,700	32	<1.0	100	59	4.4
	9/21/2012	50.53	20.17	-	30.36	3,900	68	1.5	140	88.5	9.8
	12/14/2012	50.53	19.12	-	31.41	3,100	48	6.7	100	62.3	5.2
	<b>3/28/2013</b>	<b>50.53</b>	<b>19.47</b>	<b>N</b>	<b>31.06</b>	<b>1,900</b>	<b>30</b>	<b>&lt;1.0</b>	<b>59</b>	<b>48.4</b>	<b>4.5</b>

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**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
MW-6	9/21/2004	45.82	17.64	-	28.18	34,000	150	130	2200	8100	0.6
	12/14/2004	45.82	15.75	-	30.07	5,161	137	7	436	1136	<5.5
	3/11/2005	45.82	13.80	-	32.02	6,040	125	3.22	260	722.1	4.94
	6/15/2005	45.82	14.78	-	31.04	5,590	44.3	6.60	272	382	5.85
	8/26/2005	45.82	15.91	-	29.91	6,130	99	<8.6	378	492.9	5.66
	11/11/2005	45.82	16.55	-	29.27	11,400	101	<8.6	645	834.7	4.33
	2/9/2006	45.82	13.92	-	31.90	2,790	32.3	<8.6	131	131.22	7.30
	5/9/2006	45.82	13.95	-	31.87	3,730	25	<2.0	213	207.82	5.87
	8/10/2006	45.82	15.28	-	30.54	4,800	41.9	<2.0	201	189	10.4
	10/26/2006	45.82	16.11	-	29.71	6,080	37.4	<2.0	116	183	9.78
	1/25/2007	45.82	15.76	-	30.06	3,220	25.2	<2.0	219	174	14.7
	4/26/2007	45.82	15.18	-	30.64	3,110	28	<2.0	165	138.47	14.6
	7/25/2007	45.82	16.82	-	29.00	4,960	54.1	<2.0	199	255.87	8.05
	10/23/2007	45.82	16.91	-	28.91	9,610	64.3	<2.0	188	302.6	5.81
	1/21/2008	45.82	15.36	-	30.46	3,290	33	<2.0	149	131.31	3.86
	4/15/2008	45.82	15.73	-	30.09	2,070	10.8	<2.0	51.1	67	<0.5
	7/2/2008	45.82	16.9	-	28.92	7,900	42.4	<2.0	194	296	3.58
	10/15/2008	45.82	17.21	-	28.61	18,000 <sup>Y</sup>	42	1.4	320	673	1.7
	1/7/2009	45.82	17.08	-	28.74	13,000	47	<3.1	210	425	<3.1
	4/13/2009	45.82	15.52	-	30.30	7,200 <sup>Y</sup>	26	<1.3	170	312.6	2.6
8/26/2009	45.82	17.82	-	28.00	10,000 <sup>Y</sup>	25	<2.0	130	294	2.2	
12/1/2009	45.82	17.34	-	28.48	11,000 <sup>Y</sup>	31	6.1	220	539	<2.0	
3/16/2010	45.82	14.81	-	31.01	31,000	63	140	970	4,200	64	
6/3/2010	45.82	15.72	-	30.10	27,000	22	67	840	3,100	32	
9/1/2010	45.82	16.86	-	28.96	33,000	24	34	1,100	3,780	12	
12/2/2010	45.82	16.98	-	28.84	70,000	32	55	1,700	5,670	18	

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<b>MW-6 cont.</b>	3/3/2011	45.82	14.35	-	31.47	7,000	18	<2.5	97	237	11
	5/20/2011	45.82	14.95	-	30.87	14,000	14	<2.5	300	823	7.2
	9/8/2011	45.82	16.14	-	29.68	23,000	28	<2.5	360	812	3.4
	12/1/2011	45.82	16.17	-	29.65	NA	NA	NA	NA	NA	NA
	3/2/2012	45.82	16.11	-	29.71	14,000	23	<4.2	400	694.4	<4.2
	6/6/2012	45.82	16.31	-	29.51	9,200	12	<1.7	210	320	<1.7
	9/20/2012*	45.82	17.36	17.32	28.49	NA	NA	NA	NA	NA	NA
	12/13/2012	45.82	15.46	-	30.36	13,000	22	<0.71	83	62.8	5.1
	<b>3/27/2013</b>	<b>45.82</b>	<b>16.3</b>	<b>Y</b>	<b>29.52</b>	<b>7,400</b>	<b>27</b>	<b>&lt;1.3</b>	<b>190</b>	<b>221.8</b>	<b>&lt;1.3</b>
<b>MW-7</b>	9/21/2004	44.74	15.21	-	29.53	2,900	<0.5	<0.5	52	61	8.1
	12/14/2004	44.74	13.90	-	30.84	<50	1.6	<0.5	29	58	6.0
	3/11/2005	44.74	11.46	-	33.28	2,230	<2.5	<2.5	39.4	51.4	12.4
	6/15/2005	44.74	12.97	-	31.77	2,940	0.85	<2.0	50.6	31.9	13.7
	8/26/2005	44.74	14.10	-	30.64	2,310	<0.50	<2.0	55.7	29.6	4.01
	11/11/2005	44.74	14.59	-	30.15	3,030	<0.5	<2.0	66.5	42.3	9.76
	2/9/2006	44.74	NM	-	NM	NA	NA	NA	NA	NA	NA
	5/9/2006	44.74	12.02	-	32.72	1,400	<0.5	<2.0	19.8	12.4	2.30
	8/10/2006	44.74	13.72	-	31.02	604	<0.50	<2.0	6.2	4.63	1.42
	10/26/2006	44.74	14.38	-	30.36	1350	<0.50	<2.0	16.6	10.8	1.87
	1/25/2007	44.74	13.93	-	30.81	340	<0.5	<2.0	6.84	2.44	1.63
	4/26/2007	44.74	14.44	-	30.30	552	<0.5	<2.0	11.4	6.11	4.12
	7/25/2007	44.74	14.79	-	29.95	1,230	<0.5	<2.0	27	19.24	3.2
	10/23/2007	44.74	14.88	-	29.86	1,730	0.67	<2.0	20.7	17.31	8.44
	1/21/2008	44.74	13.34	-	31.40	610	1.15	<2.0	8.4	4.34	17.2
	4/15/2008	44.74	13.91	-	30.83	1,460	<0.5	<2.0	15.9	19.7	17.3
	7/2/2008	44.74	14.87	-	29.87	1,450	<0.5	<2.0	11	6.8	22.1
	10/15/2008	44.74	15.68	-	29.06	1,900 <sup>Y</sup>	0.56	1.2	27	39.5	55
	1/7/2009	44.74	14.72	-	30.02	2,700	1.2	2.9	11	25	39
4/13/2009	44.74	13.54	-	31.20	2,300 <sup>Y</sup>	<0.5	<0.5	15	6.3	63	
8/26/2009	44.74	15.84	-	28.90	2,700 <sup>Y</sup>	<0.5	<0.5	48	53	140	
12/1/2009	44.74	15.03	-	29.71	1,800 <sup>Y</sup>	<0.5	<0.5	22	15	120	

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MW-7 cont.	3/16/2010	44.74	12.56	-	32.18	1,100	<0.5	<0.5	3.2	1.4	65
	6/3/2010	44.74	13.80	-	30.94	740	<0.5	<0.5	1.8	0.62	28
	9/1/2010	44.74	14.84	-	29.90	1,200	<0.5	<0.5	10	3.2	29
	12/2/2010	44.74	14.74	-	30.00	1,400	<0.5	<0.5	8	0.74	21
	3/3/2011	44.74	13.31	-	31.43	1,000	<0.5	<0.5	1.8	<0.5	16
	5/19/2011	44.74	13.43	-	31.31	810	<0.5	<0.5	2.2	0.79	7.8
	9/8/2011	44.74	14.38	-	30.36	1,000	<0.5	<0.5	8.3	2.9	5.4
	12/1/2011	44.74	13.57	-	31.17	1,500 <sup>x</sup>	<0.33	<0.19	12	5.7	13
	3/2/2012	44.74	14.16	-	30.58	1,000	<0.5	<0.5	4	1.1	5.1
	6/6/2012	44.74	14.00	-	30.74	780	<0.5	<0.5	2.9	1.0	2.6
	9/20/2012	44.74	15.26	-	29.48	1,200	<0.5	<0.5	4.3	0.92	2.7
	12/13/2012	44.74	13.34	-	31.40	1,100	<0.5	<0.5	0.99	<0.5	3.4
	<b>3/27/2013</b>	<b>44.74</b>	<b>14.30</b>	<b>N</b>	<b>30.44</b>	<b>680</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>1.8</b>	<b>&lt;0.5</b>	<b>4.2</b>
MW-8	9/21/2004	41.14	12.98	-	28.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/14/2004	41.14	11.22	-	29.92	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	3/11/2005	41.14	NM	-	NM	NA	NA	NA	NA	NA	NA
	6/15/2005	41.14	10.46	-	30.68	<200	0.53	<2.0	<0.5	<1.0	<0.5
	8/26/2005	41.14	11.53	-	29.61	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	11/11/2005	41.14	11.92	-	29.22	<50	<0.5	<2.0	1.36	1.8	<0.5
	2/9/2006	41.14	9.74	-	31.40	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	5/9/2006	41.14	9.90	-	31.24	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	8/10/2006	41.14	10.9	-	30.24	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	10/26/2006	41.14	11.68	-	29.46	<50	<0.50	<2.0	3.37	<1.0	<0.50
	1/25/2007	41.14	11.44	-	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/26/2007	41.14	10.81	-	30.33	<50	<0.5	<2.0	4.29	<2.0	<0.5
	7/25/2007	41.14	12.31	-	28.83	<50	<0.5	<2.0	4.39	<2.0	<0.5
	10/23/2007	41.14	12.37	-	28.77	<50	<0.5	<2.0	4.31	<2.0	<0.5
	1/21/2008	41.14	11.02	-	30.12	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/15/2008	41.14	11.44	-	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
7/2/2008	41.14	12.39	-	28.75	94.8	<0.5	<2.0	1	<2.0	<0.5	
10/15/2008	41.14	13.42	-	27.72	<50	<0.5	<0.5	<0.5	<0.5	<0.5	

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MW-8 cont.	1/7/2009	41.14	12.50	-	28.64	<50	<0.5	<0.5	<0.5	0.6	<0.5
	4/13/2009	41.14	11.23	-	29.91	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	41.14	13.24	-	27.90	<50	<0.5	<0.5	<0.5	<0.5	<0.5
<b>Well Decommissioned 11/13/2009</b>											
MW-9	9/21/2004	40.26	12.18	-	28.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/14/2004	40.26	10.91	-	29.35	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	3/11/2005	40.26	10.52	-	29.74	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	6/15/2005	40.26	14.73	-	25.53	<200	<0.5	<2.0	<0.5	<1.0	<0.5
	8/26/2005	40.26	10.59	-	29.67	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	11/11/2005	40.26	11.25	-	29.01	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	2/9/2006	40.26	10.05	-	30.21	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	5/9/2006	40.26	9.06	-	31.20	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	8/10/2006	40.26	10.01	-	30.25	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	10/26/2006	40.26	10.81	-	29.45	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	1/25/2007	40.26	10.67	-	29.59	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/26/2007	40.26	10.05	-	30.21	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/25/2007	40.26	11.44	-	28.82	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/23/2007	40.26	11.59	-	28.67	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	1/21/2008	40.26	10.37	-	29.89	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/15/2008	40.26	10.56	-	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/2/2008	40.26	11.95	-	28.31	161	<0.5	<2.0	2.15	<2.0	<0.5
	10/15/2008	40.26	12.64	-	27.62	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/7/2009	40.26	11.75	-	28.51	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/13/2009	40.26	10.89	-	29.37	<50	<0.5	<0.5	<0.5	<0.5	<0.5
8/26/2009	40.26	12.50	-	27.76	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>Well Decommissioned 11/13/2009</b>											

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
<b>Extraction Wells</b>											
<b>EX-1</b>	12/2/2009	47.36	17.02	-	30.34	2,900	120	4	64	410	25
	3/16/2010	47.36	19.08	-	28.28	2,200	150	18	94	326	210
	6/3/2010	47.36	17.02	-	30.34	3,600	180	6.3	150	428	83
	9/1/2010	47.36	16.88	-	30.48	550	6.5	0.5	6.9	31.7	38
	12/2/2010	47.36	19.84	-	27.52	<200	3.1	<2.0	<2.0	<2.0	210
	3/3/2011	47.36	14.96	-	32.4	530	51	0.94	15	31.3	110
	5/19/2011	47.36	16.12	-	31.24	370	42	<0.71	7.6	17.2	110
	9/8/2011	47.36	16.47	-	30.89	110	5	<0.5	2.2	6.4	12
	12/1/2011	47.36	16.1	-	31.26	780 <sup>x</sup>	91	3	29	85	150
	3/2/2012	47.36	16.35	-	31.01	140	6	<0.5	3.5	8	14
	6/6/2012	47.36	24.76	-	22.6	250	22	<0.5	4.7	20	71
	9/20/2012	47.36	17.26	-	30.1	95	24	<0.5	<0.5	2.61	36
	12/13/2012	47.36	16.55	-	30.81	1,000	73	2.3	47	110	48
	<b>3/27/2013</b>	<b>47.36</b>	<b>20.7</b>	<b>N</b>	<b>26.66</b>	<b>69</b>	<b>4.1</b>	<b>&lt;0.5</b>	<b>3.3</b>	<b>10</b>	<b>1.8</b>
<b>Extraction Wells</b>											
<b>EX-2</b>	12/2/2009	45.96	17.56	-	28.4	7,100 <sup>Y</sup>	9.3	3.2	440	770	<3.1
	3/16/2010	45.96	19.65	-	26.31	13,000	600	360	770	2,250	15
	6/3/2010	45.96	17.10	-	28.86	16,000	590	400	700	2,500	9.5
	9/1/2010	45.96	16.99	-	28.97	6,100	230	74	200	890	11
	12/2/2010	45.96	20.87	-	25.09	14,000	510	270	640	2,170	15
	3/3/2011	45.96	14.61	-	31.35	8,600	340	52	460	1,350	13
	5/19/2011	45.96	15.08	-	30.88	7,500	260	65	390	1,080	11
	9/8/2011	45.96	16.34	-	29.62	3,400	190	28	160	451	5.4
	12/1/2011	45.96	22.60	-	23.36	9,900 <sup>x</sup>	630	200	690	1,760	<3.3
	3/2/2012	45.96	16.48	-	29.48	5,000	220	25	200	600	7.1
	6/6/2012	45.96	18.90	-	27.06	6,900	290	97	310	790	5.2
	9/20/2012	45.96	17.49	-	28.47	1,800	170	14	62	204	5.0
	12/13/2012	45.96	15.96	-	30.00	7,300	490	180	610	1,290	5.2
	<b>3/27/2013</b>	<b>45.96</b>	<b>19.70</b>	<b>N</b>	<b>26.26</b>	<b>2,200</b>	<b>130</b>	<b>9.6</b>	<b>100</b>	<b>288</b>	<b>4.3</b>
<b>MPE Wells</b>											
<b>MPE-1</b>	12/1/2009	51.96	21.41	-	30.55	NA	NA	NA	NA	NA	NA



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**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)	
MPE-1 cont.	3/16/2010	51.96	20.22	-	31.74	NA	NA	NA	NA	NA	NA	
	6/3/2010	51.96	21.18	-	30.78	NA	NA	NA	NA	NA	NA	
	9/1/2010	51.96	21.25	-	30.71	NA	NA	NA	NA	NA	NA	
	12/2/2010	51.96	21.64	-	30.32	NA	NA	NA	NA	NA	NA	
	Pre-MPE	3/3/2011	51.96	19.33	-	32.63	NA	NA	NA	NA	NA	NA
		5/19/2011	51.96	20.6	-	31.36	NA	NA	NA	NA	NA	NA
		8/4/2011	51.96	NM	-	NC	49,000	210	100	840	7,070	45
	Post-MPE	9/8/2011	51.96	20.83	-	31.13	NA	NA	NA	NA	NA	NA
		9/26/2011	51.96	20.94	-	31.02	62,000	6,300	3,700	1,800	9,400	1,200
		12/2/2011	51.96	20.14	-	31.82	56,000	9,000	7,700	2,200	10,800	2,600
		3/2/2012	51.96	20.73	-	31.23	97,000	11,000	11,000	2,600	12,600	2,700
		6/6/2012	51.96	20.96	-	31.00	78,000	4,500	4,900	2,300	10,700	750
		9/20/2012	51.96	21.58	-	30.38	89,000	8,600	9,200	3,400	14,800	1,900
12/14/2012	51.96	20.57	-	31.39	98,000	7,400	9,600	2,900	13,300	1,300		
<b>3/27/2013</b>	<b>51.96</b>	<b>20.91</b>	<b>Y</b>	<b>31.05</b>	<b>61,000</b>	<b>6,600</b>	<b>4,500</b>	<b>2,200</b>	<b>9,400</b>	<b>1,500</b>		
<b>Separator</b>												
MPE-2	12/1/2009	53.72	22.87	-	30.85	NA	NA	NA	NA	NA	NA	
	3/16/2010	53.72	21.7	-	32.02	NA	NA	NA	NA	NA	NA	
	6/3/2010	53.72	22.35	-	31.37	NA	NA	NA	NA	NA	NA	
	9/1/2010	53.72	23.7	-	30.02	NA	NA	NA	NA	NA	NA	
	12/2/2010	53.72	22.7	-	31.02	NA	NA	NA	NA	NA	NA	
	Pre-MPE	3/3/2011	53.72	21.25	-	32.47	NA	NA	NA	NA	NA	NA
		5/19/2011	53.72	22.19	-	31.53	NA	NA	NA	NA	NA	NA
		8/4/2011	53.72	NM	-	NC	46,000	2,100	80	1,900	5,300	75
	Post-MPE	9/8/2011	53.72	22.31	-	31.41	NA	NA	NA	NA	NA	NA
		9/26/2011	53.72	22.38	-	31.34	37,000	1,800	33	1,700	2,760	<17
		12/2/2011	53.72	21.44	-	32.28	26,000	1,600	43	1,800	3,370	<17
		3/2/2012	53.72	22.24	-	31.48	36,000	1,100	19	1,700	2,970	<17
		6/7/2012	53.72	22.35	-	31.37	33,000	1,800	27	1,600	2,700	29
9/21/2012		53.72	23.03	-	30.69	31,000	1,700	13	1,900	2,747	14	
12/14/2012	53.72	22.17	-	31.55	31,000	1,700	20	1,800	2,490	16		
<b>3/28/2013</b>	<b>53.72</b>	<b>22.53</b>	<b>N</b>	<b>31.19</b>	<b>20,000</b>	<b>2,200</b>	<b>&lt;20</b>	<b>1,300</b>	<b>960</b>	<b>&lt;20</b>		

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**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Depth to Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
<b>2nd WBZ</b>											
<b>MW-1D</b>	1/3/2008	54.42		-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	1/22/2008	54.42	22.85	-	31.57	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	4/16/2008	54.42	23.10	-	31.32	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/3/2008	54.42	23.44	-	30.98	75.9	<0.5	<2.0	0.54	<2.0	<0.5
	10/15/2008	54.42	23.82	-	30.60	120	1.6	<0.5	2.8	3.6	<0.5
	1/8/2009	54.42	23.44	-	30.98	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/14/2009	54.42	23.06	-	31.36	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/26/2009	54.42	23.73	-	30.69	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2009	54.42	23.59	-	30.83	330 <sup>Y</sup>	<0.5	<0.5	1.3	2.2	<0.5
	3/16/2010	54.42	22.60	-	31.82	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/4/2010	54.42	23.10	-	31.32	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/1/2010	54.42	23.51	-	30.91	<50	<0.5	<0.5	0.52	1.8	<0.5
	12/3/2010	54.42	23.41	-	31.01	61	<0.5	<0.5	1.0	3.73	<0.5
	3/3/2011	54.42	22.27	-	32.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	5/19/2011	54.42	22.89	-	31.53	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	54.42	23.08	-	31.34	220	<0.5	<0.5	0.6	1.4	<0.5
	12/1/2011	54.42	22.26	-	32.16	<22	<0.33	<0.19	<0.15	<0.20	<0.38
	3/2/2012	54.42	23.01	-	31.41	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/6/2012	54.42	23.18	-	31.24	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/20/2012	54.42	23.76	-	30.66	<50	<0.5	<0.5	<0.5	<0.5	<0.5
12/13/2012	54.42	23.04	-	31.38	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>3/27/2013</b>	<b>54.42</b>	<b>23.34</b>	<b>N</b>	<b>31.08</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>MW-3D</b>	1/3/2008	54.10		-	-	<50	<0.50	<2.0	<0.50	<2.0	87.6
	1/22/2008	54.10	22.31	-	31.79	<50	<0.50	<2.0	<0.50	<2.0	88.3
	4/16/2008	54.10	22.64	-	31.46	<50	<0.5	<2.0	<0.5	<2.0	71.1
	7/3/2008	54.10	23.17	-	30.93	<50	<0.5	<2.0	<0.5	<2.0	67.4
	10/16/2008	54.10	23.62	-	30.48	<50	<0.5	<0.5	<0.5	<0.5	37
	1/8/2009	54.10	23.07	-	31.03	<50	<0.5	<0.5	<0.5	<0.5	29
	4/14/2009	54.10	22.36	-	31.74	<50	<0.5	<0.5	<0.5	<0.5	44
	8/26/2009	54.10	23.41	-	30.69	<50	<0.5	<0.5	<0.5	<0.5	20
	12/1/2009	54.10	23.27	-	30.83	110 <sup>Y</sup>	<0.5	<0.5	<0.5	0.52	24

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MW-3D cont.	3/16/2010	54.10	22.10	-	32.00	<50	<0.5	<0.5	<0.5	<0.5	7.1
	6/4/2010	54.10	22.70	-	31.40	<50	<0.5	<0.5	<0.5	<0.5	17
	9/1/2010	54.10	23.09	-	31.01	78	<0.5	<0.5	1.1	4.71	24
	12/3/2010	54.10	22.90	-	31.20	<50	<0.5	<0.5	0.56	1.4	13
	3/3/2011	54.10	21.66	-	32.44	<50	1.3	<0.5	<0.5	0.59	14
	5/19/2011	54.10	22.61	-	31.49	<50	<0.5	<0.5	<0.5	<0.5	5.2
	9/8/2011	54.10	22.68	-	31.42	69	<0.5	<0.5	<0.5	0.62	4.8
	12/1/2011	54.10	22.86	-	31.24	<22	<0.33	<0.19	<0.15	<0.20	10
	3/2/2012	54.10	22.60	-	31.50	<50	<0.5	<0.5	<0.5	<0.5	4.2
	6/6/2012	54.10	22.77	-	31.33	<50	<0.5	<0.5	<0.5	<0.5	4.8
	9/20/2012	54.10	23.42	-	30.68	<50	<0.5	<0.5	<0.5	<0.5	5.1
	12/13/2012	54.10	22.57	-	31.53	<50	<0.5	<0.5	<0.5	<0.5	4.4
	<b>3/27/2013</b>	<b>54.10</b>	<b>22.87</b>	<b>N</b>	<b>31.23</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>4.4</b>
MW-4D	1/4/2008	53.12		-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	1/22/2008	53.12	21.11	-	32.01	91.5	18.7	<2.0	7.08	11.42	219
	4/15/2008	53.12	21.67	-	31.45	<50	<0.5	<2.0	<0.5	<2.0	27
	7/3/2008	53.12	22.39	-	30.73	<50	<0.5	<2.0	<0.5	<2.0	6.27
	10/16/2008	53.12	22.98	-	30.14	<50	<0.5	<0.5	<0.5	<0.5	1.9
	1/8/2009	53.12	22.25	-	30.87	<50	<0.5	<0.5	<0.5	<0.5	2
	4/14/2009	53.12	21.34	-	31.78	<50	<0.5	<0.5	<0.5	<0.5	2.2
	8/27/2009	53.12	22.79	-	30.33	<50	<0.5	<0.5	<0.5	<0.5	2.2
	12/1/2009	53.12	22.49	-	30.63	120 <sup>Y</sup>	<0.5	<0.5	1.4	2.3	2.3
	3/16/2010	53.12	21.02	-	32.10	<50	<0.5	<0.5	<0.5	<0.5	0.65
	6/4/2010	53.12	21.93	-	31.19	<50	<0.5	<0.5	<0.5	<0.5	1.1
	9/1/2010	53.12	23.32	-	29.80	<50	<0.5	<0.5	0.85	3.76	2.2
	12/3/2010	53.12	22.46	-	30.66	<50	<0.5	<0.5	<0.5	0.67	<0.5
	3/3/2011	53.12	20.45	-	32.67	<50	<0.5	<0.5	<0.5	<0.5	0.58
	5/19/2011	53.12	21.57	-	31.55	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	53.12	21.92	-	31.20	59	<0.5	<0.5	<0.5	0.51	1.7
12/1/2011	53.12	21.19	-	31.93	<22	<0.33	<0.19	<0.15	<0.20	4.2	

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MW-4D cont.	3/2/2012	53.12	21.8	-	31.32	<50	<0.5	<0.5	0.85	1.2	2.7
	6/6/2012	53.12	22.00	-	31.12	<50	<0.5	<0.5	<0.5	<0.5	1.3
	9/20/2012	53.12	22.67	-	30.45	<50	<0.5	<0.5	<0.5	<0.5	1.6
	12/13/2012	53.12	21.55	-	31.57	<50	<0.5	<0.5	<0.5	<0.5	0.94
	3/27/2013	53.12	21.98	N	31.14	<50	<0.5	<0.5	<0.5	<0.5	2.1
1573 153 RD	7/2/2008	NS	NM	-	NC	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/16/2008	NS	NM	-	NC	<50	<0.5	<0.5	<0.5	<0.5	<0.5
<b>Equipment Blanks</b>											
EB-PMP	1/21/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PRB	1/21/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PMP2	1/22/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PRB2	1/22/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
ESL (ug/L)	-	-	-	-	-	100	1	40	30	20	5

Notes:

The first time SOMA monitored this Site was in May 2002.

\*: Due to minimal recharge rates in well MW-2, the groundwater elevation recorded on these dates did not match the overall site conditions, May 2002 & August 2003.

NC: Not Calculated

<sup>1</sup>: Top of casing elevations were surveyed to a datum of 67.07 M.S.L by Kier & Wright Civil Engineers & Land Surveyors on May 7, 2002.

On October 11, 2004, the site was re-surveyed by Harrington Surveys, Inc. of Walnut Creek, CA to a datum of California Coordinate System, Zone 3, NAD 83.

<sup>2</sup> MtBE analyzed by EPA Method 8021B, and confirmed by EPA Method 8260B.

<: Not detected above the laboratory reporting limit.

Y: Sample exhibits chromatographic pattern which does not resemble standard

<sup>c</sup> Presence confirmed, but confirmation concentration differed by more than a factor of two.

C: Presence confirmed, but RPD between columns exceeds 40%.

H: Heavier hydrocarbons contributed to the quantitation.

x: Does not match pattern of reference Gasoline Standard. Hydrocarbons in the range of C5-C12 quantified as gasoline (possibly aged gasoline)

NA: Not Analyzed. Well MW-8 was inaccessible during the First Quarter 2005, car was parked over well.

Not Analyzed. Well MW-7 was inaccessible during the First Quarter 2006, car was parked over well.

NM: Not Measured. Well MW-8 was inaccessible during the First Quarter 2005, car was parked over well.

Not Measured. Well MW-7 was inaccessible during the First Quarter 2006, car was parked over well.

The first time SOMA monitored wells MW-6 to MW-9 was in September 2004.

EB-PMP/EB-PRB: Equipment Blanks for Pump and Probe

ESL: Environmental Screening Levels per CRWQCB SFBay Region Interim Final Nov. 2007 (Revised May 2008);

Table F-1a, Groundwater Screening Levels (groundwater is a current or potential drinking water resource)

MW-8 and MW-9 were decommissioned November 13, 2009

\* During September 2012 groundwater monitoring event, free-product was observed in MW-6. groundwater elevation in this well has been corrected for the presence of FP:

Corrected depth to groundwater is equal to (measured depth)- 0.68(free product thickness)

The correction factor is derived by the following: specific gravity of gas at 20 °C is 0.68, then specific gravity is multiplied by the thickness of free product

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
<b>1st WBZ</b>							
<b>MW-1</b>	8/8/2002	78	<1.3	<1.3	<1.3	NA	NA
	11/1/2002	42	<1.0	<1.0	<1.0	NA	NA
	2/21/2003	47	<0.5	<0.5	<0.5	NA	NA
	5/28/2003	25	<0.5	<0.5	<0.5	NA	NA
	8/12/2003	<10	<0.5	<0.5	<0.5	NA	NA
	10/9/2003	70	<1.0	<1.0	<1.0	NA	NA
	1/15/2004	55	<0.5	<0.5	<0.5	NA	NA
	5/25/2004	62	<0.7	<0.7	<0.7	NA	NA
	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<21.5	<4.3	<4.3	<17.2	NA	NA
	3/11/2005	81	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	68.9	<2.15	<2.15	<8.6	NA	NA
	11/11/2005	46	<2.15	<2.15	<8.6	NA	NA
	2/9/2006	11.3	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	0.51	<0.5
	8/10/2006	<43	<2.15	<2.15	<8.60	3.37	<2.15
	10/26/2006	39.4	<1.0	<1.0	<4.0	2.92	<1.0
	1/25/2007	41.4	<0.5	<0.5	<2.0	1.36	<0.5
	4/26/2007	39.6	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	46.5	<1.0	<1.0	<4.0	<1.0	<1.0
	10/23/2007	53.7	<0.5	<0.5	<2.0	<0.5	<0.5
	1/22/2008	23.8	<0.5	<0.5	<2.0	<0.5	<0.5
	4/16/2008	8.36	<0.5	<0.5	<2.0	164	<0.5
	7/3/2008	30.5	<0.5	<0.5	<2.0	1.08	<0.5
	10/15/2008	<20	<1.0	<1.0	<1.0	<1.0	<1.0
	1/7/2009	<25	<1.3	<1.3	<1.3	<1.3	<1.3
	4/14/2009	15	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	<40	<2.0	<2.0	<2.0	<2.0	<2.0
	12/2/2009	<40	<2.0	<2.0	<2.0	<2.0	<2.0
	3/17/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/3/2010	26	<0.5	<0.5	<0.5	<0.5	<0.5
	9/2/2010	<100	<5.0	<5.0	<5.0	<5.0	<5.0
12/2/2010	<63	<3.1	<3.1	<3.1	<3.1	<3.1	
3/4/2011	40	<0.5	<0.5	<0.5	<0.5	<0.5	
5/20/2011	<71	<3.6	<3.6	<3.6	<3.6	<3.6	
9/9/2011	33	<1.3	<1.3	<1.3	<1.3	<1.3	
12/2/2011	49	<3.2	<3.5	<2.8	<2.4	<1.7	
3/2/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
6/7/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
9/21/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
12/14/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
3/28/2013	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
<b>MW-2</b>	8/8/2002	21	<0.5	<0.5	<0.5	NA	NA
	11/1/2002	15	<0.5	<0.5	<0.5	NA	NA
	2/21/2003	12	<0.5	<0.5	<0.5	NA	NA
	5/28/2003	31	<0.5	<0.5	<0.5	NA	NA
	8/12/2003	69	<0.8	<0.8	<0.8	NA	NA
	10/9/2003	12	<0.5	<0.5	<0.5	NA	NA
	1/15/2004	<10	<0.5	<0.5	<0.5	NA	NA
	5/25/2004	14	<0.5	<0.5	<0.5	NA	NA
	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-2 cont.	3/11/2005	<2.5	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	<10	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/15/2008	<2.0	<0.5	<0.5	<2.0	2.44	<0.5
	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/15/2008	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	1/7/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	4/13/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	3/17/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/3/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/2/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/2/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	3/4/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	5/20/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/9/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/2/2011	<13	<3.2	<3.5	<2.8	<2.4	<1.7
	3/2/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/7/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
9/21/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
12/14/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
3/28/2013	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
MW-3	8/8/2002	<330	<8.3	<8.3	330	NA	NA
	11/1/2002	85	< 1.3	<1.3	220	NA	NA
	2/21/2003	140	<5.0	<5.0	320	NA	NA
	5/28/2003	520	<10	<10	530	NA	NA
	8/12/2003	180	<4.2	<4.2	270	NA	NA
	10/9/2003	<170	<8.3	<8.3	200	NA	NA
	1/15/2004	<100	<5.0	<5.0	150	NA	NA
	5/25/2004	<100	<5.0	<5.0	270	NA	NA
	9/21/2004	<140	<7.1	<7.1	110	NA	NA
	12/14/2004	<100	<20	<20	154	NA	NA
	3/11/2005	<215	<43	<43	256	NA	NA
	6/15/2005	<215	<10.8	<10.8	374	NA	NA
	8/26/2005	699	<21.5	<21.5	277	NA	NA
	11/11/2005	<430	<21.5	<21.5	171	NA	NA
	2/9/2006	<430	<21.5	<21.5	620	NA	NA
	5/9/2006	367	<10.8	<10.8	594	<10.8	<10.8
	8/10/2006	365	<10.8	<10.8	727	<10.8	<10.8
	10/26/2006	591	<10.8	<10.8	899	<10.8	<10.8
	1/25/2007	711	<10.8	<10.8	768	<10.8	<10.8
	4/26/2007	690	<10.8	<10.8	369	<10.8	<10.8
	7/25/2007	1,340	<10.8	<10.8	565	<10.8	<10.8
	10/23/2007	1,050	<21.5	<21.5	301	<21.5	<21.5
1/22/2008	373	<10.8	<10.8	170	<0.5	<0.5	
4/16/2008	881	<5.50	<5.50	<22.0	1,850	12.1	
7/3/2008	426	<10.8	<10.8	124	<10.8	<10.8	
10/16/2008	<400	<20	<20	<20	<20	<20	
1/8/2009	<500	<25	<25	<25	<25	<25	
4/13/2009	<500	<25	<25	<25	<25	<25	
8/27/2009	<500	<25	<25	<25	<25	<25	
12/2/2009	270	<13	<13	<13	<13	<13	

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-3 cont.	3/17/2010	<250	<13	<13	<13	<13	<13
	6/3/2010	<250	<13	<13	<13	<13	<13
	9/2/2010	<250	<13	<13	<13	<13	<13
	12/2/2010	<130	<6.3	<6.3	<6.3	<6.3	<6.3
	3/4/2011	<170	<8.3	<8.3	<8.3	<8.3	<8.3
	5/20/2011	<130	<6.3	<6.3	<6.3	<6.3	<6.3
	9/9/2011	<140	<7.1	<7.1	<7.1	<7.1	<7.1
	12/2/2011	<6.6	<1.6	<1.7	<1.4	<1.2	<0.86
	3/2/2012	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	6/7/2012	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	9/21/2012	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	12/14/2012	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	3/28/2013	<100	<5.0	<5.0	<5.0	<5.0	<5.0
MW-4	8/8/2002	1500	<17	<17	18	NA	NA
	11/1/2002	580	<5.0	6	13	NA	NA
	2/21/2003	1600	<20	22	<20	NA	NA
	5/28/2003	690	<8.3	<8.3	17	NA	NA
	8/12/2003	550	<7.1	7.3	18	NA	NA
	10/9/2003	1400	<31	50	<31	NA	NA
	1/15/2004	1,300	<20	25	21	NA	NA
	5/25/2004	560	<8.3	<8.3	24	NA	NA
	9/21/2004	1,300	<50	<50	<50	NA	NA
	12/14/2004	826	<10.75	21	49	NA	NA
	3/11/2005	1,110	<10.8	12.1	<43	NA	NA
	6/15/2005	<110	<5.5	<5.5	22.9	NA	NA
	8/26/2005	902	<5.50	<5.50	37.4	NA	NA
	11/11/2005	884	<10.8	<10.8	<43	NA	NA
	2/9/2006	769	<10.8	16.4	45.6	NA	NA
	5/9/2006	405	<2.15	2.95	31.3	<2.15	<2.15
	8/10/2006	306	<2.15	<2.15	35.3	<2.15	<2.15
	10/26/2006	3430	<10.8	13.8	<43	<10.8	<10.8
	1/25/2007	822	<2.15	2.4	28	2.25	<2.15
	4/26/2007	556	<2.15	2.28	29.2	<2.15	<2.15
	7/25/2007	1,860	<2.15	9.94	24	<2.15	<2.15
	10/23/2007	3,400	<2.15	18.4	25.9	<2.15	<2.15
	1/22/2008	2,580	<5.50	64.7	<22	<0.5	<0.5
	4/15/2008	1,100	<5.50	11.7	<22	39.9	<5.50
	7/2/2008	8,720	<5.50	75.2	<22	<5.50	<5.50
	10/16/2008	700	<3.6	4.2	37	5.4	<3.6
	1/8/2009	1,500	<3.6	9.9	41	3.6	<3.6
	4/13/2009	1,100	<8.3	<8.3	28	<8.3	<8.3
	8/27/2009	4,900	<5.0	24	<5.0	<5.0	<5.0
	12/2/2009	6,800	<5.0	69	<5.0	<5.0	<5.0
	3/17/2010	1,900	<3.6	18	<3.6	<3.6	<3.6
	6/3/2010	930	<3.6	7.7	<3.6	<3.6	<3.6
9/2/2010	7,200	<3.6	57	<3.6	<3.6	<3.6	
12/2/2010	3,800	<10	30	<10	<10	<10	
3/3/2011	410	<0.71	3.2	<0.71	<0.71	<0.71	
5/19/2011	130	<0.5	1.4	<0.5	<0.5	<0.5	
9/8/2011	380	<0.5	3.5	<0.5	1.1	<0.5	
12/1/2011	790	<1.6	5.4	8.2	<1.2	<0.86	
3/2/2012	920	<2.0	5.9	24	<2.0	<2.0	
6/7/2012	1,000	<2.5	13	<2.5	<2.5	<2.5	
9/21/2012	1,300	<2.5	14	<2.5	<2.5	<2.5	
12/14/2012	36	<0.5	0.65	<0.5	<0.5	<0.5	
3/28/2013	2,500	<5.0	29	<5.0	<5.0	<5.0	
MW-5	8/8/2002	<250	<6.3	<6.3	510	NA	NA
	11/1/2002	66	<2.0	<2.0	560	NA	NA
	2/21/2003	<63	<3.1	<3.1	280	NA	NA
	5/28/2003	<33	<1.7	<1.7	110	NA	NA
	8/12/2003	130	<3.6	<3.6	270	NA	NA
	10/9/2003	<100	<5.0	<5.0	740	NA	NA
	1/15/2004	<63	<3.1	<3.1	300	NA	NA
	5/25/2004	<100	<5.0	<5.0	210	NA	NA
	9/21/2004	<130	<6.3	<6.3	550	NA	NA
	12/14/2004	40	<5.5	<5.5	444	NA	NA

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**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-5 cont.	3/11/2005	88.8	<5.5	<5.5	448	NA	NA
	6/15/2005	<43	<2.15	<2.15	88.1	NA	NA
	8/26/2005	274	<5.50	<5.50	195	NA	NA
	11/11/2005	192	<5.50	<5.50	360	NA	NA
	2/9/2006	218	<5.50	<5.50	523	NA	NA
	5/9/2006	91.8	<2.15	<2.15	163	<2.15	<2.15
	8/10/2006	138	<5.50	<5.50	342	<5.50	<5.50
	10/26/2006	322	<5.50	<5.50	712	<5.50	<5.50
	1/25/2007	878	<5.50	<5.50	552	<5.50	<5.50
	4/26/2007	708	<2.15	<2.15	310	<2.15	<2.15
	7/25/2007	1,020	<2.15	<2.15	356	<2.15	<2.15
	10/23/2007	1,510	<2.15	<2.15	181	<2.15	<2.15
	1/22/2008	470	<0.5	4.56	62.1	<0.5	<0.5
	4/15/2008	566	<1.0	<1.0	29.6	231	5.66
	7/3/2008	2,320	<2.15	<2.15	53.3	<2.15	<2.15
	10/16/2008	990	<5.0	<5.0	82	<5.0	<5.0
	1/8/2009	360	<6.3	<6.3	51	<6.3	<6.3
	4/13/2009	280	<3.1	<3.1	<3.1	<3.1	<3.1
	8/27/2009	1,300	<5.0	<5.0	<5.0	<5.0	<5.0
	12/2/2009	320	<5.0	<5.0	25	<5.0	<5.0
Pre- MPE	3/17/2010	570	<1.0	<1.0	<1.0	<1.0	<1.0
	6/4/2010	340	<1.0	<1.0	<1.0	<1.0	<1.0
	9/2/2010	320	<2.5	<2.5	13	<2.5	<2.5
	12/2/2010	200	<3.1	<3.1	<3.1	<3.1	<3.1
	3/4/2011	180	<0.5	<0.5	<0.5	<0.5	<0.5
	5/20/2011	480	<1.0	<1.0	<1.0	<1.0	<1.0
	8/4/2011	110	<0.71	<0.71	2.6	<0.71	<0.71
	9/9/2011	260	<1.0	<1.0	11	<1.0	<1.0
	12/2/2011	95	<3.2	<3.5	14	<2.4	<1.7
	3/2/2012	59	<1.0	<1.0	4.1	<1.0	<1.0
	6/7/2012	22	<1.0	<1.0	2.8	<1.0	<1.0
	9/21/2012	66	<1.0	<1.0	<1.0	<1.0	<1.0
	12/14/2012	<20	<1.0	<1.0	4.2	<1.0	<1.0
	<b>3/28/2013</b>	<b>&lt;20</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>
	MW-6	9/21/2004	<10	<0.5	<0.5	<0.5	NA
12/14/2004		<5.5	<5.5	<5.5	<22	NA	NA
3/11/2005		2.54	<0.5	<0.5	<2.0	NA	NA
6/15/2005		<20	<1.0	<1.0	<4.0	NA	NA
8/26/2005		<43	<2.15	<2.15	<8.6	NA	NA
11/11/2005		<43	<2.15	<2.15	<8.6	NA	NA
2/9/2006		<43	<2.15	<2.15	<8.6	NA	NA
5/9/2006		<10	<0.5	<0.5	<2.0	<0.5	<0.5
8/10/2006		<10	<0.5	<0.5	<2.0	<0.5	<0.5
10/26/2006		<10	<0.5	<0.5	<2.0	<0.5	<0.5
1/25/2007		<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
4/26/2007		7.21	<0.5	<0.5	<2.0	<0.5	<0.5
7/25/2007		5.66	<0.5	<0.5	<2.0	<0.5	<0.5
10/23/2007		6.68	<0.5	<0.5	<2.0	<0.5	<0.5
1/21/2008		13.9	<0.5	<0.5	<2.0	<0.5	<0.5
4/15/2008		<2.0	<0.5	<0.5	<2.0	6.78	1.49
7/2/2008		4.54	<0.5	<0.5	<2.0	<0.5	<0.5
10/15/2008		<10	<0.5	<0.5	<0.5	<0.5	<0.5
1/7/2009		<63	<3.1	<3.1	<3.1	<3.1	<3.1
4/13/2009		<25	<1.3	<1.3	<1.3	<1.3	<1.3
8/26/2009	<40	<2.0	<2.0	<2.0	<2.0	<2.0	
12/1/2009	<40	<2.0	<2.0	<2.0	<2.0	<2.0	
3/16/2010	<40	<2.0	<2.0	<2.0	<2.0	<2.0	
6/3/2010	<40	<2.0	<2.0	<2.0	<2.0	<2.0	
9/1/2010	<200	<10	<10	<10	<10	<10	
12/2/2010	<330	<17	<17	<17	<17	<17	
3/3/2011	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
5/20/2011	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
9/8/2011	<50	<2.5	<2.5	<2.5	<2.5	<2.5	
12/1/2011	NA	NA	NA	NA	NA	NA	



**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-6 cont.	3/2/2012	<83	<4.2	<4.2	<4.2	<4.2	<4.2
	6/6/2012	<33	<1.7	<1.7	<1.7	<1.7	<1.7
	9/20/2012	NA	NA	NA	NA	NA	NA
	12/13/2012	29	<0.71	<0.71	<0.71	<0.71	<0.71
	<b>3/27/2013</b>	<b>&lt;25</b>	<b>&lt;1.3</b>	<b>&lt;1.3</b>	<b>&lt;1.3</b>	<b>&lt;1.3</b>	<b>&lt;1.3</b>
<b>MW-7</b>							
MW-7	9/21/2004	<10	<0.5	<0.5	1.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA
	3/11/2005	<12.5	<2.5	<2.5	<10	NA	NA
	6/15/2005	<10	<0.5	<0.5	2.23	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	NA	NA	NA	NA	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	6.49	<0.5	<0.5	2.58	<0.5	<0.5
	1/21/2008	<2.0	<0.5	<0.5	6.01	<0.5	<0.5
	4/15/2008	8.8	<0.5	<0.5	<2.0	<0.5	1.26
	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/15/2008	<10	<0.5	<0.5	14	<0.5	<0.5
	1/7/2009	<10	<0.5	<0.5	11	<0.5	<0.5
	4/13/2009	<10	<0.5	<0.5	16	<0.5	<0.5
	8/26/2009	<33	<0.5	<0.5	33	<0.5	<0.5
	12/1/2009	<10	<0.5	<0.5	30	<0.5	<0.5
	3/16/2010	11	<0.5	<0.5	<0.5	<0.5	<0.5
	6/3/2010	20	<0.5	<0.5	7.1	<0.5	<0.5
	9/1/2010	47	<0.5	<0.5	7.2	<0.5	<0.5
	12/2/2010	22	<0.5	<0.5	4.9	<0.5	<0.5
	3/4/2011	14	<0.5	<0.5	4.0	<0.5	<0.5
	5/19/2011	<10	<0.5	<0.5	2.1	<0.5	<0.5
	9/8/2011	<10	<0.5	<0.5	1.6	<0.5	<0.5
	12/1/2011	15	<0.36	<0.40	2.4	<0.28	<0.19
	3/2/2012	<10	<0.5	<0.5	0.82	<0.5	<0.5
	6/6/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
9/20/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
12/13/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>3/27/2013</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>MW-8</b>							
MW-8	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA
	3/11/2005	NA	NA	NA	NA	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	<10	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	<0.5	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	4/15/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/15/2008	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	1/7/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	4/13/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5

Well Decommissioned 11/13/2009

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
<b>MW-9</b>	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<2.5	<0.5	<0.5	<2.0	NA	NA
	3/11/2005	<2.5	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	<10	<0.5	<0.5	<2.0	NA	NA
	11/11/2005	<10	<0.5	<0.5	<2.0	NA	NA
	2/9/2006	<10	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	2.8	<0.5
	8/10/2006	<10	<0.5	<0.5	<2.0	1.83	<0.5
	10/26/2006	<10	<0.5	<0.5	<2.0	3.07	<0.5
	1/25/2007	<2.0	<0.5	<0.5	<2.0	2.92	<0.5
	4/26/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/23/2007	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	1/21/2008	<2.0	<0.5	<0.5	<2.0	1.18	<0.5
	4/15/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/2/2008	<2.0	<0.5	<0.5	<2.0	2.07	<0.5
	10/15/2008	<10	<0.5	<0.5	<0.5	1.5	<0.5
	1/7/2009	<10	<0.5	<0.5	<0.5	1.4	<0.5
	4/13/2009	<10	<0.5	<0.5	<0.5	0.97	<0.5
8/26/2009	<10	<0.5	<0.5	<0.5	2.6	<0.5	
<b>Well Decommissioned 11/13/2009</b>							
<b>EX-1</b>	12/2/2009	150	<1.3	<1.3	<1.3	<1.3	<1.3
	3/16/2010	980	<1.3	2.4	27	<1.3	<1.3
	6/3/2010	570	<1.3	1.9	<1.3	<1.3	<1.3
	9/1/2010	470	<0.5	1.4	2	<0.5	<0.5
	12/2/2010	1,300	<2.0	3.6	15	<2.0	<2.0
	3/3/2011	690	<0.71	2.5	12	<0.71	<0.71
	5/19/2011	370	<0.71	1.9	13	<0.71	<0.71
	9/8/2011	32	<0.5	<0.5	0.53	<0.5	<0.5
	12/1/2011	1,200	<1.6	8.3	6.8	<1.2	<0.86
	3/2/2012	31	<0.5	<0.5	<0.5	<0.5	<0.5
	6/6/2012	390	<0.5	2.9	4.8	0.57	<0.5
	9/20/2012	170	<0.5	1.5	<0.5	<0.5	<0.5
	12/13/2012	210	<0.5	2.7	5.2	<0.5	<0.5
	3/27/2013	<10	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EX-2</b>	12/2/2009	<63	<3.1	<3.1	<3.1	<3.1	<3.1
	3/16/2010	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	6/3/2010	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	9/1/2010	<50	<2.5	<2.5	<2.5	<2.5	<2.5
	12/2/2010	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	3/3/2011	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	5/19/2011	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	9/8/2011	<25	<1.3	<1.3	<1.3	<1.3	<1.3
	12/1/2011	74	<3.2	<3.5	<2.8	<2.4	<1.7
	3/2/2012	<25	<1.3	<1.3	<1.3	<1.3	<1.3
	6/6/2012	<33	<1.7	<1.7	<1.7	<1.7	<1.7
	9/20/2012	<33	<1.7	<1.7	<1.7	<1.7	<1.7
	12/13/2012	<71	<3.6	<3.6	<3.6	<3.6	<3.6
	3/27/2013	<20	<1.0	<1.0	<1.0	<1.0	<1.0
<b>MPE Wells</b>							
<b>MPE-1</b>	8/4/2011	<500	<25	<25	<25	<25	<25
	9/26/2011	<500	<25	<25	600	<25	<25
	12/2/2011	830	<32	<35	750	<24	<17
	3/2/2012	<710	<36	<36	1,200	<36	<36
	6/6/2012	<630	<31	<31	430	<31	<31
	9/20/2012	<1,300	<63	<63	1,200	<63	<63
	12/14/2012	<1,300	<63	<63	940	<63	<63
	3/27/2013	<710	<36	<36	890	<36	<36
<b>MPE-2</b>	8/4/2011	<330	<17	<17	<17	<17	<17
	9/26/2011	<330	<17	<17	<17	<17	<17
	12/2/2011	<66	<16	<17	<14	<12	<8.6
	3/2/2012	<330	<17	<17	<17	<17	<17
	6/7/2012	<250	<13	<13	<13	<13	<13
	9/21/2012	<250	<13	<13	<13	<13	<13
	12/14/2012	<250	<13	<13	<13	<13	<13
	3/28/2013	<400	<20	<20	<20	<20	<20

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
<b>2nd WBZ</b>							
<b>MW-1D</b>	1/3/2008	111	<0.5	<0.5	<2.0	NA	NA
	1/22/2008	12.9	<0.5	<0.5	<2.0	<0.5	<0.5
	4/16/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	7/3/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/15/2008	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	1/8/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	4/14/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	8/26/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	3/16/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/4/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/1/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/3/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	3/3/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	5/19/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2011	<1.5	<0.36	<0.40	<0.32	<0.28	<0.19
	3/2/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/6/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/20/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
12/13/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>3/27/2013</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>MW-3D</b>	1/3/2008	37.3	<0.5	3.12	15.3	NA	NA
	1/22/2008	15.6	<0.5	3.1	15.3	<0.5	<0.5
	4/16/2008	17.7	<0.5	<0.5	<2.0	<0.5	<0.5
	7/3/2008	<2.0	<0.5	<0.5	7.45	<0.5	<0.5
	10/16/2008	<10	<0.5	<0.5	4.7	<0.5	<0.5
	1/8/2009	<10	<0.5	<0.5	3.4	<0.5	<0.5
	4/14/2009	<10	<0.5	<0.5	5	<0.5	<0.5
	8/26/2009	<10	<0.5	<0.5	1.6	<0.5	<0.5
	12/1/2009	<10	<0.5	<0.5	2.2	<0.5	<0.5
	3/16/2010	<10	<0.5	<0.5	0.65	<0.5	<0.5
	6/4/2010	<10	<0.5	<0.5	1.8	<0.5	<0.5
	9/1/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/3/2010	<10	<0.5	<0.5	0.93	<0.5	<0.5
	3/3/2011	<10	<0.5	<0.5	1.0	<0.5	<0.5
	5/19/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2011	<1.5	<0.36	<0.40	0.52	<0.28	<0.19
	3/2/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/6/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/20/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
12/13/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>3/27/2013</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>MW-4D</b>	1/4/2008	25	<0.5	<0.5	<2.0	NA	NA
	1/22/2008	124	<0.5	4.9	3.32	<0.5	<0.5
	4/15/2008	25.7	<0.5	<0.5	<2.0	<0.5	<0.5
	7/3/2008	3.38	<0.5	<0.5	<2.0	<0.5	<0.5
	10/16/2008	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	1/8/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	4/14/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2009	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	3/16/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/4/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/1/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/3/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	3/3/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	5/19/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2011	<1.5	<0.36	<0.40	<0.32	<0.28	<0.19
	3/2/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/6/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	9/20/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5
12/13/2012	<10	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>3/27/2013</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
1573 153 RD	7/2/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
	10/16/2008	<10	<0.5	<0.5	<0.5	<0.5	<0.5
EB-PMP	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PRB	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PMP2	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PRB2	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
<b>ESL</b>		<b>12</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>0.5</b>	<b>0.05</b>

Notes:

August 8, 2002 was the first time that samples were analyzed for Gasoline Oxygenates

<: Not detected above the laboratory reporting limit.

NA: Not Analyzed. Well MW-8 was inaccessible during the 1Q05 & well MW-7 (1Q06) car was parked over each well.

NE: Not Established

TBA: tert-Butyl Alcohol

DIPE: Isopropyl Ether

ETBE: Ethyl tert-Butyl Ether

TAME: Methyl tert-Amyl Ether

ESL: Environmental Screening Levels per CRWQCB SFBay Region Interim Final Nov. 2007 (Revised May 2008);

Table F-1a, Groundwater Screening Levels (groundwater is a current or potential drinking water resource)

MW-8 and MW-9 were decommissioned November 13, 2009

**Table 3**  
**Effluent Chemical Analytical Results**  
**and Operational History of Remediation System**  
15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH
<b>2009</b>											
8-Oct-2009	15,351	<50	120 <sup>Y</sup>	NA	NA	NA	NA	NA	NA	NA	NA
19-Nov-2009	8,287	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.7
9-Dec-2009	0	Installation of GWETS									
16-Dec-2009	20,000	<50	<50	<300	<0.5	0.65 C	<0.5	0.84 C	<10	<5	7.4
<b>2010</b>											
18-Jan-2010	215,453	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.4
15-Feb-2010	297,560	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	11	<5	6.7
15-Mar-2010	475,245	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5.0	6.5
19-Apr-2010	621,180	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	8	6.6
17-May-2010	705,770	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	8	6.7
16-Jun-2010	825,200	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	17	9	6.8
19-Jul-2010	910,652	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	8	6.6
16-Aug-2010	939,935	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.6
28-Sep-2010	970,450	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	10	6.8
26-Oct-2010	1,013,700	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.2
15-Nov-2010	1,052,591	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.5
7-Dec-2010	1,100,492	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.6
<b>2011</b>											
11-Jan-2011	1,179,075	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	12	6	6.6
10-Feb-2011	1,249,569	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.6
14-Mar-2011	1,336,784	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.5
11-Apr-2011	1,364,272	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.5
10-May-2011	1,466,472	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	12	7	6.6
7-Jun-2011	1,532,263	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.6

**Table 3**  
**Effluent Chemical Analytical Results**  
**and Operational History of Remediation System**  
15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH
28-Jul-2011	1,573,295	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	5	6.3
25-Aug-2011	1,613,935	77	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.1
23-Sep-2011	1,631,273	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.7
27-Oct-2011	1,642,277	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	7	7.1
18-Nov-2011	1,676,170	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.8
1-Dec-2011	1,694,889	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.97
<b>2012</b>											
19-Jan-2012	1,715,163	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.02
23-Feb-2012	1,794,185	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.98
20-Mar-2012	1,803,832	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	7	7.02
17-Apr-2012	1,876,439	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.95
29-May-2012	1,900,111	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.89
11-Jun-2012	1,914,130	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.1
12-Jul-2012	1,943,456	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.3
17-Aug-2012	1,955,438	<50	<52	<310	<0.5	<0.5	<0.5	<0.5	NA	NA	7.04
17-Sep-2012	1,979,852	<50	<54	<330	<0.5	<0.5	<0.5	<0.5	NA	NA	7.02
23-Oct-2012	1,989,022	<50	<49	<290	<0.5	<0.5	<0.5	<0.5	NA	NA	6.95
12-Nov-2012	1,995,170	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.90
4-Dec-2012	2,024,040	<50	<49	<290	<0.5	<0.5	<0.5	<0.5	NA	NA	6.86
<b>2013</b>											
7-Jan-2013	2,099,002	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.01
14-Feb-2013	2,186,595	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.08
<b>14-Mar-2013</b>	<b>2,193,121</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;300</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>NA</b>	<b>NA</b>	<b>6.98</b>

**Table 3**  
**Effluent Chemical Analytical Results**  
**and Operational History of Remediation System**  
 15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylben zene (µg/L)	Total Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH
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Note:

NA: Not Available/Not Applicable

< : Less than Laboratory-reporting limit

In October and November 2009 discharge occurred only during MPE events

GWETS and totalizer installed in December 2009.

Week # 1 sampling conducted on Oct 8, 2009

C: Presence confirmed, but RPD between column exceeds 40%

Volume discharged during the October 2009 MPE event was 18,669 gallons

Volume discharged during the November 2009 MPE event was 10,507 gallons

Volume discharged during the December 2009 MPE event was 20,298 gallons

Volume discharged during the February 2010 MPE event was 6,339 gallons

Volume discharged during the March 2010 MPE event was 3,810 gallons

Volume discharged during the June 2010 MPE event was 15,600 gallons

Volume discharged during the August 2010 MPE event was 1,421 gallons

Volume discharged during the October 2010 MPE event was 13,282 gallons

SOMA ceased COD and TSS testing based on a request from OLSA dated April 5, 2012

**Table 4**  
**Cumulative Masses of Petroleum Hydrocarbons Removed from**  
**the Groundwater Since Installation of the Treatment System**  
15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	Influent Concentration (µg/L)					Mass removed (pounds)				
		TPH-g	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPH-g	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<b>2009</b>											
9-Dec-2009	0	Installation of GWETS, began discharging treated groundwater to site sewer main									
<b>2010</b>											
18-Jan-2010	215,453	1,900	79	32.00	2.4	260	3.41	0.14	0.06	0.00	0.47
19-Apr-2010	621,180	2,100	75	28	56	332	10.50	0.40	0.15	0.19	1.59
19-Jul-2010	910,652	56 <sup>Y</sup>	<0.5	<0.5	<0.5	<0.5	10.64	0.40	0.15	0.19	1.59
26-Oct-2010	1,013,700	2,600	200	25	68	405	12.87	0.57	0.17	0.25	1.94
<b>2011</b>											
11-Jan-2011	1,179,075	1,700	80	19	50	295	15.21	0.68	0.20	0.32	2.34
11-Apr-2011	1,364,272	1,200	41	3.3	23	185	17.06	0.75	0.20	0.36	2.63
28-Jul-2011	1,573,295	540	21	2.8	5.4	49	18.00	0.78	0.21	0.37	2.71
27-Oct-2011	1,642,277	<50	1.50	<0.5	<0.5	2.9	18.00	0.78	0.21	0.37	2.71
<b>2012</b>											
19-Jan-2012	1,715,163	110 <sup>Y</sup>	<0.5	<0.5	<0.5	<0.5	18.07	0.78	0.21	0.37	2.71
17-Apr-2012	1,876,439	1,100	60	6.8	24	161	19.54	0.87	0.22	0.40	2.93
12-Jul-2012	1,943,456	320	30	1.6	15	34	19.72	0.88	0.22	0.41	2.95
23-Oct-2012	1,989,022	1,400 <sup>Y</sup>	130	12	42	153	20.25	0.93	0.22	0.42	3.01
<b>2013</b>											
<b>7-Jan-2013</b>	<b>2,099,002</b>	<b>1,500</b>	<b>66</b>	<b>9.8</b>	<b>37</b>	<b>228</b>	<b>21.63</b>	<b>0.99</b>	<b>0.23</b>	<b>0.46</b>	<b>3.22</b>

Notes:

< : Below laboratory-reporting limit

Y : sample exhibits chromatographic pattern which does not resemble standard



# **Appendix A**

## **Standard Operating Procedures for Conducting Groundwater Monitoring Activities**

# **Standard Operating Procedures for Conducting Groundwater Monitoring Activities**

## **Water Level and Free-Product 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.

For free-product (FP) measurement, an oil-water interface probe is used. When the probe is lowered into the FP, the oil/water light and beeper are continuously on at which point a reading for depth to FP is noted. The probe is lowered further into the well until the water signal is given (light flashes and beeps intermittently). Then the probe is carefully raised until the FP signal is given and the reading is noted. This gives the depth to interface of product and water.

## **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.

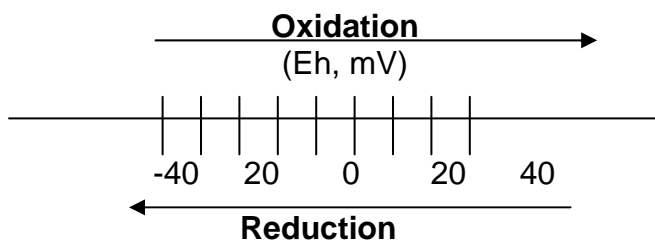
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater EC is directly related to the concentration of total dissolved solids (TDS) in solution.

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 O<sub>2</sub> in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and

because the rate of  $O_2$  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  $O_2$  in the groundwater is consumed; however, the oxidizing agents (i.e., the constituents that undergo reduction) now become  $NO_3^-$ ,  $MnO_2$ ,  $Fe(OH)_3$ ,  $SO_4^{2-}$  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, amber, non-preserved glass containers. Samples are placed in an ice-filled cooler and maintained at  $4^\circ C$ . 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

Table of Elevations and Coordinates on Monitoring Wells,  
Field Measurements of Physical, Chemical, and Natural  
Attenuation Parameters of Groundwater Samples, and  
Groundwater Gradient Calculations

**Harrington Surveys Inc.**

**Land Surveying & Mapping**

2278 Larkey Lane, Walnut Creek, Ca. 94596 Phone (925)935-7228 Fax (925)935-5118  
Cel (925)788-7359 E-Mail (ben5132@pacbell.net)

Soma Environmental Engineering  
2680 Bishop Dr. # 203  
San Ramon, Ca. 94583

Oct. 14, 2004

Attn: Elena Manzo  
Job # 2445

Ref: 15101 Freedom Ave, San Leandro, Ca.

**HORIZONTAL CONTROL, NAD 88:**

Survey based on California Coordinate System, Zone 3, NAD 83.

CHABOT "B", NORTH 2,087,731.02 EAST 6,094,039.23 sft. LAT. N37°43'02.71762"  
W122°07'00.46339", NAVD 88, ELEV. 134.957.

CHABOT "A", NORTH 2,088,584.99 EAST 6,093,351.39 sft. LAT. N37°43'11.04190"  
W122°07'09.20691", NAVD 88, ELEV. 492.08.

**VERTICAL CONTROL, NAVD 88:**

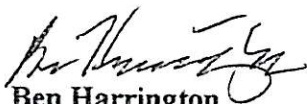
NGS 1974, STATION K 1256, NAVD 88 ELEV. 58.50.  
PID # HT1871

GPS: TRIMBLE 5800, LEICA TCA 1800, 1" HORZ. & VERT.

EPOCH DATE 1998.5

OBSERVATION: EPOCH=180.

FIELD SURVEY: OCT. 11, 2004.

  
Ben Harrington  
PLS 5132









DATE: 1/08/2008  
 JOB NUMBER 0208101  
 DATE OF SURVEY 1/03/08  
 INSTRUMENT LIECA SR520

TABLE OF ELEVATIONS & COORDINATES  
 ON MONITORING WELLS  
 SOMA ENVIRONMENTAL, PROJECT 15101 FREEDOM DRIVE - SAN LEANDRO

WELL ID#	NORTHING (ft.) LATITUDE	EASTING (ft.) LONGITUDE	ELEVATION (ft.)	DESCRIPTION
MW-1D	2084371.23	6092127.90	54.42	MW-1D NOTCH
	37.708104856	122.123200912	54.94	MW-1D RIM
	37° 42' 29.1" N	122° 07' 23" W	54.74	PAVEMENT
MW-3D	2084303.98	6092183.53	54.10	MW-3D NOTCH
	37.707922851	122.123004590	54.56	MW-3D RIM
	37° 42' 28.5" N	122° 07' 22" W	54.47	PAVEMENT
MW-4D	2084222.77	6092116.37	53.12	MW-4D NOTCH
	37.707696648	122.123231858	53.37	MW-4D RIM
	37° 42' 27.7" N	122° 07' 23" W	53.39	PAVEMENT



BENCH MARK: NGS BENCH MARK NO. HT1871

3.0 KM (1.85 MI) NORTH FROM SAM LORENZO. 1.85 MILES NORTH ALONG INTERSTATE HIGHWAY 580 FROM THE JUNCTION OF STATE HIGHWAY 238 IN SAN LORENZO, IN THE WEST CORNER OF THE CROSSING OF 150TH AVENUE, IN TOP OF THE CONCRETE BRIDGE DECK, 15.5 FEET NORTHWEST OF THE SOUTHWEST BOUND LANES OF THE AVENUE, 10.9 FEET NORTHEAST OF THE SOUTH CORNER OF THE SOUTHWEST END OF THE NORTHWEST CONCRETE GUARDRAIL, 0.7 FOOT NORTHEAST OF THE SOUTHWEST EDGE OF THE DECK, 0.9 FOOT SOUTHEAST OF THE NORTHWEST CONCRETE GUARDRAIL, AND ABOUT LEVEL WITH THE HIGHWAY.

ELEVATION = 58.50 NAVD 88 DATUM

HORIZONTAL AND VERTICAL CONTROL BASED ON HARRINGTON SURVEY DATED 10-12-2004

FD CHABOT A, CALIFORNIA STATE PLAIN COORDINATE SYSTEM, NAD 83, ZONE 3. NORTH 2,088,584.99 EAST 6,093,351.39. LAT N 37°43'11.04190" LONG W 122°07'09.20691", ELEVATION 492.08 NAVD 88.

FD CHABOT B, CALIFORNIA STATE PLAIN COORDINATE SYSTEM, NAD 83, ZONE 3. NORTH 2,087,731.02 EAST 6,094,039.23. . LAT N 37°43'02.71762" LONG W 122°07'00.46339", ELEVATION 442.77 NAVD 88.

DATE: 12/11/2009

JOB# 09039

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

SOMA ENVIRONMENTAL ENGINEERING  
15101 FREEDOM AVENUE  
SAN LEANDRO, CA 94579

WELL ID #	NORTHING (FT.) / LATITUDE (D.DEG.)	EASTING (FT.) / LONGITUDE (D.DEG.)	ELEVATION (FT.)	DESCRIPTION
EX-1	2084135.454	6092163.720	47.36	4" PVC NOTCH NORTH SIDE
	37.707459134	122.123062972	47.61	SET PUNCH NORTH SIDE RIM
			47.60	PAVEMENT NORTH SIDE
EX-2	2084082.018	6092130.224	45.96	4" PVC NOTCH NORTH SIDE
	37.707310806	122.123175540	47.04	SET PUNCH NORTH SIDE RIM
			47.00	CONCRETE NORTH SIDE
MPE-1	2084213.168	6092125.258	51.96	4" PVC NOTCH NORTH SIDE
	37.707670702	122.123200567	52.49	SET PUNCH NORTH SIDE RIM
			52.51	CONCRETE NORTH SIDE
MPE-2	2084293.133	6092171.374	53.72	4" PVC NOTCH NORTH SIDE
	37.707892479	122.123045970	54.29	SET PUNCH NORTH SIDE RIM
			54.27	PAVEMENT NORTH SIDE

HORIZONTAL AND VERTICAL CONTROL  
SURVEY BASED ON PREVIOUS SURVEY BY HARRINGTON SURVEY INC. DATED: 2/21/2008  
COORDINATE VALUES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83.  
ELEVATIONS ARE NAVD 88 DATUM.

MW-2, PUNCH  
NORTHING 2,084323.44, EASTING 6,092063.77, ELEVATION 52.92

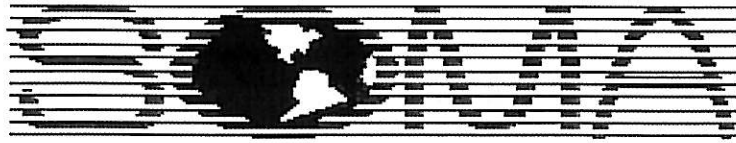
MW-4 PUNCH  
NORTHING 2,084250.55, EASTING 6,092124.46, ELEVATION 53.74

EQUIPMENT USED: TRIMBLE S6

**Edgis Land Surveying**  
Land Surveying and mapping  
1374 Garland Avenue, Clovis, CA 93612  
Phone (559) 906-3554 Fax (559) 292-0560  
email: edgis@aol.com



*Eduardo A. Espinoza*  
1 of 1



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-1  
 Casing Diameter: 4 inches  
 Depth of Well: 30.50 feet  
 Top of Casing Elevation: 54.46 feet  
 Depth to Groundwater: 23.15 feet  
 Groundwater Elevation: 31.31 feet  
 Water Column Height: 7.35 feet  
 Purged Volume: 12 gallons

Project No.: 2551  
 Address: 15101 Freedom Avenue  
 San Leandro, CA  
 Date: March 28, 2013  
 Sampler: Lizzie Hightower

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_

Sheen: Yes  No  Describe: \_\_\_\_\_

Odor: Yes  No  Describe: Slight Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
09:52	Started purging well						
09:53	2	2.40	6.45	20.64	1235	6.01	-59.7
09:54	4	1.90	6.44	20.68	1240	5.87	-64.4
09:56	8	1.37	6.42	20.60	1278	5.91	-67.2
09:58	12	1.07	6.40	20.67	1307	5.93	-70.5
10:03	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-2 Project No.: 2551  
 Casing Diameter: 4 inches Address: 15101 Freedom Avenue  
 Depth of Well: 30.15 feet San Leandro, CA  
 Top of Casing Elevation: 52.41 feet Date: March 28, 2013  
 Depth to Groundwater: 21.24 feet Sampler: Lizzie Hightower  
 Groundwater Elevation: 31.17 feet  
 Water Column Height: 9.91 feet  
 Purged Volume: 14 gallons

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_  
 Sheen: Yes  No  Describe: \_\_\_\_\_  
 Odor: Yes  No  Describe: Slight Petro odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
09:27	Started purging well						
09:28	2	7.90	6.27	20.42	1288	8.15	+23.3
09:29	4	4.45	6.41	20.52	1190	7.75	-39.7
09:31	8	2.01	6.42	20.58	1008	6.13	-77.9
09:33	12	1.54	6.44	20.59	1098	6.07	-85.2
09:34	14	1.35	6.46	20.59	1107	5.98	-88.0
09:39	sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-3  
 Casing Diameter: 4 inches  
 Depth of Well: 29.90 feet  
 Top of Casing Elevation: 53.91 feet  
 Depth to Groundwater: 22.69 feet  
 Groundwater Elevation: 31.22 feet  
 Water Column Height: 7.21 feet  
 Purged Volume: 12 gallons

Project No.: 2551  
 Address: 15101 Freedom Avenue  
 San Leandro, CA  
 Date: March 28, 2013  
 Sampler: Lizzie Hightower

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

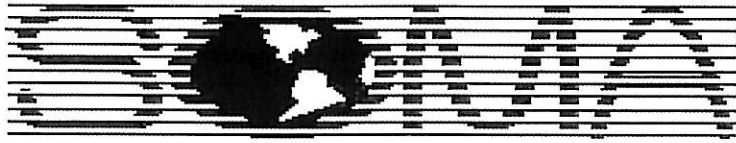
Color: Yes  No  Describe: \_\_\_\_\_

Sheen: Yes  No  Describe: Slight rainbow sheen

Odor: Yes  No  Describe: Petro odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
10:14	Started purging well						
10:15	2	2.73	6.58	20.63	1262	12.3	-35.2
10:16	4	1.73	6.58	20.68	1208	10.7	-40.4
10:18	8	1.06	6.49	20.72	1166	8.13	-52.0
10:20	12	0.90	6.49	20.71	1180	7.83	-56.8
10:25	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-4 Project No.: 2551  
 Casing Diameter: 4 inches Address: 15101 Freedom Avenue  
 Depth of Well: 30.20 feet San Leandro, CA  
 Top of Casing Elevation: 53.31 feet Date: March 28, 2013  
 Depth to Groundwater: 22.24 feet Sampler: Lizzie Hightower  
 Groundwater Elevation: 31.07 feet  
 Water Column Height: 7.96 feet  
 Purged Volume: 12 gallons

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_  
 Sheen: Yes  No  Describe: \_\_\_\_\_  
 Odor: Yes  No  Describe: Slight Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
10:59	Started purging well						
11:00	2	2.15	6.62	20.01	864	7.59	-31.6
11:01	4	1.64	6.59	20.02	876	6.03	-38.1
11:03	8	1.23	6.56	20.00	1263	5.82	-39.9
11:05	12	0.94	6.54	19.99	1350	5.03	-35.1
11:10	sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-5  
 Casing Diameter: 4 inches  
 Depth of Well: 29.80 feet  
 Top of Casing Elevation: 50.53 feet  
 Depth to Groundwater: 19.47 feet  
 Groundwater Elevation: 31.06 feet  
 Water Column Height: 10.33 feet  
 Purged Volume: 12 gallons

Project No.: 2551  
 Address: 15101 Freedom Avenue  
 San Leandro, CA  
 Date: March 28, 2013  
 Sampler: Lizzie Hightower

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_  
 Sheen: Yes  No  Describe: \_\_\_\_\_  
 Odor: Yes  No  Describe: Petro Odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
11:26	Started purging well						
11:27	2	3.43	6.68	21.19	1068	8.05	-83.8
11:28	4	2.48	6.65	21.19	1056	7.32	-104.3
11:30	8	1.33	6.62	21.22	1060	7.05	-127.3
11:32	12	1.01	6.59	21.24	1069	6.39	-141.5
11:37	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-6 Project No.: 2551  
 Casing Diameter: 4 inches Address: 15101 Freedom Avenue  
 Depth of Well: 27.30 feet San Leandro, CA  
 Top of Casing Elevation: 45.82 feet Date: March 27, 2013  
 Depth to Groundwater: 16.30 feet Sampler: Lizzie Hightower  
 Groundwater Elevation: 29.52 feet  
 Water Column Height: 11.00 feet  
 Purged Volume: 14 gallons

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_  
 Sheen: Yes  No  Describe: Rainbow Sheen  
 Odor: Yes  No  Describe: Petro odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
11:58	Started purging well						
11:59	2	<del>7.40</del>	6.60	20.75	1176	8.35	+0.9
12:00	4	5.43	6.59	20.75	1176	8.02	-15.0
12:02	8	2.49	6.60	20.78	1177	7.39	-35.0
12:04	12	1.67	6.59	20.81	1179	7.03	-50.3
12:05	14	1.53	6.58	20.81	1179	6.82	-54.9
12:10	Sampled						











ENVIRONMENTAL ENGINEERING, INC

Well No.: MPE-1  
 Casing Diameter: 4 inches  
 Depth of Well: 30.00 feet  
 Top of Casing Elevation: 51.96 feet  
 Depth to Groundwater: 20.91 feet  
 Groundwater Elevation: 31.05 feet  
 Water Column Height: 9.09 feet  
 Purged Volume: 14 gallons

Project No.: 2551  
 Address: 15101 Freedom Avenue  
 San Leandro, CA  
 Date: March 27, 2013  
 Sampler: Lizzie Hightower

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: Yes  No

Describe: Cloudy

Sheen: Yes  No

Describe: Rainbow Sheen

Odor: Yes  No

Describe: Petro odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
14:29	Started purging well						
14:30	2	4.34	6.81	20.06	1519	18.7	-158.4
14:31	4	2.77	6.74	19.89	1519	16.3	-193.7
14:33	8	2.41	6.60	19.94	1506	10.2	-207.0
14:35	12	2.25	6.62	19.93	1498	7.41	-213.0
14:36	14	2.01	6.64	19.96	1499	7.03	-214.9
14:41	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MPE-2 Project No.: 2551  
 Casing Diameter: 4 inches Address: 15101 Freedom Avenue  
 Depth of Well: 30.00 feet San Leandro, CA  
 Top of Casing Elevation: 93.72 feet Date: March 28, 2013  
 Depth to Groundwater: 22.53 feet Sampler: Lizzie Hightower  
 Groundwater Elevation: 31.19 feet  
 Water Column Height: 7.47 feet  
 Purged Volume: 12 gallons

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_

Sheen: Yes  No  Describe: \_\_\_\_\_

Odor: Yes  No  Describe: Slight Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
10:32	Started purging well						
10:33	2	2.58	6.53	20.95	1321	11.7	-22.0
10:34	4	1.73	6.52	20.97	1322	10.3	-36.8
10:36	8	1.08	6.51	20.95	1324	9.12	-53.2
10:38	12	0.84	6.51	20.93	1327	8.35	-64.3
10:43	sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-1 D Project No.: 2551  
 Casing Diameter: 2 inches Address: 15101 Freedom Avenue  
 Depth of Well: 591.81 feet San Leandro, CA  
 Top of Casing Elevation: 54.42 feet Date: March 27, 2013  
 Depth to Groundwater: 23.34 feet Sampler: Lizzie Hightower  
 Groundwater Elevation: 31.08 feet  
 Water Column Height: 35.47 feet  
 Purged Volume: 14 gallons

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump   
 Color: Yes  No  Describe: \_\_\_\_\_  
 Sheen: Yes  No  Describe: \_\_\_\_\_  
 Odor: Yes  No  Describe: \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
11:17	Started purging well						
11:18	2	4.14	7.18	19.78	1248	7.32	+12.4
11:19	4	3.28	7.16	19.74	1249	8.05	+4.1
11:21	8	2.17	7.03	19.69	1251	6.37	+5.2
11:23	12	1.71	7.05	19.70	1252	6.04	+0.8
11:24	14	1.45	7.08	19.70	1253	5.79	-1.0
11:29	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-3D  
 Casing Diameter: 2 inches  
 Depth of Well: 58.59 feet  
 Top of Casing Elevation: 54.10 feet  
 Depth to Groundwater: 22.87 feet  
 Groundwater Elevation: 31.23 feet  
 Water Column Height: 35.72 feet  
 Purged Volume: 12 gallons

Project No.: 2551  
 Address: 15101 Freedom Avenue  
 San Leandro, CA  
 Date: March 27, 2013  
 Sampler: Lizzie Hightower

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_

Sheen: Yes  No  Describe: \_\_\_\_\_

Odor: Yes  No  Describe: \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
13:43	Started						
13:44	2	3.22	7.47	20.00	1087	11.13	+67.3
13:45	4	2.78	7.06	19.94	1186	6.03	+68.1
13:47	8	2.39	7.03	19.94	1227	5.87	+68.5
13:49	12	2.11	7.01	19.94	1241	5.31	+66.3
13:54	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-4D  
 Casing Diameter: 2 inches  
 Depth of Well: 58.79 feet  
 Top of Casing Elevation: 53.12 feet  
 Depth to Groundwater: 21.98 feet  
 Groundwater Elevation: 31.14 feet  
 Water Column Height: 36.81 feet  
 Purged Volume: 14 gallons

Project No.: 2551  
 Address: 15101 Freedom Avenue  
 San Leandro, CA  
 Date: March 27, 2013  
 Sampler: Lizzie Hightower

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: Yes  No  Describe: \_\_\_\_\_

Sheen: Yes  No  Describe: \_\_\_\_\_

Odor: Yes  No  Describe: \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. (NTU)	ORP
14:07	Started						
14:08	2	4.68	7.35	19.54	1146	9.13	+50.3
14:09	4	2.89	7.09	19.40	1218	7.10	+37.3
14:11	8	2.38	7.01	19.44	1232	6.03	+45.5
14:13	12	2.05	7.02	19.39	1237	5.51	+46.7
14:14	14	2.01	7.02	19.39	1236	5.31	+47.4
14:19	Sampled						



**Table A**  
**Historical Field Parameters**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Dissolved Oxygen (mg/L)	pH	Temperature °C	Electrical Conductivity µS/cm	Turbidity NTU	ORP
<b>1st WBZ</b>							
<b>MW-1</b>	8/27/2009	0.38	6.32	20.8	1357	4.69	-95.7
	12/2/2009	0.15	6.4	20.82	1261	6.19	-136.4
	3/17/2010	0.58	5.68	20.97	1186	7.00	-155.9
	6/3/2010	0.91	6.11	20.81	1285	2.49	-131.6
	9/2/2010	0.92	6.04	20.66	1361	2.46	-86.4
	12/2/2010	0.97	5.96	20.74	1309	4.32	-119.7
	3/4/2011	1.4	6.69	20.96	1169	1.98	-101.2
	5/20/2011	1.51	6.22	20.68	1305	1.85	-164.5
	9/9/2011	1.73	6.02	20.53	1320	4.63	-179.2
	3/2/2012	1.39	6.53	20.84	1309	12.00	-204.4
	6/7/2012	0.89	6.51	20.00	1234	3.92	-20.0
	9/21/2012	0.55	6.12	19.96	1313	5.98	-31.4
	12/14/2012	0.63	6.6	19.71	1314	6.56	-99.2
	<b>3/28/2013</b>	<b>1.07</b>	<b>6.4</b>	<b>20.67</b>	<b>1307</b>	<b>5.93</b>	<b>-70.5</b>
<b>MW-2</b>	8/27/2009	0.43	6.57	20.72	1530	2.59	-168.1
	12/1/2009	0.48	6.75	21.12	1297	5.01	-191.3
	3/17/2010	0.51	5.78	21.08	1025	5.65	-108
	6/3/2010	0.62	6.28	20.84	930	2.66	-150.2
	9/2/2010	0.66	6.29	20.73	1269	2.67	-174.2
	12/2/2010	0.63	6.06	20.94	1439	2062	-162.4
	3/4/2011	1.55	6.84	20.91	815	3.34	-87.8
	5/20/2011	1.22	6.39	20.59	981	2.58	-185.9
	9/9/2011	1.67	5.89	20.48	1303	6.19	-157.7
	3/2/2012	1.98	6.37	20.83	1014	11.8	-204.5
	6/7/2012	0.93	6.53	19.87	877	4.64	-22.9
	9/21/2012	0.63	5.97	20.01	1359	7.56	-55.0
	12/14/2012	1.06	6.67	19.91	1067	7.75	-82.3
	<b>3/28/2013</b>	<b>1.35</b>	<b>6.46</b>	<b>20.59</b>	<b>1107</b>	<b>5.98</b>	<b>-88.0</b>
<b>MW-3</b>	8/27/2009	1.90	6.36	20.82	1318	5.57	-119.3
	12/2/2009	1.80	6.52	20.94	1239	5.88	-206.6
	3/17/2010	1.60	5.78	21.28	1080	5.37	-166.4
	6/3/2010	1.05	6.24	21.16	1130	2.03	-134.8
	9/2/2010	1.17	6.18	21.04	1256	2.86	-131.2
	12/2/2010	1.27	6.06	21.03	1152	1.83	-171.9
	3/4/2011	1.26	6.77	21.18	1074	3.57	-109.8
	5/20/2011	1.04	6.4	20.9	1180	2.72	-220.1
	9/9/2011	1.05	6.13	20.74	1272	3.23	-179.4
	3/2/2012	1.72	6.58	20.87	1120	12.00	-162.7
	6/7/2012	0.54	6.66	20.13	1057	3.11	-20.9
	9/21/2012	0.60	6.08	20.04	1229	8.61	-74.9
	12/14/2012	0.53	6.66	19.81	1017	7.42	-59.3
	<b>3/28/2013</b>	<b>0.90</b>	<b>6.49</b>	<b>20.71</b>	<b>1188</b>	<b>7.83</b>	<b>-56.8</b>
<b>MW-4</b>	8/27/2009	2.90	6.26	20.11	1649	2.78	-115.5
	12/2/2009	0.87	6.4	20.12	1578	5.06	-173.2
	3/17/2010	2.30	5.63	20.39	1506	4.01	-119.4
	6/3/2010	1.90	6.14	20.45	1418	1.56	-131.8
	9/2/2010	1.80	6.06	20.21	1305	1.45	-101.5
	12/2/2010	1.63	5.89	20.28	1465	102	-180
	3/3/2011	1.89	6.66	20.47	1278	0.97	-90.5
	5/19/2011	1.78	6.42	20.51	1251	1.5	-168.3
	9/8/2011	1.77	6.27	20.32	1430	3.82	-157.4
	3/2/2012	1.55	6.39	20.21	1486	8.00	-165.9
	6/7/2012	0.58	6.58	19.53	1315	2.62	-0.3
	9/21/2012	0.48	6.08	19.49	1425	5.12	-82.6
	12/14/2012	0.62	6.58	19.12	1216	5.42	-46
	<b>3/28/2013</b>	<b>0.94</b>	<b>6.54</b>	<b>19.99</b>	<b>1350</b>	<b>5.03</b>	<b>-35.1</b>
<b>MW-5</b>	8/27/2009	1.00	6.38	20.8	1321	6.63	-91.9
	12/2/2009	1.50	6.47	21.03	1227	5.66	-109.1
	3/17/2010	1.10	5.82	21.28	1150	75.3	-60.7
	6/4/2010	1.10	5.99	20.87	1128	3.84	-33.8
	9/2/2010	1.03	6.16	21.22	1178	13.0	-168.4
	12/2/2010	1.05	6.02	21.46	1112	12.3	-167.7
	3/4/2011	1.11	6.89	21.46	1078	4.59	-106.9
	5/20/2011	1.18	6.47	21.02	1106	26.5	-222.5
9/9/2011	1.14	6.2	21.07	1194	5.83	-215.4	

**Table A**  
**Historical Field Parameters**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Dissolved Oxygen (mg/L)	pH	Temperature °C	Electrical Conductivity µS/cm	Turbidity NTU	ORP	
MW-5 cont.	3/2/2012	1.70	6.72	21.34	1187	11.7	-228.6	
	6/7/2012	0.40	6.68	20.29	1200	5.35	-50.7	
	9/21/2012	0.44	6.24	20.73	1164	9.74	33.0	
	12/14/2012	0.52	6.76	20.7	1173	17	-126.5	
	<b>3/28/2013</b>	<b>1.01</b>	<b>6.59</b>	<b>21.24</b>	<b>1068</b>	<b>6.39</b>	<b>-141.5</b>	
MW-6	8/26/2009	0.42	6.47	20.93	1201	6.53	-172.3	
	12/1/2009	0.26	6.89	21.64	1171	6.83	-207.9	
	3/16/2010	0.63	5.91	21.26	1544	6.72	-168.2	
	6/3/2010	0.58	6.38	20.74	1346	2.61	-116.4	
	9/1/2010	0.41	6.44	20.86	1419	2.77	-120.3	
	12/2/2010	0.37	6.24	21.17	1362	4.5	-148	
	3/3/2011	1.54	6.81	21	1262	1.87	-98.3	
	5/20/2011	1.23	6.62	20.51	1312	2.53	-221.1	
	9/8/2011	1.07	6.2	20.84	1292	5.17	-167.9	
	3/2/2012	1.10	6.55	21.03	1197	13.2	-166.4	
	6/6/2012	1.18	6.78	19.82	1091	3.46	-32.8	
	9/20/2012	NA	NA	NA	NA	NA	NA	
	12/13/2012	1.47	6.72	21.05	1231	9.99	-46.2	
	<b>3/27/2013</b>	<b>1.53</b>	<b>6.58</b>	<b>20.81</b>	<b>1179</b>	<b>6.82</b>	<b>-54.9</b>	
MW-7	8/26/2009	0.98	6.36	19.24	1375	145	-128.3	
	12/1/2009	1.05	6.83	19.51	1340	997	-4.3	
	3/16/2010	0.83	5.88	18.37	1266	382	-37.9	
	6/3/2010	0.77	6.46	18.67	1199	873	-30.4	
	9/1/2010	0.98	6.4	19.83	1271	999	-60	
	12/2/2010	1.01	6.23	19.17	1253	999	-85.6	
	3/4/2011	3.66	6.68	18.33	1098	609	-49.5	
	5/19/2011	1.35	6.42	17.71	1192	879	-53.7	
	9/8/2011	2.01	6.07	18.91	1198	748	-17.8	
	3/2/2012	1.82	6.39	18.12	1308	363	-69.3	
	6/6/2012	2.78	6.57	17.41	1106	362	1.3	
	9/20/2012	1.61	6.11	18.8	1303	1000	95.9	
	12/13/2012	2.93	6.67	18.42	1274	524	-22	
	<b>3/27/2013</b>	<b>3.01</b>	<b>6.51</b>	<b>17.1</b>	<b>1256</b>	<b>335</b>	<b>2.1</b>	
MPE-1	6/6/2012	1.73	6.83	19.34	1269	16.8	-41.9	
	9/20/2012	0.62	5.87	19.36	1389	16.2	20.2	
	12/14/2012	0.7	6.76	19.14	1473	16.4	-63.5	
	<b>3/27/2013</b>	<b>2.01</b>	<b>6.64</b>	<b>19.96</b>	<b>1499</b>	<b>7.03</b>	<b>-214.9</b>	
	<b>2nd WBZ</b>							
MPE-2	3/2/2012	1.30	6.40	21.18	1303	8.70	-164.9	
	6/7/2012	0.48	6.62	20.32	1309	3.63	-20.4	
	9/21/2012	0.46	6.29	20.27	1284	7.05	72.4	
	12/14/2012	0.47	6.68	20.14	1223	7.29	-60.5	
	<b>3/28/2013</b>	<b>0.84</b>	<b>6.51</b>	<b>20.93</b>	<b>1327</b>	<b>8.35</b>	<b>-64.3</b>	
	MW-1D	8/26/2009	0.45	7.04	19.93	1388	7.75	-11
		12/1/2009	0.51	7.4	19.79	1342	19.1	-21.7
		3/16/2010	0.57	6.45	19.99	1353	98.9	-28.2
		6/4/2010	0.58	6.66	19.98	1336	3.85	97.7
		9/1/2010	0.52	6.94	20.12	1404	4.41	-6.6
		12/3/2010	0.49	6.64	19.73	1328	7.12	-75.3
		3/3/2011	2.77	7.35	19.79	1294	9.97	18.8
		5/19/2011	2.81	7.07	19.95	1330	5.26	6.6
		9/8/2011	3.21	6.66	20.03	1309	9.98	-35.5
3/2/2012		2.04	6.75	19.76	1306	22.0	-71.3	
6/6/2012		1.1	7.29	19.54	1228	10.8	58.7	
9/20/2012		0.42	6.85	19.57	1256	18.6	93.7	
12/13/2012		1.03	7.29	18.82	1234	11.4	93.7	
<b>3/27/2013</b>		<b>1.45</b>	<b>7.08</b>	<b>19.7</b>	<b>1253</b>	<b>5.8</b>	<b>-1</b>	
MW-3D	8/26/2009	0.73	6.93	20.17	1276	1.73	-18.8	
	12/1/2009	0.98	7.3	20.04	1236	2.48	-23.5	
	3/16/2010	0.69	6.38	20.29	1272	8.05	-27.8	
	6/4/2010	0.77	6.54	20.2	1254	0.42	78.1	
	9/1/2010	0.79	6.85	20.33	1304	0.25	-29.4	
	12/3/2010	0.81	6.49	20.04	1252	1.49	-79.2	
	3/3/2011	2	7.24	20.02	1254	0.85	54	
	5/19/2011	1.99	6.91	20.21	1260	2.03	-14.8	
	9/8/2011	1.73	6.52	20.19	1247	3.53	-32.6	
	3/2/2012	2.17	6.99	20.02	1269	9.02	-84.2	
	6/6/2012	0.33	7.16	19.76	1225	4.78	67.5	
	9/20/2012	0.54	6.77	19.71	1233	4.70	88.0	
	12/13/2012	0.85	7.14	19.02	1229	5.27	104.1	
	<b>3/27/2013</b>	<b>2.11</b>	<b>7.01</b>	<b>19.94</b>	<b>1241</b>	<b>5.31</b>	<b>66.3</b>	

**Table A**  
**Historical Field Parameters**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Dissolved Oxygen (mg/L)	pH	Temperature °C	Electrical Conductivity μS/cm	Turbidity NTU	ORP
MW-4D	8/27/2009	0.98	6.93	19.46	1280	4.31	-26.4
	12/1/2009	1.9	7.36	19.42	1249	4.66	-24.2
	3/16/2010	1.4	6.36	19.58	1283	24.8	-16.7
	6/4/2010	1.3	6.53	19.49	1259	5.1	115.8
	9/1/2010	1.44	6.92	19.67	1333	2.2	-26.9
	12/3/2010	1.3	6.5	19.4	1266	1.57	-116.6
	3/3/2011	2.11	7.36	19.42	1219	1.8	-96.4
	5/19/2011	2.12	6.95	19.56	1262	2.09	-15.5
	9/8/2011	2.03	6.57	19.62	1261	3.13	-54
	3/2/2012	2.15	6.92	19.39	1272	13.1	-86.5
	6/6/2012	0.32	7.27	19.25	1189	6.32	22.9
	9/20/2012	0.39	6.76	19.21	1232	6.12	91.1
	12/13/2012	0.89	7.2	18.46	1210	7.34	-15.7
	3/27/2013	2.01	7.02	19.39	1236	5.31	47.4



## 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

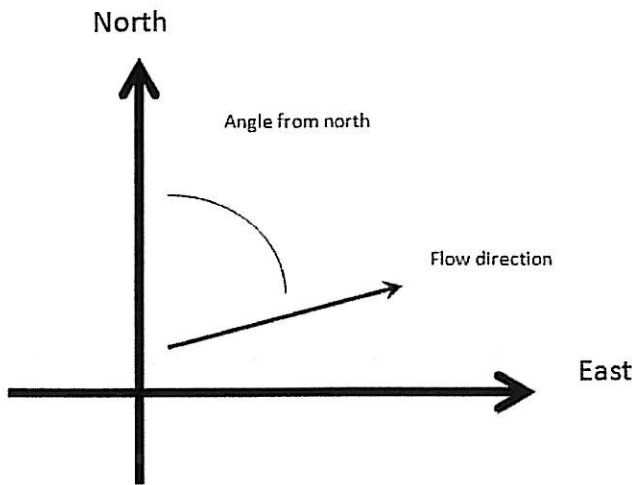
$$\begin{aligned}
 a x_1 + b y_1 + c &= h_1 \\
 a x_2 + b y_2 + c &= h_2 \\
 a x_3 + b y_3 + c &= h_3 \\
 &\dots \\
 a x_{30} + b y_{30} + c &= h_{30}
 \end{aligned}$$

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 15101 Freedom Ave., Sa

Date March 27, 2013

Calculation basis Head

Coordinates ft

I.D.	x-coordinate	y-coordinate	head ft
1) MW-1	6092119.016	2084364.691	31.31
2) MW-2	6092063.978	2084323.224	31.17
3) MW-3	6092176.317	2084298.343	31.22
4) MW-4	6092124.294	2084251.598	31.07
5) MW-5	6092177.071	2084206.361	31.06
6) MW-6	6092140.881	2084072.911	29.52
7) MW-7	6092290.918	2084008.071	30.44
8) EX-1	6092163.5	2084133.982	31.21
9) EX-2	6092131.08	2084082.713	29.37
10) MPE-1	6092125.048	2084212.393	31.05
11) MPE-2	6092171.793	2084292.312	31.19
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	11
Max. Difference Between Head Values	0.5913
Gradient Magnitude (i)	0.008436
Flow direction as degrees from North (positive y axis)	223.9
Coefficient of Determination (R <sup>2</sup> )	0.695

WCMS

Last updated on Thursday, January 10, 2013



## 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

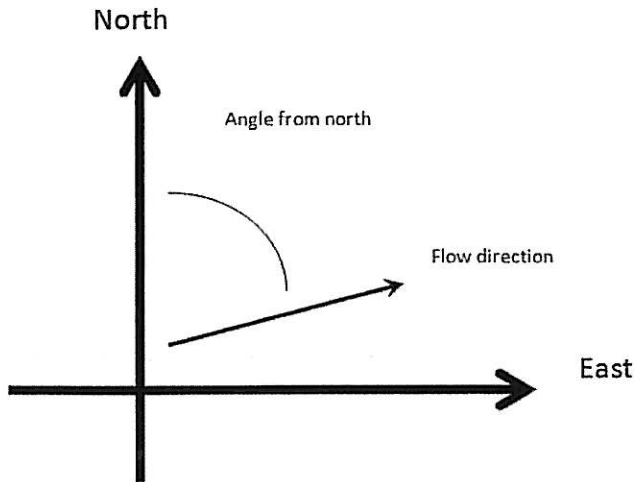
$$\begin{aligned}
 a x_1 + b y_1 + c &= h_1 \\
 a x_2 + b y_2 + c &= h_2 \\
 a x_3 + b y_3 + c &= h_3 \\
 &\dots \\
 a x_{30} + b y_{30} + c &= h_{30}
 \end{aligned}$$

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  ft

I.D.	x-coordinate	y-coordinate	head ft
1) MW-1D	6092128.064	2084372.231	31.08
2) MW-3D	6092183.856	2084303.621	31.23
3) MW-4D	6092116.755	2084222.948	31.14
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	0.04572
Gradient Magnitude (l)	0.002082
Flow direction as degrees from North (positive y axis)	285.4
Coefficient of Determination (R <sup>2</sup> )	1.00

WCMS

Last updated on Thursday, January 10, 2013

# Appendix C

Laboratory Report and Chain of Custody Form  
for the First Quarter 2013 Monitoring Event





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

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

Laboratory Job Number 244169
ANALYTICAL REPORT

SOMA Environmental Engineering Inc.
6620 Owens Dr.
Pleasanton, CA 94588

Project : 2551
Location : 15101 Freedom Avenue San Leandro
Level : II

Table with 2 columns: Sample ID and Lab ID. Rows include MW-1 through MW-7, MW-1D through MW-4D, EX-1 through EX-2, and MPE-1 through MPE-2.

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: [Handwritten Signature]
Tracy Babjar
Project Manager
(510) 204-2226

Date: 04/09/2013

NELAP # 01107CA

### CASE NARRATIVE

Laboratory number: 244169  
Client: SOMA Environmental Engineering Inc.  
Project: 2551  
Location: 15101 Freedom Avenue San Leandro  
Request Date: 03/29/13  
Samples Received: 03/29/13

This data package contains sample and QC results for fourteen water samples, requested for the above referenced project on 03/29/13. The samples were received cold and intact.

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

High recovery was observed for MTBE in the BS for batch 196930; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. MW-5 (lab # 244169-005) was diluted due to high non-target analytes. No other analytical problems were encountered.

# CHAIN OF CUSTODY

## Analyses

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

C&T LOGIN # 244169

**Sampler: Lizzie Hightower/**

**Project No: 2551**

**Report To: Joyce Bobek**

**Project Name: 15101 Freedom Ave., San Leandro**

**Company: SOMA Environmental**

**Turnaround Time: Standard**

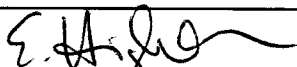
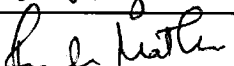
**Telephone: 925-734-6400**

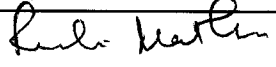
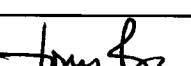
**Fax: 925-734-6401**

TPHg, BTEX, MtBE 8260B Gasoline Oxygenates & Lead Scavengers																				
	*	*																		
	*	*																		
	*	*																		
	*	*																		
	*	*																		
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Lab No.	Sample ID.	Sampling Date Time			Matrix			# of Containers	Preservative				
					Soil	Water	Waste		HCl	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE	
1	MW-1	3/22	13	10:03	*			3-VOAs	*			*	
2	MW-2	3/23	13	09:39	*			3-VOAs	*			*	
3	MW-3	3/23	13	10:25	*			3-VOAs	*			*	
4	MW-4	3/28	13	11:10	*			3-VOAs	*			*	
5	MW-5	3/28	13	11:37	*			3-VOAs	*			*	
6	MW-6	3/27	13	12:10	*			3-VOAs	*			*	
7	MW-7	3/27	13	11:45	*			3-VOAs	*			*	
8	MW-1D	3/27	13	11:29	*			3-VOAs	*			*	
9	MW-3D	3/27	13	13:54	*			3-VOAs	*			*	
10	MW-4D	3/27	13	14:17	*			3-VOAs	*			*	
11	EX-1	3/27	13	12:34	*			3-VOAs	*			*	
12	EX-2	3/27	13	12:20	*			3-VOAs	*			*	
13	MPE-1	3/27	13	14:41	*			3-VOAs	*			*	
14	MPE-2	3/28	13	10:43	*			3-VOAs	*			*	

**Notes: EDF OUTPUT REQUIRED**  
 Ethanol

**RELINQUISHED BY:**  
 3/28/13 12:50  
 DATE/TIME  
 3/29/13 13:46  
 DATE/TIME

**RECEIVED BY:**  
 3/29/13 13:46  
 DATE/TIME  
 3/29/13 13:46  
 DATE/TIME

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 244169 Date Received 3/29/13 Number of coolers 1
Client SOMA Project 15101 Freedom Hve.

Date Opened 3/29/13 By (print) AA (sign) [Signature]
Date Logged in 4/1/13 By (print) EL (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, Foam blocks, Bags, None, Cloth material, Cardboard, Styrofoam, 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.

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-1	Batch#: 196971
Lab ID: 244169-001	Sampled: 03/28/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/03/13
Diln Fac: 5.000	

Analyte	Result	RL
Gasoline C7-C12	5,100	250
tert-Butyl Alcohol (TBA)	ND	50
Isopropyl Ether (DIPE)	ND	2.5
Ethyl tert-Butyl Ether (ETBE)	ND	2.5
Methyl tert-Amyl Ether (TAME)	ND	2.5
Ethanol	ND	5,000
MTBE	3.6	2.5
1,2-Dichloroethane	ND	2.5
Benzene	230	2.5
Toluene	ND	2.5
1,2-Dibromoethane	ND	2.5
Ethylbenzene	280	2.5
m,p-Xylenes	48	2.5
o-Xylene	ND	2.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-2	Batch#: 196971
Lab ID: 244169-002	Sampled: 03/28/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/03/13
Diln Fac: 1.000	

Analyte	Result	RL
Gasoline C7-C12	890	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	4.3	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	99	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-3	Batch#: 196971
Lab ID: 244169-003	Sampled: 03/28/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/03/13
Diln Fac: 10.00	

Analyte	Result	RL
Gasoline C7-C12	9,300	500
tert-Butyl Alcohol (TBA)	ND	100
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	10,000
MTBE	8.7	5.0
1,2-Dichloroethane	ND	5.0
Benzene	790	5.0
Toluene	8.2	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	760	5.0
m,p-Xylenes	930	5.0
o-Xylene	44	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	77-134
1,2-Dichloroethane-d4	90	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-4	Batch#: 197063
Lab ID: 244169-004	Sampled: 03/28/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/05/13
Diln Fac: 10.00	

Analyte	Result	RL
Gasoline C7-C12	790	500
tert-Butyl Alcohol (TBA)	2,500	100
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	29	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	10,000
MTBE	15	5.0
1,2-Dichloroethane	ND	5.0
Benzene	650	5.0
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	26	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	109	77-134
1,2-Dichloroethane-d4	106	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected  
 RL= Reporting Limit



### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-5	Batch#: 196971
Lab ID: 244169-005	Sampled: 03/28/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/03/13
Diln Fac: 2.000	

Analyte	Result	RL
Gasoline C7-C12	1,900	100
tert-Butyl Alcohol (TBA)	ND	20
Isopropyl Ether (DIPE)	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	1.0
Methyl tert-Amyl Ether (TAME)	3.1	1.0
Ethanol	ND	2,000
MTBE	4.5	1.0
1,2-Dichloroethane	ND	1.0
Benzene	30	1.0
Toluene	ND	1.0
1,2-Dibromoethane	ND	1.0
Ethylbenzene	59	1.0
m,p-Xylenes	43	1.0
o-Xylene	5.4	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	91	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	96	80-120

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-6	Units: ug/L
Lab ID: 244169-006	Sampled: 03/27/13
Matrix: Water	Received: 03/29/13

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	7,400	360	7.143	196971	04/03/13
tert-Butyl Alcohol (TBA)	ND	25	2.500	196930	04/02/13
Isopropyl Ether (DIPE)	ND	1.3	2.500	196930	04/02/13
Ethyl tert-Butyl Ether (ETBE)	ND	1.3	2.500	196930	04/02/13
Methyl tert-Amyl Ether (TAME)	ND	1.3	2.500	196930	04/02/13
Ethanol	ND	2,500	2.500	196930	04/02/13
MTBE	ND	1.3	2.500	196930	04/02/13
1,2-Dichloroethane	ND	1.3	2.500	196930	04/02/13
Benzene	27	1.3	2.500	196930	04/02/13
Toluene	ND	1.3	2.500	196930	04/02/13
1,2-Dibromoethane	ND	1.3	2.500	196930	04/02/13
Ethylbenzene	190	1.3	2.500	196930	04/02/13
m,p-Xylenes	220	1.3	2.500	196930	04/02/13
o-Xylene	1.8	1.3	2.500	196930	04/02/13

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	105	77-134	2.500	196930	04/02/13
1,2-Dichloroethane-d4	96	72-140	2.500	196930	04/02/13
Toluene-d8	92	80-120	2.500	196930	04/02/13
Bromofluorobenzene	95	80-120	2.500	196930	04/02/13

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-7	Batch#: 196971
Lab ID: 244169-007	Sampled: 03/27/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/03/13
Diln Fac: 1.000	

Analyte	Result	RL
Gasoline C7-C12	680	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	4.2	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	1.8	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	97	72-140
Toluene-d8	95	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-1D	Batch#: 196930
Lab ID: 244169-008	Sampled: 03/27/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/02/13
Diln Fac: 1.000	

Analyte	Result	RL
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	98	72-140
Toluene-d8	95	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MW-3D	Diln Fac: 1.000
Lab ID: 244169-009	Sampled: 03/27/13
Matrix: Water	Received: 03/29/13
Units: ug/L	

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	ND	50	196930	04/02/13
tert-Butyl Alcohol (TBA)	ND	10	196930	04/02/13
Isopropyl Ether (DIPE)	ND	0.50	196930	04/02/13
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	196930	04/02/13
Methyl tert-Amyl Ether (TAME)	ND	0.50	196930	04/02/13
Ethanol	ND	1,000	196930	04/02/13
MTBE	4.4	0.50	196966	04/03/13
1,2-Dichloroethane	ND	0.50	196930	04/02/13
Benzene	ND	0.50	196930	04/02/13
Toluene	ND	0.50	196930	04/02/13
1,2-Dibromoethane	ND	0.50	196930	04/02/13
Ethylbenzene	ND	0.50	196930	04/02/13
m,p-Xylenes	ND	0.50	196930	04/02/13
o-Xylene	ND	0.50	196930	04/02/13

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	103	77-134	196930	04/02/13
1,2-Dichloroethane-d4	101	72-140	196930	04/02/13
Toluene-d8	95	80-120	196930	04/02/13
Bromofluorobenzene	94	80-120	196930	04/02/13

ND= Not Detected  
 RL= Reporting Limit

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-4D	Diln Fac:	1.000
Lab ID:	244169-010	Sampled:	03/27/13
Matrix:	Water	Received:	03/29/13
Units:	ug/L		

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	ND	50	196930	04/02/13
tert-Butyl Alcohol (TBA)	ND	10	196930	04/02/13
Isopropyl Ether (DIPE)	ND	0.50	196930	04/02/13
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	196930	04/02/13
Methyl tert-Amyl Ether (TAME)	ND	0.50	196930	04/02/13
Ethanol	ND	1,000	196930	04/02/13
MTBE	2.1	0.50	196966	04/03/13
1,2-Dichloroethane	ND	0.50	196930	04/02/13
Benzene	ND	0.50	196930	04/02/13
Toluene	ND	0.50	196930	04/02/13
1,2-Dibromoethane	ND	0.50	196930	04/02/13
Ethylbenzene	ND	0.50	196930	04/02/13
m,p-Xylenes	ND	0.50	196930	04/02/13
o-Xylene	ND	0.50	196930	04/02/13

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	104	77-134	196930	04/02/13
1,2-Dichloroethane-d4	100	72-140	196930	04/02/13
Toluene-d8	91	80-120	196930	04/02/13
Bromofluorobenzene	98	80-120	196930	04/02/13

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: EX-1	Diln Fac: 1.000
Lab ID: 244169-011	Sampled: 03/27/13
Matrix: Water	Received: 03/29/13
Units: ug/L	

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	69	50	196930	04/02/13
tert-Butyl Alcohol (TBA)	ND	10	196930	04/02/13
Isopropyl Ether (DIPE)	ND	0.50	196930	04/02/13
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	196930	04/02/13
Methyl tert-Amyl Ether (TAME)	ND	0.50	196930	04/02/13
Ethanol	ND	1,000	196930	04/02/13
MTBE	1.8	0.50	197014	04/04/13
1,2-Dichloroethane	ND	0.50	196930	04/02/13
Benzene	4.1	0.50	196930	04/02/13
Toluene	ND	0.50	196930	04/02/13
1,2-Dibromoethane	ND	0.50	196930	04/02/13
Ethylbenzene	3.3	0.50	196930	04/02/13
m,p-Xylenes	8.3	0.50	196930	04/02/13
o-Xylene	1.7	0.50	196930	04/02/13

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	105	77-134	196930	04/02/13
1,2-Dichloroethane-d4	99	72-140	196930	04/02/13
Toluene-d8	92	80-120	196930	04/02/13
Bromofluorobenzene	93	80-120	196930	04/02/13

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: EX-2	Batch#: 196971
Lab ID: 244169-012	Sampled: 03/27/13
Matrix: Water	Received: 03/29/13
Units: ug/L	Analyzed: 04/03/13
Diln Fac: 2.000	

Analyte	Result	RL
Gasoline C7-C12	2,200	100
tert-Butyl Alcohol (TBA)	ND	20
Isopropyl Ether (DIPE)	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	1.0
Ethanol	ND	2,000
MTBE	4.3	1.0
1,2-Dichloroethane	ND	1.0
Benzene	130	1.0
Toluene	9.6	1.0
1,2-Dibromoethane	ND	1.0
Ethylbenzene	100	1.0
m,p-Xylenes	240	1.0
o-Xylene	48	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	96	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected  
 RL= Reporting Limit



### Purgeable Organics by GC/MS

Lab #: 244169	Location: 15101 Freedom Avenue San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2551	Analysis: EPA 8260B
Field ID: MPE-1	Sampled: 03/27/13
Lab ID: 244169-013	Received: 03/29/13
Matrix: Water	Analyzed: 04/03/13
Units: ug/L	

Analyte	Result	RL	Diln Fac	Batch#
Gasoline C7-C12	61,000	3,600	71.43	196930
tert-Butyl Alcohol (TBA)	ND	710	71.43	196930
Isopropyl Ether (DIPE)	ND	36	71.43	196930
Ethyl tert-Butyl Ether (ETBE)	ND	36	71.43	196930
Methyl tert-Amyl Ether (TAME)	890	36	71.43	196930
Ethanol	ND	71,000	71.43	196930
MTBE	1,500	42	83.33	196971
1,2-Dichloroethane	ND	36	71.43	196930
Benzene	6,600	36	71.43	196930
Toluene	4,500	36	71.43	196930
1,2-Dibromoethane	ND	36	71.43	196930
Ethylbenzene	2,200	36	71.43	196930
m,p-Xylenes	6,500	36	71.43	196930
o-Xylene	2,900	36	71.43	196930

Surrogate	%REC	Limits	Diln Fac	Batch#
Dibromofluoromethane	100	77-134	71.43	196930
1,2-Dichloroethane-d4	88	72-140	71.43	196930
Toluene-d8	98	80-120	71.43	196930
Bromofluorobenzene	96	80-120	71.43	196930

ND= Not Detected  
 RL= Reporting Limit

**Purgeable Organics by GC/MS**

Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MPE-2	Batch#:	197063
Lab ID:	244169-014	Sampled:	03/28/13
Matrix:	Water	Received:	03/29/13
Units:	ug/L	Analyzed:	04/05/13
Diln Fac:	40.00		

Analyte	Result	RL
Gasoline C7-C12	20,000	2,000
tert-Butyl Alcohol (TBA)	ND	400
Isopropyl Ether (DIPE)	ND	20
Ethyl tert-Butyl Ether (ETBE)	ND	20
Methyl tert-Amyl Ether (TAME)	ND	20
Ethanol	ND	40,000
MTBE	ND	20
1,2-Dichloroethane	ND	20
Benzene	2,200	20
Toluene	ND	20
1,2-Dibromoethane	ND	20
Ethylbenzene	1,300	20
m,p-Xylenes	960	20
o-Xylene	ND	20

Surrogate	%REC	Limits
Dibromofluoromethane	106	77-134
1,2-Dichloroethane-d4	107	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196930
Units:	ug/L	Analyzed:	04/02/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682349

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	87.50	116.9	134	37-144
Isopropyl Ether (DIPE)	17.50	19.98	114	52-123
Ethyl tert-Butyl Ether (ETBE)	17.50	21.05	120	57-120
Methyl tert-Amyl Ether (TAME)	17.50	19.58	112	59-120
MTBE	17.50	22.37	128 *	58-120
1,2-Dichloroethane	17.50	18.87	108	73-136
Benzene	17.50	19.00	109	78-125
Toluene	17.50	17.30	99	79-123
1,2-Dibromoethane	17.50	18.08	103	78-120
Ethylbenzene	17.50	16.94	97	80-126
m,p-Xylenes	35.00	34.69	99	80-123
o-Xylene	17.50	17.67	101	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	97	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC682350

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	87.50	110.6	126	37-144	6	31
Isopropyl Ether (DIPE)	17.50	18.98	108	52-123	5	20
Ethyl tert-Butyl Ether (ETBE)	17.50	19.71	113	57-120	7	23
Methyl tert-Amyl Ether (TAME)	17.50	18.41	105	59-120	6	22
MTBE	17.50	19.89	114	58-120	12	23
1,2-Dichloroethane	17.50	18.12	104	73-136	4	20
Benzene	17.50	17.83	102	78-125	6	20
Toluene	17.50	17.82	102	79-123	3	20
1,2-Dibromoethane	17.50	17.36	99	78-120	4	20
Ethylbenzene	17.50	16.70	95	80-126	1	20
m,p-Xylenes	35.00	34.93	100	80-123	1	20
o-Xylene	17.50	17.23	98	75-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	96	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	101	80-120

\*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

**Batch QC Report**

<b>Purgeable Organics by GC/MS</b>		
Lab #:	244169	Location: 15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#:	2551	Analysis: EPA 8260B
Type:	BLANK	Diln Fac: 1.000
Lab ID:	QC682351	Batch#: 196930
Matrix:	Water	Analyzed: 04/02/13
Units:	ug/L	

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	97	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	93	80-120

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196930
Units:	ug/L	Analyzed:	04/02/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682352

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	884.0	88	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	92	80-120

Type: BSD Lab ID: QC682353

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	913.9	91	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196966
Units:	ug/L	Analyzed:	04/03/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682517

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	62.50	51.84	83	37-144
Isopropyl Ether (DIPE)	12.50	13.49	108	52-123
Ethyl tert-Butyl Ether (ETBE)	12.50	12.06	96	57-120
Methyl tert-Amyl Ether (TAME)	12.50	10.22	82	59-120
MTBE	12.50	11.29	90	58-120
1,2-Dichloroethane	12.50	14.19	113	73-136
Benzene	12.50	14.04	112	78-125
Toluene	12.50	13.03	104	79-123
1,2-Dibromoethane	12.50	10.66	85	78-120
Ethylbenzene	12.50	12.47	100	80-126
m,p-Xylenes	25.00	24.59	98	80-123
o-Xylene	12.50	9.824	79	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	113	77-134
1,2-Dichloroethane-d4	112	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	89	80-120

Type: BSD Lab ID: QC682518

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	62.50	60.37	97	37-144	15	31
Isopropyl Ether (DIPE)	12.50	13.87	111	52-123	3	20
Ethyl tert-Butyl Ether (ETBE)	12.50	12.50	100	57-120	4	23
Methyl tert-Amyl Ether (TAME)	12.50	10.23	82	59-120	0	22
MTBE	12.50	12.10	97	58-120	7	23
1,2-Dichloroethane	12.50	14.22	114	73-136	0	20
Benzene	12.50	14.05	112	78-125	0	20
Toluene	12.50	13.32	107	79-123	2	20
1,2-Dibromoethane	12.50	11.14	89	78-120	4	20
Ethylbenzene	12.50	12.59	101	80-126	1	20
m,p-Xylenes	25.00	24.82	99	80-123	1	20
o-Xylene	12.50	10.04	80	75-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	116	77-134
1,2-Dichloroethane-d4	111	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	90	80-120

RPD= Relative Percent Difference

**Batch QC Report**

<b>Purgeable Organics by GC/MS</b>		
Lab #:	244169	Location: 15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#:	2551	Analysis: EPA 8260B
Type:	BLANK	Diln Fac: 1.000
Lab ID:	QC682519	Batch#: 196966
Matrix:	Water	Analyzed: 04/03/13
Units:	ug/L	

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
Gasoline C7-C12	NA	
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	124	77-134
1,2-Dichloroethane-d4	113	72-140
Toluene-d8	102	80-120
Bromofluorobenzene	94	80-120

NA= Not Analyzed  
 ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196971
Units:	ug/L	Analyzed:	04/03/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682535

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	62.50	68.27	109	37-144
Isopropyl Ether (DIPE)	12.50	13.68	109	52-123
Ethyl tert-Butyl Ether (ETBE)	12.50	13.72	110	57-120
Methyl tert-Amyl Ether (TAME)	12.50	12.80	102	59-120
MTBE	12.50	15.01	120	58-120
1,2-Dichloroethane	12.50	14.39	115	73-136
Benzene	12.50	14.43	115	78-125
Toluene	12.50	13.51	108	79-123
1,2-Dibromoethane	12.50	13.07	105	78-120
Ethylbenzene	12.50	13.41	107	80-126
m,p-Xylenes	25.00	27.69	111	80-123
o-Xylene	12.50	12.66	101	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	99	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC682536

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	62.50	70.54	113	37-144	3	31
Isopropyl Ether (DIPE)	12.50	14.11	113	52-123	3	20
Ethyl tert-Butyl Ether (ETBE)	12.50	14.39	115	57-120	5	23
Methyl tert-Amyl Ether (TAME)	12.50	13.15	105	59-120	3	22
MTBE	12.50	14.63	117	58-120	3	23
1,2-Dichloroethane	12.50	14.08	113	73-136	2	20
Benzene	12.50	14.66	117	78-125	2	20
Toluene	12.50	14.60	117	79-123	8	20
1,2-Dibromoethane	12.50	13.19	106	78-120	1	20
Ethylbenzene	12.50	13.50	108	80-126	1	20
m,p-Xylenes	25.00	27.75	111	80-123	0	20
o-Xylene	12.50	13.34	107	75-120	5	20

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	96	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference



**Batch QC Report**

<b>Purgeable Organics by GC/MS</b>		
Lab #:	244169	Location: 15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#:	2551	Analysis: EPA 8260B
Type:	BLANK	Diln Fac: 1.000
Lab ID:	QC682537	Batch#: 196971
Matrix:	Water	Analyzed: 04/03/13
Units:	ug/L	

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	106	77-134
1,2-Dichloroethane-d4	100	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196971
Units:	ug/L	Analyzed:	04/03/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682538

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	966.7	97	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	99	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	95	80-120

Type: BSD Lab ID: QC682539

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	920.5	92	80-120	5	20

Surrogate	%REC	Limits
Dibromofluoromethane	105	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	95	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	197014
Units:	ug/L	Analyzed:	04/04/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682723

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	62.50	66.01	106	37-144
Isopropyl Ether (DIPE)	12.50	13.89	111	52-123
Ethyl tert-Butyl Ether (ETBE)	12.50	12.60	101	57-120
Methyl tert-Amyl Ether (TAME)	12.50	10.03	80	59-120
MTBE	12.50	11.95	96	58-120
1,2-Dichloroethane	12.50	14.70	118	73-136
Benzene	12.50	13.89	111	78-125
Toluene	12.50	13.30	106	79-123
1,2-Dibromoethane	12.50	11.00	88	78-120
Ethylbenzene	12.50	12.55	100	80-126
m,p-Xylenes	25.00	25.22	101	80-123
o-Xylene	12.50	9.675	77	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	117	77-134
1,2-Dichloroethane-d4	115	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	89	80-120

Type: BSD Lab ID: QC682724

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	62.50	75.74	121	37-144	14	31
Isopropyl Ether (DIPE)	12.50	14.20	114	52-123	2	20
Ethyl tert-Butyl Ether (ETBE)	12.50	12.39	99	57-120	2	23
Methyl tert-Amyl Ether (TAME)	12.50	10.44	83	59-120	4	22
MTBE	12.50	12.64	101	58-120	6	23
1,2-Dichloroethane	12.50	15.11	121	73-136	3	20
Benzene	12.50	14.35	115	78-125	3	20
Toluene	12.50	13.71	110	79-123	3	20
1,2-Dibromoethane	12.50	11.72	94	78-120	6	20
Ethylbenzene	12.50	12.87	103	80-126	3	20
m,p-Xylenes	25.00	25.86	103	80-123	3	20
o-Xylene	12.50	10.01	80	75-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	117	77-134
1,2-Dichloroethane-d4	114	72-140
Toluene-d8	101	80-120
Bromofluorobenzene	89	80-120

RPD= Relative Percent Difference

**Batch QC Report**

<b>Purgeable Organics by GC/MS</b>		
Lab #:	244169	Location: 15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#:	2551	Analysis: EPA 8260B
Type:	BLANK	Diln Fac: 1.000
Lab ID:	QC682725	Batch#: 197014
Matrix:	Water	Analyzed: 04/04/13
Units:	ug/L	

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
Gasoline C7-C12	NA	
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	132	77-134
1,2-Dichloroethane-d4	115	72-140
Toluene-d8	101	80-120
Bromofluorobenzene	91	80-120

NA= Not Analyzed  
 ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	197063
Units:	ug/L	Analyzed:	04/05/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682939

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	132.0	106	37-144
Isopropyl Ether (DIPE)	25.00	29.19	117	52-123
Ethyl tert-Butyl Ether (ETBE)	25.00	28.01	112	57-120
Methyl tert-Amyl Ether (TAME)	25.00	26.87	107	59-120
MTBE	25.00	26.77	107	58-120
1,2-Dichloroethane	25.00	28.98	116	73-136
Benzene	25.00	27.62	110	78-125
Toluene	25.00	26.78	107	79-123
1,2-Dibromoethane	25.00	26.48	106	78-120
Ethylbenzene	25.00	26.92	108	80-126
m,p-Xylenes	50.00	53.89	108	80-123
o-Xylene	25.00	24.35	97	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	106	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-120

Type: BSD Lab ID: QC682940

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	122.2	98	37-144	8	31
Isopropyl Ether (DIPE)	25.00	26.26	105	52-123	11	20
Ethyl tert-Butyl Ether (ETBE)	25.00	25.23	101	57-120	10	23
Methyl tert-Amyl Ether (TAME)	25.00	24.57	98	59-120	9	22
MTBE	25.00	24.85	99	58-120	7	23
1,2-Dichloroethane	25.00	26.41	106	73-136	9	20
Benzene	25.00	24.57	98	78-125	12	20
Toluene	25.00	23.97	96	79-123	11	20
1,2-Dibromoethane	25.00	24.39	98	78-120	8	20
Ethylbenzene	25.00	24.34	97	80-126	10	20
m,p-Xylenes	50.00	48.63	97	80-123	10	20
o-Xylene	25.00	22.59	90	75-120	7	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	105	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120

RPD= Relative Percent Difference

**Batch QC Report**

<b>Purgeable Organics by GC/MS</b>		
Lab #:	244169	Location: 15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#:	2551	Analysis: EPA 8260B
Type:	BLANK	Diln Fac: 1.000
Lab ID:	QC682941	Batch#: 197063
Matrix:	Water	Analyzed: 04/05/13
Units:	ug/L	

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	106	77-134
1,2-Dichloroethane-d4	112	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	244169	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	197063
Units:	ug/L	Analyzed:	04/05/13
Diln Fac:	1.000		

Type: BS Lab ID: QC682945

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	946.4	95	80-120

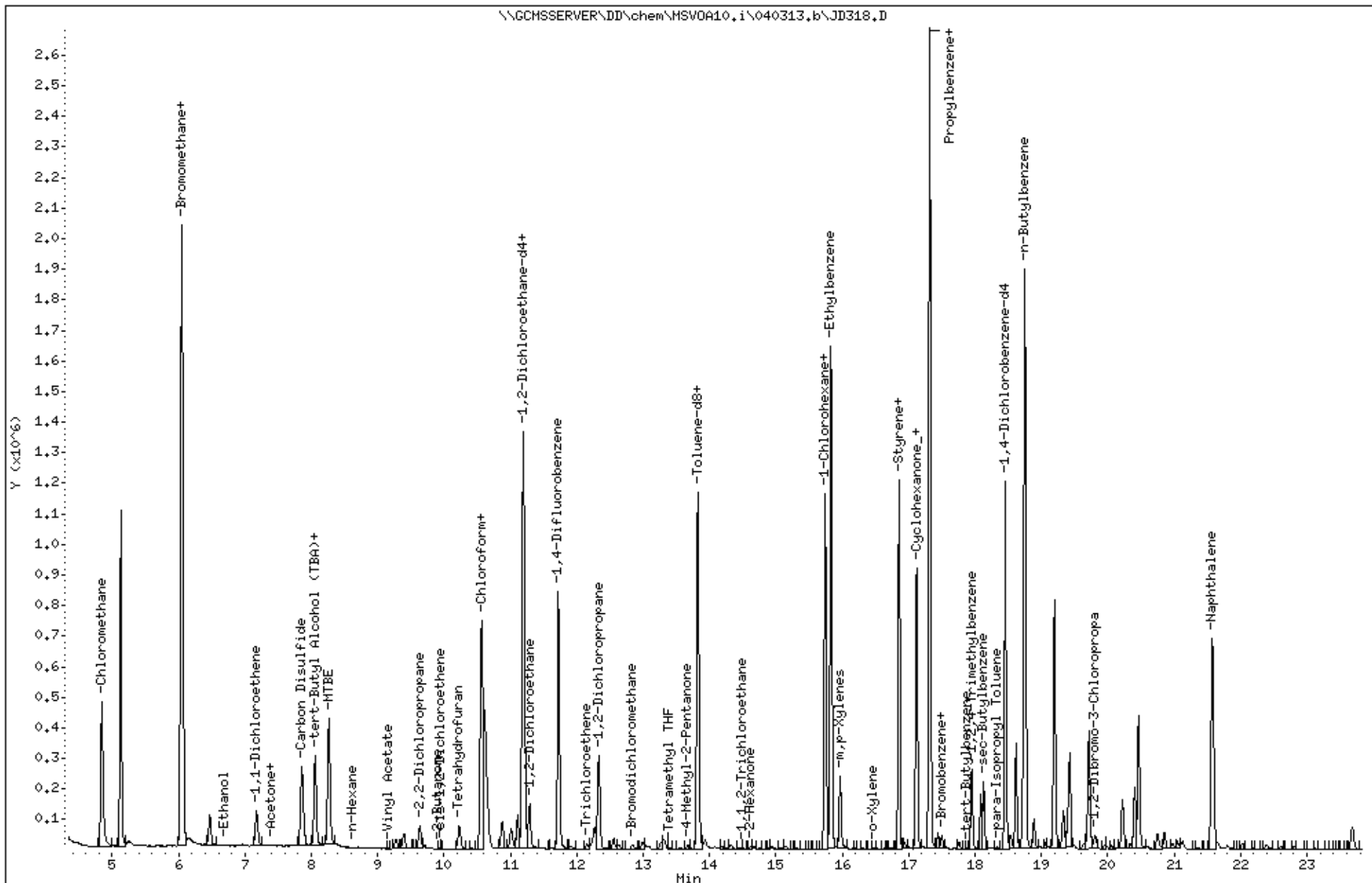
Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	108	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC682946

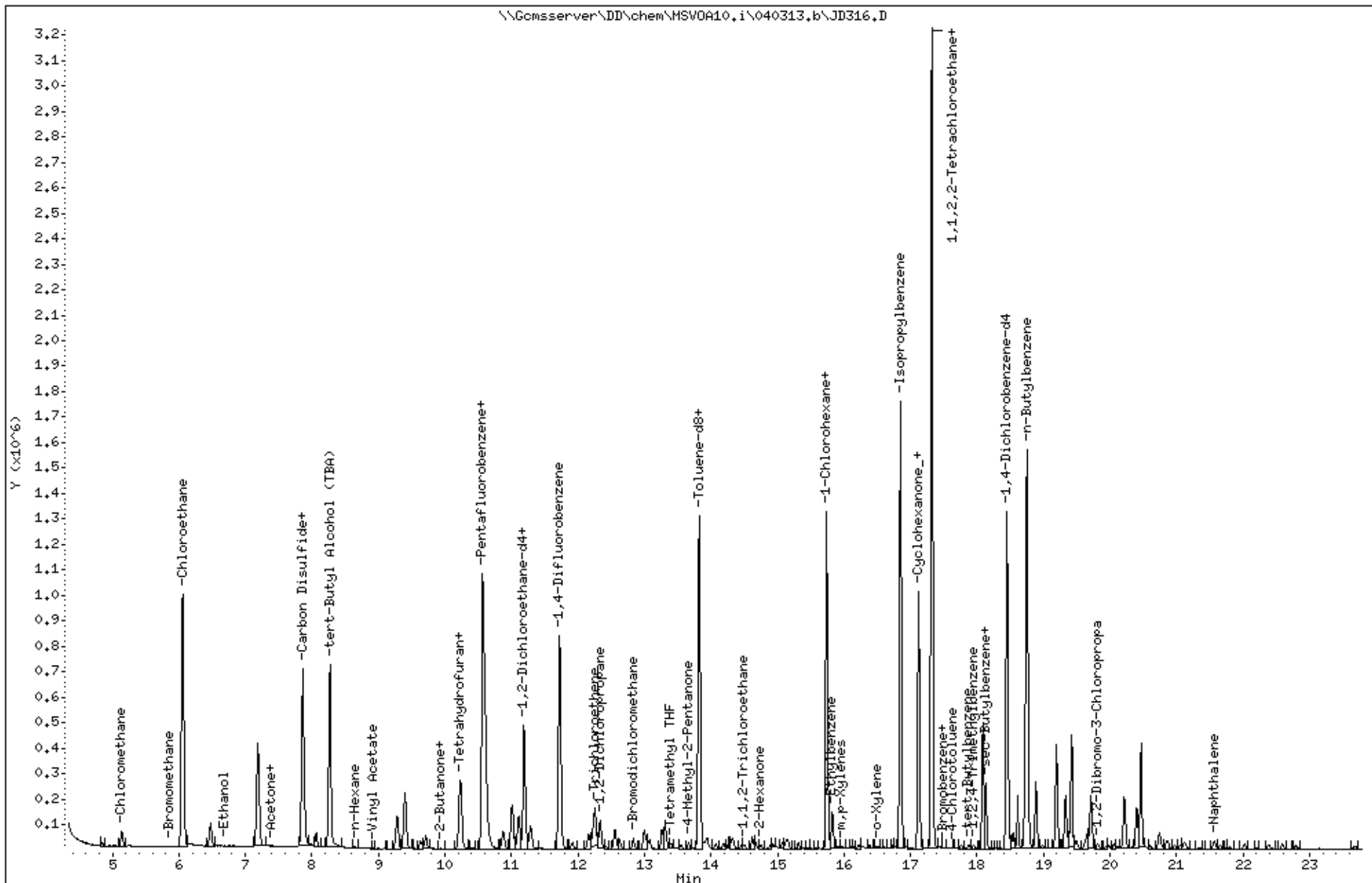
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	879.0	88	80-120	7	20

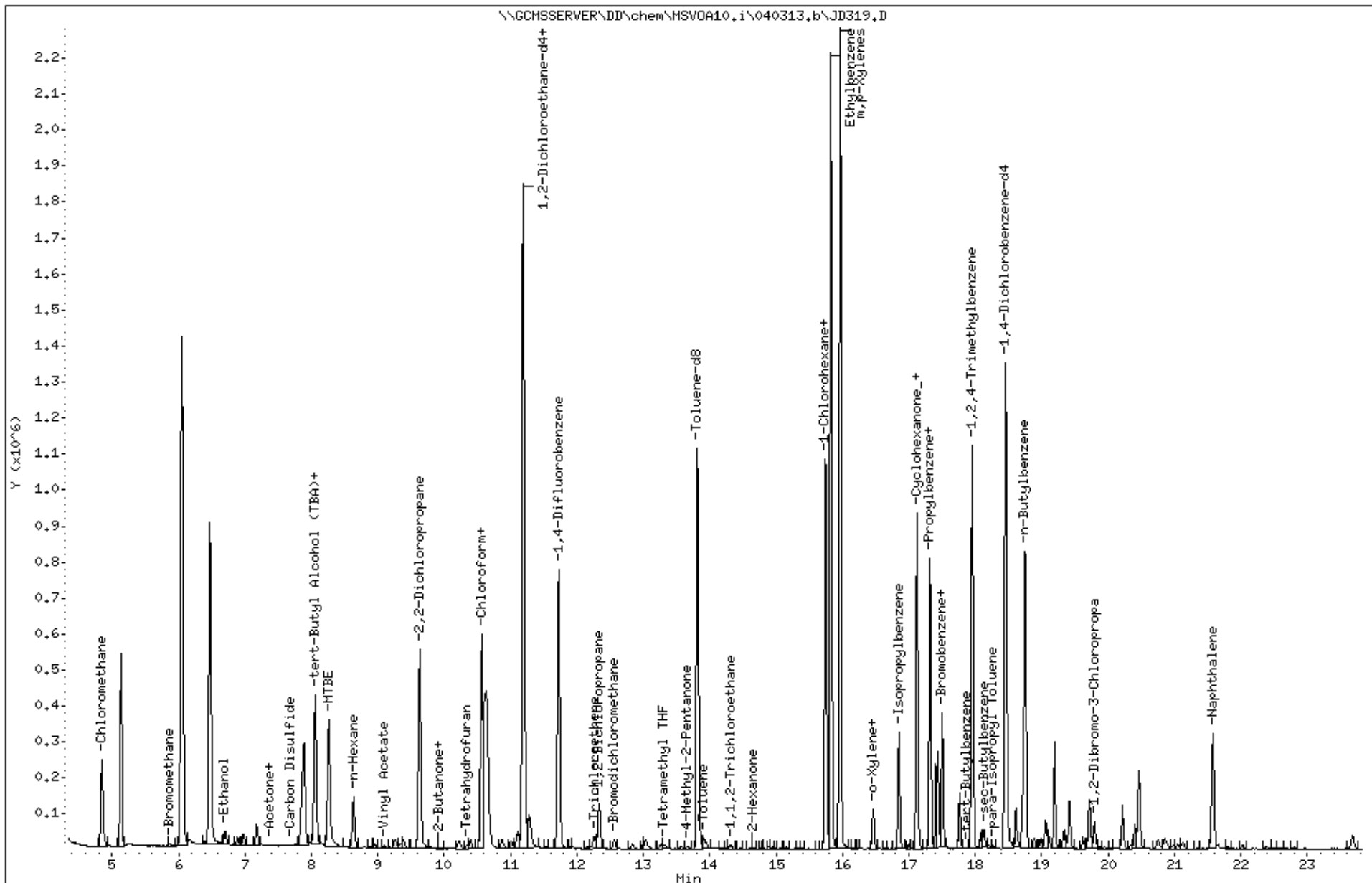
Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	110	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference









Date : 05-APR-2013 19:47

Client ID: DYNA P&T

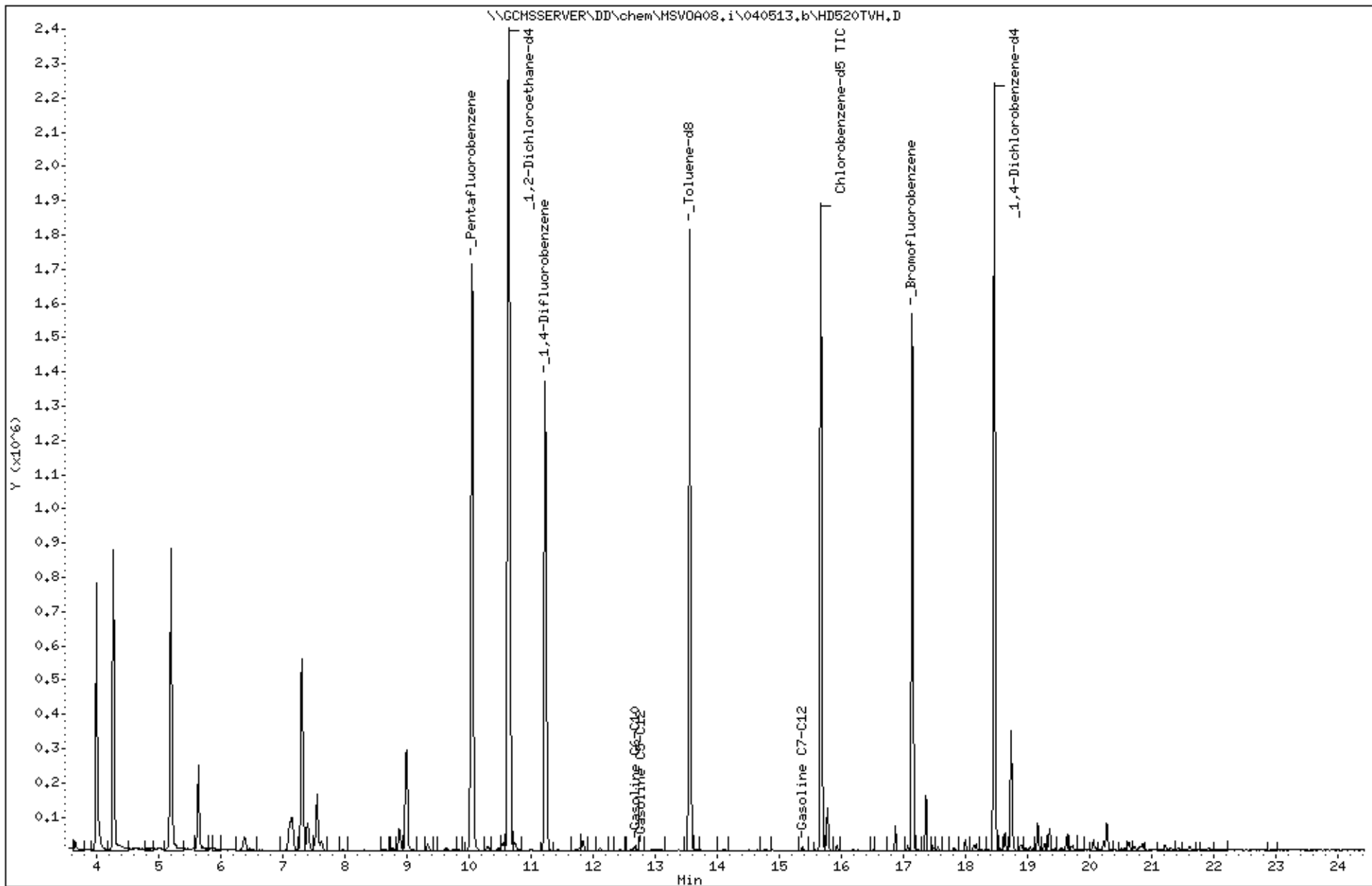
Sample Info: S,244169-004

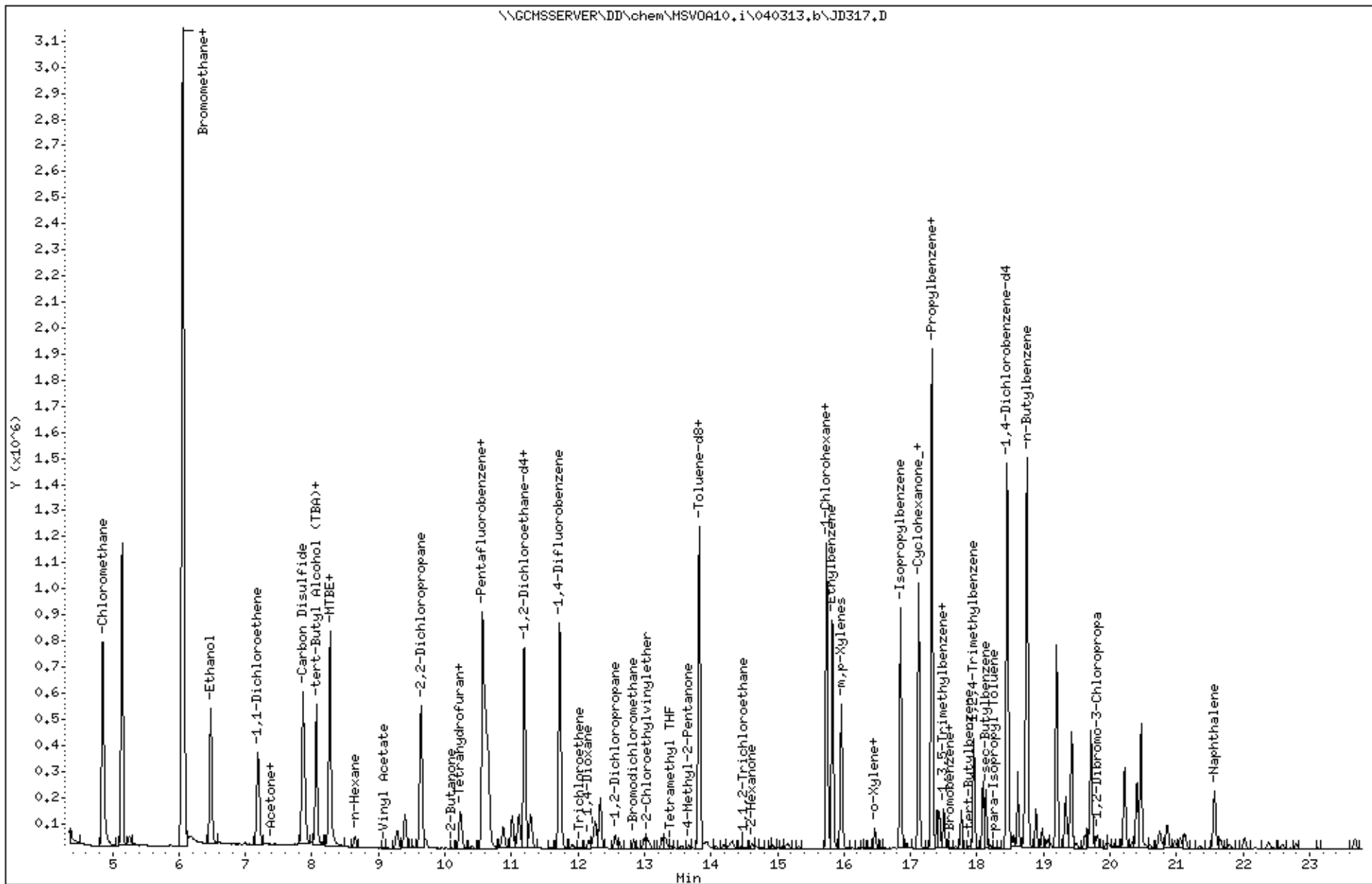
Instrument: MSV0A08.i

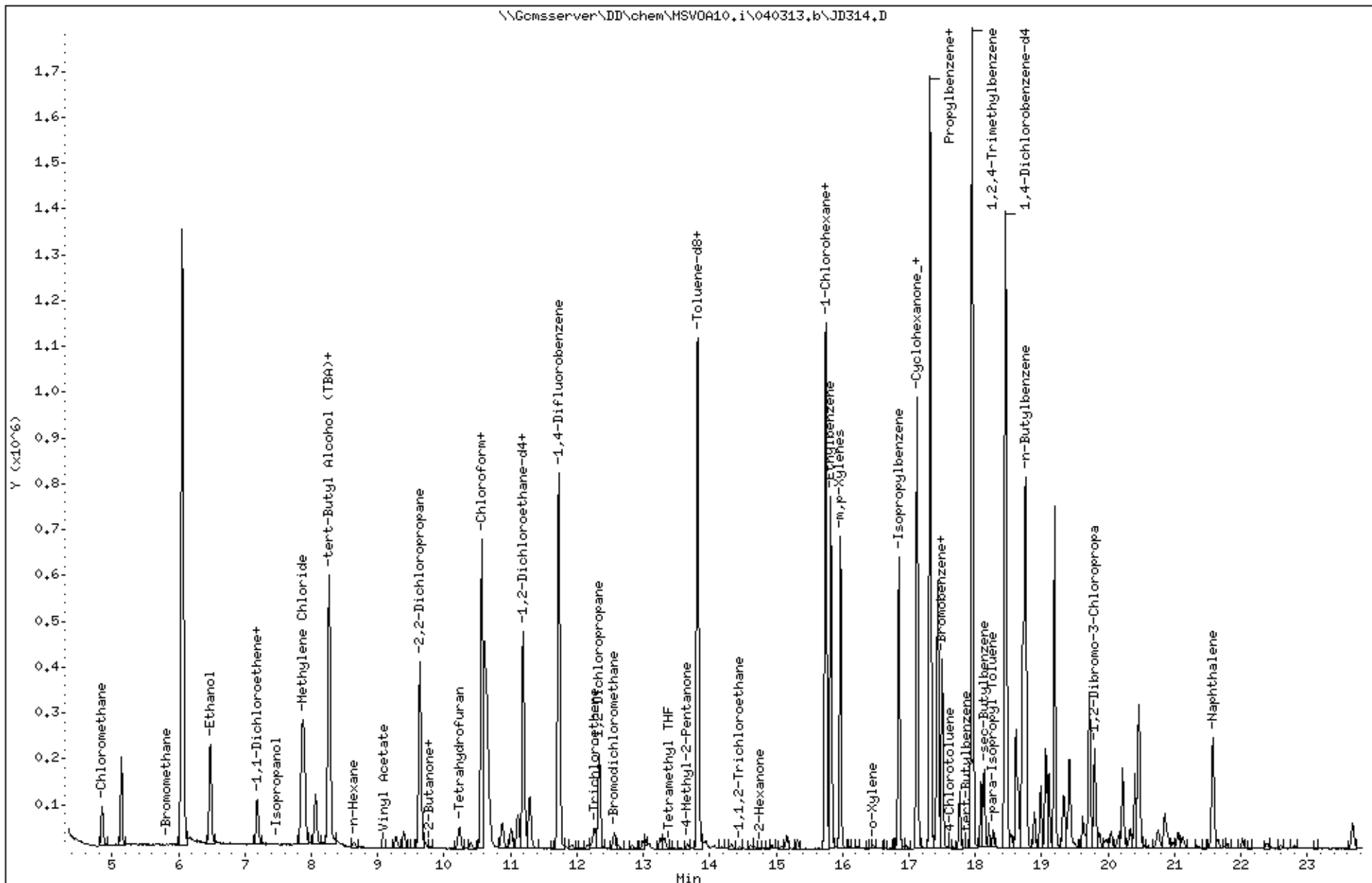
Operator: VOC

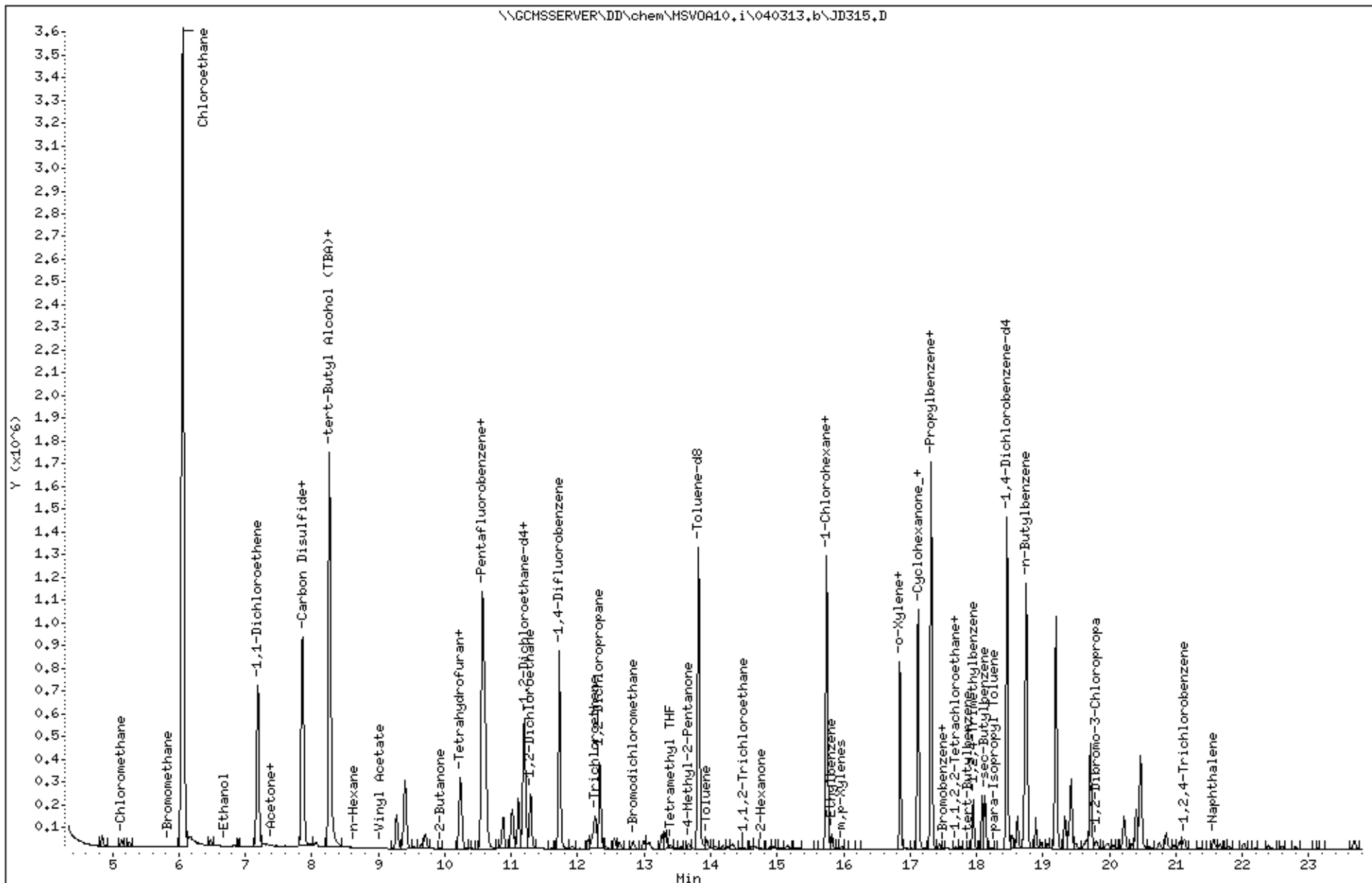
Column diameter: 2.00

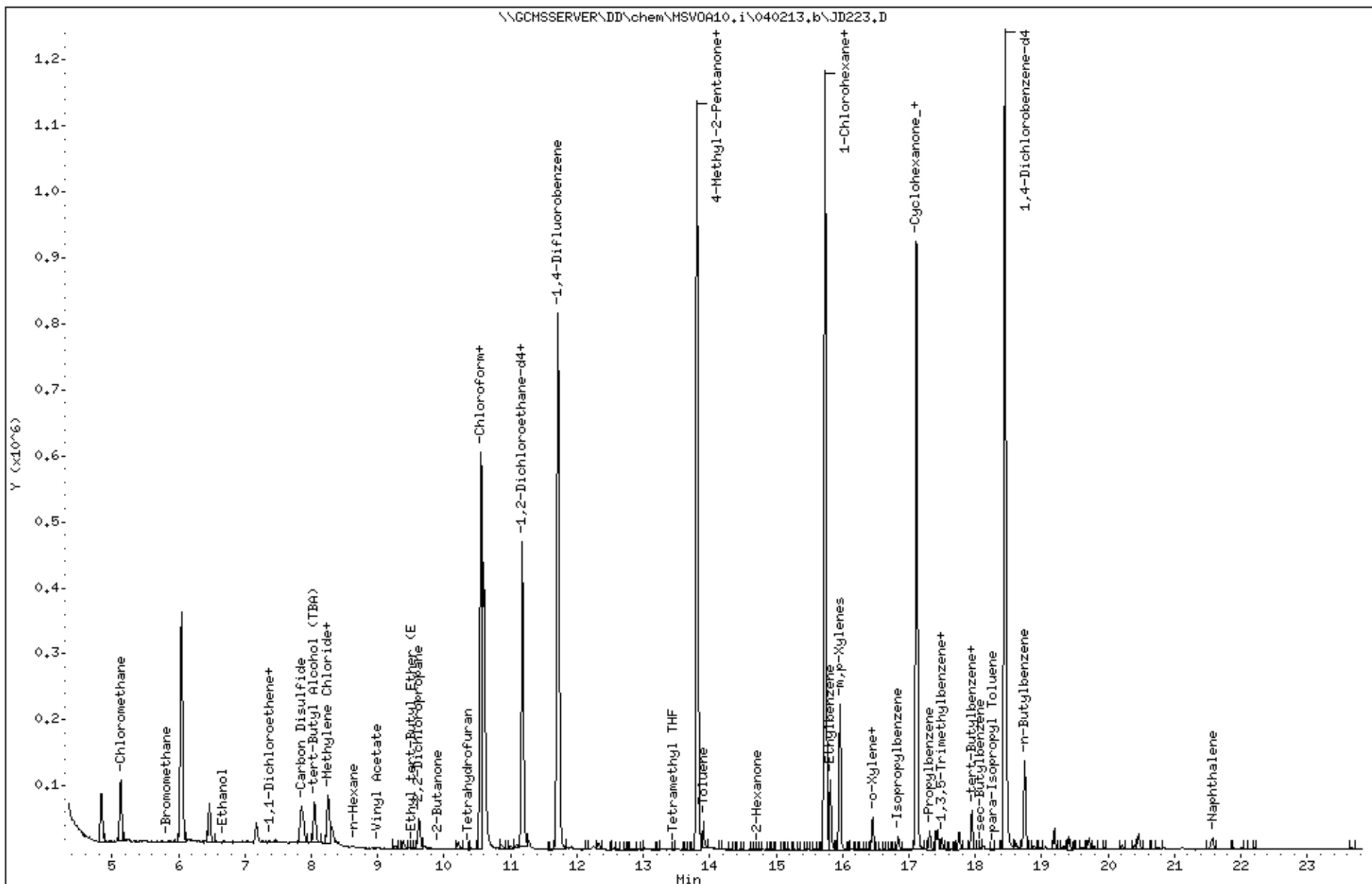
Column phase:

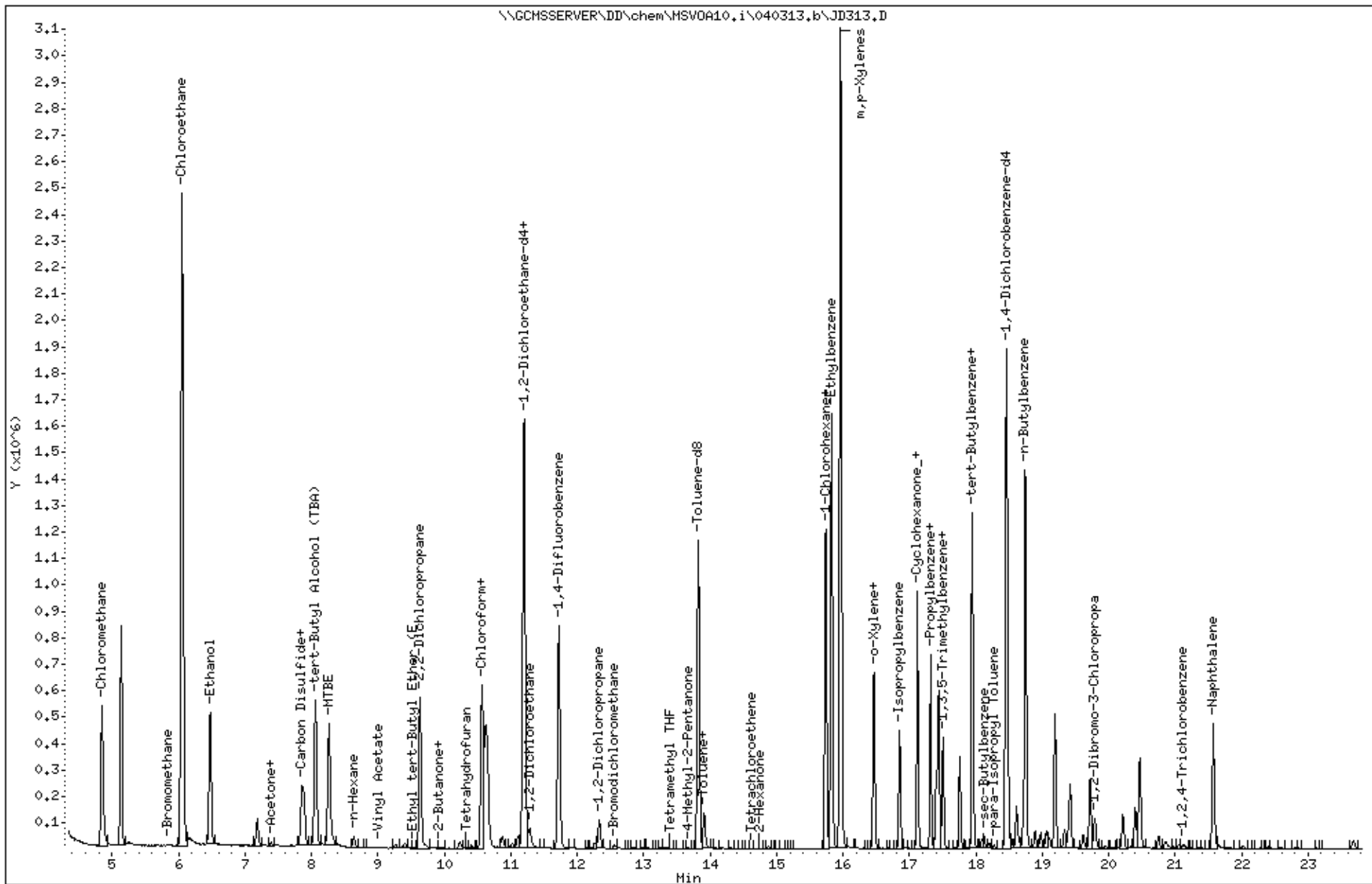




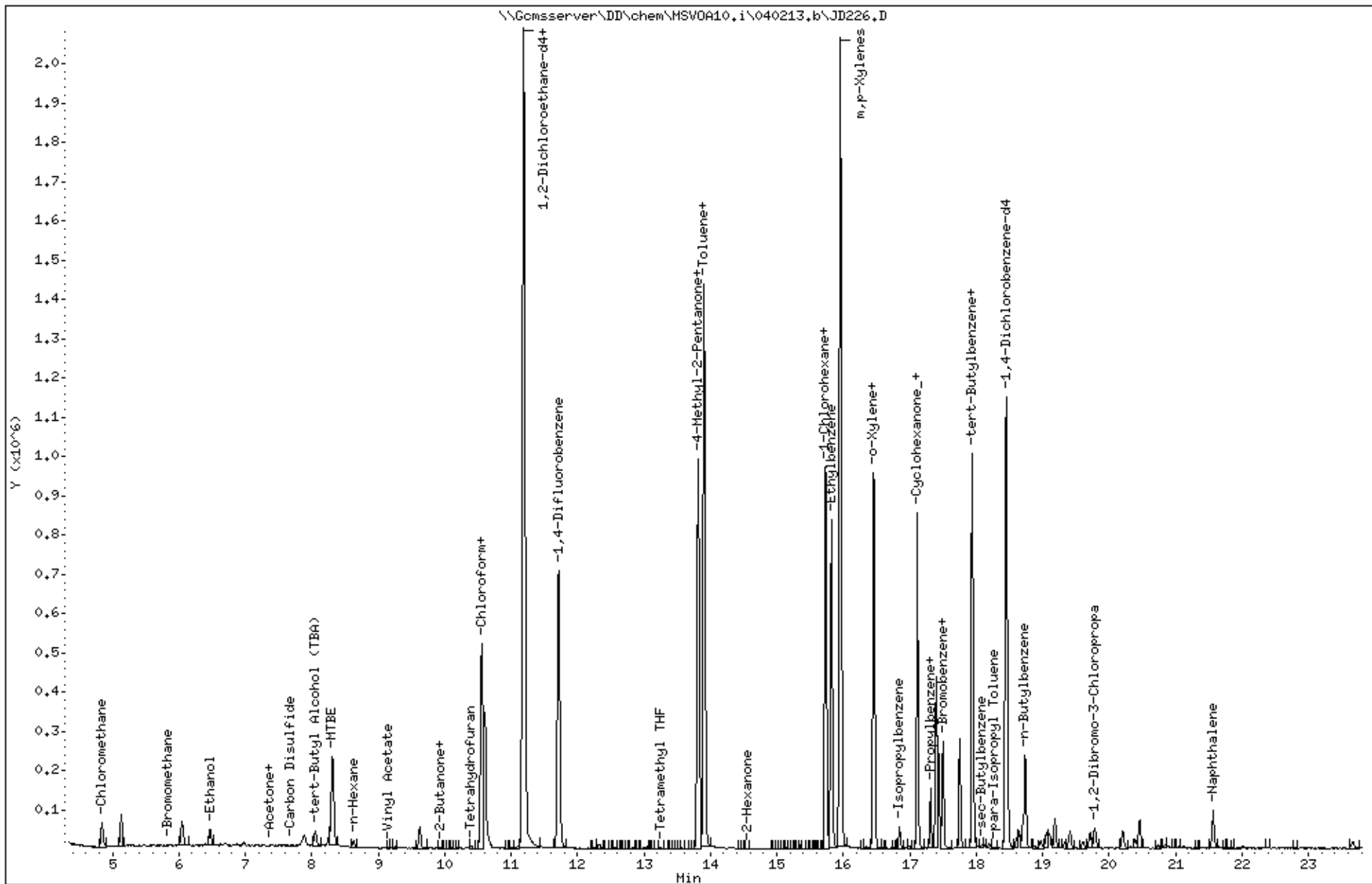












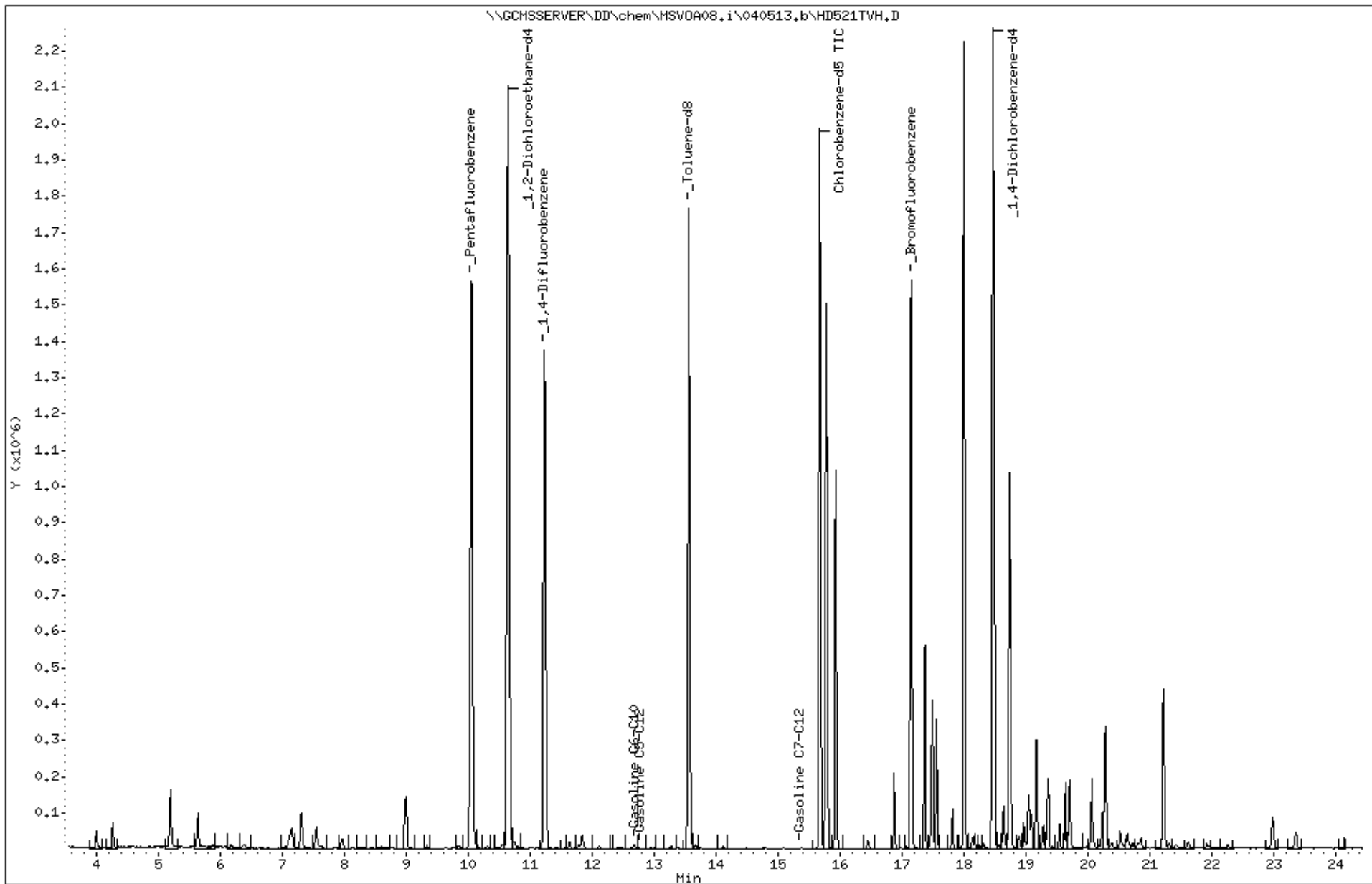
Date : 05-APR-2013 20:26  
Client ID: DYNA P&T  
Sample Info: S,244169-014

Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00

Column phase:



Date : 05-APR-2013 11:00

Client ID:

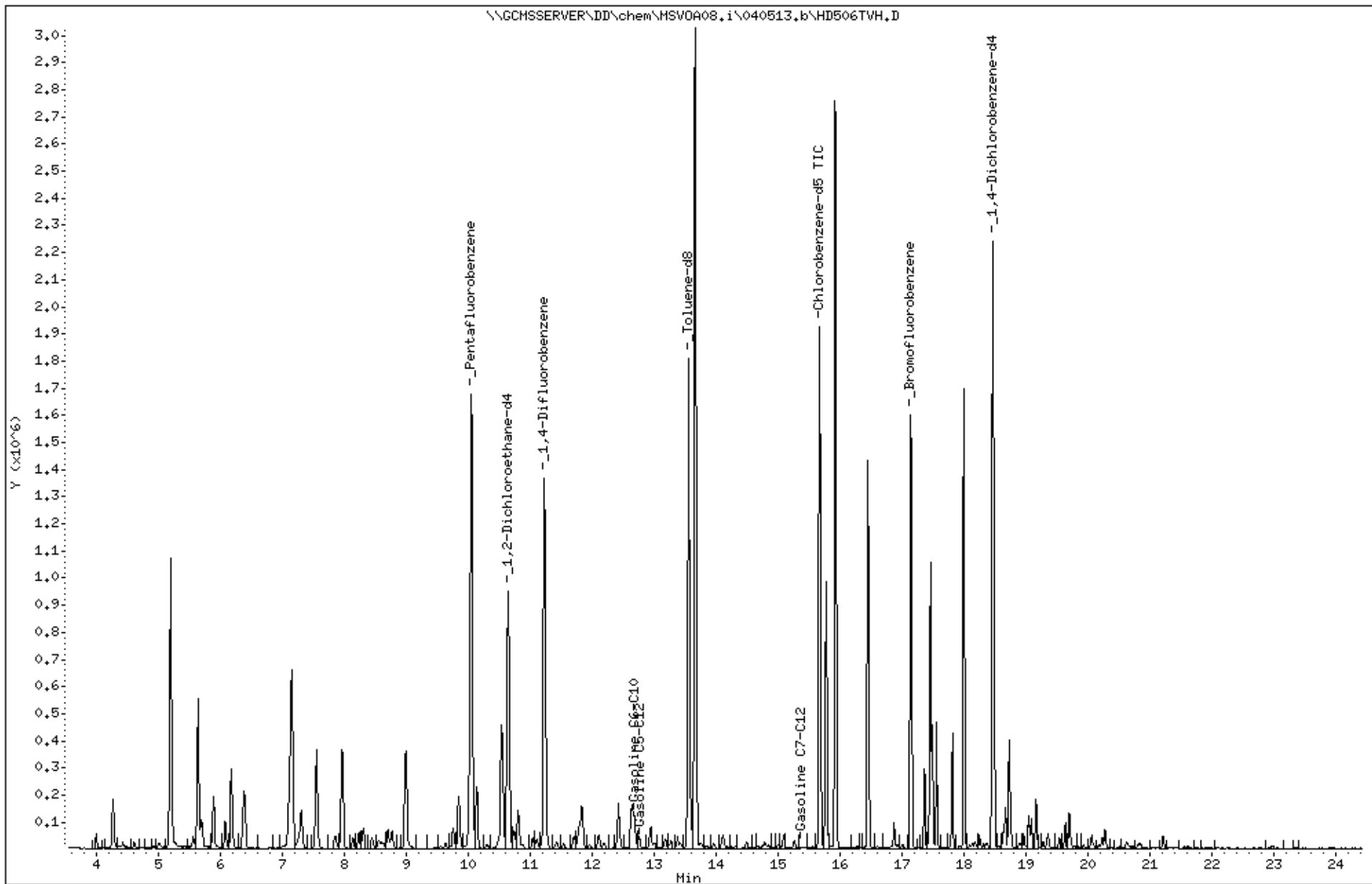
Sample Info: CCV/BS,QC682945,197063,S21442,,01/100

Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00

Column phase:



# Appendix D

## Laboratory Report and Chain of Custody Form for the Treatment System



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

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

**Laboratory Job Number 242246  
ANALYTICAL REPORT**

SOMA Environmental Engineering Inc.  
6620 Owens Dr.  
Pleasanton, CA 94588

Project : 2553  
Location : 15101 Freedom Ave. San Leandro  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
EFFLUENT	242246-001
GAC-1	242246-002
INFLUENT	242246-003

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: 01/11/2013

NELAP # 01107CA

**CASE NARRATIVE**

Laboratory number: 242246  
Client: SOMA Environmental Engineering Inc.  
Project: 2553  
Location: 15101 Freedom Ave. San Leandro  
Request Date: 01/07/13  
Samples Received: 01/07/13

This data package contains sample and QC results for three water samples, requested for the above referenced project on 01/07/13. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):**

No analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**

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

LOGIN # 242246

Sampler: MASOUD

**Analyses**

Project No: 2553

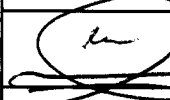
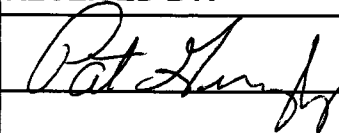
Report To: Joyce Bobek

Project Name: 15101 Freedom Ave, San Leandro Company : SOMA Environmental

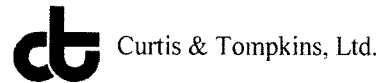
Turnaround Time: Standard

Telephone: 925-734-6400

Fax: 925-734-6401

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				TPH-g 8015	TPH-d, TPH-mo 8015	BTEX 8020						
			Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE									
1	EFFLUENT	<u>1/7/13 - 10</u>	*			6 VOAs	*			*									
			*			2-500 ml Ambers				*									
2	GAC-1		*			6 VOAs	*			*									
3	INFLUENT		*			6 VOAs	*			*									
Notes: <b>EDF OUTPUT REQUIRED</b>			RELINQUISHED BY:							RECEIVED BY:									
			 <u>1/7/13 - 11:30</u> DATE/TIME							 <u>1/7/13 11:30 AM</u> DATE/TIME									
			DATE/TIME							DATE/TIME									
			DATE/TIME							DATE/TIME									

COOLER RECEIPT CHECKLIST



Login # 242296 Date Received 11/7/13 Number of coolers 1
Client SOMA Project 15101 Freedom Ave.

Date Opened 11/7/13 By (print) JA (sign) [Signature]
Date Logged in 1/8/13 By (print) J (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 Foam blocks Bags None
Cloth material Cardboard Styrofoam 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
20. Sample -001, 1 of 6 VOAs w/ bubble 76mm
-003, 2 of 6 "



**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	242246	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553		
Matrix:	Water	Sampled:	01/07/13
Units:	ug/L	Received:	01/07/13
Diln Fac:	1.000	Analyzed:	01/09/13
Batch#:	194451		

Field ID: EFFLUENT                      Lab ID: 242246-001  
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	96	75-124	EPA 8015B
Bromofluorobenzene (PID)	98	62-134	EPA 8021B

Field ID: GAC-1                          Lab ID: 242246-002  
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	900	50	EPA 8015B
Benzene	42	0.50	EPA 8021B
Toluene	4.4	0.50	EPA 8021B
Ethylbenzene	11	0.50	EPA 8021B
m,p-Xylenes	110	0.50	EPA 8021B
o-Xylene	24	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	75-124	EPA 8015B
Bromofluorobenzene (PID)	100	62-134	EPA 8021B

ND= Not Detected  
RL= Reporting Limit

### Curtis & Tompkins Laboratories Analytical Report

Lab #: 242246	Location: 15101 Freedom Ave. San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2553	
Matrix: Water	Sampled: 01/07/13
Units: ug/L	Received: 01/07/13
Diln Fac: 1.000	Analyzed: 01/09/13
Batch#: 194451	

Field ID: INFLUENT                      Lab ID: 242246-003  
 Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	1,500	50	EPA 8015B
Benzene	66	0.50	EPA 8021B
Toluene	9.8	0.50	EPA 8021B
Ethylbenzene	37	0.50	EPA 8021B
m,p-Xylenes	180	0.50	EPA 8021B
o-Xylene	48	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	75-124	EPA 8015B
Bromofluorobenzene (PID)	98	62-134	EPA 8021B

Type: BLANK                              Lab ID: QC672483

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	95	75-124	EPA 8015B
Bromofluorobenzene (PID)	95	62-134	EPA 8021B

ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**
**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	242246	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	194451
Units:	ug/L	Analyzed:	01/09/13
Diln Fac:	1.000		

Type: BS Lab ID: QC672480

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	8.770	88	80-120
Toluene	10.00	9.367	94	80-120
Ethylbenzene	10.00	9.590	96	80-120
m,p-Xylenes	10.00	10.26	103	80-120
o-Xylene	10.00	9.689	97	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	99	62-134

Type: BSD Lab ID: QC672481

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	8.769	88	80-120	0	30
Toluene	10.00	9.376	94	80-120	0	20
Ethylbenzene	10.00	9.509	95	80-120	1	20
m,p-Xylenes	10.00	10.22	102	80-120	0	20
o-Xylene	10.00	9.625	96	80-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	98	62-134

RPD= Relative Percent Difference

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	242246	Location:	15101 Freedom Ave. San Leandro	
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B	
Project#:	2553	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC672482	Batch#:	194451	
Matrix:	Water	Analyzed:	01/09/13	
Units:	ug/L			

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	979.4	98	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	75-124

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	242246	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	194451
MSS Lab ID:	242261-005	Sampled:	01/03/13
Matrix:	Water	Received:	01/08/13
Units:	ug/L	Analyzed:	01/09/13
Diln Fac:	1.000		

Type: MS Lab ID: QC672484

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<10.56	2,000	1,902	95	71-120

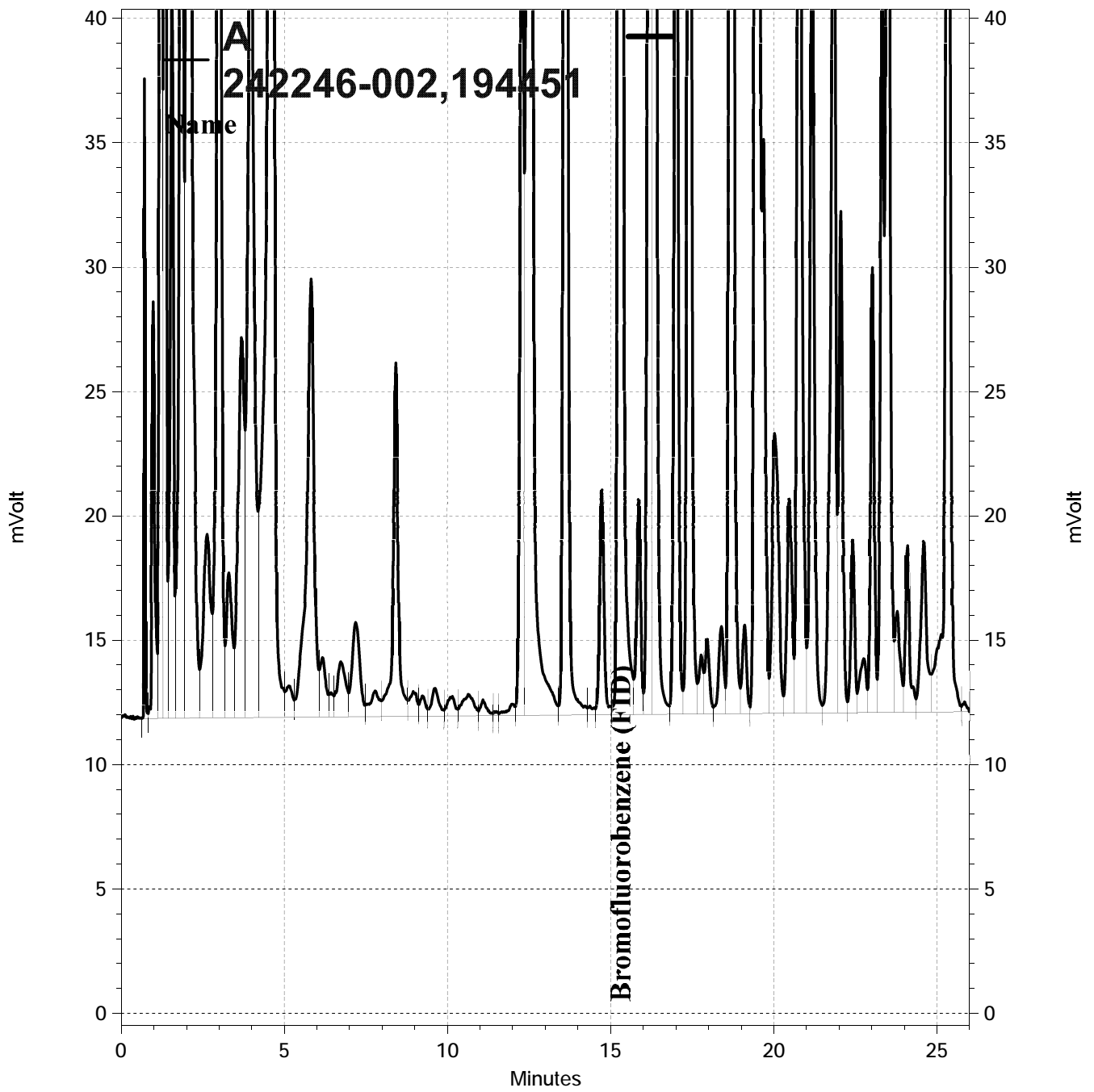
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	75-124

Type: MSD Lab ID: QC672485

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,873	94	71-120	2	22

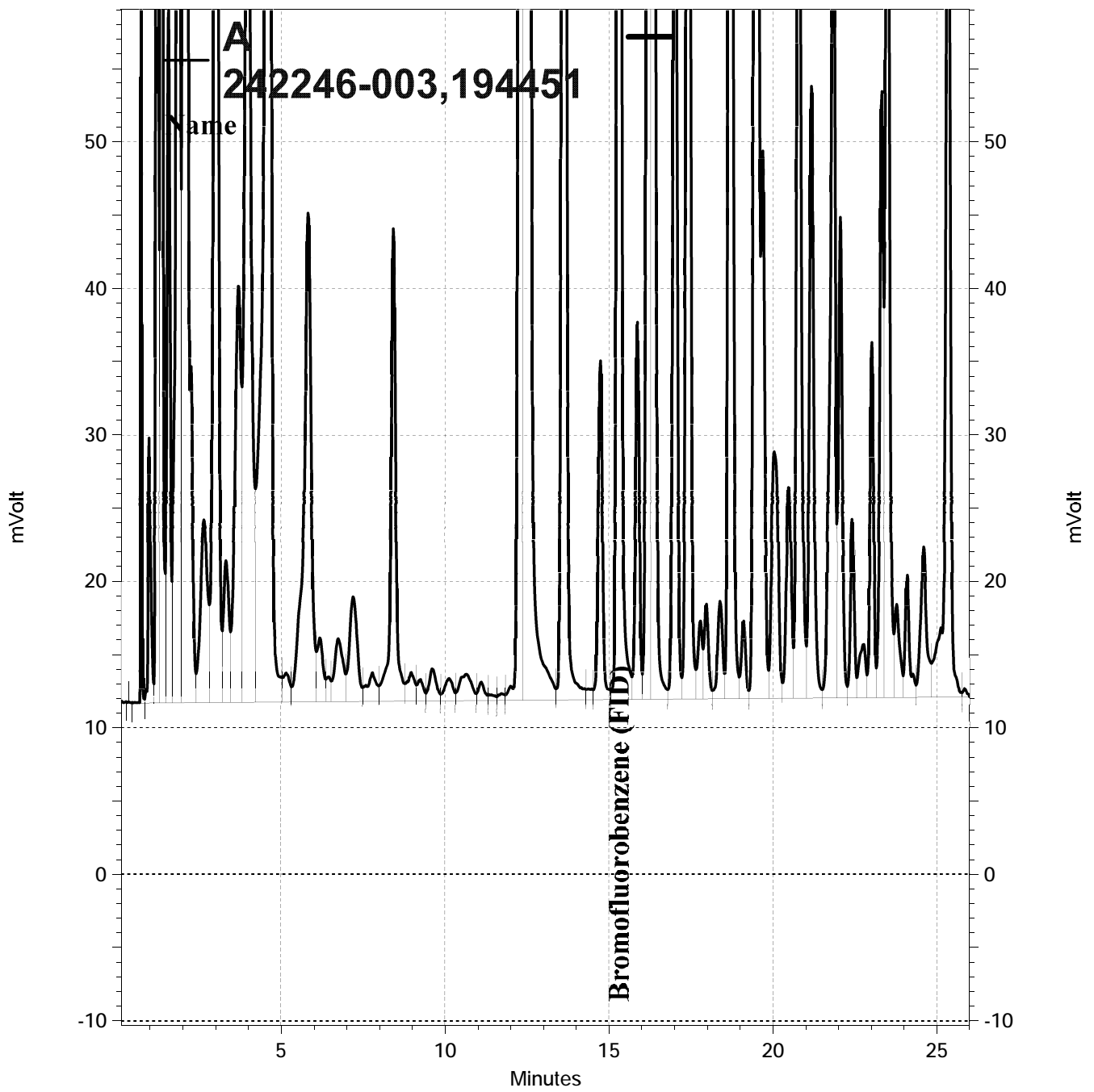
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	75-124

RPD= Relative Percent Difference



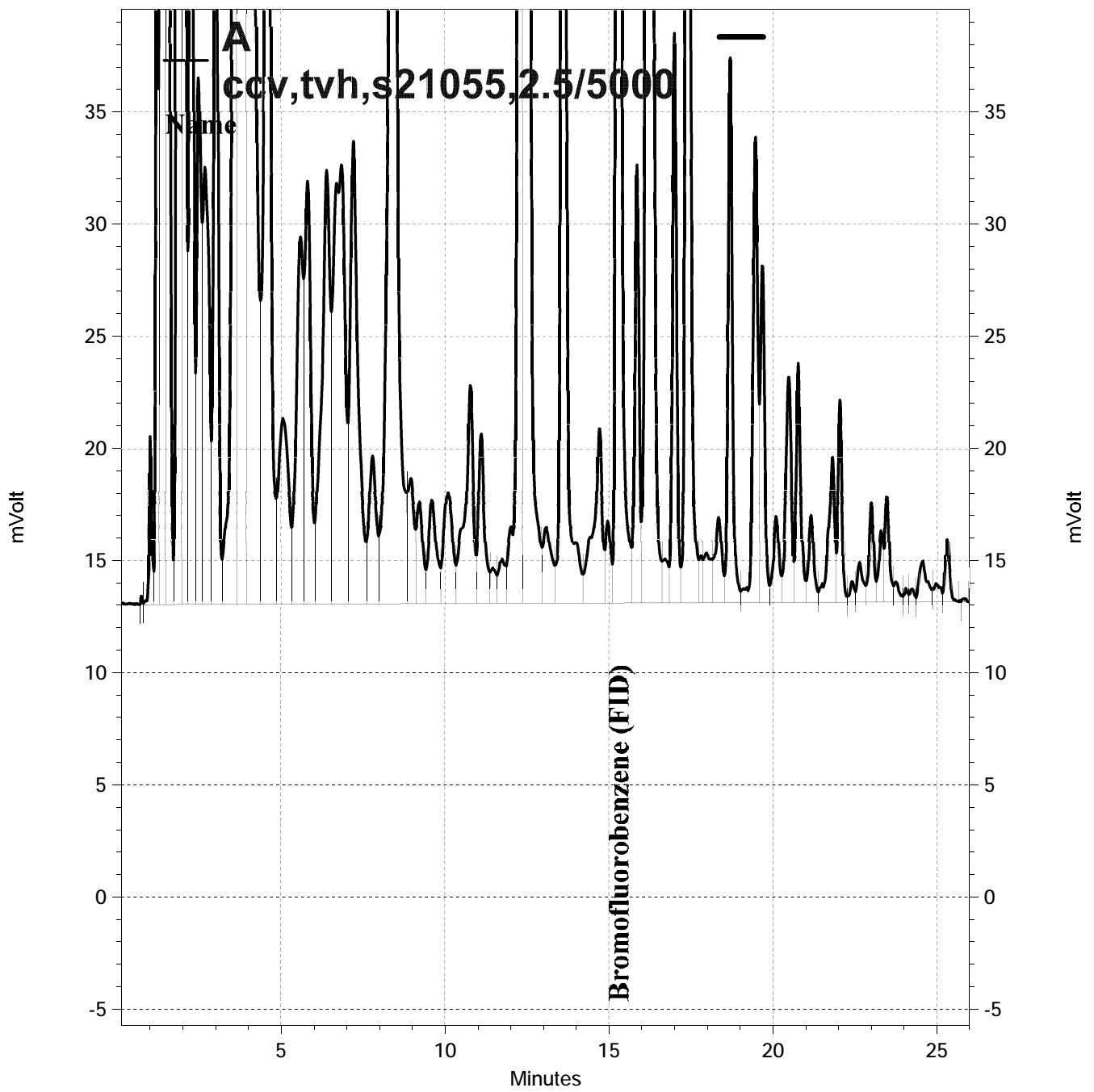
— \\Lims\gdrive\ezchrom\Projects\GC07\Data\009-012, A

— \\Lims\gdrive\ezchrom\Projects\GC07\Data\348-006,



— \\Lims\gdrive\ezchrom\Projects\GC07\Data\009-013, A

— \\Lims\gdrive\ezchrom\Projects\GC07\Data\348-006,



— \\Lims\gdrive\ezchrom\Projects\GC07\Data\009-002, A

— \\Lims\gdrive\ezchrom\Projects\GC07\Data\348-006,



Total Extractable Hydrocarbons		
Lab #:	242246	Location: 15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep: EPA 3520C
Project#:	2553	Analysis: EPA 8015B
Field ID:	EFFLUENT	Sampled: 01/07/13
Matrix:	Water	Received: 01/07/13
Units:	ug/L	Prepared: 01/08/13
Diln Fac:	1.000	Analyzed: 01/10/13
Batch#:	194415	

Type: SAMPLE Lab ID: 242246-001

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

Surrogate	%REC	Limits
o-Terphenyl	106	61-134

Type: BLANK Lab ID: QC672336

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

Surrogate	%REC	Limits
o-Terphenyl	84	61-134

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	242246	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	194415
Units:	ug/L	Prepared:	01/08/13
Diln Fac:	1.000	Analyzed:	01/10/13

Type: BS Lab ID: QC672337

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,364	95	60-120

Surrogate	%REC	Limits
o-Terphenyl	102	61-134

Type: BSD Lab ID: QC672338

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,434	97	60-120	3	35

Surrogate	%REC	Limits
o-Terphenyl	98	61-134

RPD= Relative Percent Difference

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	242246	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	194415
MSS Lab ID:	242261-005	Sampled:	01/03/13
Matrix:	Water	Received:	01/08/13
Units:	ug/L	Prepared:	01/08/13
Diln Fac:	1.000	Analyzed:	01/10/13

Type: MS Lab ID: QC672450

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	21.89	2,604	2,349	89	44-135

Surrogate	%REC	Limits
o-Terphenyl	94	61-134

Type: MSD Lab ID: QC672451

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,604	2,316	88	44-135	1	42

Surrogate	%REC	Limits
o-Terphenyl	94	61-134

RPD= Relative Percent Difference



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

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

**Laboratory Job Number 243100  
ANALYTICAL REPORT**

SOMA Environmental Engineering Inc.  
6620 Owens Dr.  
Pleasanton, CA 94588

Project : 2553  
Location : 15101 Freedom Ave. San Leandro  
Level : II

Sample ID  
EFFLUENT

Lab ID  
243100-001

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: 02/21/2013

NELAP # 01107CA

**CASE NARRATIVE**

Laboratory number: 243100  
Client: SOMA Environmental Engineering Inc.  
Project: 2553  
Location: 15101 Freedom Ave. San Leandro  
Request Date: 02/14/13  
Samples Received: 02/14/13

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/14/13. The sample was received cold and intact.

**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

## Analyses

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

LOGIN # 243100

Sampler: MASOUD

Project No: 2553

Report To: Joyce Bobek

Project Name: 15101 Freedom Ave, San Leandro Company: SOMA Environmental

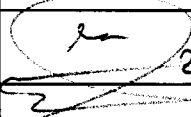

Turnaround Time: Standard Telephone: 925-734-6400

Fax: 925-734-6401

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative			
			Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE
	Effluent	2,14,13-10		*		6 VOAs	*			*
		↓		*		2-500 mL Ambers				*

TPH-g, TPH-d, TPH-mo 8015																				
	BTEX 8020																			

Notes: **EDF OUTPUT REQUIRED**

RELINQUISHED BY:		RECEIVED BY:	
	2,14,13-11		2/14/13 10:58
	DATE/TIME		DATE/TIME
	DATE/TIME		DATE/TIME
	DATE/TIME		DATE/TIME

**COOLER RECEIPT CHECKLIST**



Curtis & Tompkins, Ltd.

Login # 243100 Date Received 2/14/13 Number of coolers 0  
 Client SOMA Project 2553

Date Opened 2/14/13 By (print) EU (sign) [Signature]  
 Date Logged in ↓ By (print) ↓ (sign) ↓

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  Foam blocks  Bags  None
- Cloth material  Cardboard  Styrofoam  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**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### Total Extractable Hydrocarbons

Lab #: 243100	Location: 15101 Freedom Ave. San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 3520C
Project#: 2553	Analysis: EPA 8015B
Field ID: EFFLUENT	Batch#: 195574
Matrix: Water	Sampled: 02/14/13
Units: ug/L	Received: 02/14/13
Diln Fac: 1.000	Prepared: 02/14/13

Type: SAMPLE Analyzed: 02/16/13  
 Lab ID: 243100-001

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

Surrogate	%REC	Limits
o-Terphenyl	88	62-133

Type: BLANK Analyzed: 02/15/13  
 Lab ID: QC676831

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

Surrogate	%REC	Limits
o-Terphenyl	83	62-133

ND= Not Detected  
 RL= Reporting Limit



## Batch QC Report

Total Extractable Hydrocarbons				
Lab #:	243100	Location:	15101 Freedom Ave. San Leandro	
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C	
Project#:	2553	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC676832	Batch#:	195574	
Matrix:	Water	Prepared:	02/14/13	
Units:	ug/L	Analyzed:	02/15/13	

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,010	80	59-120

Surrogate	%REC	Limits
o-Terphenyl	98	62-133

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	243100	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	195574
MSS Lab ID:	243089-001	Sampled:	02/13/13
Matrix:	Water	Received:	02/13/13
Units:	ug/L	Prepared:	02/14/13
Diln Fac:	1.000	Analyzed:	02/16/13

Type: MS Lab ID: QC676833

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	646.0	2,500	2,549	76	61-120

Surrogate	%REC	Limits
o-Terphenyl	92	62-133

Type: MSD Lab ID: QC676834

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,684	82	61-120	5	43

Surrogate	%REC	Limits
o-Terphenyl	96	62-133

RPD= Relative Percent Difference

### Purgeable Organics by GC/MS

Lab #: 243100	Location: 15101 Freedom Ave. San Leandro
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2553	Analysis: EPA 8260B
Field ID: EFFLUENT	Batch#: 195589
Matrix: Water	Sampled: 02/14/13
Units: ug/L	Received: 02/14/13
Diln Fac: 1.000	Analyzed: 02/15/13

Type: SAMPLE                      Lab ID: 243100-001

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	105	77-134
1,2-Dichloroethane-d4	128	72-140
Toluene-d8	91	80-120
Bromofluorobenzene	104	80-120

Type: BLANK                      Lab ID: QC676918

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	120	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	243100	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	195589
Units:	ug/L	Analyzed:	02/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC676916

Analyte	Spiked	Result	%REC	Limits
Benzene	25.00	24.64	99	78-125
Toluene	25.00	23.49	94	79-123
Ethylbenzene	25.00	24.15	97	80-126
m,p-Xylenes	50.00	47.75	95	80-123
o-Xylene	25.00	22.45	90	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	105	77-134
1,2-Dichloroethane-d4	115	72-140
Toluene-d8	93	80-120
Bromofluorobenzene	99	80-120

Type: BSD Lab ID: QC676917

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	25.00	24.89	100	78-125	1	20
Toluene	25.00	23.37	93	79-123	1	20
Ethylbenzene	25.00	24.10	96	80-126	0	20
m,p-Xylenes	50.00	47.26	95	80-123	1	20
o-Xylene	25.00	22.45	90	75-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	117	72-140
Toluene-d8	91	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference

## Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	243100	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	195589
Units:	ug/L	Analyzed:	02/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC676928

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	890.2	89	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	118	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC676929

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	855.9	86	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	115	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	102	80-120

RPD= Relative Percent Difference



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

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

**Laboratory Job Number 243796  
ANALYTICAL REPORT**

SOMA Environmental Engineering Inc.  
6620 Owens Dr.  
Pleasanton, CA 94588

Project : 2553  
Location : 15101 Freedom Ave. San Leandro  
Level : II

Sample ID  
EFFLUENT

Lab ID  
243796-001

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: 03/20/2013

NELAP # 01107CA

**CASE NARRATIVE**

Laboratory number: 243796  
Client: SOMA Environmental Engineering Inc.  
Project: 2553  
Location: 15101 Freedom Ave. San Leandro  
Request Date: 03/14/13  
Samples Received: 03/14/13

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/14/13. The sample was received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):**

No analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**

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

## Analyses

LOGIN # 243790

Sampler: MASOOD

Project No: 2553

Report To: Joyce Bobek

Project Name: 15101 Freedom Ave, San Leandr Company: SOMA Environmental

Turnaround Time: Standard

Telephone: 925-734-6400

Fax: 925-734-6401

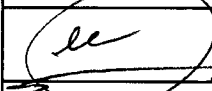
TPH-g, TPH-d, TPH-mo 8015																	
	BTEX 8020																


Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative									
			Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE						
	Effluent	3,14,13-10		*		6 VOAs	*			*						
		↕		*		2-500 mL Ambers				*						

Notes: **EDF OUTPUT REQUIRED**

RELINQUISHED BY:

RECEIVED BY:

 3,14,13-12-34 DATE/TIME  
 \_\_\_\_\_ DATE/TIME  
 \_\_\_\_\_ DATE/TIME

 3/14/13 12:34 DATE/TIME  
 \_\_\_\_\_ DATE/TIME  
 \_\_\_\_\_ DATE/TIME



COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 243796 Date Received 3/14/13 Number of coolers 0
Client SOMA Project 2553

Date Opened 3/14/13 By (print) EL (sign) E Long
Date Logged in [down arrow] By (print) [down arrow] (sign) [down arrow]

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 [X] 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 [X] Foam blocks [ ] Bags [ ] None
[ ] Cloth material [ ] Cardboard [ ] Styrofoam [ ] Paper towels

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

Type of ice used: [ ] Wet [ ] Blue/Gel [X] 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.

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	243796	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553		
Field ID:	EFFLUENT	Batch#:	196412
Matrix:	Water	Sampled:	03/14/13
Units:	ug/L	Received:	03/14/13
Diln Fac:	1.000	Analyzed:	03/15/13

Type: SAMPLE                      Lab ID: 243796-001

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	76-128	EPA 8015B
Bromofluorobenzene (PID)	102	70-136	EPA 8021B

Type: BLANK                      Lab ID: QC680238

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	93	76-128	EPA 8015B
Bromofluorobenzene (PID)	98	70-136	EPA 8021B

ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**
**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	243796	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	196412
Units:	ug/L	Analyzed:	03/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC680235

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	10.23	102	80-120
Toluene	10.00	9.846	98	80-120
Ethylbenzene	10.00	10.01	100	80-120
m,p-Xylenes	10.00	9.973	100	80-120
o-Xylene	10.00	10.03	100	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	99	70-136

Type: BSD Lab ID: QC680236

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	10.64	106	80-120	4	20
Toluene	10.00	9.595	96	80-120	3	20
Ethylbenzene	10.00	9.624	96	80-120	4	20
m,p-Xylenes	10.00	9.704	97	80-120	3	20
o-Xylene	10.00	9.678	97	80-120	4	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	103	70-136

RPD= Relative Percent Difference

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	243796	Location:	15101 Freedom Ave. San Leandro	
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B	
Project#:	2553	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC680237	Batch#:	196412	
Matrix:	Water	Analyzed:	03/15/13	
Units:	ug/L			

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	985.2	99	80-120

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

Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	243796	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8015B
Field ID:	EFFLUENT	Batch#:	196412
MSS Lab ID:	243796-001	Sampled:	03/14/13
Matrix:	Water	Received:	03/14/13
Units:	ug/L	Analyzed:	03/15/13
Diln Fac:	1.000		

Type: MS Lab ID: QC680239

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	15.77	2,000	1,887	94	76-120

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

Type: MSD Lab ID: QC680240

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,869	93	76-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	76-128

RPD= Relative Percent Difference

Total Extractable Hydrocarbons			
Lab #:	243796	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Field ID:	EFFLUENT	Sampled:	03/14/13
Matrix:	Water	Received:	03/14/13
Units:	ug/L	Prepared:	03/15/13
Diln Fac:	1.000	Analyzed:	03/18/13
Batch#:	196414		

Type: SAMPLE Lab ID: 243796-001

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

Surrogate	%REC	Limits
o-Terphenyl	101	62-133

Type: BLANK Lab ID: QC680245

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

Surrogate	%REC	Limits
o-Terphenyl	101	62-133

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	243796	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	196414
Units:	ug/L	Prepared:	03/15/13
Diln Fac:	1.000	Analyzed:	03/18/13

Type: BS Cleanup Method: EPA 3630C  
 Lab ID: QC680246

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,187	87	59-120

Surrogate	%REC	Limits
o-Terphenyl	105	62-133

Type: BSD Cleanup Method: EPA 3630C  
 Lab ID: QC680247

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,085	83	59-120	5	46

Surrogate	%REC	Limits
o-Terphenyl	100	62-133

RPD= Relative Percent Difference