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October 1, 2008

Mr. Jerry Wickham  
Alameda County  
Department of Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Subject: **StID#3337**

Site Address: 3609 International Blvd., Oakland, California

Dear Mr. Wickham:

SOMA's "Third Quarter 2008 Groundwater Monitoring and Remediation System Report With Evaluation of Effectiveness of Monthly MPE" 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. If you have any questions or comments, please call me at (925) 734-6400.

Sincerely,



Mansour Sepehr, Ph.D., PE  
Principal Hydrogeologist

Enclosure

cc: Mr. Abolghassem Razi w/report enclosure  
Tony's Express Auto Service

Mr. Vince Tong w/report enclosure  
Traction International



**Third Quarter 2008  
Groundwater Monitoring and  
Remediation System Report  
With Evaluation of Effectiveness  
of Monthly MPE**

**Tony's Express Auto Service  
3609 International Boulevard  
Oakland, California**

**October 1, 2008**

**Project 2331**

**Prepared for  
Mr. Abolghassem Razi  
3609 International Boulevard  
Oakland, California 94601**



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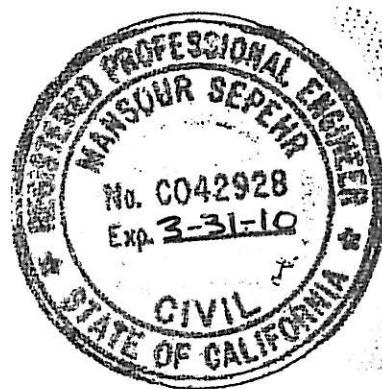
## CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this report on behalf of Mr. Abolghassem Razi, property owner of 3609 International Boulevard, Oakland, California, to comply with Alameda County Environmental Health Services requirements for the Third Quarter 2008 groundwater monitoring event.



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Mansour Sepehr, PhD, PE  
Principal Hydrogeologist



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- Appendix D Chain of Custody Forms and Laboratory Reports for the Groundwater Extraction Treatment System
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## **1. INTRODUCTION**

SOMA Environmental Engineering, Inc. (SOMA) has prepared this monitoring and groundwater remediation report on behalf of Mr. Abolghassem Razi, owner of the property at 3609 International Boulevard at the intersection of 36<sup>th</sup> Avenue and International Boulevard in Oakland, California (Figure 1). Tony's Express Auto Service operates on the property.

This report summarizes results of the Third Quarter 2008 groundwater monitoring event conducted at the site on August 5 and 6, 2008, and includes laboratory analytical results for the groundwater samples.

This report also describes operation of the groundwater remediation systems composed of groundwater-pump-and treat and groundwater air sparging, and results of September 2008 multi-phase extraction (MPE) conducted at the site. Locations of groundwater remediation systems are shown in Figure 2.

### **1.1 Summary of Field Activities**

On August 5, 2008, eight on-site monitoring wells (MW-1 through MW-3, MW-4R, MW-5 through MW-8), two off-site wells (MW-10, MW-12), three French drain risers (FD Center, FD East, and FD West), and one extraction well (EX-1) were measured for depth to groundwater.

On August 5 and 6, 2008, additional field measurements and grab groundwater samples were collected from all monitoring wells except MW-11. The SOMA field crew was unable to monitor well MW-11 because the access gate to this well was locked.

Groundwater monitoring activities were performed in accordance with general guidelines of the California Regional Water Quality Control Board (CRWQCB) and Alameda County Environmental Health Services (ACEHS). A description of groundwater monitoring procedures followed is included in Appendix A. Figure 2 shows well and riser locations.

A natural attenuation study was conducted during this monitoring event to evaluate whether petroleum hydrocarbons found in the groundwater were biodegrading.

### **1.2 Summary of Laboratory Analysis**

Curtis & Tompkins, Ltd., a California state-certified laboratory, analyzed groundwater samples for the following:

- Total petroleum hydrocarbons as gasoline (TPH-g)
- Benzene, toluene, ethylbenzene, total xylenes (BTEX)
- Methyl tertiary-butyl ether (MtBE)

Samples were prepared using EPA Method 5030 and analyzed using EPA Method 8260B.

## 2. RESULTS

Following are results of field measurements and laboratory analyses for the August 5 and 6, 2008 groundwater monitoring event.

### 2.1 Field Measurements

As shown in Table 1, depths to groundwater for monitoring wells ranged from 11.50 feet in MW-10 to 14.09 feet in MW-3. Corresponding groundwater elevations ranged from 24.69 feet in MW-12 to 27.52 feet in MW-5. Groundwater elevations for FD Center, FD East, FD West and extraction well EX-1 were 23.30 feet, 26.52 feet, 25.01 feet, and 23.13 feet, respectively.

Figure 3 shows the groundwater elevation contour map. Groundwater flows toward extraction well EX-1 at an approximate gradient of 0.088 feet/feet. The lowest site-wide groundwater elevation was measured in EX-1, which is providing a capture zone within the region of the UST cavity and in general has reduced off-site contaminant migration.

Field notes for physical, chemical and biodegradation parameters measured during this monitoring event are included in Appendix B.

The most energetically preferred electron acceptor for redox reactions is dissolved oxygen (DO). Evaluating distribution of electron acceptors can provide evidence of where, and to what extent, hydrocarbon biodegradation is occurring.

Upon equalization of the surrounding aquifer, when the purge cycle was terminated, DO concentrations ranged from 0.14 mg/L in MW-4R to 0.47 mg/L in MW-3. Oxidation-reduction potential (ORP) showed negative redox potentials in MW-1, MW-3, and MW-8. Oxidation of petroleum hydrocarbons could have occurred in these monitoring wells because negative redox potential indicates that contaminants in groundwater are conducive to anaerobic biodegradation. All other tested wells showed positive redox potential. 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.

Ferrous iron concentrations were detected throughout the site except in MW-2, MW-4R, MW-5, and MW-10. Detectable ferrous iron concentrations, which can indicate anaerobic biodegradation, ranged from 0.42 mg/L in well MW-7 to 2.95 mg/L in MW-3.

Nitrate concentrations were non-detectable throughout the site.

High ferrous iron concentrations in combination with non-detectable nitrate levels indicate anaerobic biodegradation beneath the site.

Absence of sulfate in groundwater samples may indicate an anaerobic methanogenesis process. Sulfate was below the equipment tolerance level in all monitoring wells except for MW-7, where it was detected at 11 mg/L.

## 2.2 Laboratory Analysis

Table 1 presents laboratory analysis results for groundwater samples collected during this monitoring event, and Appendix C contains chain of custody documentation and laboratory analytical reports.

TPH-g was detected throughout the site except at MW-5 and MW-7. Detectable TPH-g concentrations ranged from 200 µg/L in MW-10 to 7,900 µg/L in MW-6.

In the more impacted wells MW-1, MW-3, MW-6 and MW-8 the following concentration trends were observed.

- At MW-1 in the vicinity of the UST cavity, TPH-g has decreased since the previous monitoring event; in addition, the current TPH-g concentration is significantly lower than in Fourth Quarter 2006.
- At MW-3 in the vicinity of the UST cavity, TPH-g has decreased significantly since the previous monitoring event.
- Since the previous monitoring event, TPH-g has decreased at MW-6.
- The groundwater sample collected from MW-8 indicated a decrease in TPH-g concentrations.

Refer to Table 1 for detailed TPH-g site concentration trends.

Figure 4 displays the contour map of TPH-g concentrations in groundwater. The majority of the TPH-g plume was in the vicinity of the UST cavity at MW-3, MW-6 and MW-1, as well as in MW-8 southwest of MW-1 and MW-3. Capture zones have been established at the French drain and extraction well, which have

decreased off-site migration. TPH-g has decreased significantly at both off-site wells, MW-10 and MW-12, since First Quarter 2007.

The following BTEX concentration trends were observed during this monitoring event:

- All BTEX analytes were below laboratory-reporting limits in well MW-5.
- In well MW-7, all BTEX analytes were below laboratory-reporting limits except xylenes, which were at low level.
- In MW-10, toluene and xylenes were below laboratory-reporting limits, and benzene and ethylbenzene were at low levels.
- In well MW-12, all BTEX analytes were below laboratory-reporting limits except benzene, which was at low level.
- The highest benzene and toluene concentrations were detected in MW-3 at 140 µg/L and 21 µg/L, respectively. The highest total xylenes concentration was detected in MW-1 at 309 µg/L. The highest ethylbenzene concentration was detected in MW-6 at 300 µg/L.

Figure 5 shows the contour map of benzene concentrations in groundwater. The majority of the benzene plume appears to be in the vicinity of the pump islands and USTs, at well MW-3. Refer to Table 1 for benzene concentration trends.

MtBE was below the laboratory-detection limit in wells MW-2, MW-4R, MW-5, MW-6, and MW-7. Detectable MtBE concentrations ranged from 1.7 µg/L in MW-3 to 13 µg/L in MW-8 and MW-12. Figure 6 shows the contour map of MtBE concentrations in groundwater.

### **3. GROUNDWATER TREATMENT SYSTEM OPERATION**

The treatment system began operating on December 9, 1999. Since startup, 3,986,232 gallons of groundwater have been treated and discharged (as of September 19, 2008), into the East Bay Municipal Utility District (EBMUD) sewer system under the existing discharge permit.

As of January 9, 2004, the previously installed pneumatic downhole pumps in FD West and FD Center were removed and replaced with electrical submersible pumps. On May 4, 2005, to maintain accurate recordings of total flow through the system, a newer totalizer meter was installed. On September 29, 2005, the existing 2,000-pound carbon vessel was replaced with a newer 2,000-pound carbon vessel that was refurbished with new carbon; the 200-pound carbon drum was also replaced. The former 2,000-pound vessel had become rusted from prolonged use. A schematic diagram of the remediation system is displayed in Figure 7.

On February 19, 2007, a carbon change-out was conducted on the remedial system, during which the 2,000-pound vessel was refurbished with new carbon and the 200-pound carbon drum was replaced.

To reduce the hydrocarbon source region in the vicinity of the UST cavity, SOMA oversaw installation of extraction well EX-1 by Gregg Drilling & Testing, Inc. on February 5, 2007. On April 20, 2007, SOMA installed an electric submersible pump in well EX-1, connected it to the existing groundwater remediation system, and began extracting groundwater from the well. The pump is powered on the same electrical circuit as the two existing pumps inside the French drain risers. Underground piping to the existing system influent surge tank conveys the extracted groundwater, which is then treated using granular activated carbon (GAC) and discharged to the local sanitary sewer system, in accordance with the EBMUD discharge permit. Figure 2 shows the location of EX-1.

Table 2 presents total volume of treated groundwater and groundwater analytical results. All effluent samples have remained below discharge limits set forth by EBMUD. The most current laboratory reports for the groundwater treatment system are included in Appendix D.

As of September 8, 2008, the treatment system has removed approximately 240.94 pounds of hydrocarbons and 87.60 pounds of MtBE from groundwater at the site. Figure 8 shows approximate masses of TPH-g and MtBE removed from impacted groundwater during operation of the treatment system.

#### **4. OPERATION OF AIR SPARGING SYSTEM**

From February 22, 2006 to March 6, 2006, SOMA oversaw installation of the air sparging system, which consists of nine vapor extraction wells and three air sparge wells. The air sparge wells were installed in the vicinity of the UST cavity, pump islands, and near MW-6 (Figure 2). Figures 9 and 10 provide block diagrams of the air sparging and vapor extraction units. The operating permit for the soil vapor extraction (SVE) system was extended to August 2008 by the Bay Area Air Quality Management District (BAAQMD).

In November 2005, prior to installation of the air sparging wells, SOMA collected air samples from previously existing SVE wells. Based on sampling results, which showed non-detectable contaminant levels, lines from SVE wells P-4 and ISL-1 to the vacuum pump were closed. This allowed for greater vacuum at the more impacted SVE wells.

The air sparging system was initially started on March 15, 2006. However, due to close proximity of the system to a residential area, the system was modified to

reduce noise level. Specifically, a timer-controller was installed on the compressor limit operation to daytime hours. To further reduce noise, the existing blower unit, installed in 2000, was rebuilt and foam placed around it as a noise suppressant.

To more effectively increase removal of contaminants from soil, an additional vacuum blower was installed in series to the existing vacuum blower on July 24, 2006. Rain causes the water table to rise, thereby decreasing the actual layer of the unsaturated zone. Therefore, the actual mass of contaminants in the soil that can be removed by the remedial system is greatly reduced. Based on the reduction in the unsaturated region, as well as a reduction in the mass of contaminant vapors removed from the soil, the remedial system was shut down on November 7, 2006.

On May 23, 2007, SOMA restarted the SVE and air sparge systems and resumed recording field readings for these systems. Based on field measurements, it appeared that using both vacuum blowers in series on the same extraction manifold had little effect on the air flow rate into the system or concentrations of hydrocarbons in the extracted gases. Therefore, the inlet piping from the well field was divided into two manifolds with the intent to use each vacuum pump to extract from a separate set of wells. However, due to alterations in the facility's main electrical supply panel made by non-SOMA personnel without SOMA's knowledge, the operation of both vacuum pumps at the same time was not possible because the resultant electrical load tripped the circuit breaker that includes the SVE system. Subsequent operation of the SVE system has been limited to one blower at a time.

As shown in Table 3, approximately 967.2 pounds of hydrocarbons as vapor have been removed from impacted soil, as of September 28, 2007. The air sparging remedial system has been shut down since then. Table 3 also outlines the history of the SVE system.

## 5. SEPTEMBER 2008 MULTI-PHASE EXTRACTION EVENT

Based on an ACEHS directive dated August 26, 2008, an MPE event was conducted in September 2008 between September 8 and 12, 2008 utilizing wells MW-1, MW-3, and MW-6. MPE operational data is presented in Table 4. Extraction data is presented in Table 5. Field data sheets are presented in Appendix E. A representative sample was analyzed from the stack of the thermal oxidizer to show compliance with the BAAQMD permit. Table 6 lists sample identifiers and analysis results of vapor samples.

MPE was performed at wells MW-1, MW-3, and MW-6, starting Monday, September 8 at 11:00 and ending Friday, September 12 at 16:00. Total MPE time was 6,000 minutes, or 100 hours.

The estimated mass of VOCs removed from the soil vapor extracted from MW-1, MW-3, and MW-6 during the MPE event was 239.48 lbs. The estimated VOC mass removal rate was 57.47 lbs/day.

As of completion of the September 2008 MPE event, the cumulative total mass of VOCs extracted by MPE from extraction wells is 475.03 lbs (Figure 17). This includes 64 lbs extracted during the December 2007 pilot test, 24.3 lbs during the March 2008 event, 43.06 lbs during the April 2008 event, 46.19 lbs during the May 2008 event, 58.0 lbs during the June 2008 event, and 239.48 lbs during the September 2008 event. Figure 18 illustrates the mass of VOCs removed during each MPE event.

Listed in Table 7 are analysis results for groundwater samples collected from MW-1, MW-3, and MW-6 before and after conducting the September 2008 event. Also listed in Table 7 are analysis results for groundwater samples collected from MW-1 and MW-3 during previous events. Figures 11 through 16 illustrate results of groundwater analysis. Comparison of analysis results before and after the September 2008 event indicates that concentrations of TPH-g and BTEX analytes increased at MW-1 and decreased at MW-3. In the same comparison, concentrations of TPH-g, toluene, and total xylenes increased, while concentrations of benzene and ethylbenzene decreased, at MW-6. Also in the same comparison, MtBE concentrations increased at MW-3 and remained below the laboratory-reporting limit at MW-1 and MW-6. Increases in constituent concentrations illustrate that fuel hydrocarbons are still adsorbed to the smear zone.

Figures 19 through 21 illustrate concentrations of TPH-g, benzene, and MtBE in monitoring well MW-1 from the Fourth Quarter 2007 monitoring event to the September 2008 MPE event. Figures 22 through 24 illustrate concentrations of TPH-g, benzene, and MtBE in monitoring well MW-3 from the Fourth Quarter 2007 monitoring event to the September 2008 MPE event. Comparison of these analytical results indicates a trend of decreasing contaminant concentrations in these wells.

## 6. CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

Conclusions based on finding of the Third Quarter 2008 groundwater monitoring event are summarized below.

1. In general, based on low groundwater elevations observed at EX-1, a capture zone remains established at this location.
2. The highest TPH-g concentration was detected in MW-6 at 7,900 µg/L. Compared with the previous monitoring event (Second quarter 2008), TPH-g concentrations have decreased across the site, except at MW-2 and MW-4R. However, it appears that MW-6 is located within the remaining hotspot of the groundwater chemical plume.
3. It appears that MtBE concentrations in groundwater are diminishing across the site and that current maximum concentrations are below Environmental Screening Levels (ESLs) for industrial land use type where groundwater is not a potential drinking water source.
4. The bioattenuation study confirmed that biodegradation is occurring beneath the site, most actively in the vicinity of the USTs, around wells MW-1 and MW-3 and the eastern section of the site, around MW-6.
5. The source area remains in the vicinity of the UST cavity, pump islands, and eastern section of the mechanic shop at MW-1, MW-3, and MW-6. During this monitoring event, the highest benzene and toluene concentrations were detected in MW-3 at 140 µg/L and 21 µg/L, respectively. The highest total xylenes concentration was detected in MW-1 at 309 µg/L. The highest ethylbenzene concentration was detected in MW-6 at 300 µg/L.
6. In general, the GAC and SVE systems have effectively reduced peak contaminant levels beneath the site. Since initial startup, approximately 240.94 pounds of hydrocarbons and 87.60 pounds of MtBE have been removed from groundwater. Approximately 967.2 pounds of petroleum hydrocarbons have been removed from the vadose zone.
7. MPE events at the site have been effective in reducing contaminant concentrations. The cumulative total mass of VOCs extracted by MPE during the pilot test and five subsequent MPE events is 475.03 lbs. Comparison of benzene concentration with pre-MPE events shows a dramatic reduction in contaminant levels in source area wells such as MW-3 and MW-1.

## 6.2 Recommendations

Based on results of this monitoring event, and in accordance with the ACEHS directive dated August 26, 2008, SOMA will conduct the following action items:

1. Continue operation of the pump-and-treat system to maintain the removal rate of contaminant masses in groundwater.
2. Based on ACHES approval, SOMA will temporarily discontinue testing for ferrous iron, nitrate, and sulfate parameters. Due to the extent of

biodegradation data generated during quarterly monitoring events, SOMA has adequately characterized site groundwater.

3. Reduce the number of groundwater monitoring wells included in quarterly monitoring activities. Based on ACEHS approval, SOMA will limit groundwater monitoring to wells MW-1, MW-3, MW-6, MW-8, and MW-10 during future quarterly groundwater monitoring events.

4. Continue monthly MPE events. MPE events were conducted in March, April, May, June, and September 2008. Approximately 475.03 lbs of VOCs have been removed during MPE operations at the site. Based on ACEHS approval, SOMA will conduct another MPE event in October 2008. Results of this event will be discussed in the Fourth Quarter 2008 groundwater monitoring report.
5. SOMA has submitted a workplan for evaluating vapor intrusion utilizing soil vapor sampling.

## 7. REPORT LIMITATIONS

This report is the summary of work done by SOMA including observations and descriptions of site conditions. It includes analytical results produced by California state-certified laboratories for the current and previous monitoring events and summaries of data produced by environmental consultants for previous monitoring events. Quantities and locations of wells were selected to provide the required information, but may not be completely representative of entire site conditions. All conclusions and recommendations are based on 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 environmental engineering and consulting practices at the time of this sampling.

# **TABLES**

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Third Quarter 2008: Groundwater Monitoring and Remediation System Report  
With Evaluation of Effectiveness of Monthly MPE

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethyl-Benzene ( $\mu\text{g/L}$ )	Total Xylenes ( $\mu\text{g/L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g/L}$ )
MW-1	10/5/1994	97.99	15.39	82.60	320,000	24,000	21,000	2,600	15,000	NA
	12/5/1994	97.99	9.32	88.67	80,000	3,800	6,600	2,300	11,000	NA
	3/2/1995	97.99	8.07	89.92	32,000	190	160	150	490	NA
	6/6/1995	97.99	9.53	88.46	21,000	950	650	570	150	NA
	10/5/1995	97.99	13.29	84.70	59,000	140	130	140	390	NA
	1/2/1996	97.99	10.07	87.92	30,000	71	73	50	120	NA
	4/1/1996	97.99	8.29	89.70	31,000	98	120	63	170	NA
	12/3/1996	97.99	11.67	86.32	NA	NA	NA	NA	NA	NA
	4/9/1997	97.99	11.14	86.85	NA	NA	NA	NA	NA	NA
	12/10/1997	97.99	9.30	88.69	27,000	2,300	2,100	1,400	5,100	NA
	9/10/1998	97.99	13.58	84.41	NA	NA	NA	NA	NA	NA
	12/16/1998	97.99	11.10	86.89	65,000	2,500	2,400	2,300	9,500	160
	3/16/1999	97.99	9.91	88.08	17,000	480	860	850	3,000	190
	6/10/1999	97.99	11.10	86.89	25,000	1,110	1,460	1,330	5,265	77
	8/23/1999	97.99	13.35	84.64	19,750	678	463	893	2,938	38
	11/9/1999	97.99	14.45	83.54	10,000	693	15	<5	3,471	50
	2/7/2000	97.99	11.20	86.79	40,000	2,280	1,380	8	6,130	47
	5/31/2000	97.99	11.49	86.50	15,610	610	350	310	1,400	<5
	8/9/2000	97.99	13.36	84.63	11,000	638	<5	<5	<5	17.1
	11/2/2000	97.99	13.20	84.79	7,050	435	52	ND	689	10

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g}/\text{L}$ )	Benzene ( $\mu\text{g}/\text{L}$ )	Toluene ( $\mu\text{g}/\text{L}$ )	Ethyl-Benzene ( $\mu\text{g}/\text{L}$ )	Total Xylenes ( $\mu\text{g}/\text{L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g}/\text{L}$ )
<b>MW-1 cont.</b>	3/13/2001	97.99	8.96	89.03	14,570	1,005	440	108	2,030	16
	5/22/2001	97.99	11.50	86.49	4,900	310	81	82	388	150
	8/8/2001	97.99	13.51	84.48	14,820	852	342	568	1,606	2,000
	11/19/2001	97.99	14.01	83.98	41,000	2,700	5,100	1,000	4,570	74,000
	2/21/2002	97.99	10.11	87.88	260,000	3,700	12,000	3,700	19,200	23,000
	5/7/2002	97.99	10.86	87.13	53,000	4,400	5,100	1300	7,000	32,000
	7/30/2002	40.11	12.80	27.31	29,000	2,400	2,500	920	4,400	13,000
	10/2/2002	40.11	15.50	24.61	27,000	2,200	2,400	950	4,500	34,000
	1/3/2003	40.11	9.73	30.38	62,000	3,500	6,000	1600	9,700	48,000
	5/3/2003	40.11	9.71	30.40	59,000	3,100	2,700	1500	7,000	14,000
	7/24/2003	40.11	12.44	27.67	36,000	4,800	1,800	1300	5,600	25,000
	10/22/2003	40.11	13.89	26.22	630,000 H	3,300	1900 C	3600	27,700	15,000
	1/22/2004	40.11	10.45	29.66	39,000	3,100	1,600	950	4,300	8,500
	4/1/2004	40.11	11.49	28.62	41,000	1,200	350C	830	2,740	4,300
	8/20/2004	40.11	13.81	26.30	22,000	2,000	220	560	3,090	6,900
	12/8/2004	40.11	11.10	29.01	22,790	1,634	319	895	2,851	5,504
	3/16/2005	40.11	8.40	31.71	44,400	3,150	811	1,090	2,856	7,180
	5/16/2005	40.11	9.72	30.39	33,900	3,440	1,700	1,090	2,276	3,210
	7/14/2005	40.11	11.31	28.80	50,100	4,350	1,760	1,500	2,853	3,980
	10/13/2005	40.11	13.51	26.60	43,100	1,960	325	639	3,080	3,000
	1/3/2006	40.11	8.82	31.29	55,000	1,100	510	1,100	4,070	2,200
	4/7/2006	40.11	7.12	32.99	42,500	1,780	1,010	1,610	2,449	2,110
	9/8/2006	40.11	12.64	27.47	37,200	3,280	1,460	1,290	2,685	2,180
	11/29/2006	40.11	12.49	27.62	29,400	2,490	782	1,510	1,815	1,540
	2/27/2007	40.11	9.68	30.43	17,000	1,400	452	989	1,583	1,150
	5/24/2007	40.11	11.58	28.53	8,630	575	121	306	687	235
	8/21/2007	40.11	13.34	26.77	7,480	544	87	356	537	172
	11/15/2007	40.11	12.73	27.38	18,500	413	93.1	523	627	86.6
	2/22/2008	40.11	9.82	30.29	3,450	20.7	3.73	60.2	78.0	8.11
	5/7/2008	40.11	12.09	28.02	4,470	26.1	14.8	57.6	464.6	10.6
	8/6/2008	40.11	13.43	26.68	3,400	17	7.8	73	309	3.7

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**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g}/\text{L}$ )	Benzene ( $\mu\text{g}/\text{L}$ )	Toluene ( $\mu\text{g}/\text{L}$ )	Ethyl-Benzene ( $\mu\text{g}/\text{L}$ )	Total Xylenes ( $\mu\text{g}/\text{L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g}/\text{L}$ )
MW-2	10/1/1994	98.58	15.36	83.22	NA	NA	NA	NA	NA	NA
	12/1/1994	98.58	8.60	89.98	NA	NA	NA	NA	NA	NA
	3/6/1995	98.58	7.68	90.90	490	3	3	3	1	NA
	6/5/1995	98.58	9.59	88.99	8,000	220	330	350	660	NA
	10/2/1995	98.58	13.42	85.16	46,000	160	130	93	240	NA
	1/3/1996	98.58	9.93	88.65	46,000	160	130	93	240	NA
	4/3/1996	98.58	8.13	90.45	27,000	0.1	92	44	13	NA
	12/9/1996	98.58	11.67	86.91	6,200	11	7	2	14	ND
	4/10/1997	98.58	11.40	87.18	53,000	150	110	37	0.12	ND
	12/30/1997	98.58	9.04	89.54	35,000	4,900	4,900	1,600	7,000	NA
	6/30/1998	98.58	NM	NM	25,000	2,000	2,000	1,300	4,300	NA
	9/29/1998	98.58	13.58	85.00	29,000	290	180	160	360	<0.5
	12/16/1998	98.58	10.94	87.64	26,000	1,400	1,600	880	9,500	<5
	3/16/1999	98.58	7.60	90.98	7,600	730	830	610	1,900	55
	6/10/1999	98.58	11.24	87.34	3,500	290	428	211	744	ND
	8/23/1999	98.58	13.50	85.08	60	6	9	4	11	ND
	11/9/1999	98.58	14.10	84.48	<50	<5	<5	<5	<5	<5
	2/7/2000	98.58	9.85	88.73	6,400	372	639	46	134	8
	5/31/2000	98.58	10.88	87.70	2,930	130	330	130	570	<5
	8/9/2000	98.58	13.03	85.55	<50	<5	<5	<5	<5	<5
	11/2/2000	98.58	12.60	85.98	ND	ND	ND	ND	ND	ND
	3/13/2001	98.58	8.55	90.03	932	18	34	1.3	225	ND
	5/22/2001	98.58	11.00	87.58	870	37	75	55	179	2.7
	8/8/2001	98.58	13.53	85.05	125	4	4	3	11	ND
	11/19/2001	98.58	13.43	85.15	470	13	64	22	83	14
	2/21/2002	98.58	8.99	89.59	1,700	26	180	95	360	<2
	5/7/2002	98.58	10.59	87.99	1,800	31	140	110	348	<2
	7/30/2002	40.71	12.70	28.01	180	11	6.3	9.4	27	<2.0
	10/2/2002	40.71	14.23	26.48	<50	<0.5	<0.5	<0.5	0.64	<2.0

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**3609 International Boulevard, Oakland, California**

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<b>MW-2 cont.</b>	1/3/2003	40.71	8.66	32.05	510	5	30.0	24.0	92	<2.0
	5/3/2003	40.71	9.17	31.54	1,300	14	88.0	78.0	271	<2.0
	7/24/2003	40.71	12.23	28.48	220	3.9	4.3	7	14.5	<2.0
	10/22/2003	40.71	13.65	27.06	170 H	1.9	<0.5	2.2	2.2	<2.0
	1/22/2004	40.71	9.54	31.17	860	7.2	37	50	151	<2.0
	4/1/2004	40.71	10.80	29.91	730	6.6	19	38	87	<2.0
	8/20/2004	40.71	13.54	27.17	220	2.2	1.9	7	11.7	<0.5
	12/8/2004	40.71	10.52	30.19	99	1.7	3.3	8.3	25.1	<0.5
	3/15/2005	40.71	8.06	32.65	5,690	18.7	120	315	876	<1.0
	5/17/2005	40.71	9.10	31.61	6,320	12.5	75	429	557	<2.15
	7/14/2005	40.71	11.10	29.61	7,680	14.1	46.3	522	471	<2.15
	10/13/2005	40.71	13.25	27.46	562	4.25	3.28	15	8.29	<0.50
	1/3/2006	40.71	6.72	33.99	340	2.5	4.4	22	50.2	<0.5
	4/7/2006	40.71	5.75	34.96	6,160	24	84.8	385	474	<2.15
	9/7/2006	40.71	12.58	28.13	114	2.45	<2.0	8.62	6.85	<0.5
	11/29/2006	40.71	12.26	28.45	293	5.02	3.25	24	15.15	<0.5
	2/27/2007	40.71	8.78	31.93	3,190	18.30	49.20	396	466	<1.0
	5/23/2007	40.71	11.09	29.62	<50.0	<0.500	<2.00	6.22	4.68	<0.500
	8/21/2007	40.71	13.31	27.40	241	3.12	<2.00	17.6	7.59	<0.500
	11/16/2007	40.71	12.59	28.12	61.1	5.09	<2.00	1.67	<2.00	<0.5
	2/21/2008	40.71	8.56	32.15	<50	<0.5	<2.00	1.41	<2.00	<0.5
	5/7/2008	40.71	11.81	28.90	1,510	3.80	5.55	135	92.18	<0.5
	8/6/2008	<b>40.71</b>	<b>13.39</b>	<b>27.32</b>	<b>1,900</b>	<b>4.6</b>	<b>6.7</b>	<b>98</b>	<b>114.7</b>	<b>&lt;0.5</b>
<b>MW-3</b>	10/5/1994	97.78	15.79	81.99	3,000,000	190,000	740,000	310,000	130,000	NA
	12/2/1994	97.78	9.79	87.99	250,000	19,000	22,000	4,400	28,000	NA
	3/6/1995	97.78	8.69	89.09	350,000	20,000	42,000	5,800	36,000	NA
	6/5/1995	97.78	10.25	87.53	350,000	20,000	42,000	5,800	36,000	NA
	10/2/1995	97.78	12.91	84.87	150,000	510	410	210	65	NA
	1/3/1996	97.78	10.55	87.23	150,000	510	410	210	650	NA
	4/3/1996	97.78	8.76	89.02	NA	NA	NA	NA	NA	NA
	12/3/1996	97.78	12.02	85.76	NA	NA	NA	NA	NA	NA

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MW-3 cont.	4/1/1997	97.78	11.73	86.05	NA	NA	NA	NA	NA	NA
	12/1/1997	97.78	NM	NM	NA	NA	NA	NA	NA	NA
	9/1/1998	97.78	14.68	83.10	NA	NA	NA	NA	NA	NA
	12/16/1998	97.78	11.55	86.23	51,000	5,700	3,900	1,200	6,300	410
	3/16/1999	97.78	8.44	89.34	45,000	4,100	6,400	1,000	6,100	470
	6/10/1999	97.78	11.8	85.98	46,000	8,245	6,425	1,015	7,173	274
	8/23/1999	97.78	13.85	83.93	64,000	7,484	8,052	1,744	9,749	141
	11/9/1999	97.78	14.7	83.08	26,000	3,218	1,319	<5	6,697	126
	2/7/2000	97.78	10.95	86.83	44,000	6,090	3,360	<5	5,780	276
	5/31/2000	97.78	11.68	86.10	68,000	15,000	8,900	1,500	7,400	<5
	8/9/2000	97.78	13.73	84.05	76,000	8,900	5,636	883	7,356	176
	11/2/2000	97.78	13.4	84.38	48,000	6,789	4,816	676	7,258	83
	3/13/2001	97.78	9.43	88.35	14,754	2,250	140	ND	1,284	110
	5/22/2001	97.78	11.81	85.97	44,000	5,400	3,100	1,400	6,400	200
	8/8/2001	97.78	14.1	83.68	41,750	3,485	2,670	1,255	5,420	52
	11/19/2001	97.78	14.32	83.46	NA	NA	NA	NA	NA	NA
	2/21/2002	97.78	10.01	87.77	62,000	6,000	7,600	1,900	9,200	12,000
	5/7/2002	97.78	11.28	86.50	54,000	6,700	3,200	1,800	7,100	9,100
	7/30/2002	40.91	13.25	27.66	45,000	8,900	1,700	1,600	5,600	2,600
	10/2/2002	40.91	14.98	25.93	70,000	4,900	5,100	2,100	11,900	21,000
	1/3/2003	40.91	9.79	31.12	35,000	2,900	1,300	860	5,200	13,000
	5/3/2003	40.91	10.01	30.90	48,000	5,800	1,400	1,600	7,400	5,900
	7/24/2003	40.91	12.94	27.97	31,000	4,700	990	1,400	5,200	16,000
	10/22/2003	40.91	14.29	26.62	30,000	4,400	930	1,600	5,400	7,400
	1/22/2004	40.91	10.57	30.34	45,000	2,100	850	1,500	5,700	2,900
	4/1/2004	40.91	11.84	29.07	31,000	4,200	590	1,600	4,370	900
	8/20/2004	40.91	14.24	26.67	21,000	3,400	370	1,000	2,350	1,100
	12/8/2004	40.91	11.32	29.59	6,441	978	109	490	941	201
	3/16/2005	40.91	8.87	32.04	22,300	1,280	456	729	1,870	2,400
	5/17/2005	40.91	9.96	30.95	17,600	764	302	735	1,227	1,800
	7/14/2005	40.91	11.50	29.41	34,600	1,390	492	1,460	2,054	1,090
	10/13/2005	40.91	13.78	27.13	15,000	1,290	267	675	838	893

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<b>MW-3 cont.</b>	1/3/2006	40.91	7.50	33.41	8,700	650	98	330	860	280
	4/7/2006	40.91	6.74	34.17	16,800	677	239	802	1,018	564
	9/8/2006	40.91	12.95	27.96	26,400	1,660	381	933	1,545	332
	11/29/2006	40.91	12.78	28.13	15,100	2,080	381	1,290	1,624	247
	2/27/2007	40.91	9.43	31.48	5,950	1,100	116	531	500	170
	5/24/2007	40.91	11.63	29.28	8,240	1,360	116	540	696	37
	8/21/2007	40.91	13.75	27.16	13,200	2,240	119	868	983	36.4
	11/16/2007	40.91	13.25	27.66	5,490	2,360	52	523	213.9	43
	2/22/2008	40.91	10.07	30.84	7,840	402	64.5	496	430	<1
	5/7/2008	40.91	12.69	28.22	8,180	232	66.7	208	942	5.11
	<b>8/6/2008</b>	<b>40.91</b>	<b>14.09</b>	<b>26.82</b>	<b>3,000</b>	<b>140</b>	<b>21</b>	<b>97</b>	<b>233</b>	<b>1.7</b>
<b>MW-4</b>	1/3/1996	97.85	10.11	87.74	9,300	230	110	10	29	NA
	4/3/1996	97.85	8.35	89.50	1,900	12	8	5	14	NA
	12/9/1996	97.85	11.58	86.27	4,000	14	6	4	12	ND
	4/10/1997	97.85	11.23	86.62	ND	ND	ND	ND	ND	ND
	12/30/1997	97.85	9.43	88.42	2,300	410	270	100	1,500	NA
	6/30/1998	97.85	NM	NM	1,700	780	160	54	200	NA
	9/29/1998	97.85	13.64	84.21	6,200	910	77	68	200	18
	12/16/1998	97.85	11.13	86.72	1,400	590	33	28	94	24
	3/16/1999	97.85	8.46	89.39	600	200	35	19	56	11
	6/10/1999	97.85	11.30	86.55	1,000	298	44	19	64	13
	8/23/1999	97.85	13.20	84.65	660	497	41	54	145	6
	11/9/1999	97.85	14.10	83.75	<50	<5	<5	<5	<5	<5
	2/7/2000	97.85	11.25	86.60	7,800	1,200	61	<5	781	<5
	5/31/2000	97.85	11.46	86.39	552	42	19	16	67	<5
	8/9/2000	97.85	13.35	84.50	370	5.08	<5	<5	<5	<5
	11/2/2000	97.85	13.05	84.80	ND	5.30	ND	ND	8	ND
	3/13/2001	97.85	9.24	88.61	62	ND	ND	3.2	8.7	ND
	5/22/2001	97.85	11.50	86.35	80	12	1.9	4.1	9.8	ND
	8/8/2001	97.85	13.80	84.05	133	12	2.2	3.9	9	ND
	11/19/2001	97.85	13.68	84.17	670	180	5	17	53	ND

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<b>MW-4 cont.</b>	2/21/2002	97.85	9.97	87.88	450	63	4.1	22	28.7	<2
	5/7/2002	97.85	10.81	87.04	570	72	29	27	74	<2
	7/30/2002	40.01	12.62	27.39	450	20	24	19	74	<2.0
	10/2/2002	40.01	14.34	25.67	320	69	0.99	9	5.49	<2.0
	1/3/2003	40.01	9.79	30.22	310	49	2.5	13	26.7	<2.0
	7/24/2003	40.01	12.44	27.57	<50	1	<0.5	<0.5	<0.5	<0.5
	10/22/2003	40.01	13.72	26.29	70	12	<0.5	4.7	3.0	<2.0
	1/22/2004	40.01	10.55	29.46	230	18	2.1	8.1	17.1	<2.0
	4/1/2004	40.01	11.39	28.62	<50	3.8	<0.5	1.6	1.9	<2.0
	8/20/2004	40.01	13.68	26.33	<50	1.6	<0.5	0.66	0.53	<2.0
	12/7/2004	40.01	10.95	29.06	<50	1.3	<0.5	2.80	<1.0	<0.5
	3/15/2005	40.01	8.61	31.40	661	72	4.13	39.7	48.42	<0.5
<b>MW-4R</b>	5/17/2005	40.34	9.88	30.46	7,780	170	11.1	192	121.2	<0.5
	7/14/2005	40.34	11.61	28.73	847	25.3	<2.0	28.2	10.9	<0.5
	10/13/2005	40.34	13.73	26.61	785	35.5	<2.0	48.2	8.35	<0.50
	1/3/2006	40.34	9.18	31.16	2,500	65	3.8	70	62	<0.5
	4/6/2006	40.34	7.70	32.64	852	42.4	2.25	28.4	17.13	<0.5
	9/7/2006	40.34	12.96	27.38	97.7	9.29	<2.0	4.05	1.03	<0.5
	11/28/2006	40.34	12.70	27.64	914	87	<2.0	15.10	10.40	<0.5
	2/26/2007	40.34	9.78	30.56	561	38.4	<2.0	41.30	9.67	<0.5
	5/23/2007	40.34	11.36	28.98	351	35.8	<2.0	23.20	4.82	<0.5
	8/20/2007	40.34	13.45	26.89	223	24.7	<2.0	9.15	2.54	<0.5
	11/15/2007	40.34	13.01	27.33	1,740	94.5	<2.0	41	15.52	<0.5
<b>MW-5</b>	2/22/2008	40.34	9.68	30.66	122	8.12	<2.0	3.14	<2.0	<0.5
	5/6/2008	40.34	12.17	28.17	68.9	3.12	<2.0	0.65	<2.0	<0.5
	<b>8/5/2008</b>	<b>40.34</b>	<b>13.58</b>	<b>26.76</b>	<b>630</b>	<b>33</b>	<b>0.59</b>	<b>13</b>	<b>2</b>	<b>&lt;0.5</b>
	10/2/1995	99.04	13.57	85.47	1,500	1	1	4	5	NA
	1/3/1996	99.04	10.03	89.01	1,500	1	1	4	5	NA
	4/3/1996	99.04	8.24	90.80	780	1	1	5	4	NA
	12/9/1996	99.04	11.48	87.56	NA	NA	NA	NA	NA	NA
	4/10/1997	99.04	11.35	87.69	NA	NA	NA	NA	NA	NA

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<b>MW-5 cont.</b>	12/30/1997	99.04	9.15	89.89	790	82	66	59	160	NA
	6/30/1998	99.04	NM	NM	400	<5	<5	15	<10	NA
	9/29/1998	99.04	13.82	85.22	270	2	1	3	3	<.5
	12/16/1998	99.04	11.20	87.84	1,400	1	1	ND	2	ND
	3/16/1999	99.04	7.73	91.31	650	3	1	16	2	10
	6/10/1999	99.04	11.50	87.54	270	4	3	6	4	ND
	8/23/1999	99.04	13.55	85.49	120	ND	4	ND	4	ND
	11/9/1999	99.04	14.30	84.74	<50	<5	<5	<5	<5	<5
	2/7/2000	99.04	9.85	89.19	70	<5	<5	<5	7	<5
	5/31/2000	99.04	11.03	88.01	627.4	7.4	24	12	32.4	<5
	8/9/2000	99.04	13.22	85.82	<50	<5	<5	<5	<5	<5
	11/2/2000	99.04	13.55	85.49	ND	ND	ND	ND	ND	ND
	3/13/2001	99.04	8.67	90.37	382	6.1	1.9	6.6	5.9	ND
	5/22/2001	99.04	11.12	87.92	180	ND	ND	2.1	0.57	4.4
	8/8/2001	99.04	13.79	85.25	258	1	1.1	3.4	7.3	1.4
	11/19/2001	99.04	13.72	85.32	920	17	160	26	135	40
	2/21/2002	99.04	9.04	90.00	290	3.5	2	6.2	6.2	<0.5
	5/7/2002	99.04	10.69	88.35	160	<0.5	0.78 C	2	2.15	2.3
	7/30/2002	41.16	12.94	28.22	110	<0.5	<0.5	0.77	<0.5	<0.5
	10/20/2002	41.16	14.51	26.65	77	<0.5	<0.5	<0.5	<0.5	<2.0
	1/3/2003	41.16	8.73	32.43	450 Y	<0.5	<0.5	4	0.54	2.1
	5/3/2003	41.16	9.24	31.92	130	<0.5	<0.5	1	<0.5	3.1
	7/24/2003	41.16	12.45	28.71	300	<0.5	1.9 C	0.76	<0.5	<2.0
	10/22/2003	41.16	13.89	27.27	460 H	<0.5	<0.5	<0.5	<0.5	1.9
	1/22/2004	41.16	9.60	31.56	160	<0.5	<0.5	0.55 C	<0.5	<5.0
	4/1/2004	41.16	11.06	30.10	280	<0.5	0.74C	0.62	<0.5	2.1
	8/20/2004	41.16	13.75	27.41	250	<0.5	<0.5	<0.5	<0.5	2
	12/7/2004	41.16	10.73	30.43	150	<0.5	<0.5	<0.5	<1.0	2.6

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**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g}/\text{L}$ )	Benzene ( $\mu\text{g}/\text{L}$ )	Toluene ( $\mu\text{g}/\text{L}$ )	Ethyl-Benzene ( $\mu\text{g}/\text{L}$ )	Total Xylenes ( $\mu\text{g}/\text{L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g}/\text{L}$ )
<b>MW-5 cont.</b>	3/15/2005	41.16	8.18	32.98	496	<0.5	<0.5	<0.5	<1.0	1.91
	5/17/2005	41.16	9.22	31.94	360	<0.5	<0.5	<0.5	<1.0	1.72
	7/14/2005	41.16	11.30	29.86	267	<0.5	<2.0	<0.5	<1.0	1.74
	10/13/2005	41.16	13.57	27.59	404	<0.50	<2.0	<0.50	<1.0	0.93
	1/3/2006	41.16	6.81	34.35	170	2.2	<0.5	1.8	3.1	1.1
	4/7/2006	41.16	5.81	35.35	449	<0.5	<2.0	0.53	<1.0	1.16
	9/7/2006	41.16	12.78	28.38	185	<0.5	<2.0	2.02	<1.0	<0.5
	11/28/2006	41.16	12.62	28.54	158	0.64	<2.0	<0.5	<2.0	<0.5
	2/26/2007	41.16	8.92	32.24	78.2	<0.5	<2.0	<0.5	<2.0	0.52
	5/23/2007	41.16	11.36	29.80	58.4	<0.5	<2.0	4.36	<2.0	<0.5
	8/20/2007	41.16	13.52	27.64	82.4	0.52	<2.0	4.49	2.3	<0.5
	11/16/2007	41.16	12.74	28.42	<50	3.45	<2.00	<0.5	<2.0	0.58
	2/21/2008	41.16	8.67	32.49	131	<0.5	<2.0	<0.5	<2.0	<0.5
	5/6/2008	41.16	12.06	29.10	300	<0.5	<2.0	<0.5	<2.0	0.52
	<b>8/5/2008</b>	<b>41.16</b>	<b>13.64</b>	<b>27.52</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-6</b>	10/1/1995	98.77	13.94	84.83	NA	NA	NA	NA	NA	NA
	1/1/1996	98.77	10.55	88.22	120,000	350	310	200	610	NA
	4/1/1996	98.77	8.76	90.01	NA	NA	NA	NA	NA	NA
	12/1/1996	98.77	12.04	86.73	NA	NA	NA	NA	NA	NA
	4/1/1997	98.77	11.76	87.01	NA	NA	NA	NA	NA	NA
	12/1/1997	98.77	9.30	89.47	NA	NA	NA	NA	NA	NA
	9/1/1998	98.77	14.10	84.67	NA	NA	NA	NA	NA	NA
	12/1/1998	98.77	11.60	87.17	NA	NA	NA	NA	NA	NA
	3/16/1999	98.77	8.40	90.37	37,000	3,900	4,300	1,600	7,000	180
	6/10/1999	98.77	11.90	86.87	18,500	2,060	1,650	735	3,170	ND
	8/23/1999	98.77	13.90	84.87	42,000	3,806	3,649	1,554	7,996	10
	11/9/1999	98.77	14.75	84.02	40,000	1,084	130	<5	10,940	<5
	2/7/2000	98.77	10.95	87.82	17,000	1,360	521	<5	4,150	6
	8/9/2000	98.77	13.78	84.99	24,000	1,306	870	<5	5,162	<5
	11/2/2000	98.77	13.40	85.37	19,000	1,387	618	ND	5,250	ND

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**3609 International Boulevard, Oakland, California**

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<b>MW-6 cont.</b>	3/13/2001	98.77	9.49	89.28	15,637	713	459	238	2,363	ND
	5/22/2001	98.77	11.82	86.95	27,000	760	450	1,600	4,270	ND
	8/8/2001	98.77	NM	NM	NA	NA	NA	NA	NA	NA
	11/19/2001	98.77	NM	NM	NA	NA	NA	NA	NA	NA
	2/21/2002	98.77	9.92	88.85	14,000	440	180	750	1,020	<10
	5/7/2002	98.77	11.33	87.44	10,000	400	160	470	970	<2
	7/30/2002	40.92	13.28	27.64	24,000	1,000	410	1,400	3,770	<20
	10/20/2002	40.92	14.93	25.99	22,000	1,200	620	1,300	2,800	<20
	1/3/2003	40.92	9.78	31.14	12,000	730	230	740	1,690	<20
	5/3/2003	40.92	9.92	31.00	150,000 H	1,400	780	2,500	8,700	<40
	7/24/2003	40.92	12.98	27.94	29,000	1,600	520	1,500	4,400	<200
	10/22/2003	40.92	14.35	26.57	36,000	1,300	430	1,600	4,570	<40
	1/22/2004	40.92	10.60	30.32	30,000	1,300	320	1,500	3,040	<50
	4/1/2004	40.92	11.80	29.12	99,000	1,700	580 C	2,200	5,200	<50
	8/20/2004	40.92	14.36	26.56	12,000	580	130	520	1,020	<10
	12/8/2004	40.92	11.22	29.70	12,631	649	134	1,009	2,037	<2.15
	3/16/2005	40.92	8.94	31.98	18,300	546	126	705	1,069	<2.15
	5/17/2005	40.92	10.02	30.90	38,500	1,290	395	1,550	1,652	<5.50
	7/15/2005	40.92	11.78	29.14	50,100	1,510	409	1,900	1,920	<5.50
	10/13/2005	40.92	14.04	26.88	9,620	513	97.4	523	422.3	<2.15
	1/3/2006	40.92	7.86	33.06	13,000	260	79.0	680	750	<4.2
	4/7/2006	40.92	6.93	33.99	18,200	650	151	918	715	<5.5
	9/8/2006	40.92	13.12	27.80	18,600	604	98.80	639	659	<2.15
	11/28/2006	40.92	12.95	27.97	20,300	656	96.30	1,060	760	7.86
	2/27/2007	40.92	9.68	31.24	8,440	249	36.30	697	316.8	<2.15
	5/24/2007	40.92	11.59	29.33	11,400	292	34.8	493	278.5	<2.15
	8/21/2007	40.92	13.88	27.04	9,480	727	87.6	761	590	<2.15
	11/16/2007	40.92	13.29	27.63	5,430	436	29.8	439	147.8	<2.15
	2/22/2008	40.92	9.41	31.51	4,870	100	9.56	331	76.9	<1.0
	5/7/2008	40.92	12.47	28.45	8,700	125	10.3	365	209.3	<1.0
	8/6/2008	<b>40.92</b>	<b>13.98</b>	<b>26.94</b>	<b>7,900</b>	<b>82</b>	<b>6.9</b>	<b>300</b>	<b>126.3</b>	<b>&lt;2.0</b>

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MW-7	10/2/1995	97.83	12.95	84.88	NA	10	12	17	NA	3,300
	1/3/1996	97.83	9.57	88.26	3,300	9	12	17	45	NA
	4/3/1996	97.83	7.75	90.08	1,900	2	3	5	7	NA
	12/9/1996	97.83	10.97	86.86	NA	NA	NA	NA	NA	NA
	4/10/1997	97.83	12.95	84.88	NA	NA	NA	NA	NA	NA
	12/30/1997	97.83	8.65	89.18	1,400	130	98	75	200	NA
	6/30/1998	97.83	NM	NM	620	4	<5	9	<10	NA
	9/29/1998	97.83	13.09	84.74	1,800	1	1	1	2	68
	12/16/1998	97.83	10.52	87.31	990	5	10	5	20	160
	3/16/1999	97.83	7.00	90.83	300	3	1	1	1	62
	6/10/1999	97.83	10.70	87.13	320	3	7	4	3	26
	8/23/1999	97.83	12.80	85.03	570	5	10	ND	ND	ND
	11/9/1999	97.83	13.25	84.58	290	<5	9	<5	<5	12
	2/7/2000	97.83	9.50	88.33	80	<5	<5	<5	<5	23
	5/31/2000	97.83	10.52	87.31	494.9	4.9	22	4.2	21.9	29
	8/9/2000	97.83	12.63	85.20	80	<5	<5	<5	<5	11.7
	11/2/2000	97.83	11.95	85.88	50	ND	ND	ND	ND	9.1
	3/13/2001	97.83	8.04	89.79	82	0.97	ND	0.76	ND	78
	5/22/2001	97.83	10.60	87.23	370	ND	9.1	1.3	2.3	28
	8/8/2001	97.83	13.02	84.81	610	3.7	3	6.2	18.9	10
	11/19/2001	97.83	12.83	85.00	1,700	24	220	41	205	69
	2/21/2002	97.83	8.91	88.92	380	<0.5	2.5	2	3.8	78
	5/7/2002	97.83	10.13	87.70	560	15	28.0	9.2	44.0	37
	7/30/2002	39.94	12.15	27.79	270	5.3	1.3 C	2.3	8.1	46
	10/20/2002	39.94	13.74	26.20	350	<0.5	2.1 C	<0.5	3.1 C	43
	1/3/2003	39.94	8.45	31.49	220 Y	<0.5	<0.5	0.78	0.55	19
	5/3/2003	39.94	7.69	32.25	280	<0.5	<0.5	<0.5	<0.5	11
	7/24/2003	39.94	11.72	28.22	230	<0.5	1.3 C	<0.5	0.63	5.9
	10/22/2003	39.94	13.10	26.84	460	<0.5	<0.5	<0.5	<0.5	5.0

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<b>MW-7 cont.</b>	1/22/2004	39.94	9.23	30.71	380	<0.5	1.4 C	<0.5	<0.5	<5.0
	4/1/2004	39.94	10.40	29.54	480	<0.5	2.5 C	<0.5	0.90	0.62
	8/20/2004	39.94	12.92	27.02	410	<0.5	.81 C	<0.5	<0.5	1.70
	12/7/2004	39.94	10.28	29.66	96	<0.5	<0.5	<0.5	<1.0	<0.5
	3/16/2005	39.94	7.44	32.50	209	<0.5	<0.5	<0.5	<1.0	1.74
	5/16/2005	39.94	8.53	31.41	262	4.85	2.19	2.36	4.24	0.73
	7/14/2005	39.94	10.61	29.33	753	20.6	11.9	16.8	33.23	2.36
	10/13/2005	39.94	12.80	27.14	1,690	5.3	2.71	12.6	54	1.93
	1/3/2006	39.94	6.39	33.55	250 Y	0.80	<0.5	0.61	<0.5	1.1
	4/7/2006	39.94	8.10	31.84	3,440	0.64	<2.0	17	<1.0	<0.5
	9/7/2006	39.94	14.52	25.42	320	2.87	<2.0	4.76	1.34	<0.5
	11/28/2006	39.94	12.17	27.77	774	1.81	<2.0	6.76	3.03	<0.5
	2/26/2007	39.94	10.41	29.53	1,240	<0.5	<2.0	6.83	<2.0	<0.5
	5/23/2007	39.94	10.16	29.78	265	<0.5	<2.0	5.38	<2.0	<0.5
	8/20/2007	39.94	12.98	26.96	<50.0	0.78	<2.0	4.87	2.36	<0.5
	11/15/2007	39.94	12.45	27.49	135	<0.5	<2.00	0.54	<2.0	<0.5
	2/21/2008	39.94	8.79	31.15	<50	3.18	<2.0	1.69	<2.0	<0.5
	5/6/2008	39.94	11.31	28.63	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	<b>8/5/2008</b>	<b>39.94</b>	<b>13.03</b>	<b>26.91</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>0.91</b>	<b>&lt;0.5</b>
<b>MW-8</b>	10/2/1995	97.25	12.86	84.39	NA	NA	NA	NA	NA	NA
	1/3/1996	97.25	9.79	87.46	94,000	310	250	180	480	NA
	4/3/1996	97.25	7.98	89.27	58,000	250	170	140	330	NA
	12/9/1996	97.25	11.13	86.12	27,000	88	43	44	80	ND
	4/10/1997	97.25	12.95	84.30	24,000	86	55	50	100	ND
	12/30/1997	97.25	8.95	88.30	28,000	6,000	1,600	2,100	4,700	NA
	6/30/1998	97.25	NM	NM	54,000	4,600	2,800	3,500	7,300	NA
	9/29/1998	97.25	13.02	84.23	NA	NA	NA	NA	NA	NA
	12/16/1998	97.25	10.75	86.50	61,000	6,300	1,700	2,200	4,400	1,300
	3/16/1999	97.25	7.58	89.67	22,000	1,800	470	2,000	2,000	820
	6/10/1999	97.25	10.80	86.45	39,500	3,610	1,635	2,175	5,913	988
	8/23/1999	97.25	12.75	84.50	58,000	5,379	2,438	3,001	6,960	639
	11/9/1999	97.25	13.65	83.60	10,500	92	<5	<5	3,414	769
	2/7/2000	97.25	10.85	86.40	44,200	1,080	617	<5	4,160	240
	5/31/2000	97.25	11.15	86.10	25,940	940	130	1,600	3,960	75
	8/9/2000	97.25	12.87	84.38	22,000	632	5.38	<5	2,686	37.3
	11/2/2000	97.25	12.55	84.70	3,000	278	350	209	980	21

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<b>MW-8 cont.</b>	3/13/2001	97.25	8.75	88.50	2,360	81	16	71	270	221
	8/8/2001	97.25	12.97	84.28	5,620	153	46	373	345	174
	11/19/2001	97.25	13.19	84.06	13,000	600	270	750	1,200	400
	2/21/2002	97.25	9.88	87.37	240,000	1,400	<25	4,200	6,560	<100
	5/7/2002	97.25	10.32	86.93	9,000	360	56	560	622	2,100
	7/30/2002	39.38	11.79	27.59	8,400	340	78	530	517	1,200
	10/20/2002	39.38	13.80	25.58	18,000	950	75	1,400	1,269	700
	1/3/2003	39.38	9.48	29.90	8,100	300	29	370	302	1,100
	5/3/2003	39.38	9.48	29.90	18,000	380	33 C	1,000	516	540
	7/24/2003	39.38	11.92	27.46	12,000	460	54 C	910	435	890
	10/22/2003	39.38	13.09	26.29	16,000	830	87	2,000	675	280
	1/22/2004	39.38	10.32	29.06	18,000	330	37 C	860	239	500
	4/1/2004	39.38	11.23	28.15	12,000	240	26 C	650	128.8 C	<4
	8/20/2004	39.38	13.02	26.36	6,000	310	27	660	56.8 C	<4
	12/8/2004	39.38	10.79	28.59	6,650	171	15	360	35	166
	3/15/2005	39.38	7.62	31.76	11,400	125	21	418	55.3	865
	5/16/2005	39.38	9.15	30.23	10,100	122	13.2	440	34.73	406
	7/14/2005	39.38	10.81	28.57	11,600	213	27.8	854	71.51	184
	10/13/2005	39.38	12.81	26.57	6,590	256	27.7	655	48.50	375
	1/3/2006	39.38	7.40	31.98	4,800	53	5.2	130	21	210
	4/6/2006	39.38	6.04	33.34	8,240	82.5	14.6	364	28.06	771
	9/7/2006	39.38	12.15	27.23	4,130	86.80	7.32	173	19.73	48.60
	11/28/2006	39.38	11.92	27.46	3,680	198	15.10	313	23.82	149
	2/27/2007	39.38	8.52	30.86	5,690	122	15.10	455	33.62	203
	5/24/2007	39.38	10.79	28.59	3,400	32.60	4.35	177	14.65	69.5
	8/20/2007	39.38	12.71	26.67	1,310	58.60	4.22	106	7.20	26.8
	11/15/2007	39.38	12.13	27.25	10,300	169	11.1	281	12.0	60.4
	2/22/2008	39.38	8.51	30.87	5,130	33.3	4.12	218	5.87	<0.5
	5/6/2008	39.38	11.41	27.97	3,490	20.3	2.38	90.3	0.77	21.8
	<b>8/5/2008</b>	<b>39.38</b>	<b>12.82</b>	<b>26.56</b>	<b>2,900</b>	<b>97</b>	<b>11</b>	<b>170</b>	<b>17</b>	<b>13</b>
<b>MW-10</b>	12/1/1996	94.54	10.44	84.10	NA	NA	NA	NA	NA	NA
	4/10/1997	94.54	10.07	84.47	1,000	21	9	3	3	ND
	12/30/1997	94.54	8.78	85.76	10,000	5,300	76	1,100	780	NA

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**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethyl-Benzene ( $\mu\text{g/L}$ )	Total Xylenes ( $\mu\text{g/L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g/L}$ )
MW-10 cont.	9/29/1998	94.54	11.93	82.61	9,900	5,400	66	970	620	2,600
	12/16/1998	94.54	10.19	84.35	8,700	3,800	51	790	420	1,800
	3/16/1999	94.54	7.30	87.24	4,100	15	28	420	250	2,800
	6/10/1999	94.54	9.95	84.59	4,200	1,168	34	264	154	1,195
	8/23/1999	94.54	11.60	82.94	3,250	2,135	97	600	248	1,800
	11/9/1999	94.54	12.50	82.04	2,950	1,134	20	<5	70	652
	2/7/2000	94.54	9.25	85.29	<50	<5	<5	<5	<5	448
	5/31/2000	94.54	9.45	85.09	4,400	1,500	25	390	107.1	580
	8/9/2000	94.54	11.52	83.02	6,800	1,055	26	54	53.8	1,283
	11/2/2000	94.54	11.35	83.19	ND	ND	ND	ND	ND	145
	3/13/2001	94.54	8.07	86.47	4,935	969	18	41	72	630
	5/22/2001	94.54	9.80	84.74	2,900	630	11	200	31	270
	8/8/2001	94.54	11.64	82.90	242	35	1	11	2	64
	11/19/2001	94.54	12.06	82.48	3,500	900	260	310	258	410
	2/21/2002	94.54	8.28	86.26	4,700	1,100	20	370	63.7	500
	5/7/2002	94.54	9.49	85.05	3,400	660	13	260	48.0	270
	7/30/2002	36.71	10.93	25.78	160	26	0.55	8.1	1.0	72
	10/20/2002	36.71	12.54	24.17	550	130	3.00	31.0	2.7	70
	1/3/2003	36.71	8.23	28.48	17,000	870	11	290	27	270
	5/3/2003	36.71	8.30	28.41	2,500	650	10	190	15.81 C	180
	7/24/2003	36.71	10.76	25.95	750	160	4	58	6.66 C	79
	10/22/2003	36.71	11.91	24.80	2,000	410	11	170	9.14 C	110
	1/22/2004	36.71	8.91	27.80	4,000	600	15	280	15.3 C	110
	4/1/2004	36.71	9.62	27.09	5,100	580	<1	330	26.4	160
	8/20/2004	36.71	11.50	25.21	3,400	550	13	240	17.0	100
	12/7/2004	36.71	9.29	27.42	2,524	556	10	184	16.0	144

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<b>MW-10 cont.</b>	3/15/2005	36.71	7.48	29.23	4,340	354	6.07	166	17.1	258
	5/16/2005	36.71	8.24	28.47	4,750	415	6.87	254	10.4	126
	7/14/2005	36.71	9.78	26.93	6,050	594	9.53	297	10.7	190
	10/13/2005	36.71	11.32	25.39	6,230	811	11.3	355	5.6	167
	1/3/2006	36.71	6.81	29.90	2,000	350	6.0	210	16	88
	4/6/2006	36.71	6.03	30.68	600	86.5	<2.0	59.1	2.36	30.4
	9/7/2006	36.71	10.90	25.81	6,960	360	<8.60	253	11.30	103
	11/28/2006	36.71	10.92	25.79	2,800	305	<8.6	228	<8.6	72.8
	2/26/2007	36.71	8.02	28.69	9,470	1,400	29.3	1,260	32.60	263.0
	5/23/2007	36.71	9.54	27.17	860	138	2.45	69.2	4.65	30.9
	8/20/2007	36.71	11.47	25.24	86.6	2.88	<2.00	5.98	2.30	2.68
	11/15/2007	36.71	11.12	25.59	492	104	<2.00	41.2	<2.0	18.7
	2/21/2008	36.71	7.85	28.86	2,040	228	4.44	193	2.68	11
	5/6/2008	36.71	10.19	26.52	2,510	161	3.36	130	<2.0	23
	8/5/2008	36.71	11.50	25.21	200	3.2	<0.5	3.7	<0.5	2.9
<b>MW-11</b>	12/1/1996	95.94	11.99	83.95	NA	NA	NA	NA	NA	NA
	4/1/1997	95.94	11.47	84.47	NA	NA	NA	NA	NA	NA
	12/30/1997	95.94	10.40	85.54	710	66	97	59	190	NA
	6/30/1998	95.94	NM	NM	1,100	45	24	71	100	NA
	9/29/1998	95.94	13.24	82.70	170	7	1	4	9	22
	12/16/1998	95.94	11.58	84.36	650	27	4	25	33	>0.5
	3/16/1999	95.94	8.81	87.13	710	30	6	53	84	8
	6/10/1999	95.94	11.50	84.44	4,600	1,240	35	290	159	1,291
	8/23/1999	95.94	12.75	83.19	170	4	4	ND	6	ND
	11/9/1999	95.94	13.85	82.09	<50	<5	<5	<5	<5	<5
	2/7/2000	95.94	13.60	82.34	700	20	15	<5	35	<5
	8/9/2000	95.94	14.87	81.07	590	10.5	5.94	<5	7.75	<5
	11/2/2000	95.94	12.55	83.39	60	ND	ND	ND	ND	ND
	3/13/2001	95.94	9.61	86.33	273	8.6	2.1	10	14	ND
	5/22/2001	95.94	11.15	84.79	280	12	8.3	3.3	9.8	12
	8/8/2001	95.94	13.04	82.90	NA	NA	NA	NA	NA	NA
	11/19/2001	95.94	13.48	82.46	300	7.9	26	5.1	28.9	ND
	2/21/2002	95.94	9.69	86.25	560	34	20	32	37.3	<0.5
	5/7/2002	95.94	10.99	84.95	280	16	3	7.6	7.6	<2
	7/30/2002	NS	13.24	NC	120	5.6	<0.5	0.61	0.53	<2.0
	10/20/2002	NS	NM	NC	NA	NA	NA	NA	NA	NA

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MW-11 cont.	1/3/2003	NS	9.76	NC	700	32	5.7	25	14.10	<2.0
	5/3/2003	NS	9.66	NC	280	17	1.5 C	8	4.10	<2.0
	7/24/2003	NS	12.30	NC	340	19 C	3.2	0.58	0.89	<2.0
	10/22/2003	NS	13.38	NC	210	5.0 C	<0.5	<0.5	<0.5	<0.5
	1/22/2004	NS	NM	NC	NA	NA	NA	NA	NA	NA
	4/1/2004	NS	NM	NC	NA	NA	NA	NA	NA	NA
	8/20/2004	NS	NM	NC	NA	NA	NA	NA	NA	NA
	12/7/2004	NS	10.54	NC	486	24	3.0	18	4.00	<0.5
	3/15/2005	NS	NM	NC	NA	NA	NA	NA	NA	NA
	5/16/2005	NS	NM	NC	NA	NA	NA	NA	NA	NA
	7/14/2005	NS	NM	NC	NA	NA	NA	NA	NA	NA
	10/13/2005	NS	NM	NC	NA	NA	NA	NA	NA	NA
	1/3/2006	NS	NM	NC	NA	NA	NA	NA	NA	NA
	4/6/2006	NS	7.72	NC	872	19.8	3.63	37.5	3.28	<0.5
	5/6/2008	NS	NM	NC	NA	NA	NA	NA	NA	NA
	8/5/2008	NS	NM	NC	NA	NA	NA	NA	NA	NA
MW-12	11/9/1999	94.84	13.20	81.64	80	<5	<5	<5	<5	229
	2/7/2000	94.84	10.20	84.64	4,000	351	37	<5	24	513
	5/31/2000	94.84	10.48	84.36	3,930	230	10	34	12	200
	8/9/2000	94.84	12.07	82.77	1,730	15.4	12.4	<5	<5	185
	11/2/2000	94.84	12.05	82.79	1,010	9.3	19.0	ND	7.40	215
	3/13/2001	94.84	9.04	85.80	1,517	13	5.6	5.5	11	214
	5/22/2001	94.84	10.52	84.32	31,000	1,200	ND	95	165	1,900
	8/8/2001	94.84	12.24	82.60	2,090	71	1.8	3	4	142
	11/19/2001	94.84	12.76	82.08	3,000	81	69	13	73	120
	2/21/2002	94.84	8.78	86.06	2,500	77	<0.5	5.7	7.4	95
	5/7/2002	94.84	10.26	84.58	2,700	74	<0.5	20	5.1	94
	7/30/2002	36.84	10.93	25.91	2,200	57	<0.5	11	2.6	100
	10/20/2002	36.84	13.13	23.71	2,600	71	<0.5	<0.5	10.3	84

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<b>MW-12 cont.</b>	1/3/2003	36.84	9.23	27.61	2,300	65	<0.5	1	4.00	86
	5/3/2003	36.84	9.24	27.60	2,200	58	<0.5	4.2 C	4.1 C	96
	7/24/2003	36.84	11.44	25.40	2,200	32 C	16 C	<0.5	9.20	66
	10/22/2003	36.84	12.50	24.34	2200 H	31 C	<0.5	<0.5	3.5 C	49
	1/22/2004	36.84	9.56	27.28	1,700	24 C	14 C	3	5.00	72
	4/1/2004	36.84	10.21	26.63	2,000	11 C	<0.5	<0.5	5 C	36
	8/20/2004	36.84	12.00	24.84	1,900	8.9 C	<0.5	<0.5	1.1 C	26
	12/7/2004	36.84	10.03	26.81	1,018	2	<0.5	<0.5	<1.0	26
	3/15/2005	36.84	8.49	28.35	1,890	4.25	<0.5	6.38	<1.0	30.6
	5/16/2005	36.84	9.07	27.77	1,080	<0.5	<0.5	<0.5	<1.0	20.6
	7/14/2005	36.84	10.43	26.41	1,580	2.71	<2.0	3.33	<1.0	29.3
	10/13/2005	36.84	12.08	24.76	1,560	0.74	<2.0	<0.50	<1.0	28.1
	1/3/2006	36.84	7.89	28.95	480 Y	13	<0.5	<0.5	<0.5	30
	4/6/2006	36.84	7.92	28.92	1,310	<0.5	<2.0	<0.5	<1.0	31.1
	9/7/2006	36.84	11.44	25.40	1,220	0.61	<2.0	2.69	<1.0	23.7
	11/28/2006	36.84	11.61	25.23	543	2.15	<2.0	1.72	<2.0	27.6
	2/26/2007	36.84	9.04	27.80	5,580	9.81	11	8.52	31.3	14.2
	5/23/2007	36.84	10.37	26.47	350	<0.5	<2.0	4.74	2.32	18.9
	8/20/2007	36.84	12.03	24.81	556	0.68	<2.0	4.81	2.41	20.3
	11/15/2007	36.84	11.84	25.00	678	0.79	<2.0	0.51	<2.0	20.4
	2/21/2008	36.84	8.86	27.98	375	0.59	<2.0	1.06	<2.0	2.52
	5/6/2008	36.84	10.85	25.99	742	<0.5	<2.0	0.70	<2.0	8.92
	8/5/2008	<b>36.84</b>	<b>12.15</b>	<b>24.69</b>	<b>550</b>	<b>0.56</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>13</b>
<b>FDC</b>	2/7/2000	97.10	15.40	81.70	NA	NA	NA	NA	NA	NA
	5/31/2000	97.10	12.41	84.69	NA	NA	NA	NA	NA	NA
	8/9/2000	97.10	15.70	81.40	NA	NA	NA	NA	NA	NA
	11/2/2000	97.10	16.85	80.25	NA	NA	NA	NA	NA	NA
	3/13/2001	97.10	9.39	87.71	NA	NA	NA	NA	NA	NA
	5/22/2001	97.10	15.85	81.25	NA	NA	NA	NA	NA	NA
	8/8/2001	97.10	13.30	83.80	NA	NA	NA	NA	NA	NA
	11/19/2001	97.10	17.82	79.28	NA	NA	NA	NA	NA	NA

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FDC cont.	2/21/2002	97.10	16.74	80.36	NA	NA	NA	NA	NA	NA
	5/7/2002	97.10	10.36	86.74	NA	NA	NA	NA	NA	NA
	7/30/2002	39.35	11.93	27.42	NA	NA	NA	NA	NA	NA
	10/20/2002	39.35	13.74	25.61	NA	NA	NA	NA	NA	NA
	1/3/2003	39.35	15.18	24.17	NA	NA	NA	NA	NA	NA
	5/3/2003	39.35	16.20	23.15	NA	NA	NA	NA	NA	NA
	7/24/2003	39.35	16.45	22.90	NA	NA	NA	NA	NA	NA
	10/22/2003	39.35	16.53	22.82	NA	NA	NA	NA	NA	NA
	1/22/2004	39.35	13.74	25.61	NA	NA	NA	NA	NA	NA
	4/1/2004	39.35	16.30	23.05	NA	NA	NA	NA	NA	NA
	8/20/2004	39.35	16.05	23.30	NA	NA	NA	NA	NA	NA
	12/7/2004	39.35	14.56	24.79	NA	NA	NA	NA	NA	NA
	3/16/2005	39.35	13.55	25.80	NA	NA	NA	NA	NA	NA
	5/17/2005	39.35	14.88	24.47	NA	NA	NA	NA	NA	NA
	7/14/2005	39.35	14.32	25.03	NA	NA	NA	NA	NA	NA
	10/13/2005	39.35	14.99	24.36	NA	NA	NA	NA	NA	NA
	1/3/2006	39.35	11.82	27.53	NA	NA	NA	NA	NA	NA
	4/6/2006	39.35	13.60	25.75	NA	NA	NA	NA	NA	NA
	9/7/2006	39.35	15.05	24.30	NA	NA	NA	NA	NA	NA
	11/28/2006	39.35	15.47	23.88	NA	NA	NA	NA	NA	NA
	2/26/2007	39.35	13.01	26.34	NA	NA	NA	NA	NA	NA
	5/23/2007	39.35	14.23	25.12	NA	NA	NA	NA	NA	NA
	8/20/2007	39.35	15.92	23.43	NA	NA	NA	NA	NA	NA
	11/15/2007	39.35	15.98	23.37	NA	NA	NA	NA	NA	NA
	2/21/2008	39.35	10.22	29.13	NA	NA	NA	NA	NA	NA
	5/6/2008	39.35	14.95	24.40	NA	NA	NA	NA	NA	NA
	8/5/2008	39.35	16.05	23.30	NA	NA	NA	NA	NA	NA
FDE	5/31/2000	97.90	13.22	84.68	NA	NA	NA	NA	NA	NA
	8/9/2000	97.90	NM	NM	NA	NA	NA	NA	NA	NA
	11/2/2000	97.90	12.75	85.15	NA	NA	NA	NA	NA	NA
	3/13/2001	97.90	9.14	88.76	NA	NA	NA	NA	NA	NA
	5/22/2001	97.90	13.05	84.85	NA	NA	NA	NA	NA	NA
	8/8/2001	97.90	13.69	84.21	NA	NA	NA	NA	NA	NA
	11/19/2001	97.90	13.92	83.98	NA	NA	NA	NA	NA	NA

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FDE cont.	2/21/2002	97.90	13.18	84.72	NA	NA	NA	NA	NA	NA
	5/7/2002	97.90	11.18	86.72	NA	NA	NA	NA	NA	NA
	7/30/2002	40.06	12.81	27.25	NA	NA	NA	NA	NA	NA
	10/20/2002	40.06	14.53	25.53	NA	NA	NA	NA	NA	NA
	1/3/2003	40.06	13.13	26.93	NA	NA	NA	NA	NA	NA
	5/3/2003	40.06	11.79	28.27	NA	NA	NA	NA	NA	NA
	7/24/2003	40.06	13.10	26.96	NA	NA	NA	NA	NA	NA
	10/22/2003	40.06	13.85	26.21	NA	NA	NA	NA	NA	NA
	1/22/2004	40.06	13.27	26.79	NA	NA	NA	NA	NA	NA
	4/1/2004	40.06	13.20	26.86	NA	NA	NA	NA	NA	NA
	8/20/2004	40.06	14.97	25.09	NA	NA	NA	NA	NA	NA
	12/7/2004	40.06	14.25	25.81	NA	NA	NA	NA	NA	NA
	3/16/2005	40.06	12.50	27.56	NA	NA	NA	NA	NA	NA
	5/17/2005	40.06	13.93	26.13	NA	NA	NA	NA	NA	NA
	7/14/2005	40.06	13.98	26.08	NA	NA	NA	NA	NA	NA
	10/13/2005	40.06	13.60	26.46	NA	NA	NA	NA	NA	NA
	1/3/2006	40.06	9.83	30.23	NA	NA	NA	NA	NA	NA
	4/6/2006	40.06	11.30	28.76	NA	NA	NA	NA	NA	NA
	9/7/2006	40.06	13.52	26.54	NA	NA	NA	NA	NA	NA
	11/28/2006	40.06	13.73	26.33	NA	NA	NA	NA	NA	NA
	2/26/2007	40.06	11.20	28.86	NA	NA	NA	NA	NA	NA
	5/23/2007	40.06	12.72	27.34	NA	NA	NA	NA	NA	NA
	8/20/2007	40.06	13.49	26.57	NA	NA	NA	NA	NA	NA
	11/15/2007	40.06	13.28	26.78	NA	NA	NA	NA	NA	NA
	2/21/2008	40.06	9.86	30.20	NA	NA	NA	NA	NA	NA
	5/6/2008	40.06	12.42	27.64	NA	NA	NA	NA	NA	NA
	8/5/2008	40.06	13.54	26.52	NA	NA	NA	NA	NA	NA
FDW	5/31/2000	96.90	12.20	84.70	NA	NA	NA	NA	NA	NA
	8/9/2000	96.90	NM	NM	NA	NA	NA	NA	NA	NA
	11/2/2000	96.90	15.50	81.40	NA	NA	NA	NA	NA	NA
	3/13/2001	96.90	10.12	86.78	NA	NA	NA	NA	NA	NA
	5/22/2001	96.90	13.50	83.40	NA	NA	NA	NA	NA	NA
	8/8/2001	96.90	13.08	83.82	NA	NA	NA	NA	NA	NA
	11/19/2001	96.90	14.31	82.59	NA	NA	NA	NA	NA	NA

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethyl-Benzene ( $\mu\text{g/L}$ )	Total Xylenes ( $\mu\text{g/L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g/L}$ )
FDW cont.	2/21/2002	96.90	12.78	84.12	NA	NA	NA	NA	NA	NA
	5/7/2002	96.90	10.14	86.76	NA	NA	NA	NA	NA	NA
	7/30/2002	39.16	11.79	27.37	NA	NA	NA	NA	NA	NA
	10/20/2002	39.16	13.50	25.66	NA	NA	NA	NA	NA	NA
	1/3/2003	39.16	12.13	27.03	NA	NA	NA	NA	NA	NA
	5/3/2003	39.16	10.84	28.32	NA	NA	NA	NA	NA	NA
	7/24/2003	39.16	12.12	27.04	NA	NA	NA	NA	NA	NA
	10/22/2003	39.16	13.48	25.68	NA	NA	NA	NA	NA	NA
	1/22/2004	39.16	13.58	25.58	NA	NA	NA	NA	NA	NA
	4/1/2004	39.16	13.90	25.26	NA	NA	NA	NA	NA	NA
	8/20/2004	39.16	15.69	23.47	NA	NA	NA	NA	NA	NA
	12/7/2004	39.16	14.85	24.31	NA	NA	NA	NA	NA	NA
	3/16/2005	39.16	13.10	26.06	NA	NA	NA	NA	NA	NA
	5/17/2005	39.16	14.60	24.56	NA	NA	NA	NA	NA	NA
	7/14/2005	39.16	15.10	24.06	NA	NA	NA	NA	NA	NA
	10/13/2005	39.16	13.34	25.82	NA	NA	NA	NA	NA	NA
	1/3/2006	39.16	12.61	26.55	NA	NA	NA	NA	NA	NA
	4/6/2006	39.16	12.80	26.36	NA	NA	NA	NA	NA	NA
	9/7/2006	39.16	15.80	23.36	NA	NA	NA	NA	NA	NA
	11/28/2006	39.16	14.10	25.06	NA	NA	NA	NA	NA	NA
	2/26/2007	39.16	10.21	28.95	NA	NA	NA	NA	NA	NA
	5/23/2007	39.16	12.44	26.72	NA	NA	NA	NA	NA	NA
	8/20/2007	39.16	15.08	24.08	NA	NA	NA	NA	NA	NA
	11/15/2007	39.16	15.12	24.04	NA	NA	NA	NA	NA	NA
EX-1	2/21/2008	39.16	8.93	30.23	NA	NA	NA	NA	NA	NA
	5/6/2008	39.16	12.01	27.15	NA	NA	NA	NA	NA	NA
	8/5/2008	39.16	14.15	25.01	NA	NA	NA	NA	NA	NA
	2/27/2007	40.51	9.05	31.46	15,900	1,400	1,190	725	2,880	185
	5/23/2007	40.51	15.37	25.14	NA	NA	NA	NA	NA	NA
	8/20/2007	40.51	17.42	23.09	NA	NA	NA	NA	NA	NA
	11/15/2007	40.51	13.28	27.23	NA	NA	NA	NA	NA	NA
	2/21/2008	40.51	16.91	23.60	NA	NA	NA	NA	NA	NA
	5/6/2008	40.51	17.38	23.13	NA	NA	NA	NA	NA	NA
	8/5/2008	40.51	17.38	23.13	NA	NA	NA	NA	NA	NA

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g ( $\mu\text{g}/\text{L}$ )	Benzene ( $\mu\text{g}/\text{L}$ )	Toluene ( $\mu\text{g}/\text{L}$ )	Ethyl-Benzene ( $\mu\text{g}/\text{L}$ )	Total Xylenes ( $\mu\text{g}/\text{L}$ )	MtBE <sup>2</sup> EPA 8260B ( $\mu\text{g}/\text{L}$ )
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Notes:

<sup>1</sup> Top of casing elevations were re-surveyed to comply with the EDF requirements for electronic reporting of data to the State Water Resources Control Board Database on August 9, 2002.

<sup>2</sup> MtBE was analyzed using the EPA Method 8021B and confirmed using 8260B.

C: Presence confirmed, but confirmation concentration differed by more than a factor of two.

H: Heavier hydrocarbons may have contributed to the quantitation.

NA: Not Analyzed

NA: Not Applicable, Well/Drain did not exist at time of sampling

NC: Not calculated. No top of casing elevation was available for MW-11.

ND, < : Not Detected above laboratory reporting limits.

NM: Not Measured

NS: Not Surveyed.

Y: Sample exhibits fuel pattern which does not resemble standard.

FDC: French drain center riser.

FDE: French drain east riser.

FDW: French drain west riser.

Well MW-4R replaced damaged well MW-4 on April 11, 2005. The first time well MW-4R was monitored was in the Second Quarter 2005

NS: Not surveyed. Well MW-11 was not surveyed due to obstructions surrounding well.

Well EX-1 was installed in the First Quarter 2007 and initially monitored in February 2007.

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data,**  
**and Laboratory Analytical Results for PSP #1 (Effluent) and GAC-1 Samples**  
**3609 International Boulevard, Oakland, California**

Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples				
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)
		<b>2008</b>					
September	9/8/2008	3,973,338	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
June	6/9/2008	3,927,778	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
May	5/21/2008	Polishing drum changed					
March	3/4/2008	3,839,508	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
<b>2007</b>							
October	10/31/2007	3,673,410	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
July	7/27/2007	3,643,880	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
May	5/17/2007	3,590,070	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
April	4/27/2007	3,561,230	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
	4/20/2007	3,546,800	Startup of groundwater extraction from the new extraction well EX-1. As of this date, groundwater is being extracted from three wells at the site (EX-1, West Riser, and Center Riser).				
March	3/16/2007	3,528,090	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
February	2/22/2007	3,510,560	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5
	2/19/2007	3,508,300	lb vessel and 55 gallon polishing vesse				
January	1/16/2007	3,488,140	<0.5 1.37	<50 <50	<0.5 1.68	<2.0 <2.0	<0.5 1.25

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**3609 International Boulevard, Oakland, California**

Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples					
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)	Total Xylenes (ug/L)
<b>2006</b>								
December	12/22/2006	3,469,890	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
November	11/20/2006	3,455,980	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<2.0 <2.0
October	10/18/2006	3,447,850	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
September	9/27/2006	3,441,500	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
August	8/14/2006	3,425,340	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
July	7/24/2006	3,414,800	<0.5 <0.5	<50 <50	<0.5 0.94	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
June	6/15/2006	3,387,940	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					
	6/7/2006	3,379,880	<0.5 2.89	<50 <50	<0.5 5.3	<2.0 <2.0	<0.5 1.24	<1.0 4.91
May	5/18/2006	3,350,260	replaced existing 200 gallon holding tank with newer 200 gallon tank					
May	5/11/2006	3,337,750	<0.5 0.61	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
April	4/19/2006	3,268,110	<0.5 1.66	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
	4/10/2006	3,236,770	lb vessel and 55 gallon polishing vesse					

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data,**  
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**3609 International Boulevard, Oakland, California**

Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples					
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)	
		2006						
March	3/10/2006	3,220,570	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
February	2/10/2006	3,186,590	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
January	1/4/2006	3,122,610	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
2005								
December	12/9/2005	3,081,750	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
November	11/14/2005	3,072,540	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
October	10/17/2005	3,065,260	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
September	9/29/2005	3,060,640	Replaced existing 2000 lb carbon vessel with newer 2000 lb vessel, also replaced 55 gallon polishing vessel					
	9/12/2005	3,055,676	<0.5 <0.5	<50 <50	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
August	8/8/2005	3,042,586	<0.5 0.51	<200 <200	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
July	7/7/2005	3,026,010	<0.5 <0.5	<200 <200	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
June	6/9/2005	3,000,386	<0.5 0.61	<200 <200	<0.5 <0.5	<2.0 <2.0	<0.5 <0.5	<1.0 <1.0
May	5/9/2005	2,971,430	<0.5 <0.5	<200 <200	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0
	5/4/2005	2,964,270	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel totalizer changed at meter reading of 2,189,270					
April	4/4/2005	2,904,500	<0.5 <0.5	<200 <200	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0

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and Laboratory Analytical Results for PSP #1 (Effluent) and GAC-1 Samples**  
**3609 International Boulevard, Oakland, California**

Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples				
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)
		2005					
March	3/21/2005	2,874,170	<0.5 <0.5	<200 <200	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
February	2/14/2005	2,828,000	<5.0 <5.0	<50 <50	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
	2/7/2005	2,819,000					
January	1/19/2005	2,775,000	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel				
	1/3/2005	2,730,480	3.6 3.8	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
2004							
December	12/6/2004	2,667,620	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
November	11/8/2004	2,631,600	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
October	10/13/2004	2,606,420	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
September	9/13/2004	2,594,390	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
August	8/25/2004	2,586,010	55 Gallon Drum Changed Out				
	8/9/2004	2,581,250	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
July	7/13/2004	2,568,830	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
	7/21/2004	2,564,710	55 Gallon Drum Changed Out				
June	6/14/2004	2,549,470	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
May	5/26/2004	2,530,000	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel				
	5/10/2004	2,488,760	Semi Annual Treatment System Meeting With EBMUD				
	5/17/2004	2,518,910	Replaced 55-gallon polishing vessel and restarted the system				
	5/5/2004	2,500,650	and 55 Gallon Drum Changed Out				
	5/3/2004	2,497,350	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
April	4/15/2004	2,436,190	< 5.0 <5.0	< 50 <50	< 5.0 <5.0	< 5.0 <5.0	< 5.0 <5.0

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data,**  
**and Laboratory Analytical Results for PSP #1 (Effluent) and GAC-1 Samples**  
**3609 International Boulevard, Oakland, California**

		Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples					
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)	Total Xylenes (ug/L)
Month	Date		2004					
March	3/17/2004	2,376,200		Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel				
February	2/24/2004	2,276,770	< 5.0 <5.0	< 5.0 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
January	1/27/2004	2,165,220	< 5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
	1/13/2004	2,116,720	< 5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
2003								
December	12/8/2003	2,092,330	< 5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
November	11/17/2003	2,087,670	< 5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
	11/3/2003	2,079,460	< 5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
October	10/13/2003	2,073,060	5.3 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
	10/1/2003	2,072,610		Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel				
September	9/15/2003	2,056,910	<5.0 6	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
	9/2/2003	2,040,040	<5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
August	8/19/2003	2,021,040	<5.0 <5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
July	7/21/2003	1,995,240	< 5.0 40	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
	7/9/2003	1,990,260	< 5.0 36	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
June	6/18/2003	1,978,560		Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel				
	6/10/2003	1,972,780	< 5.0 < 5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
May	5/21/2003	1,951,830	< 5.0 < 5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
	5/1/2003	1,918,270	< 5.0 < 5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0
April	4/11/2003	1,882,440	< 5.0 < 5.0	< 50 < 50	< 5.0 < 50	< 5.0 < 50	< 5.0 < 5.0	< 5.0 < 5.0

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data,  
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**3609 International Boulevard, Oakland, California**

Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples						
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)	Total Xylenes (ug/L)	
<b>2003</b>									
March	3/19/2003	1,846,490	< 5.0 < 5.0	< 50 < 50	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	
February	2/25/2003 2/19/2003	1,804,960 1,791,720		replaced 55-gallon polishing vessel with new 55 gallon carbon drum					
January	1/27/2003 1/2/2003	1,733,500 1,675,600	< 5.0 < 5.0 < 5.0 < 5.0	< 50 < 50 < 50 < 50	< 5.0 < 5.0 < 5.0 < 5.0				
<b>2002</b>									
December	12/10/2002	1,672,870	< 5.0 < 5.0	< 50 < 50	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	
November	11/22/2002 11/13/2002 11/7/2002	1,668,650 1,664,780 1,663,880	< 5.0 < 5.0	< 50 < 50	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	
October	10/16/02 <sup>3</sup>	1,661,590	< 310 < 0.5	2,000 Y Z < 50	< 310 < 0.5	< 310 < 0.5	< 310 < 0.5	< 310 < 0.5	
September	9/19/2002	1,653,600	< 5 < 5	< 50 < 50	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	
August	8/23/2002	1,641,650	1 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	
July	7/23/2002	1,632,834	<5.0 < 5.0	< 50 < 50	<5.0 < 5.0	<5.0 < 5.0	<5.0 < 5.0	<5.0 < 5.0	
June	6/24/2002	1,610,050	1.7 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	
May	5/30/2002 5/20/2002 5/8/2002 5/1/2002	1,571,630 1,548,000 1,538,850 1,529,650	< 0.5 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	
April	4/24/2002 4/1/2002	1,528,740 1,478,500	< 0.5 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	
				removed newly installed compressor, installed another compressor installed new compressor installed new 55 gallon GAC Vessel					
				repaired valve plate assembly on compressor					

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data,**  
**and Laboratory Analytical Results for PSP #1 (Effluent) and GAC-1 Samples**  
**3609 International Boulevard, Oakland, California**

Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples				
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)
		<b>2002</b>					
March	3/25/2002	1,478,420					
	3/18/2002	NR					
	3/14/2002	1,478,330					
			change-out on treatment system piston on compressor compressor not building up pressure				
February	2/27/2002	1,449,830	< 0.5 1.1	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
January	1/22/2002	1,381,370	< 2.0 < 2.0	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
<b>2001</b>							
December	12/12/2001	1,311,340	ND ND	ND ND	ND ND	ND ND	ND ND
November	11/2/2001	1,272,660	ND 0.6	ND ND	ND ND	ND ND	ND ND
September	9/28/2001	NA	ND ND	ND ND	ND ND	ND ND	ND ND
August	8/22/2001	1,243,100	ND ND	ND ND	ND ND	ND ND	ND ND
July	7/26/2001	1,227,270	ND ND	ND ND	ND ND	ND ND	ND ND
	7/11/2001	1,226,730	NA NA	NA NA	NA NA	NA NA	NA NA
			NA NA	NA NA	NA NA	NA NA	NA NA
June	6/29/2001	1,224,600	NA ND	NA ND	NA ND	NA ND	NA ND
	6/26/2001	NR					
	6/16/2001	1,216,580	NA NA	NA NA	NA NA	NA NA	NA NA
			installed new compressor compressor not working, repaired compressor				
	6/7/2001	1,216,580	NA NA	NA NA	NA NA	NA NA	NA NA
May	5/30/2001	1,205,198	NA NA	NA NA	NA NA	NA NA	NA NA
	5/23/2001	1,194,390	NA NA	NA NA	NA NA	NA NA	NA NA
	5/17/2001	1,182,360	ND ND	ND ND	ND ND	ND ND	ND ND
	5/10/2001	1,166,850	NA NA	NA NA	NA NA	NA NA	NA NA
	5/5/2001	1,151,600	NA NA	NA NA	NA NA	NA NA	NA NA
April	4/28/2001	1,135,690	NA NA	NA NA	NA NA	NA NA	NA NA
	4/21/2001	1,113,570	NA NA	NA NA	NA NA	NA NA	NA NA
	4/11/2001	1,082,700	NA ND	ND ND	ND ND	ND ND	ND ND
	4/6/2001	1,065,540	NA NA	NA NA	NA NA	NA NA	NA NA

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Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples					
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)	Total Xylenes (ug/L)
			2001					
March	3/29/2001	1,036,330	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	3/21/2001	1,036,070	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	3/17/2001	1,035,100	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	3/13/2001	1,032,500	ND NA	ND NA	ND NA	ND NA	ND NA	ND NA
	3/2/2001	996,520	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	3/1/2001	NR	system re-started after carbon change-out					
February	2/28/2001	NR	performed on GAC-1, washed algae from holding tank, cleaned 2000 lb GAC, re-started system for maintenance and cleaning.					
January	1/29/2001	957,880	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
2000								
December	12/5/2000	883,000	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
November	11/24/2000	NR	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	11/1/2000	842,000	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
October	10/1/2000	809,000	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
August	8/27/2000 8/24/2000	781,000 778,000	ND	ND	ND	ND	ND	ND
totalizer changed at meter reading of 775,000								
July	7/26/2000	726,000	ND	ND	ND	ND	ND	ND
	7/19/2000	718,000	ND	ND	ND	ND	ND	ND
	7/13/2000	712,000	ND	ND	ND	ND	ND	ND
	7/7/2000	706,000	ND	ND	ND	ND	ND	ND

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Month	Date	Effluent Totalizer Reading (gallons)	Lab Results For PSP #1 <sup>1</sup> and GAC-1 Samples					
			MtBE <sup>2</sup> (ug/L)	TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- benzene (ug/L)	Total Xylenes (ug/L)
<b>2000</b>								
June	6/29/2000	700,000	ND	ND	ND	ND	ND	ND
	6/21/2000	682,220	ND	ND	ND	ND	ND	ND
	6/16/2000	669,720	ND	ND	ND	ND	ND	ND
	6/10/2000	651,200	ND	ND	ND	ND	ND	ND
May	5/31/2000	629,000	ND	ND	ND	ND	ND	ND
	5/23/2000	603,700	ND	ND	ND	ND	ND	ND
	5/18/2000	570,000	ND	ND	ND	ND	ND	ND
	5/10/2000	530,400	ND	ND	ND	ND	ND	ND
April	4/30/2000	488,300	ND	ND	ND	ND	ND	ND
	4/18/2000	485,300	ND	ND	ND	ND	ND	0.51
	compressor stopped, system shut down until April 29, 2000							
	4/10/2000	440,200	ND	ND	ND	ND	ND	ND
	4/4/2000	390,100	ND	ND	ND	ND	ND	ND
	4/2/2000	NR	performed a carbon change-out on GAC-1					
March	3/31/2000	NR	replaced GAC-2 with a special GAC designed for removal of MtBE					
	3/24/2000	388,000	ND	ND	ND	ND	ND	ND
	3/17/2000	357,100	ND	ND	ND	ND	ND	ND
	3/10/2000	329,000	ND	ND	ND	ND	ND	ND
	3/3/2000	300,000	transfer overheated, repaired pump, restarted system 3/6/00					
February	2/25/2000	274,000	ND	ND	ND	ND	ND	ND
	2/18/2000	233,000	ND	ND	ND	ND	ND	ND
	2/11/2000	190,000	ND	ND	ND	ND	ND	ND
	2/4/2000	160,800	ND	ND	ND	ND	ND	ND
January	1/28/2000	130,600	ND	ND	ND	ND	ND	ND
	1/21/2000	103,435	ND	ND	ND	ND	ND	ND
	1/17/2000	NR	placed with 2,000 lb GAC unit					
	1/14/2000	83,500	185	ND	ND	ND	ND	ND
<b>1999</b>								
December	12/23/1999	51,680	1486	NA	ND	ND	ND	ND
	12/16/1999	30,450	963	NA	ND	ND	ND	ND
	12/9/1999	9,000	230	ND	ND	ND	ND	ND
Pumping began on December 6, 1999								

Notes:

1 The designator "Effluent" used on sampling and laboratory documents refers to samples collected from PSP #1.

2 MTBE was analyzed using EPA Method 8260B, prior to the September 2003. After September 2003, MtBE was only analyzed by EPA Method 8021B.

3 Lab data as shown for Oct. 2002 is erroneous data. During lab analysis a high detection of 2-Butanone was detected in only the effluent sample. The influent sample for 2-Butanone was at only 20 ppb. This caused a high dilution factor causing a high non-detectable value. The high TPH-g value was misrepresentative due to the Y and Z flags.

ND, < : Not Detected above laboratory reporting limits

NA: Not Analyzed

NR: Not recorded. Totalizer reading not recorded.

Y: Sample exhibits fuel pattern which does not resemble standard

Z: Sample exhibits unknown single peak or peaks

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft^3/min)	Time Elapsed (Hours)	Air Flow (Liters)	Air Flow (ft^3)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent					
<b>2000</b>								
7/24/2000	5:00 PM	394	0	85	0.0	0	0	0.00
7/25/2000	5:15 PM	38	2	95	24.3	3,911,768	138,225	1.35
7/26/2000	5:05 PM	207	1	80	24.0	3,260,160	115,200	6.15
7/27/2000	9:00 AM	160	5	92	16.0	2,499,456	88,320	3.64
7/28/2000	4:30 PM	141	7	87	31.5	4,653,369	164,430	5.98
7/29/2000	1:30 PM	225	8	85	21.0	3,030,930	107,100	6.21
7/30/2000	9:00 AM	226	12	85	19.5	2,814,435	99,450	5.79
7/31/2000	3:00 PM	141	5	85	30.0	4,329,900	153,000	5.56
8/1/2000	5:00 PM	135	4	80	26.0	3,531,840	124,800	4.34
8/2/2000	4:00 PM	80	4	80	23.0	3,124,320	110,400	2.28
8/3/2000	5:00 PM	60	5	85	25.0	3,608,250	127,500	1.97
8/4/2000	3:00 PM	57	4	85	22.0	3,175,260	112,200	1.65
8/5/2000	2:00 PM	97	8	87	23.0	3,397,698	120,060	3.00
8/6/2000	12:00 PM	114	8	80	22.0	2,988,480	105,600	3.10
8/7/2000	12:00 PM	93	9	85	24.0	3,463,920	122,400	2.93
8/8/2000	4:30 PM	152	10	85	28.5	4,113,405	145,350	5.70
8/10/2000	10:00 AM	173	1	85	41.5	5,989,695	211,650	9.44
8/11/2000	7:00 AM	78	4	70	21.0	2,496,060	88,200	1.77
8/12/2000	9:00 AM	100	6	70	26.0	3,090,360	109,200	2.82
8/13/2000	5:00 PM	107	9	70	32.0	3,803,520	134,400	3.71
8/14/2000	12:30 PM	122	5	70	19.5	2,317,770	81,900	2.58
8/15/2000	6:00 PM	103	12	70	29.5	3,506,370	123,900	3.29
8/16/2000	12:30 PM	112	0	70	18.5	2,198,910	77,700	2.24
8/18/2000	9:00 AM	90	0	75	44.5	5,667,075	200,250	4.65
8/21/2000	12:00 PM	74	5	80	75.0	10,188,000	360,000	6.87
8/24/2000	12:00 PM	68	13	80	72.0	9,780,480	345,600	6.06
8/27/2000	12:30 PM	68.5	2	80	72.5	9,848,400	348,000	6.15
8/31/2000	1:30 PM	52	6	80	97.0	13,176,480	465,600	6.24

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		Influent	Effluent					
<b>2000</b>								
9/4/2000	12:30 PM	54	5	80	95.0	12,904,800	456,000	6.35
9/7/2000	12:00 PM	55	3	80	71.5	9,712,560	343,200	4.87
9/11/2000	4:30 PM <sup>2</sup>	141	0	80	100.5	13,651,920	482,400	17.54
9/14/2000	9:30 AM	56	5	80	65.0	8,829,600	312,000	4.50
9/18/2000	2:00 PM	46	9.5	80	100.5	13,651,920	482,400	5.72
9/18/2000	4:30 PM <sup>3</sup>	34	0	80	2.5	339,600	12,000	0.11
9/21/2000	4:30 PM	43	1	80	72.0	9,780,480	345,600	3.83
9/25/2000	5:30 PM	55	6	80	97.0	13,176,480	465,600	6.60
9/28/2000	9:00 AM	47.5	7.5	80	63.5	8,625,840	304,800	3.73
10/1/2000	1:00 PM	38.5	6	80	76.0	10,323,840	364,800	3.62
10/5/2000	3:00 PM <sup>4</sup>	28.5	3	80	98.0	13,312,320	470,400	3.46
10/5/2000	5:00 PM	36	0	80	2.0	271,680	9,600	0.09
10/8/2000	3:00 PM	28.5	3	80	70.0	9,508,800	336,000	2.47
10/14/2000	3:00 PM	24.5	2.5	80	144.0	19,560,960	691,200	4.37
10/17/2000	2:00 PM	36.5	3.5	80	71.0	9,644,640	340,800	3.21
10/20/2000	8:30 AM	18.5	3.5	80	66.5	9,033,360	319,200	1.52
10/25/2000	2:00 PM	38	3.7	80	125.5	17,047,920	602,400	5.90
10/29/2000	10:00 AM	35	4	80	93.0	12,633,120	446,400	4.03
11/2/2000	4:00 PM	30.5	4	80	102.0	13,855,680	489,600	3.85
11/7/2000	4:00 PM	30	6	80	120.0	16,300,800	576,000	4.46
11/19/2000	12:00 PM	92.7	5.5	80	284.0	38,578,560	1,363,200	32.57
11/24/2000	1:30 PM	25	6.5	80	121.5	16,504,560	583,200	3.76
11/29/2000	3:00 PM	14.5	3.5	80	121.5	16,504,560	583,200	2.18
12/4/2000	4:30 PM	10.7	1	80	121.5	16,504,560	583,200	1.61
12/13/2000	3:30 PM	24	3	80	263.0	35,725,920	1,262,400	7.81
12/28/2000	2:30 PM	10	6	85	359.0	51,814,470	1,830,900	4.72

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Date	Time	PID (ppmv)		Flow Rate (ft^3/min)	Time Elapsed (Hours)	Air Flow (Liters)	Air Flow (ft^3)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent					
<b>2001</b>								
1/4/2001 <sup>5</sup>	2:00 PM	8.7	3.7	85	167.5	24,175,275	854,250	1.92
8/8/2001	3:00 PM	217	0	85	0.5	72,165	2,550	0.14
9/6/2001	12:00 PM	85	0	85	693.0	100,020,690	3,534,300	77.45
9/13/2001	4:00 PM	186	8	85	172.0	24,824,760	877,200	42.07
9/18/2001	3:00 PM	184	9	85	119.0	17,175,270	606,900	28.79
9/21/2001 <sup>6</sup>	--	--	--	--	NC	NC	NC	NC
10/12/01 <sup>7</sup>	--	--	--	--	NC	NC	NC	NC
10/23/2001	5:00 PM	114	58	87	0.5	73,863	2,610	0.08
10/25/01 <sup>4</sup>	3:00 PM	133	0	85	46.0	6,639,180	234,600	8.04
10/29/2001 <sup>8</sup>	1:20 PM	569	0	85	94.5	13,639,185	481,950	70.70
11/7/2001	3:30 PM	177	0	87	218.0	32,204,268	1,137,960	51.93
11/16/2001	3:00 PM	117	0	87	215.5	31,834,953	1,124,910	33.93
11/21/01 <sup>9</sup>	12:00 PM	85	72	87	117.0	17,283,942	610,740	13.38
<b>2002</b>								
2/15/02 <sup>10</sup>	4:30 PM	49	0	80	0.5	67,920	2,400	0.03
2/16/2002	3:45 PM	50	0	80	23.3	3,158,280	111,600	1.44
2/21/2002	4:00 PM	37	4	80	120.3	16,334,760	577,200	5.51
2/27/2002	10:30 AM	11	0	83	138.5	19,519,359	689,730	1.96
3/7/02 <sup>11</sup>	12:20 PM	10		80	194.0	26,352,960	931,200	2.40
6/12/2002 <sup>12</sup>	4:15 PM	53	2	75	NA	NA	NA	NA
6/17/2002	11:00 AM	28	2	80	120.0	16,306,560	576,204	4.16
6/24/2002	11:20 AM	24	3.1	80	168.3	22,866,400	808,000	5.00
7/5/2002	1:25 PM	20	5	80	266.0	36,133,440	1,276,800	6.58
7/11/2002	3:30 PM	26	8.0	80	146.0	19,832,640	700,800	4.70
7/23/2002	10:10 AM	28	7.5	83	282.8	39,849,089	1,408,095	10.16
8/9/2002	12:20 PM	7.5	0	80	410.3	55,728,360	1,969,200	3.81
8/15/2002 <sup>11</sup>	3:00 PM	7.0	1	80	146.5	19,900,560	703,200	1.27
8/23/2002 <sup>13</sup>	3:20 PM	NC	NC	NC	NC	NC	NC	NC
8/26/2002	11:15 AM	14.0	2.0	80	71.0	9,644,640	340,800	1.23
9/11/2002	10:10 AM	34.4	0	80	383.0	52,020,588	1,838,183	16.30
9/19/2002	10:55 AM	8.8	1.1	80	192.8	26,183,160	925,200	2.10
9/25/2002	10:30 AM	18.8	1.8	80	143.5	19,493,040	688,800	3.34

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		Influent	Effluent					
<b>2002</b>								
10/2/2002	8:10 AM	17.1	2.5	80	165.70	22,508,688	795,360	3.51
10/9/2002		PID malfunction		80	NC	NC	NC	NC
10/16/2002	1:45 PM	17.0	4.0	80	341.50	46,389,360	1,639,200	7.18
10/24/2002	10:00 AM	16.5	6.4	80	188.25	25,571,880	903,600	3.84
11/1/2002	10:00 AM	21.1	0.0	85	192.00	27,711,360	979,200	5.33
11/6/2002	10:12 AM	PID malfunction		87	NC	NC	NC	NC
11/7/2002	11:00 AM	17.5	0.0	85	24.75	3,572,168	126,225	0.57
11/13/2002	11:30 AM	15.0	0.0	85	144.50	20,855,685	736,950	2.85
11/22/2002	2:30 PM	6.6	0.0	80	219.00	29,748,960	1,051,200	1.79
11/22/2002 system shut-down due to rainy season and low influent readings								
<b>2003</b>								
5/9/2003	10:30 AM	0.1	0.0	82	0.5	69,618	2,460	0.00
5/12/2003	10:30 AM	0.4	0.3	85	72.00	10,391,760	367,200	0.04
5/21/2003	11:00 AM	2.2	2.2	83	216.50	30,512,211	1,078,170	0.61
6/4/2003	10:30 AM	2.5	0.1	82	335.50	46,713,678	1,650,660	1.06
6/10/2003	10:30 AM	2.2	0.08	82	144.00	20,049,984	708,480	0.40
6/16/2003	12:15 PM	2.1	0.07	82	146.25	20,363,265	719,550	0.39
6/24/2003	4:55 PM	2.6	0.08	82	196.75	27,394,683	968,010	0.65
6/30/2003	11:30 AM	2.2	0.1	82	138.50	19,284,186	681,420	0.39
7/16/2003	12:00 PM	2.2	0.22	82	384.50	53,536,242	1,891,740	1.07
7/21/2003	10:50 AM	2.1	0.21	82	119.00	16,569,084	585,480	0.32
7/28/2003	11:15 AM	2.2	0.22	82	168.25	23,426,457	827,790	0.47
8/11/2003	12:15 PM	2.1	0.21	82	337.00	46,922,532	1,658,040	0.90
8/19/2003	10:05 AM	2.1	0.22	82	190.00	26,454,840	934,800	0.51
8/25/2003	11:30 AM	2.2	0.23	81	145.50	20,011,779	707,130	0.40
9/2/2003	10:50 AM	2.1	0.21	80	191.50	26,013,360	919,200	0.50
9/8/2003	2:10 PM	9.1	3.19	83	147.30	20,759,578	733,554	1.72
9/11/2003	10:00 AM				All 4 SVE carbon drums changed-out			
9/22/2003	1:30 PM	7	0.2	88	334.25	49,944,972	1,764,840	3.19

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		Influent	Effluent					
<b>2003</b>								
10/1/2003	10:30 AM	6.5	0.2	85	213.00	30,742,290	1,086,300	1.82
10/6/2003	11:00 AM	7	0.3	85	120.50	17,391,765	614,550	1.11
10/13/2003	11:15 AM	5	0.2	85	168.25	24,283,523	858,075	1.11
10/29/2003	10:00 AM	2.4	0	85	382.75	55,242,308	1,952,025	1.21
11/3/2003	11:30 AM	3	0	85	121.50	17,536,095	619,650	0.48
11/10/2003	11:10 AM	3.5	0	85	167.67	24,199,330	855,100	0.77
11/17/2003	1:50 PM	4.1	0	85	170.70	24,637,131	870,570	0.92
11/24/2003	11:00 AM	3.8	0	85	165.20	23,843,316	842,520	0.83
11/24/2003	system shut-down due to rainy season and low influent readings							
<b>2004</b>								
4/5/2004	1:00 PM	5.6	0.11	85	0.5	72165	2550	0.004
4/12/2004	10:30 AM	6.5	0.2	83	165.5	23,324,577	824,190	1.38
4/20/2004	12:00 PM	7.1	0.9	84	193.5	27,599,292	975,240	1.79
4/23/2004	11:00 AM	7.2	2.3	80	71	9,644,640	340,800	0.63
5/3/2004	12:00 PM	7.1	3.4	80	241	32,737,440	1,156,800	2.12
5/5/2004	11:00 PM	All 4 SVE carbon drums changed-out						
5/17/2004	12:00 PM	2.7	0.8	82	336	46,783,296	1,653,120	1.15
5/26/2004	11:00 AM	3.8	0.5	82	215	29,935,740	1,057,800	1.04
6/1/2004	1:00 PM	3.6	0.9	82	146	20,328,456	718,320	0.67
6/7/2004	11:50 AM	3.2	0	82	142.75	19,875,939	702,330	0.58
6/14/2004	11:50 AM	10.9	0	86	168	24,532,704	866,880	2.44
6/21/2004	10:50: AM	13.5	0	83	167	23,535,978	831,660	2.89
6/28/2004	11:50 AM	10.9	0.5	85	169	24,391,770	861,900	2.42
7/2/2004	11:30 AM	8.7	0	85	95.8	13,826,814	488,580	1.10
7/13/2004	2:00 PM	9.1	0.22	85	266.5	38,463,945	1,359,150	3.19
7/21/2004	12:00 PM	8.9	0.5	85	190	27,422,700	969,000	2.22
7/26/2004	11:50 AM	8.5	0.4	85	119.5	17,247,435	609,450	1.34
8/2/2004	11:30 AM	4.9	0.1	85	167.8	24,218,574	855,780	1.08
8/9/2004	11:50 AM	5.6	0.2	85	168.3	24,290,739	858,330	1.24
8/16/2004	12:00 PM	6	0.4	85	168.1	24,261,873	857,310	1.33
8/24/2004	11:50 AM	6.2	1.2	85	191.9	27,696,927	978,690	1.56
8/30/2004	11:30 AM	6	0.4	85	143.66	20,734,448	732,666	1.13
9/7/2004	1:05 PM	5.5	0.8	85	193.5	27,927,855	986,850	1.40
9/13/2004	12:05 PM	5.3	0.9	85	143	20,639,190	729,300	1.00
9/20/2004	11:08 AM	7	2.9	85	167	24,103,110	851,700	1.54
9/27/2004	2:50 PM	6.5	2.1	85	171.75	24,788,678	875,925	1.47

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft^3/min)	Time Elapsed (Hours)	Air Flow (Liters)	Air Flow (ft^3)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent					
<b>2004</b>								
10/4/2004	11:30 AM	6.9	3	85	164.55	23,749,502	839,205	1.49
10/13/2004	10:30 AM	6.5	2.9	85	215	31,030,950	1,096,500	1.84
10/18/2004	2:30 PM	6	1.5	85	124	17,896,920	632,400	0.98
10/28/2004	2:00 PM	3.1	0.9	85	239.5	34,567,035	1,221,450	0.98
10/28/2004 system shut-down due to rainy season and low influent readings								
<b>2005</b>								
4/11/2005	system re-started, all four vapor phase carbon drums replaced with new carbon							
	10:50 AM	6.5	0.8	85	167.83	24,223,481	855,953	1.43
4/25/2005	5:30 PM	6	0.7	85	174.33	25,161,626	889,103	1.38
5/4/2005	11:20 AM	0.4	0	85	209.83	30,285,341	1,070,153	0.11
5/9/2005	11:00 AM	1	0.4	85	119.67	17,271,538	610,302	0.16
5/16/2005	10:15 AM	3	0	85	167.25	24,139,193	852,975	0.66
5/23/2005	11:05 AM	0.4	0	90	168.83	25,801,110	911,700	0.09
6/3/2005	3:30 PM	0.2	0	90	268.48	41,029,114	1,449,792	0.07
6/9/2005	3:00 PM	0.2	0	90	143.50	21,929,670	774,900	0.04
6/15/2005	2:15 PM	1	0	85	143.25	20,675,273	730,575	0.19
6/20/2005	12:00 PM	0.6	0	88	117.75	17,594,676	621,720	0.10
6/26/2005	12:00 PM	0.5	0	85	144.00	20,783,520	734,400	0.09
7/7/2005	2:45 PM	0.2	0	90	266.75	40,764,735	1,440,450	0.07
7/11/2005	3:00 PM	0.3	0	90	96.25	14,708,925	519,750	0.04
7/18/2005	1:00 PM	1	0	85	166.00	23,958,780	846,600	0.22
7/25/2005	12:00 PM	1.5	0	87	167.00	24,670,242	871,740	0.34
8/1/2005	1:30 PM	1	0	85	169.50	24,463,935	864,450	0.22
8/8/2005	11:50 AM	0.7	0	80	166.40	22,603,776	798,720	0.14
8/15/2005	1:30 PM	0.9	0	83	169.60	23,902,406	844,608	0.20
8/24/2005	12:00 PM	0.8	0	85	214.50	30,958,785	1,093,950	0.23
8/29/2005	11:45 AM	0.7	0	85	119.75	17,283,518	610,725	0.11
9/6/2005	12:15 PM	0.8	0	85	192.50	27,783,525	981,750	0.20
9/12/2005	12:10 PM	1.2	0	85	144.00	20,783,520	734,400	0.23
9/20/2005	11:30 AM	1.1	0	84	192.60	27,470,923	970,704	0.28

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
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**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft^3/min)	Time Elapsed (Hours)	Air Flow (Liters)	Air Flow (ft^3)	Mass Removed <sup>1</sup> (Pounds)						
		Influent	Effluent											
<b>2005</b>														
10/6/2005 3:00 PM														
10/14/2005	3:30 PM	33	5	83	192.5	27,129,795	958,650	8.16						
10/17/2005	12:00 PM	33	5	86	68.5	10,002,918	353,460	3.01						
10/28/2005	11:00 AM	77	1.5	83	263	37,065,642	1,309,740	26.00						
11/1/2005	9:40 AM	33	7	86	94.75	13,836,153	488,910	4.16						
11/3/2005	3:30 PM	33	7	87	54	7,977,204	281,880	2.40						
11/9/2005	3:15 PM	all 4 vapor phase carbon drums replaced with new carbon drums												
11/14/2005	11:30 AM	0.3	0	89	260	39,291,720	1,388,400	0.11						
11/22/2005	2:40 PM	0.8	0	88	195	29,137,680	1,029,600	0.21						
11/17/2005-11/23/2005														
3 new vapor wells installed onsite														
<b>2006</b>														
1/6/2006	10:00 AM	System shut-down due to rainy conditions												
2/22/2006-3/6/2006														
4/8/2006		Existing vacuum eductor, which was built and installed in 2000, was rebuilt. To reduce the noise level, foam was placed around the vacuum eductor to act as a noise suppressant												
4/14/2006	2:00 PM	system re-started, all 4 vapor phase carbon drums replaced with new carbon drums												
4/14/2006	2:30 PM	33	0	85	0.5	72,165	2,550	0.02						
5/18/2006	12:00 PM	14	0	87	813.5	120,175,101	4,246,470	15.33						
5/31/2006	12:30 PM	15	2	83	312.5	44,041,875	1,556,250	6.02						
6/7/2006	10:00 AM	17.7	5.8	85	165.5	23,886,615	844,050	3.85						
6/14/2006	10:00 AM	8.2	0	89	168	25,388,496	897,120	1.90						
6/19/2006	2:30 PM	220	0	88	124.5	18,603,288	657,360	37.29						
6/22/2006	11:00 AM	18	0	85	68.5	9,886,605	349,350	1.62						
7/6/2006	2:45 PM	3.2	0	80	339.75	46,151,640	1,630,800	1.35						
7/24/2006	2:00 PM	Additional vacuum eductor installed in series with the existing blower												
8/2/2006	11:00 AM	25	0	65	644.25	71,105,873	2,512,575	16.19						
8/9/2006	11:30 AM	7.3	3.5	110	168.5	31,472,430	1,112,100	2.09						
8/14/2006	12:00 PM	8	2.3	100	120.5	20,460,900	723,000	1.49						
8/25/2006	12:30 PM	2	0	100	264.5	44,912,100	1,587,000	0.82						
8/28/2006	2:30 PM	2.5	0	110	74.5	13,915,110	491,700	0.32						
9/7/2006	2:30 PM	1.4	0	105	240	42,789,600	1,512,000	0.55						
9/13/2006	12:45 PM	1.6	0	105	142.25	25,361,753	896,175	0.37						
9/22/2006	3:00 PM	1.3	0	115	219.25	42,812,948	1,512,825	0.51						
9/27/2006	2:15 PM	5.6	1.1	110	119.25	22,273,515	787,050	1.14						

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft <sup>3</sup> /min)	Time Elapsed (Hours)	Air Flow (Liters)	Air Flow (ft <sup>3</sup> )	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent					
<b>2006</b>								
10/4/2006	11:15 AM	5.9	1.6	105	165	29,417,850	1,039,500	1.58
10/10/2006	11:30 AM	0.9	0	105	144.25	25,718,333	908,775	0.21
10/18/2006	3:15 PM	0.9	0	105	195.75	34,900,268	1,233,225	0.29
10/27/2006	10:00 AM	303	0	60	210.75	21,471,210	758,700	59.27
11/1/2006	10:00 AM	0.2	0	90	120	18,338,400	648,000	0.03
11/7/2006	12:00 PM	0.2	0	80	146	19,832,640	700,800	0.04
11/7/2006	12:00 PM	System shut-down due to rainy conditions						
<b>2007</b>								
<b>5/23/2007</b>		System Re-started						
5/23/2007	10:45 AM	31.3	0	85	1	144,330	5,100	0.04
5/29/2007	11:00 AM	11.2	1.7	80	144.25	19,594,920	692,400	2.00
6/11/2007	12:00 PM	8.1	1.1	80	313	42,517,920	1,502,400	3.14
6/20/2007	3:00 PM	1.4	0.5	75	219	27,889,650	985,500	0.36
7/3/2007	12:00 PM	1.5	0.4	75	1	127,350	4,500	0.00
7/12/2007	12:00 PM	8	0.3	80	144.25	19,594,920	692,400	1.43
7/27/2007	9:30 AM	8.5	0.4	85	313	45,175,290	1,596,300	3.50
8/7/2007	3:30 PM	14	0.9	105	219	39,045,510	1,379,700	4.98
8/21/2007	2:00 PM	16.5	0	110	1	186,780	6,600	0.03
9/7/2007	12:30 PM	12.2	0.1	105	144.25	25,718,333	908,775	2.86
9/21/2007	10:00 AM	1.9	0.3	84	313	44,643,816	1,577,520	0.77
9/28/2007	11:00 AM	1.9	0.3	85	219	31,608,270	1,116,900	0.55
<b>Total Mass of Petroleum Hydrocarbons Removed =</b>								<b>967.20</b>
<b>Average Daily Removal Rate (pounds / day)=</b>								<b>0.37</b>

Notes:

<sup>1</sup> The representative molecular weight of hydrocarbons was assumed to be 150 gram/mole and use the measured temperature of Vapor (25°C) in converting ppm-v to ppm on mass basis.

<sup>2</sup> System accidentally shut down from main box, readings taken 30 minutes after startup.

<sup>3</sup> GAC Replaced

<sup>4</sup> GAC-1 removed, new GAC installed at effluent end

<sup>5</sup> SVE System turned off for rainy season due to low influent concentration

<sup>6</sup> system down, hoses disconnected and GAC moved for replacement

<sup>7</sup> system down for electrical repair

<sup>8</sup> Carbon change-out of three drums, moved new effluent drum on 10/25/01 to GAC-

<sup>9</sup> system shut-down due to high effluent value

<sup>10</sup> System re-started (since November 21, 2001), installed new 4-55 gallon vapor phase carbon vessels, repaired blow

<sup>11</sup> System was shut-down due to low influent reading

<sup>12</sup> System was restarted on 6/12/02

<sup>13</sup> System was re-started but no readings were taken

Data for October 28, 2005 based on lab data

NC: Not Calculated

Calculations

Airflow: Flowrate (ft<sup>3</sup>/min)\* 60 min \* Time Elapsed (hrs)\* 28.3 liters/ft<sup>3</sup>

Mass Removed: Time Elapsed (hrs) \* 60 min\* Flowrate (ft<sup>3</sup>/min)\* (28.3 m<sup>3</sup>/ft<sup>3</sup>)\*

((PID reading \* (102 grams TPH-g /mole)\*(1 mole / 24.4 L))\*(1/1000 m<sup>3</sup>)) \* (1 lb/454 grams)

**Table 4**

**September 2008 MPE Event  
Operational Data**

3609 International Boulevard  
Oakland, California

DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (°F)	WELL FIELD VAPOR FLOW RATE (scfm)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
9/8/2008	1100									
	1200	4,110	18.1	1,646	92	122	30	21.7	0	begin at MW-1, MW-3, MW-6; groundwater samples collected
	1300	3,360	17.9	1,597	93	123	30	21.6	140	
	1400	3,150	18.7	1,576	99	119	20	21.9	279	
	1500	3,270	19.5	1,580	101	111	10	22.4	420	
	1700	3,140	20.3	1,573	103	103	0	22.9	703	
	1800	3,230	20.1	1,562	103	103	0	22.9	791	
	800	2,250	19.5	1,465	109	109	0	22.5	2,496	
	900	2,230	19.8	1,459	109	109	0	22.5	2,621	
	1000	2,280	19.6	1,464	111	111	0	22.4	2,731	
9/9/2008	1100	2,240	19.5	1,455	109	109	0	22.5	2,851	In = 2,250; Eff = 6
	1200	2,210	19.6	1,454	109	109	0	22.5	2,941	
	1300	2,180	19.6	1,458	109	109	0	22.5	3,076	
	1400	2,100	19.5	1,454	109	109	0	22.5	3,165	
	1500	2,070	19.5	1,456	111	111	0	22.4	3,296	
	1600	2,030	19.4	1,455	109	109	0	22.5	3,384	
	1630	1,980	19.4	1,456	111	111	0	22.4	3,431	
	800	1,544	19.2	1,465	111	111	0	22.4	5,053	
	900	1,500	19.2	1,468	111	111	0	22.4	5,176	
	1000	1,580	19	1,452	112	112	0	22.3	5,301	
9/10/2008	1100	1,565	19.2	1,454	112	112	0	22.3	5,391	
	1200	1,548	19.2	1,463	111	111	0	22.4	5,481	

**Table 4**
**September 2008 MPE Event  
Operational Data**

 3609 International Boulevard  
 Oakland, California

DATE	TIME	PID (ppmv)	WELL MANIFOLD VACUUM (In of Hg)	OXIDIZER TEMPERATURE (°F)	WELL FIELD VAPOR FLOW RATE (scfm)	TOTAL SYSTEM VAPOR FLOW RATE (scfm)	DILUTION AIR FLOW RATE (scfm)	SYSTEM (BLOWER) VACUUM (In of Hg)	SYSTEM TOTALIZER READING (gallons)	COMMENTS
9/11/2008	1300	1,518	19.2	1,449	111	111	0	22.4	5,615	
	1400	1,458	19.4	1,463	112	112	0	22.3	5,701	
	1500	1,440	19.1	1,458	114	114	0	22.2	5,821	
	1600	1,428	19.1	1,460	114	114	0	22.2	5,921	
	1630	1,407	19.2	1,455	114	114	0	22.2	5,959	
	800	1,145	19	1,447	114	114	0	22.2	7,491	
	900	1,136	19.2	1,468	116	116	0	22.1	7,621	
	1000	1,131	19.2	1,450	116	116	0	22.1	7,731	
	1100	1,135	19	1,445	116	116	0	22.1	7,817	
	1200	1,100	19.2	1,466	114	114	0	22.2	7,906	
	1300	1,090	19	1,472	117	117	0	22	7,999	
	1400	1,080	19	1,452	117	117	0	22	8,121	
	1500	1,050	19	1,475	117	117	0	22	8,211	
	1600	1,050	19	1,470	117	117	0	22	8,301	
	1630	1,049	19	1,462	116	116	0	22.1	8,347	
9/12/2008	730	957	19	1,455	117	117	0	22	9,807	
	830	940	18.9	1,462	117	117	0	22	9,895	
	930	933	19	1,413	117	117	0	22	9,984	
	1030	934	19	1,402	117	117	0	22	10,071	
	1130	924	18.9	1,405	117	117	0	22	10,201	
	1230	922	19	1,403	117	117	0	22	10,291	
	1330	918	19	1,404	117	117	0	22	10,397	
	1430	916	19	1,403	117	117	0	22	10,480	
	1600	1,063	19.4	1,395	108	108	0	22.6	10,616	end at MW-1, MW-3, and MW-6; Post groundwater samples collected

Totalizer readings = 10,616 gallons

Total time of test = 6,000 minutes = 100 hours

## Notes

ppmv parts per million vapor

In of Hg inches of mercury

In of H<sub>2</sub>O inches of water

°F degrees Fahrenheit

scfm standard cubic feet per minute

Table 5

**September 2008 MPE Event**  
**Extraction Data and VOC Mass Removal Rate**

3609 International Boulevard  
 Oakland, California

WELL	COMMENT	DATE	CLOCK	INCREMENTAL	ELAPSED	Q			PID		MASS REMOVAL		
			TIME	TIME	TIME	SCFM	ft <sup>3</sup> of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min	lbs/day
MW-1/3/6	START	9/8/2008	1100	0									
			1200	60	60	122	7,312	19.2925	4,110	0.0041	6,8350	0.1139	164
			1300	60	120	123	7,407	19.5437	3,360	0.0034	5,6605	0.0943	136
			1400	60	180	119	7,121	18.7901	3,150	0.0032	5,1021	0.0850	122
			1500	60	240	111	6,645	17.5341	3,270	0.0033	4,9424	0.0824	119
			1700	60	300	103	6,169	16.2780	3,140	0.0031	4,4059	0.0734	106
			1800	60	360	103	6,169	16.2780	3,230	0.0032	4,5322	0.0755	109
			800	840	1,200	109	91,703	241.9599	2,250	0.0023	46,9281	0.0559	80
			900	60	1,260	109	6,550	17.2828	2,230	0.0022	3,3222	0.0554	80
			1000	60	1,320	111	6,645	17.5341	2,280	0.0023	3,4461	0.0574	83
			1100	60	1,380	109	6,550	17.2828	2,240	0.0022	3,3371	0.0556	80
			1200	60	1,440	109	6,550	17.2828	2,210	0.0022	3,2924	0.0549	79
			1300	60	1,500	109	6,550	17.2828	2,180	0.0022	3,2477	0.0541	78
			1400	60	1,560	109	6,550	17.2828	2,100	0.0021	3,1285	0.0521	75
			1500	60	1,620	111	6,645	17.5341	2,070	0.0021	3,1287	0.0521	75
			1600	60	1,680	109	6,550	17.2828	2,030	0.0020	3,0243	0.0504	73
			1630	30	1,710	111	3,323	8,7670	1,980	0.0020	1,4963	0.0499	72
			800	930	2,640	111	103,004	271.7779	1,544	0.0015	36,1717	0.0389	56
			900	60	2,700	111	6,645	17.5341	1,500	0.0015	2,2672	0.0378	54
			1000	60	2,760	112	6,741	17.7853	1,580	0.0016	2,4223	0.0404	58
			1100	60	2,820	112	6,741	17.7853	1,565	0.0016	2,3993	0.0400	58
			1200	60	2,880	111	6,645	17.5341	1,548	0.0015	2,3397	0.0390	56
			1300	60	2,940	111	6,645	17.5341	1,518	0.0015	2,2944	0.0382	55
			1400	60	3,000	112	6,741	17.7853	1,458	0.0015	2,2352	0.0373	54
			1500	60	3,060	114	6,836	18.0365	1,440	0.0014	2,2388	0.0373	54
			1600	60	3,120	114	6,836	18.0365	1,428	0.0014	2,2202	0.0370	53
			1630	30	3,150	114	3,418	9,0182	1,407	0.0014	1,0938	0.0365	53
			800	930	4,080	114	105,955	279.5654	1,145	0.0011	27,5928	0.0297	43
			900	60	4,140	116	6,931	18.2877	1,136	0.0011	1,7908	0.0298	43
			1000	60	4,200	116	6,931	18.2877	1,131	0.0011	1,7829	0.0297	43
			1100	60	4,260	116	6,931	18.2877	1,135	0.0011	1,7892	0.0298	43
			1200	60	4,320	114	6,836	18.0365	1,100	0.0011	1,7102	0.0285	41
			1300	60	4,380	117	7,026	18.5389	1,090	0.0011	1,7419	0.0290	42
			1400	60	4,440	117	7,026	18.5389	1,080	0.0011	1,7259	0.0288	41
			1500	60	4,500	117	7,026	18.5389	1,050	0.0011	1,6780	0.0280	40
			1600	60	4,560	117	7,026	18.5389	1,050	0.0011	1,6780	0.0280	40
			1630	30	4,590	116	3,466	9,1438	1,049	0.0010	0,8268	0.0276	40
			730	900	5,490	117	105,394	278.0834	957	0.0010	22,9400	0.0255	37
			830	60	5,550	117	7,026	18.5389	940	0.0009	1,5022	0.0250	36
			930	60	5,610	117	7,026	18.5389	933	0.0009	1,4910	0.0248	36
			1030	60	5,670	117	7,026	18.5389	934	0.0009	1,4926	0.0249	36
			1130	60	5,730	117	7,026	18.5389	924	0.0009	1,4766	0.0246	35
			1230	60	5,790	117	7,026	18.5389	922	0.0009	1,4734	0.0246	35
			1330	60	5,850	117	7,026	18.5389	918	0.0009	1,4670	0.0245	35
			1430	60	5,910	117	7,026	18.5389	916	0.0009	1,4638	0.0244	35
			1600	90	6,000	108	9,682	25.5475	1,063	0.0011	2,3409	0.0260	37
	TOTAL MEDIAN				6,000	114	678,108	1789	1,458	0.0015	239.48	0.0399	57.47

Notes

Q volumetric flow rate  
 SCFM standard cubic feet per minute  
 ft<sup>3</sup> cubic feet per minute  
 VOC volatile organic compounds  
 PID photo-ionization detector  
 ppmv parts per million vapor

## DERIVATION OF MASS REMOVAL RATE

ppmv as hexane/1,000,000 = VOC mole %  
 ft<sup>3</sup> of extracted air/(379 ft<sup>3</sup> air/lb-mole air) = moles of extracted air  
 (moles of extracted air)(VOC mole %)(86.2 lb/lb-mole hexane) = lbs of VOC removed as hexane  
 (lbs of VOC mass removed as hexane)(elapsed time) = lbs/min of VOC removed as hexane  
 (lbs/min of VOC removed as hexane)(60 min/1 hour)(24 hours/1 day) = lbs/day of VOC removed as hexane

**Table 6**

**September 2008 MPE Event  
Mass Removal**

3609 International Boulevard  
Oakland, California

Extraction Well	Vapor Sample ID	Collection Date/Time	PID	Q (CFM)	Mass Removal Rate (lbs/day) (VOCs)	Total Test time (minutes/days)	Total Mass Removed (lbs) (VOCs)
			ppmv (hexane)				
MW-1/3	Influent	9/9/2008 @ 0800	2,250(a)	114	57.47	6,000/4.17	<b>239.48 (b)</b>
MW-1/3	Stack	9/9/2008 @ 0750	6(a)	114	N/A	N/A	N/A
<b>REMOVAL EFFICIENCIES</b>			99.7333%				

**Notes**

- CFM cubic feet per minute  
 lbs/day pounds per day  
 (a) dilution factor 1  
 (b) average value

**DERIVATION OF MASS REMOVAL RATE  
DERIVATION OF TOTAL MASS REMOVED**  
Table 2

**DERIVATION OF REMOVAL EFFICIENCIES**  
INFLUENT sample concentration / STACK concentration

**Table 7**

**Dissolved-Phase Hydrocarbon Concentrations  
Pre- and Post-MPE Event**

3609 International Boulevard  
Oakland, California

<b>Monitoring Well</b>	<b>Date</b>	<b>MPE Event</b>	<b>TPH-g (µg/L)</b>	<b>Benzene (µg/L)</b>	<b>Toluene (µg/L)</b>	<b>Ethyl benzene (µg/L)</b>	<b>Total Xylenes (µg/L)</b>	<b>MtBE (µg/L)</b>
<b>MW-1</b>	12/3/2007	Pilot Test	839	9	<2	1	<2.5	4
	12/7/2007	Pilot Test	2,270	20	6	34	50	11
	3/24/2008	March 2008	<50	<0.5	<2.0	<0.5	<2.5	<0.5
	3/28/2008	March 2008	705	10	4	8	40	5
	4/14/2008	April 2008	<50	<0.5	<2.0	<0.5	<2.5	<0.5
	4/18/2008	April 2008	3,710	27	21	47	303	11
	5/12/2008	May 2008	<50	<0.5	<2.0	<0.5	<2.0	1
	5/16/2008	May 2008	2,780	28	3	2	82	25
	6/9/2008	June 2008	<50	<0.5	<2.0	<0.5	<2.0	1
	6/13/2008	June 2008	1,730	11	8	53	92	9
	9/8/2008	September 2008	170 <sup>Y</sup>	0.68	<0.5	<0.5	<0.5	<0.5
	9/16/2008	September 2008	420 <sup>Y</sup>	1.20	1	1	16	<0.5
<b>MW-3</b>	12/3/2007	Pilot Test	2,040	2,200	<22	115	33	25
	12/7/2007	Pilot Test	4,610	785	57	275	262	6
	3/24/2008	March 2008	4,720	251	8	384	270	3
	3/28/2008	March 2008	13,700	653	395	514	1,153	<2.15
	4/14/2008	April 2008	6,350	124	19	231	464	<0.5
	4/18/2008	April 2008	4,630	191	101	74	692	<2.15
	5/12/2008	May 2008	3,460	111	8	99	222	<0.5
	5/16/2008	May 2008	16,600	795	371	427	3,807	10
	6/9/2008	June 2008	3,770	177	8	161	209	1
	6/13/2008	June 2008	6,910	534	283	233	1,241	<5.5
	9/8/2008	September 2008	2200 <sup>Y</sup>	64	14	73	103	2
	9/12/2008	September 2008	320 <sup>Y</sup>	9	1	<0.5	22	5

**Table 7**

**Dissolved-Phase Hydrocarbon Concentrations  
Pre- and Post-MPE Event**

3609 International Boulevard  
Oakland, California

<b>MW-6</b>	9/8/2008	September 2008	4600 <sup>Y</sup>	340	15	120	118	<2.5
	9/12/2008	September 2008	5,800 <sup>Y</sup>	300	66	110	518	<2

Notes:

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

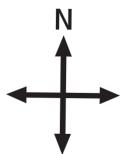
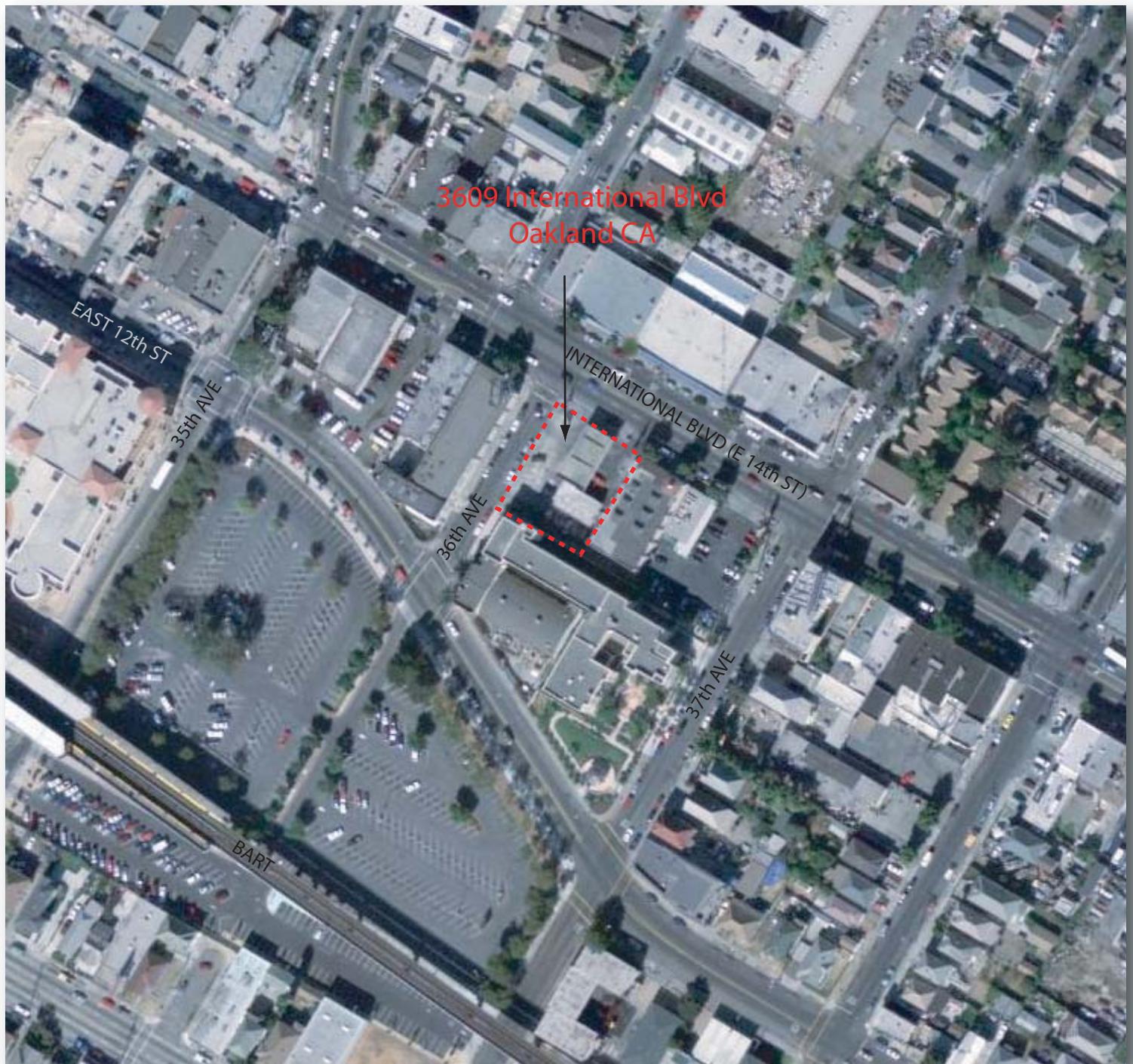
MTBE = methyl-tertiary-butyl ether

ug/l - Micrograms per liter

# **FIGURES**

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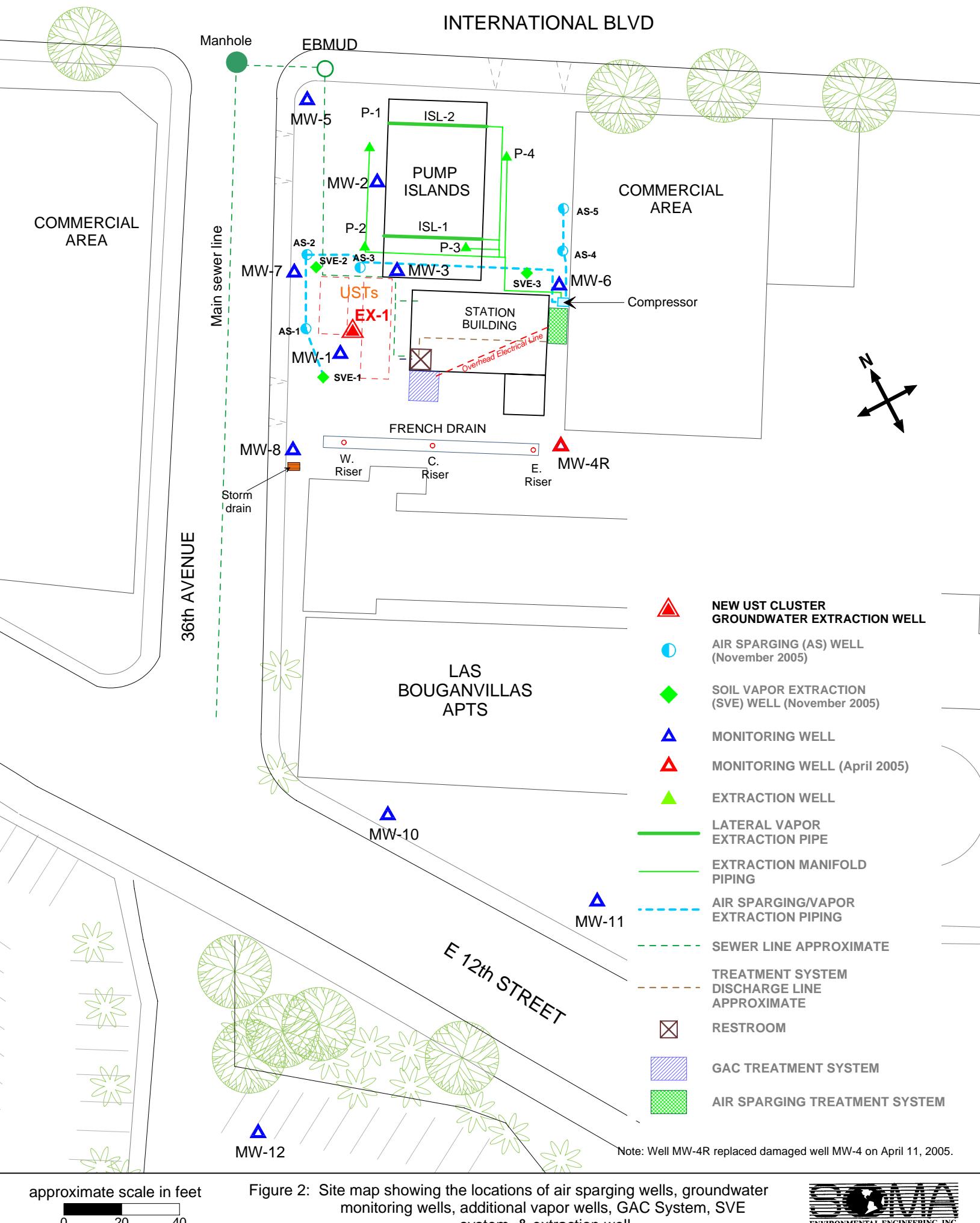
Third Quarter 2008: Groundwater Monitoring and Remediation System Report  
With Evaluation of Effectiveness of Monthly MPE



approximate scale in feet



Figure 1: Site vicinity map.



# INTERNATIONAL BLVD

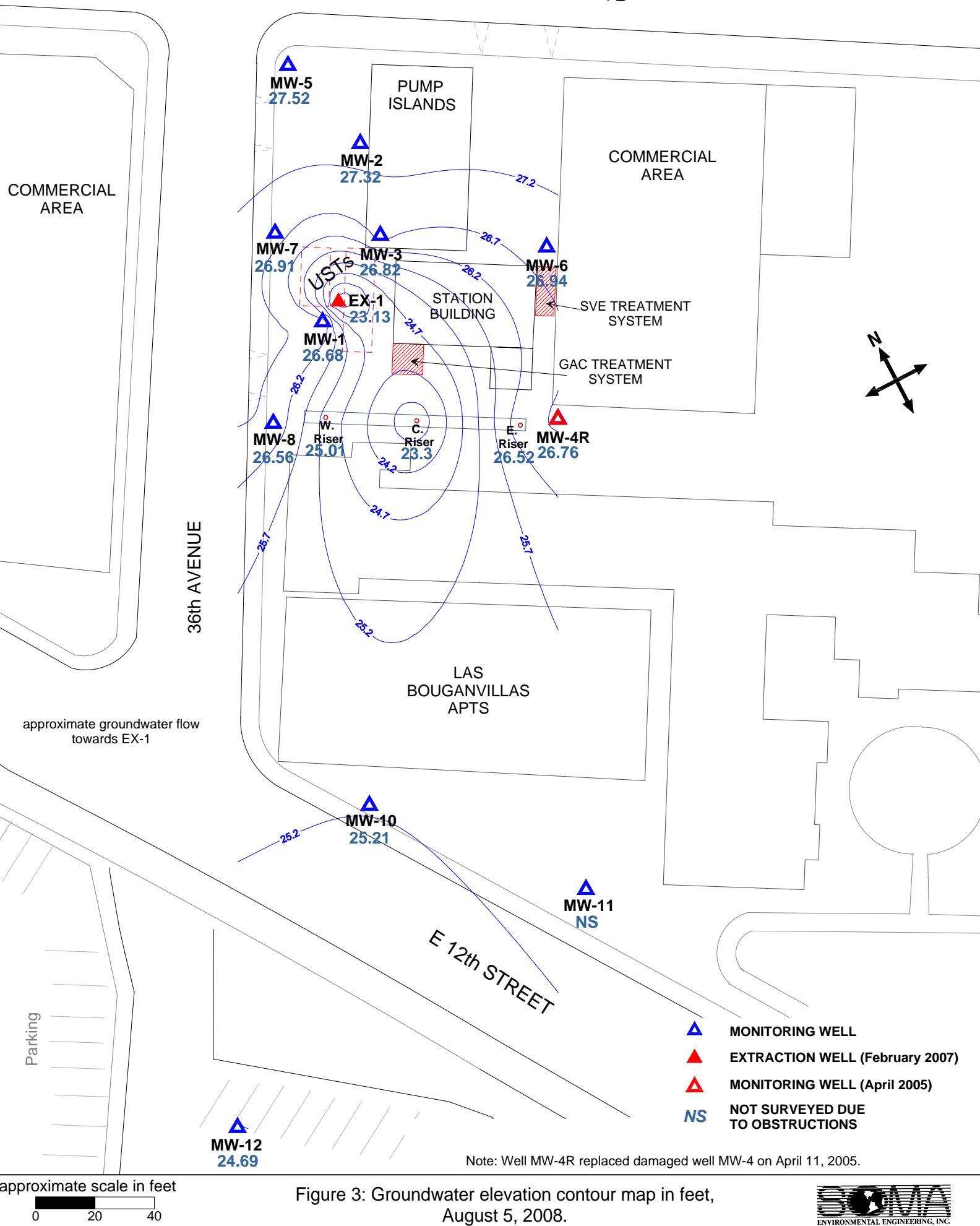
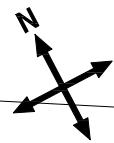


Figure 3: Groundwater elevation contour map in feet,  
August 5, 2008.

# INTERNATIONAL BLVD



COMMERCIAL AREA

36th AVENUE

approximate groundwater flow towards EX-1

approximate scale in feet  
 0 20 40

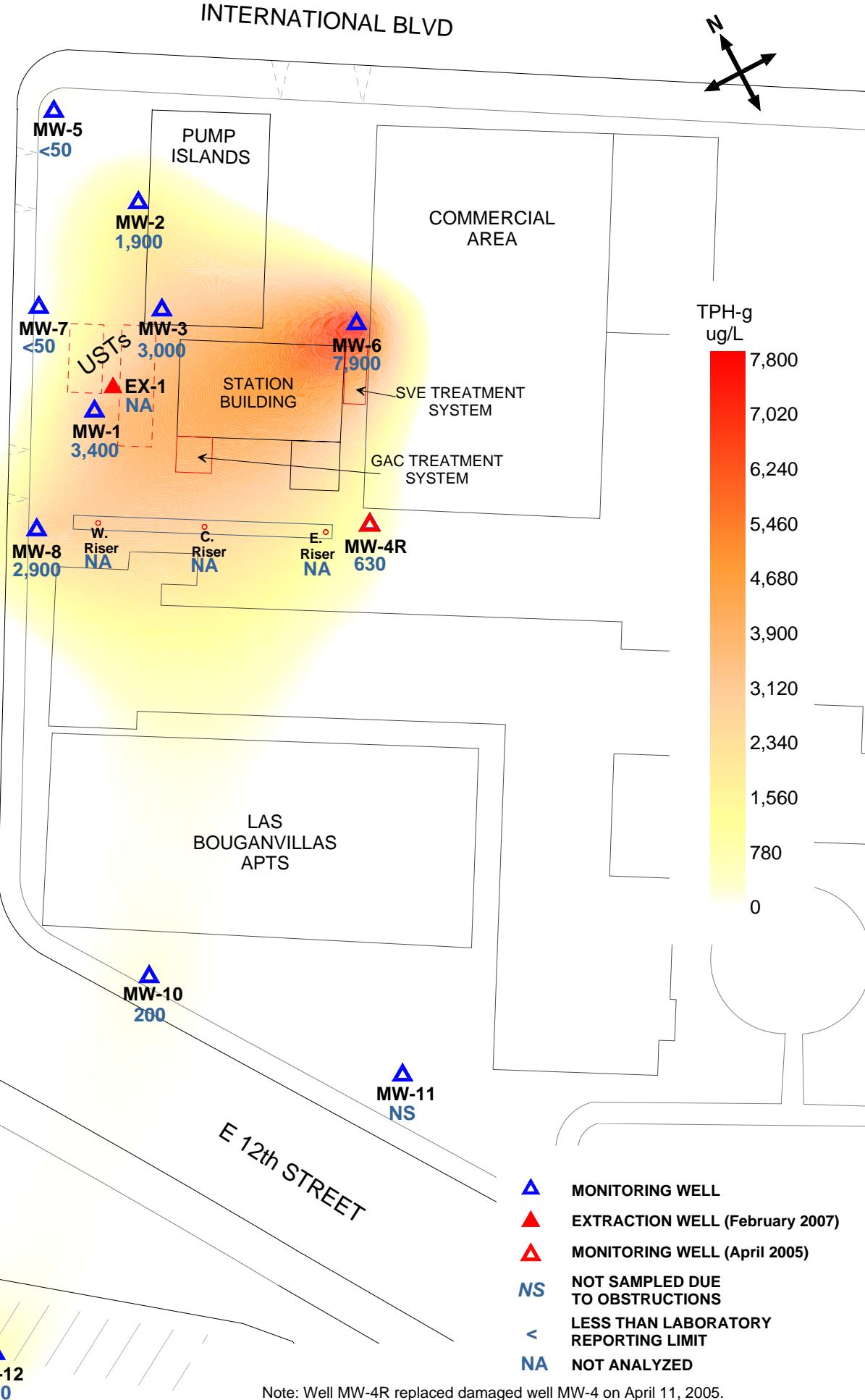
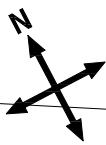


Figure 4: Contour map of TPH-g concentrations in the groundwater.  
 August 5 and 6, 2008.

# INTERNATIONAL BLVD



COMMERCIAL AREA

36th AVENUE

approximate groundwater flow towards EX-1

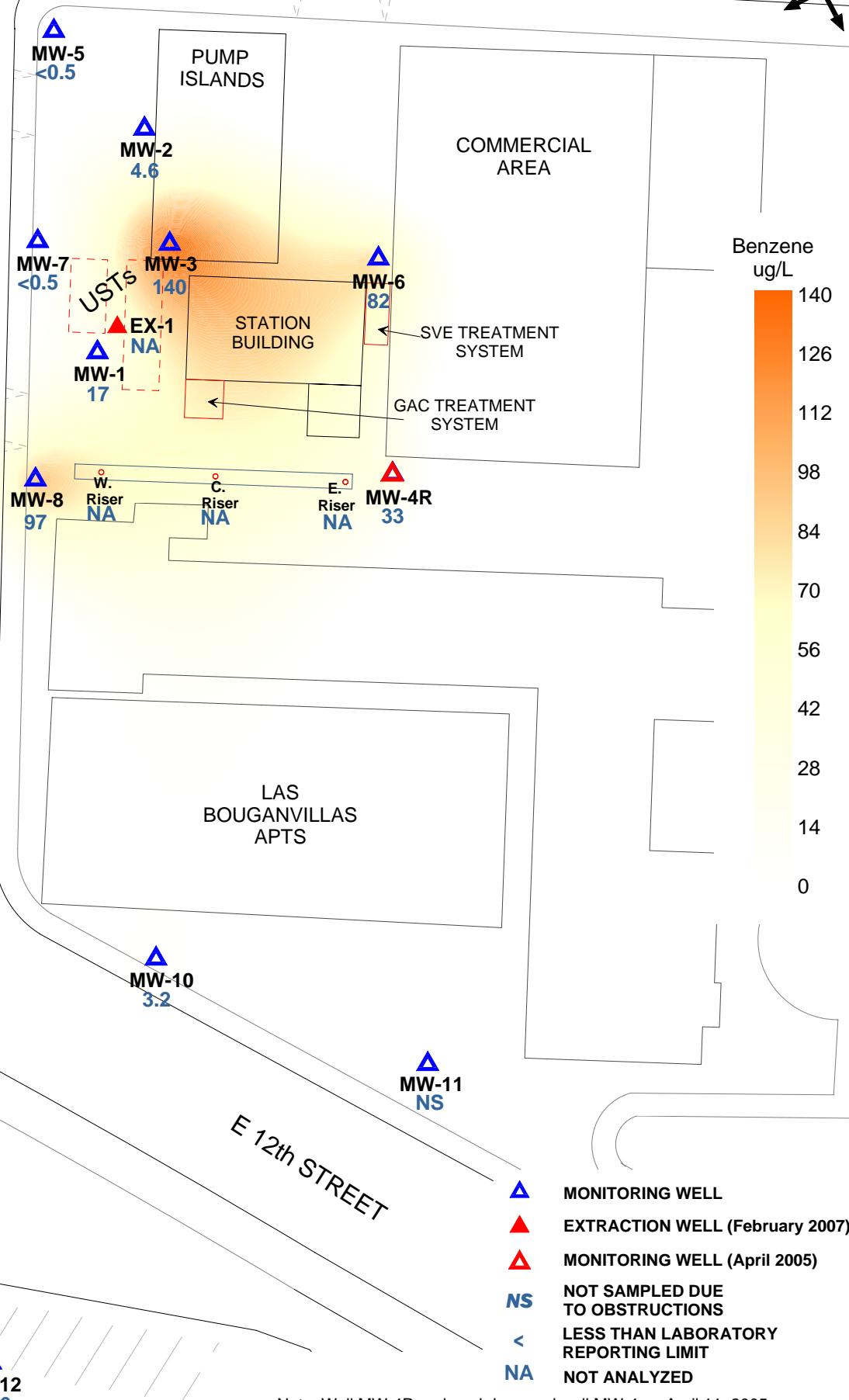
approximate scale in feet



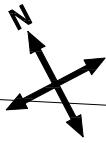
0 20 40

Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

Figure 5: Contour map of benzene concentrations in the groundwater.  
August 5 and 6, 2008.



# INTERNATIONAL BLVD



COMMERCIAL AREA

36th AVENUE

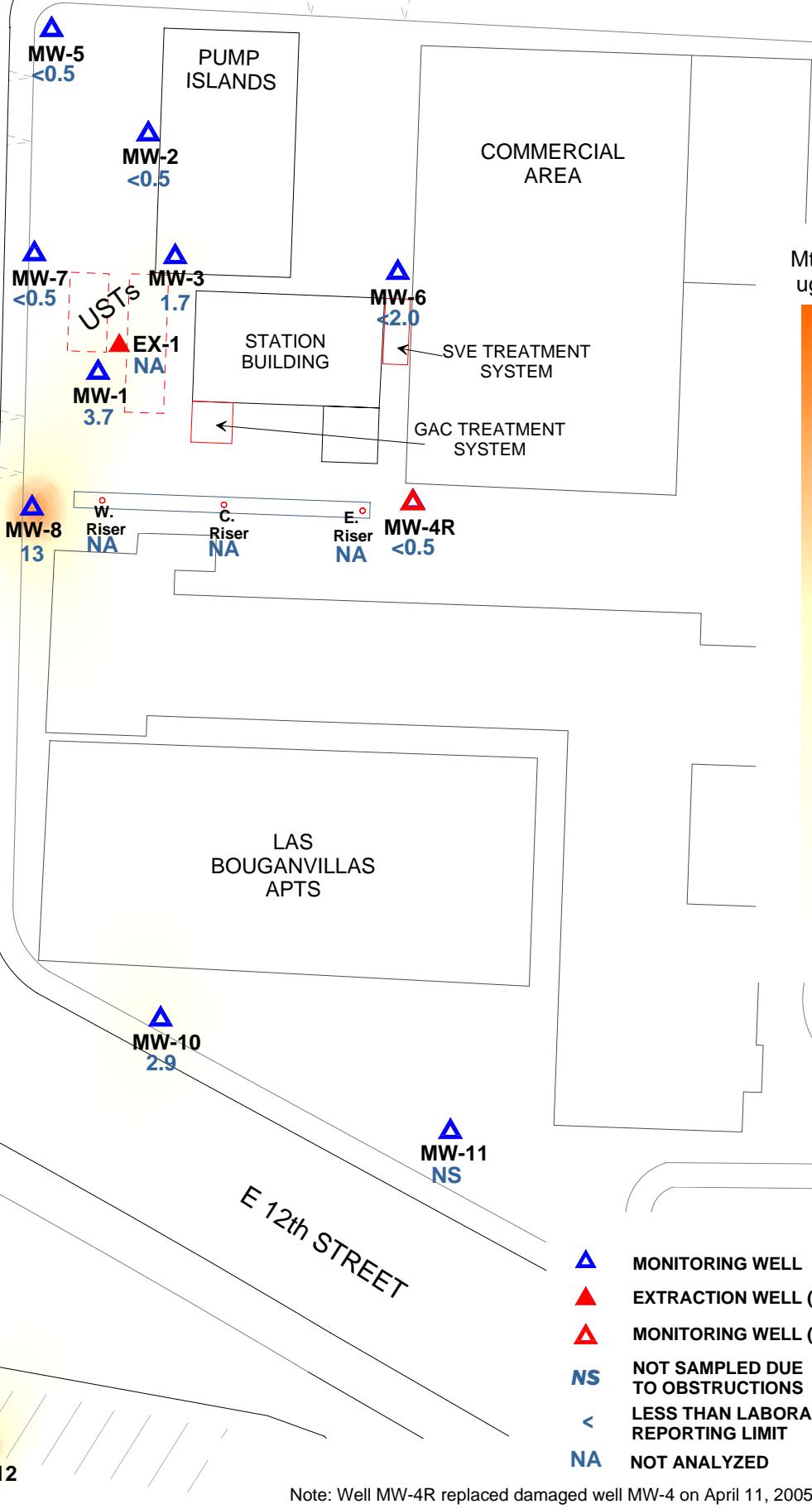
approximate groundwater flow  
towards EX-1

Parking

approximate scale in feet

0 20 40

Figure 6: Contour map of MtBE concentrations in the groundwater (EPA Method 8260B). August 5 and 6, 2008.



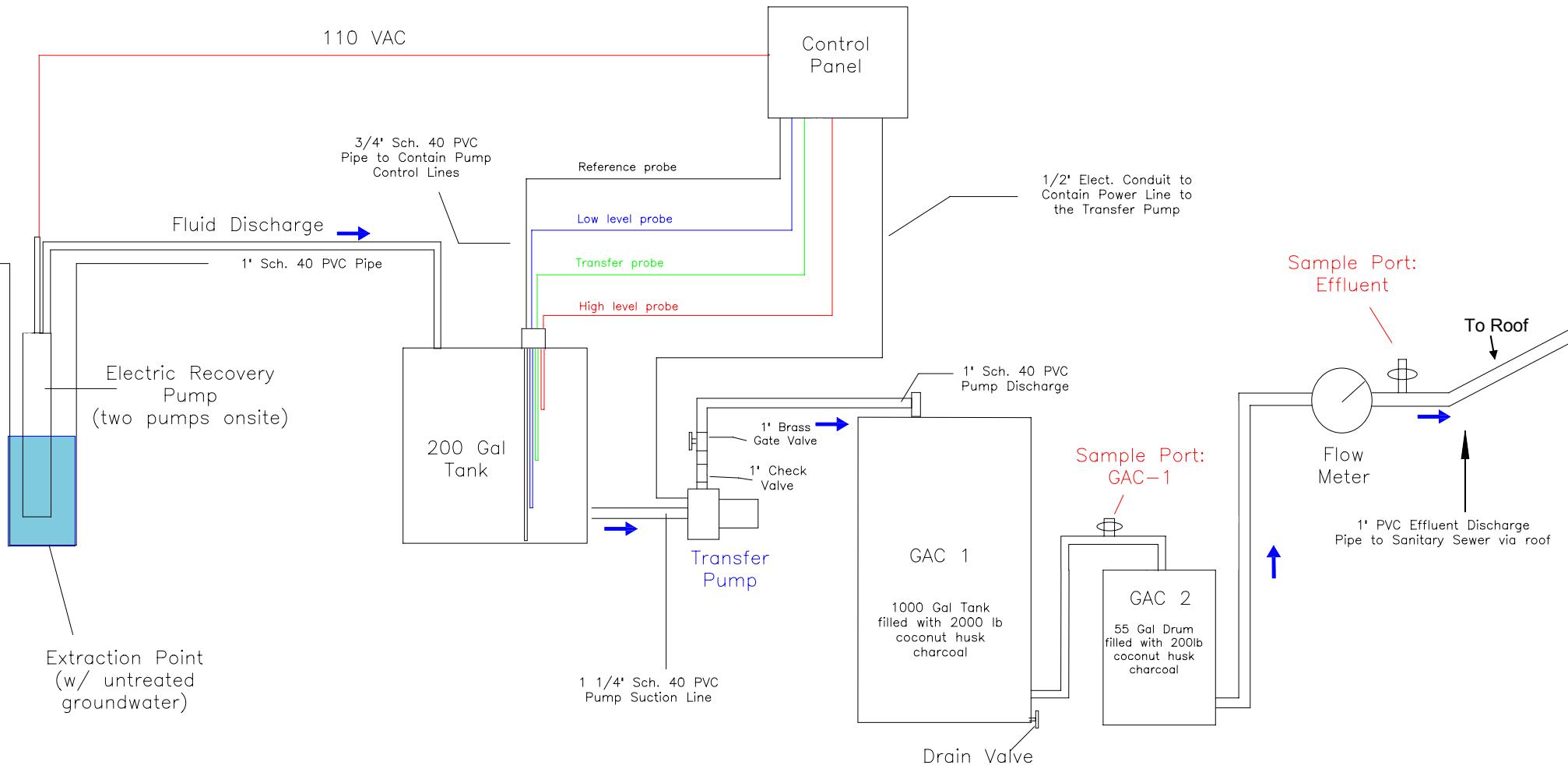
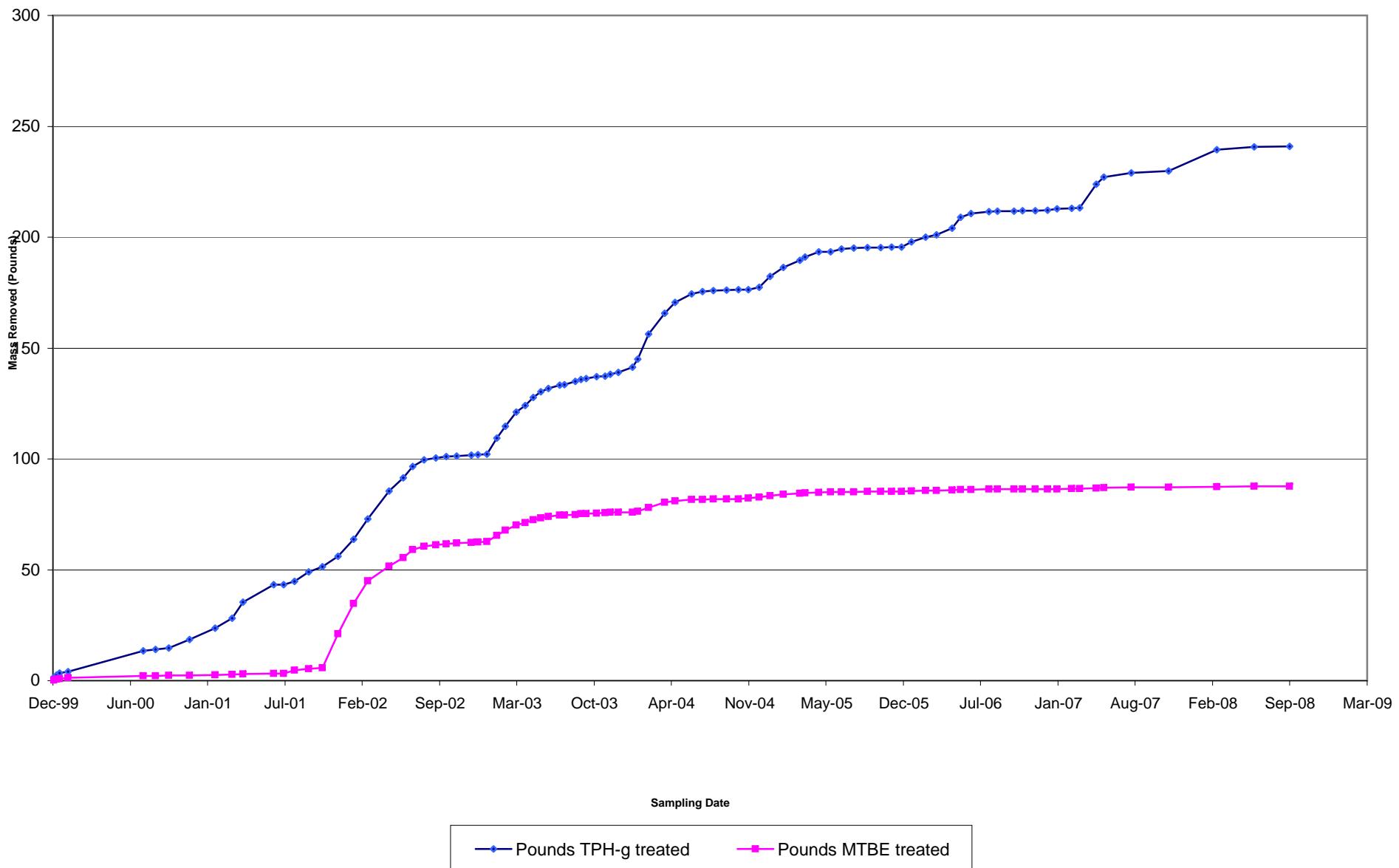


Figure 7: Schematic of the Groundwater Remediation System.  
3609 International Blvd., Oakland, CA

**Figure 8: Cumulative Mass of TPH-g and MtBE Removed from Groundwater since the Installation of the Treatment System**



## BLOWERS

Meter 59 inches  
 $H_2O$  suction

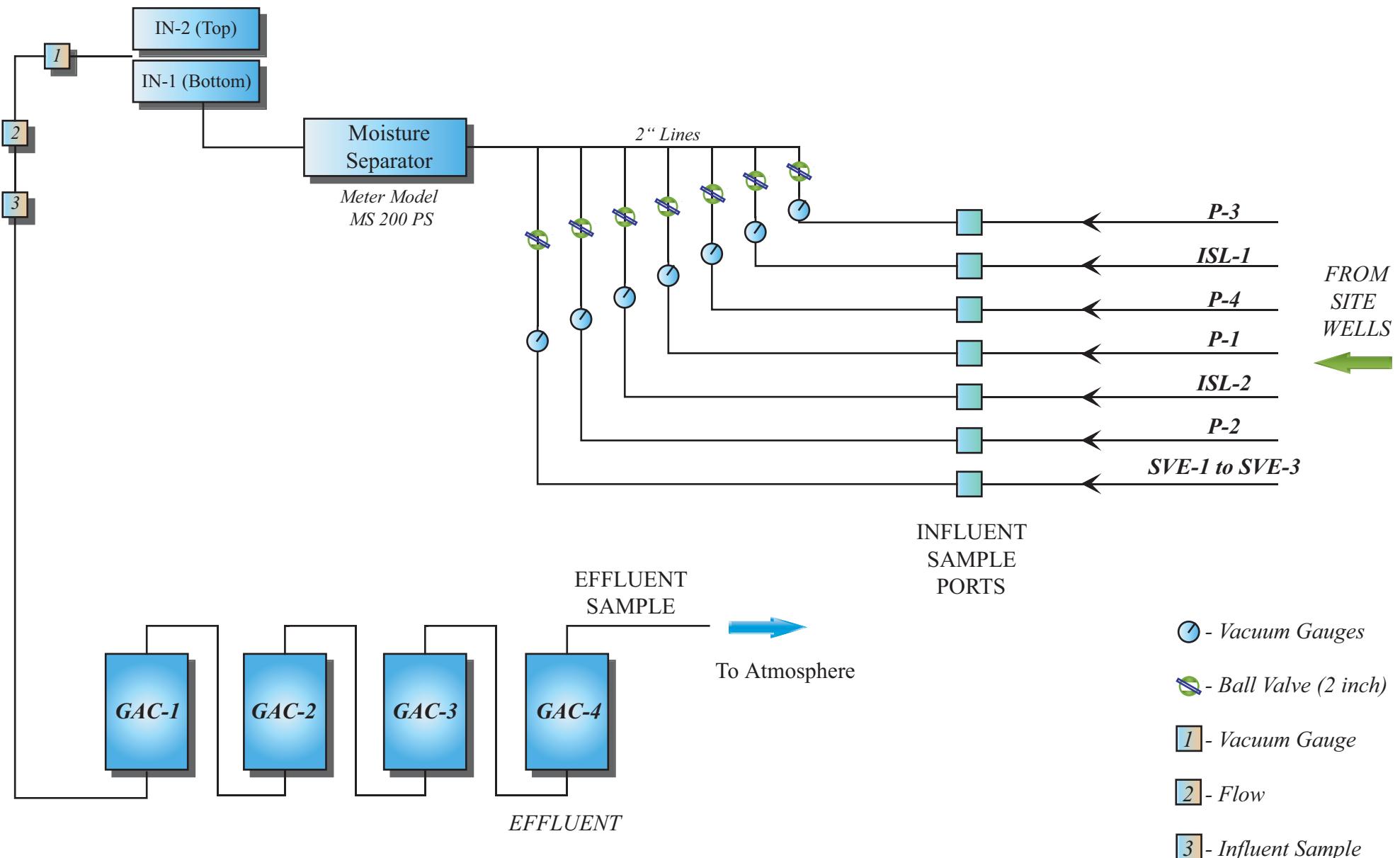


Figure 9: Block Diagram of SVE System

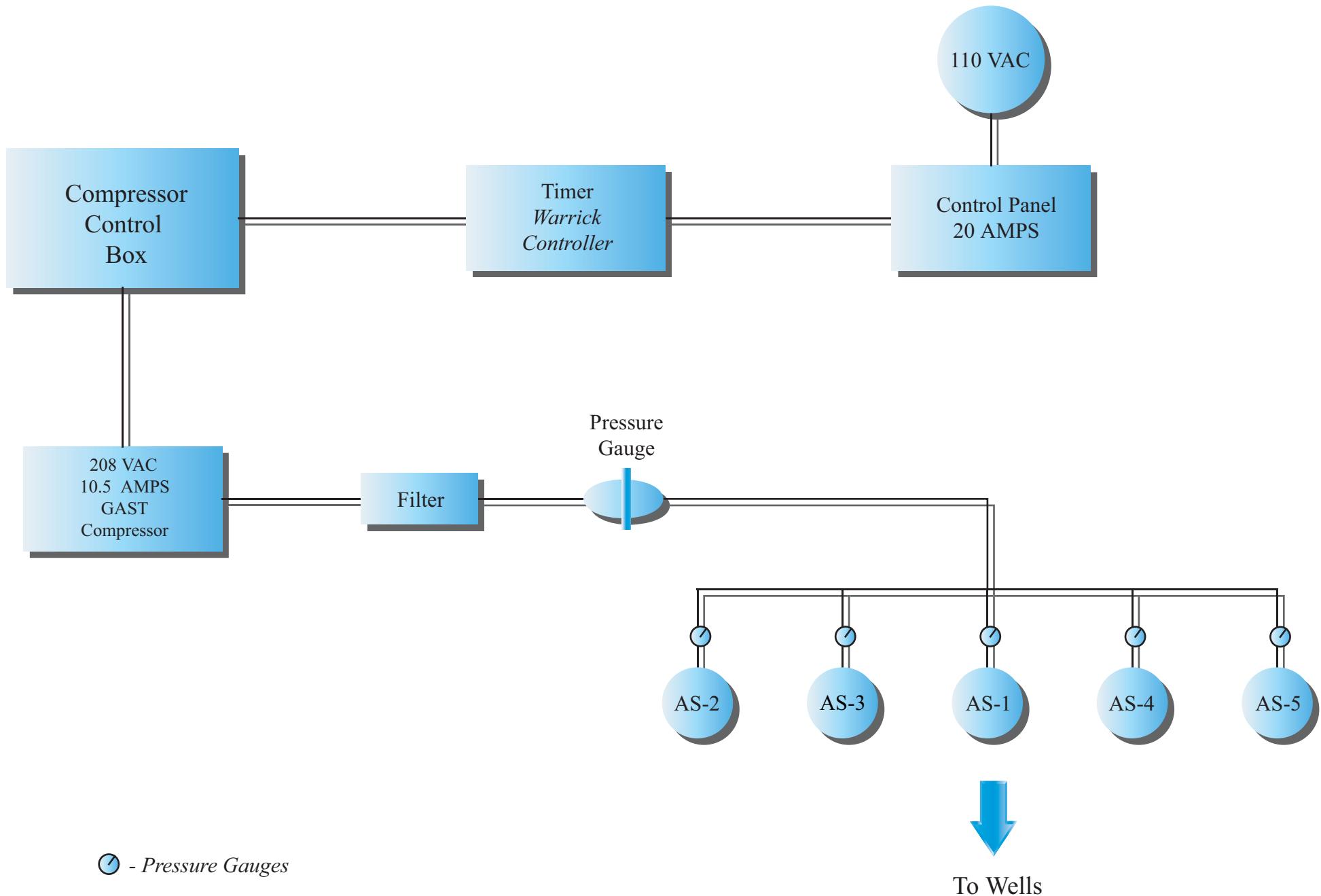


Figure 10: Block diagram of the Air Sparge System

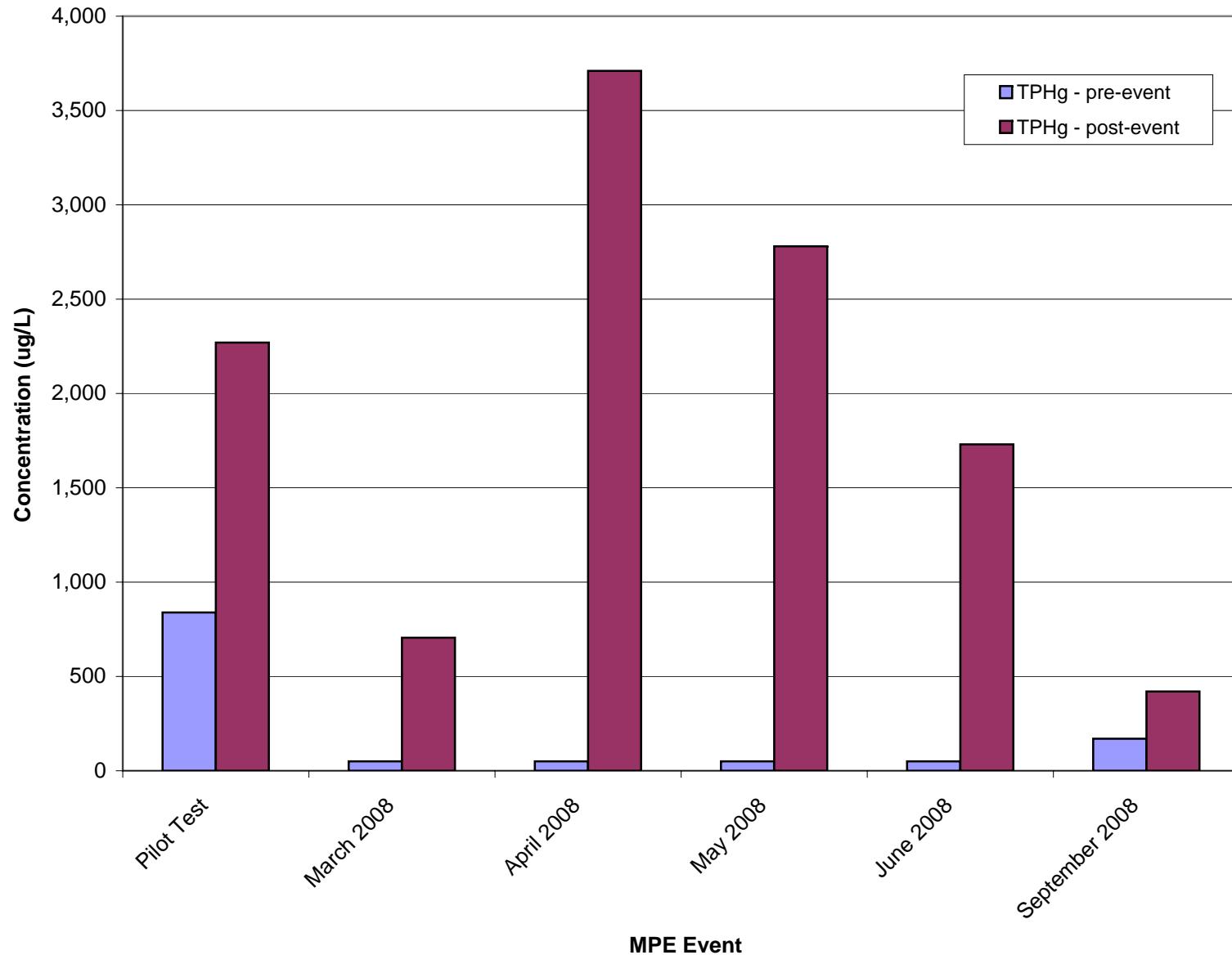


Figure 11: Dissolved-Phase Hydrocarbon Concentrations in Groundwater, TPH-g, Pre- and Post-MPE Event, MW-1

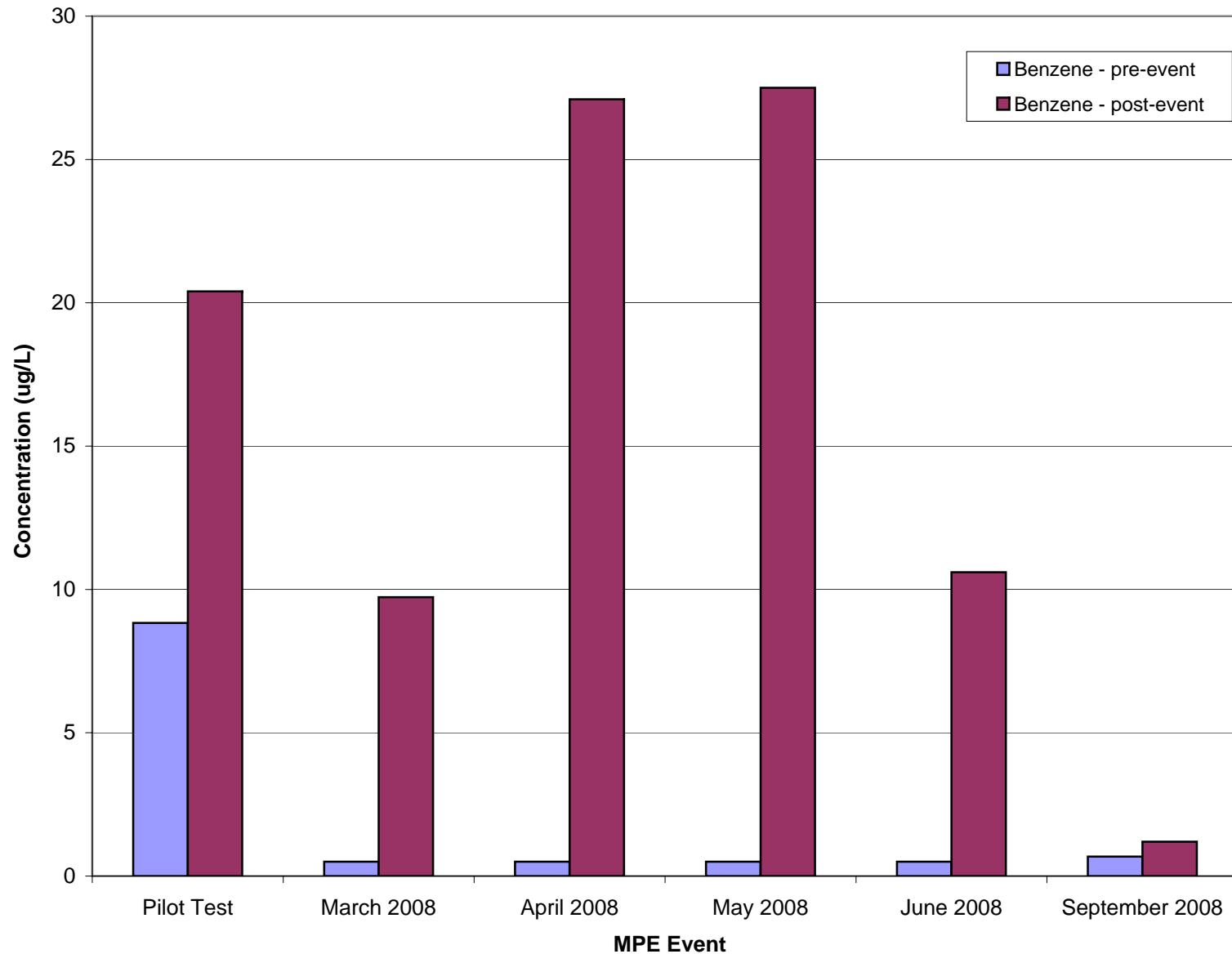


Figure 12: Dissolved-Phase Hydrocarbon Concentrations in Groundwater, Benzene, Pre- and Post-MPE Event, MW-1

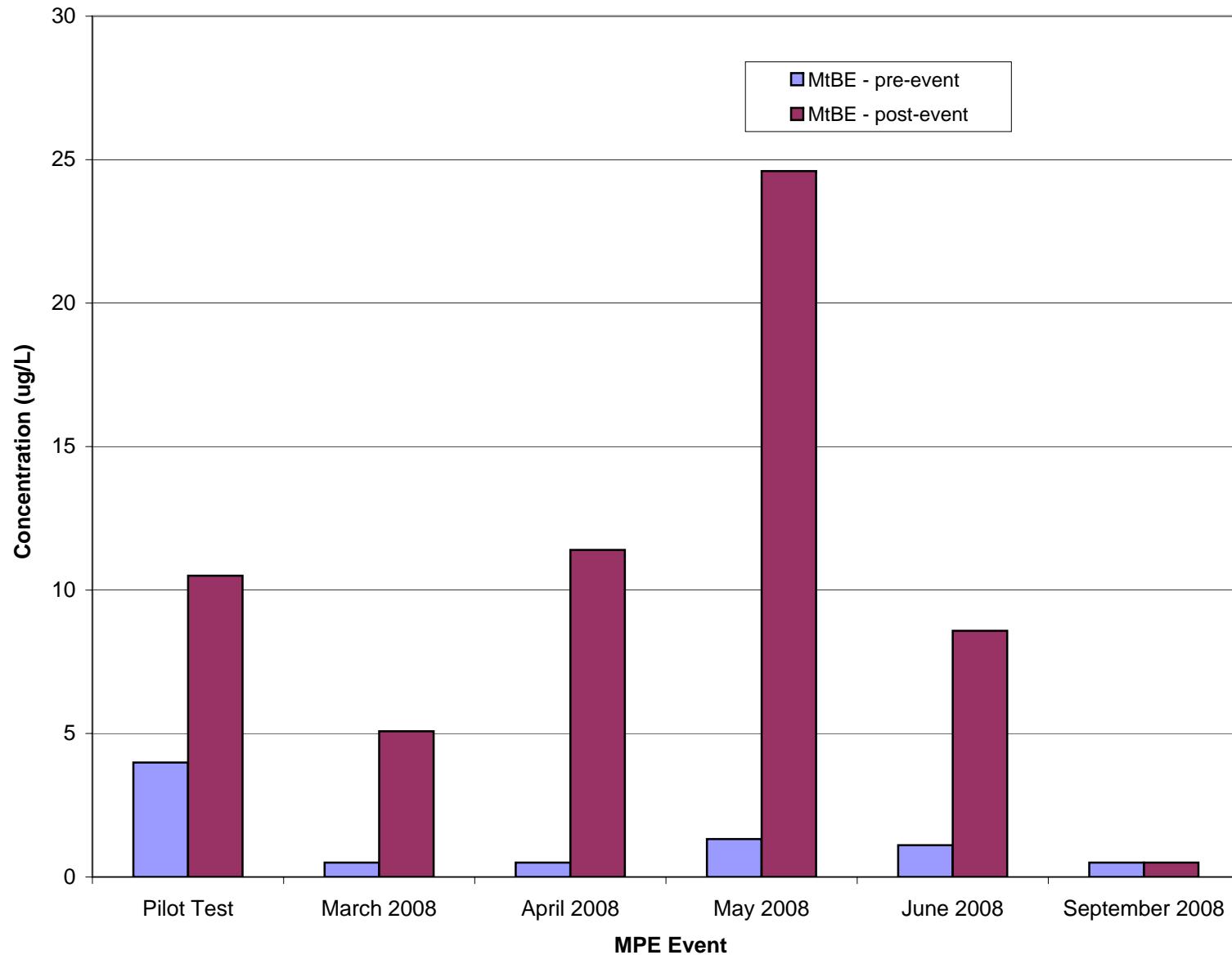


Figure 13: Dissolved-Phase Hydrocarbon Concentrations in Groundwater, MtBE, Pre- and Post-MPE Event, MW-1

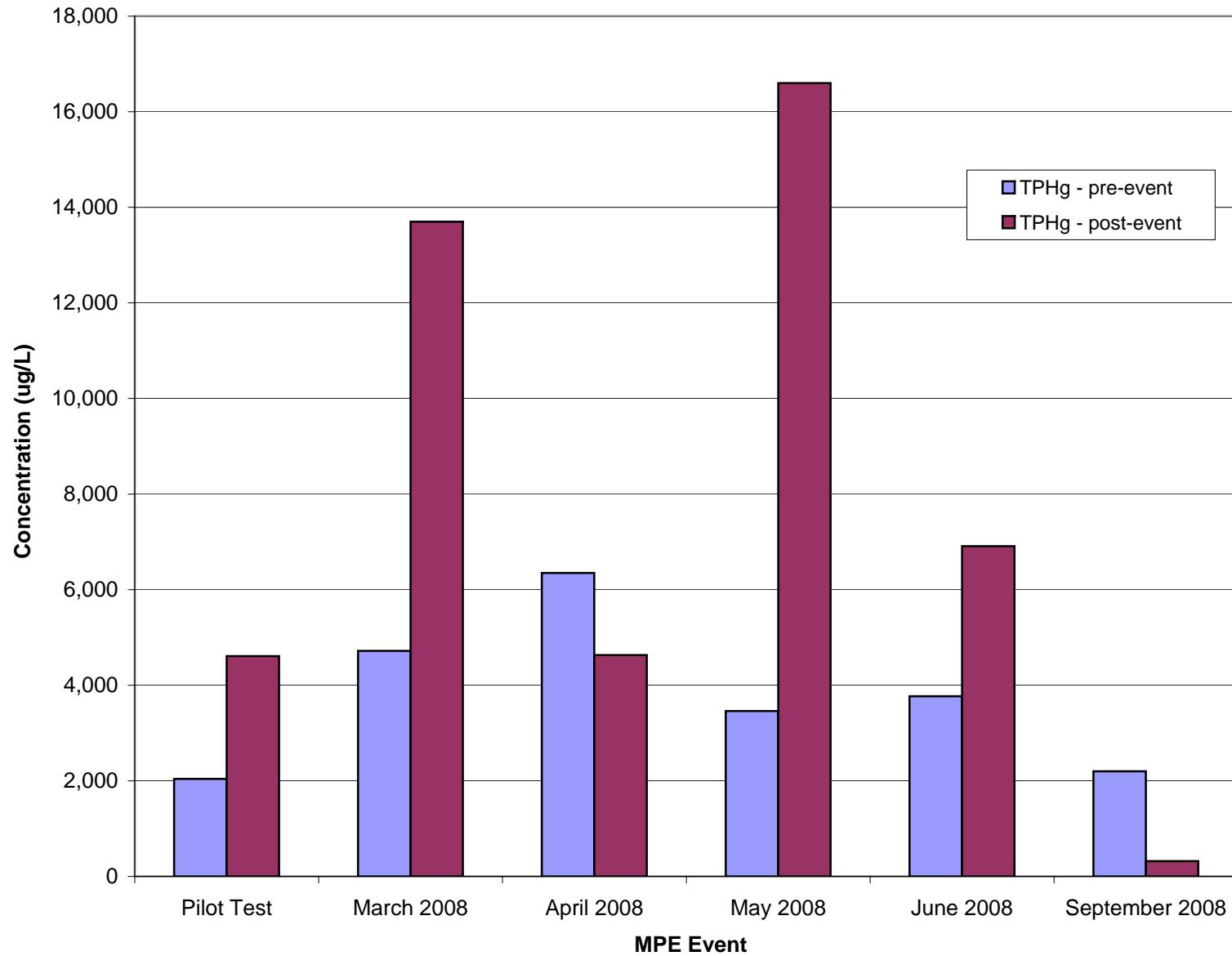


Figure 14: Dissolved-Phase Hydrocarbon Concentrations in Groundwater, TPH-g, Pre- and Post-MPE Event, MW-3

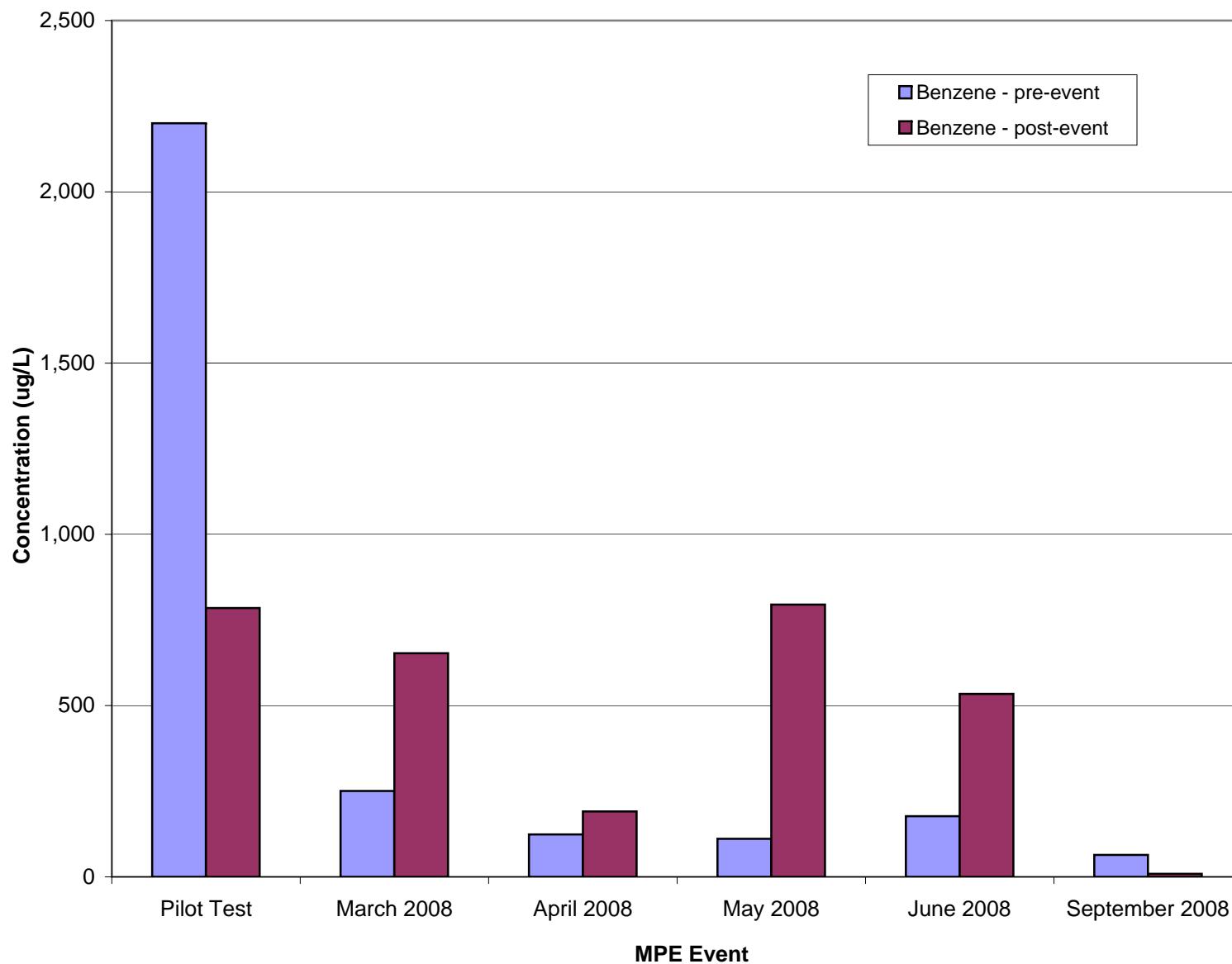


Figure 15: Dissolved-Phase Hydrocarbon Concentrations in Groundwater, Benzene, Pre- and Post-MPE Event, MW-3

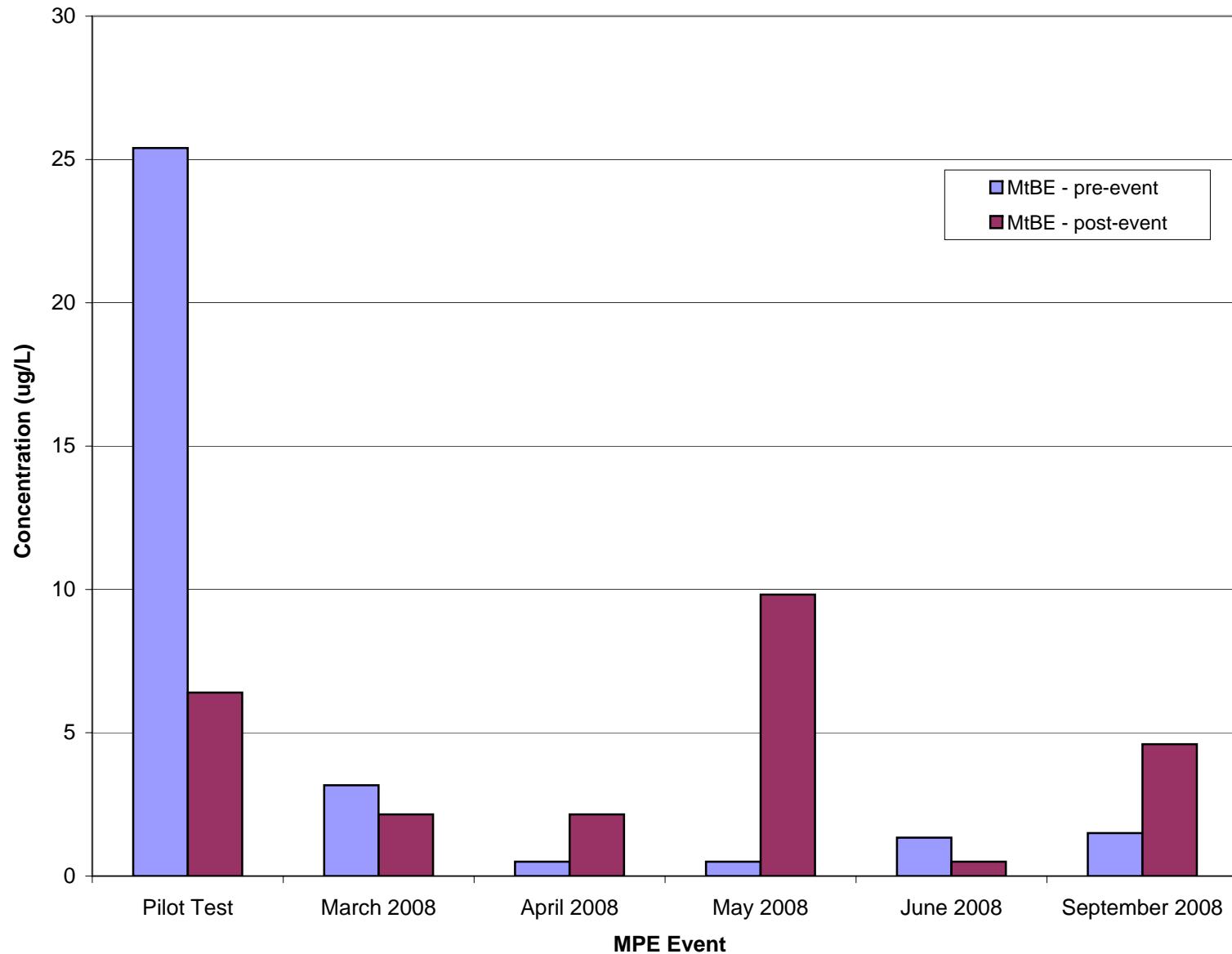


Figure 16: Dissolved-Phase Hydrocarbon Concentrations in Groundwater, MtBE, Pre- and Post-MPE Event, MW-3

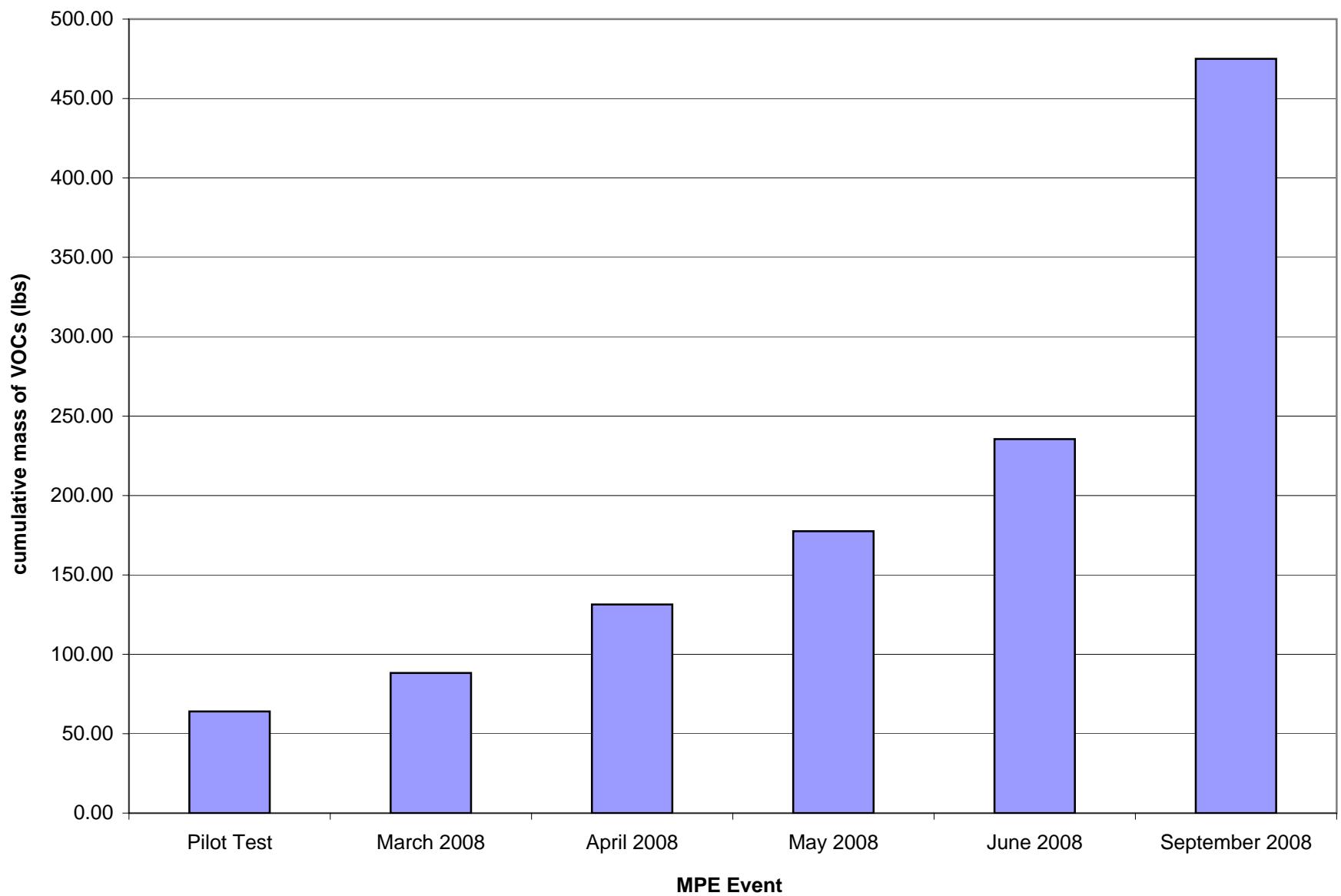


Figure 17: Cumulative Mass of VOCs Removed

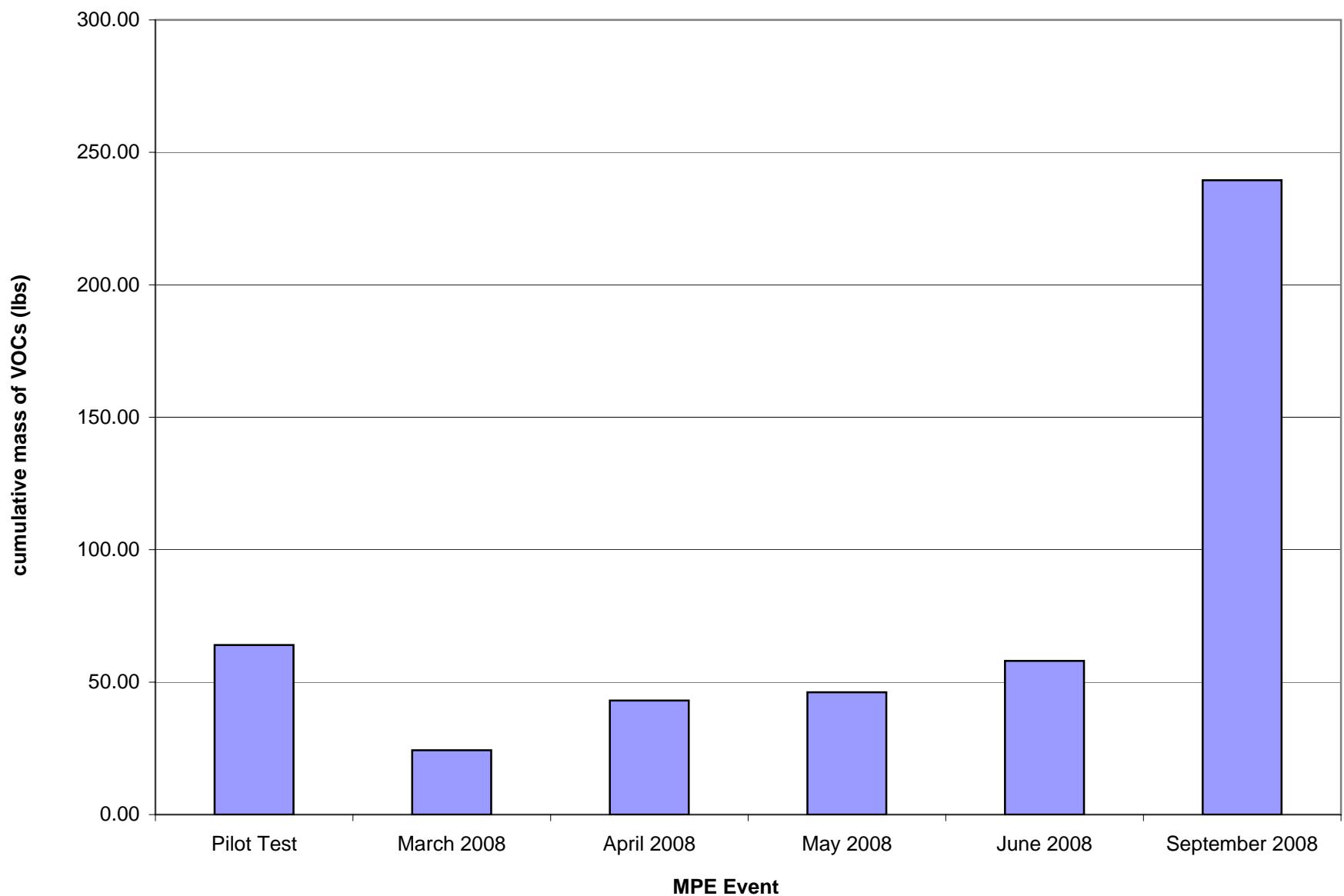


Figure 18: Mass of VOCs Removed Per Event

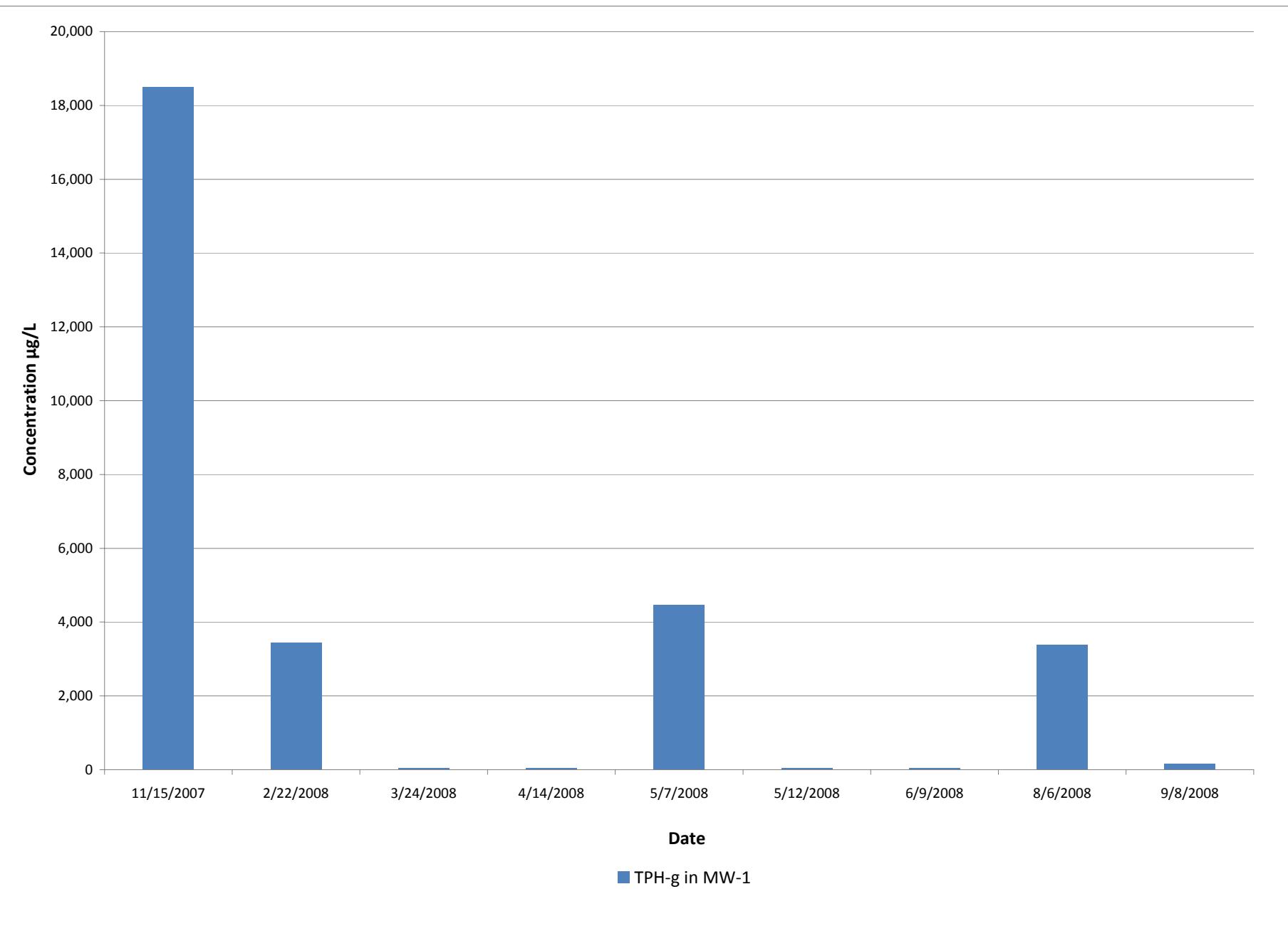


Figure 19: Comparison of TPH-g Concentrations in MW-1

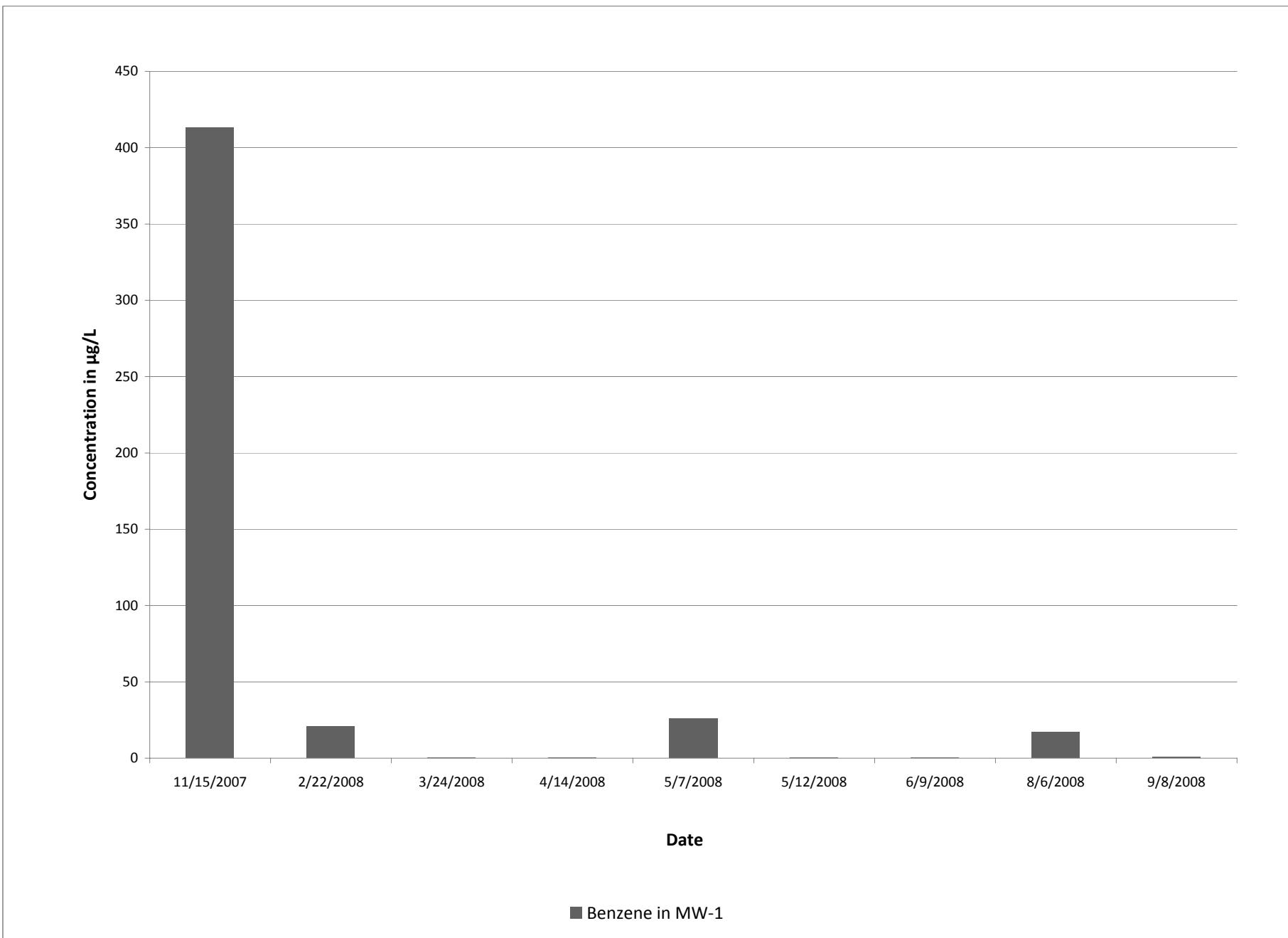


Figure 20: Comparison of Benzene Concentrations in MW-1

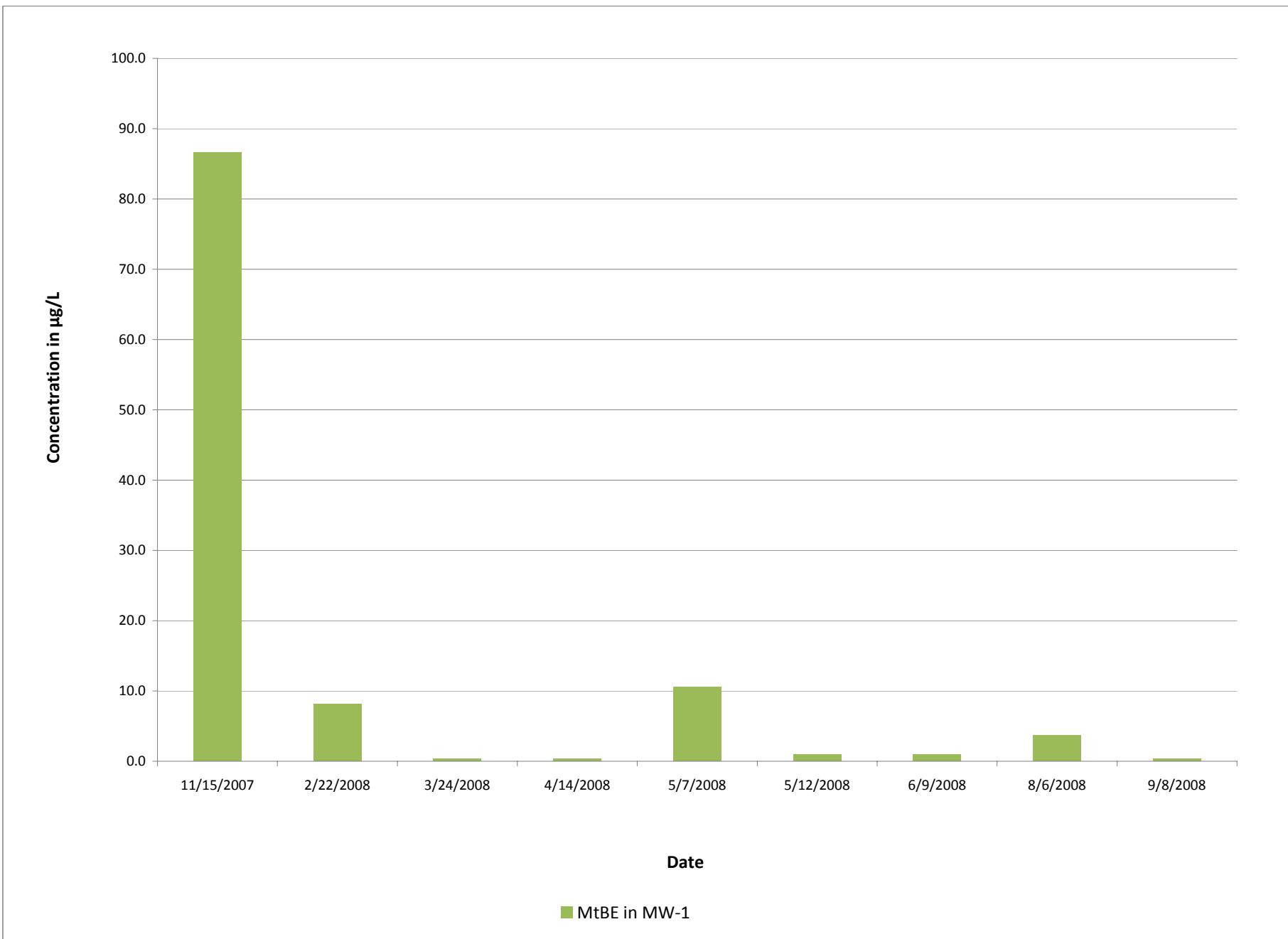


Figure 21: Comparison of MtBE Concentrations in MW-1

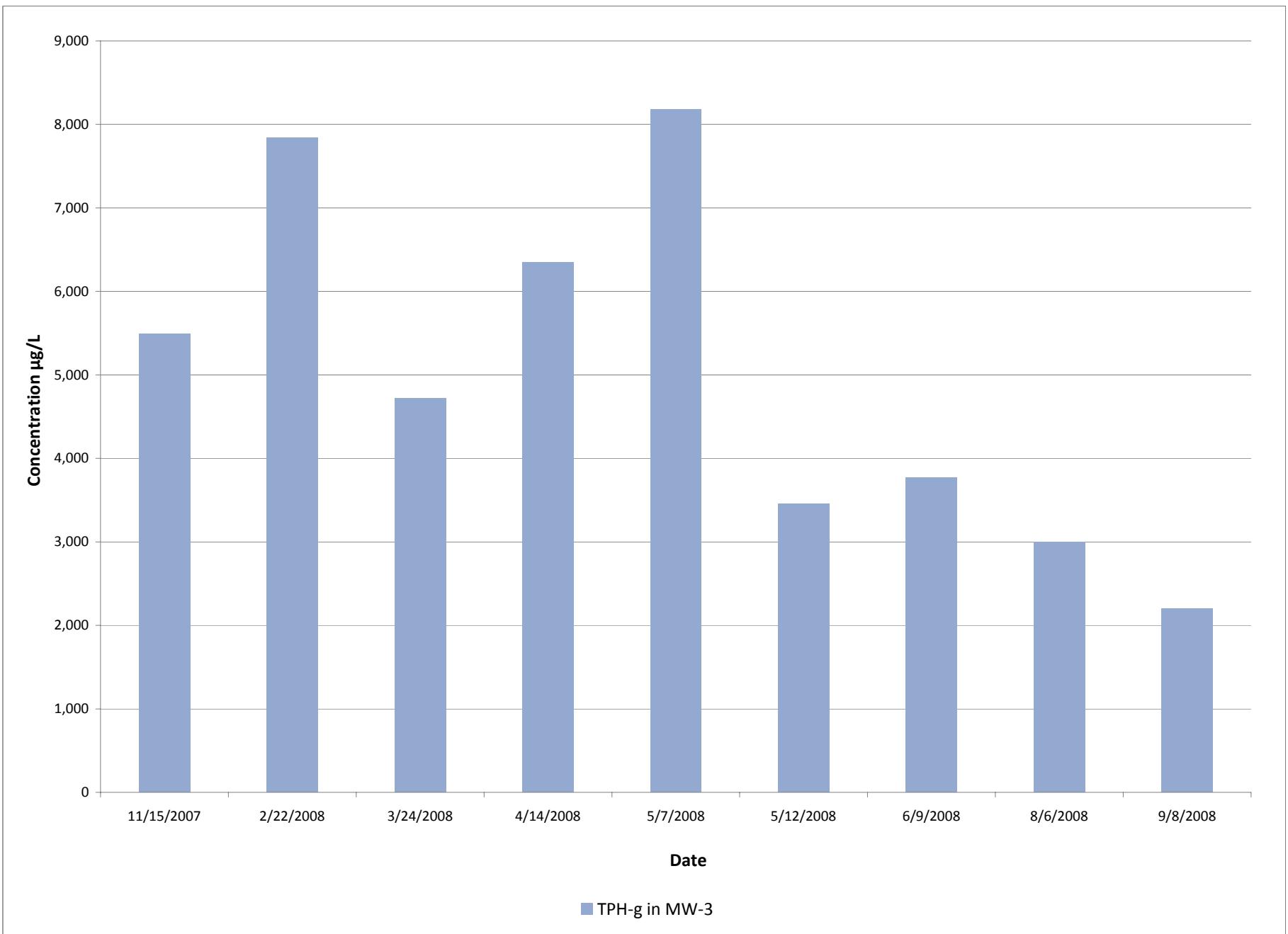


Figure 22: Comparison of TPH-g Concentrations in MW-3

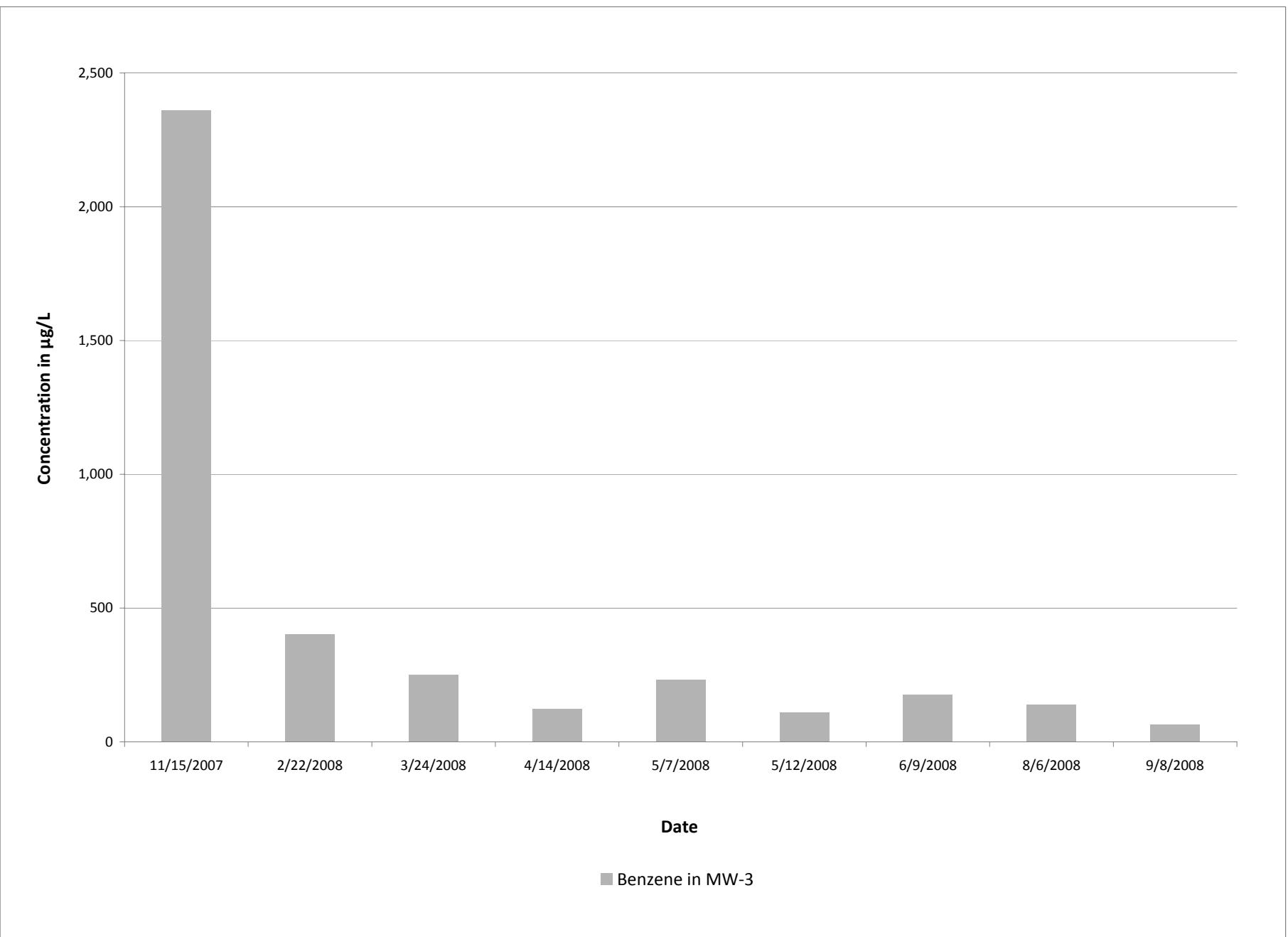


Figure 23: Comparison of Benzene Concentrations in MW-3

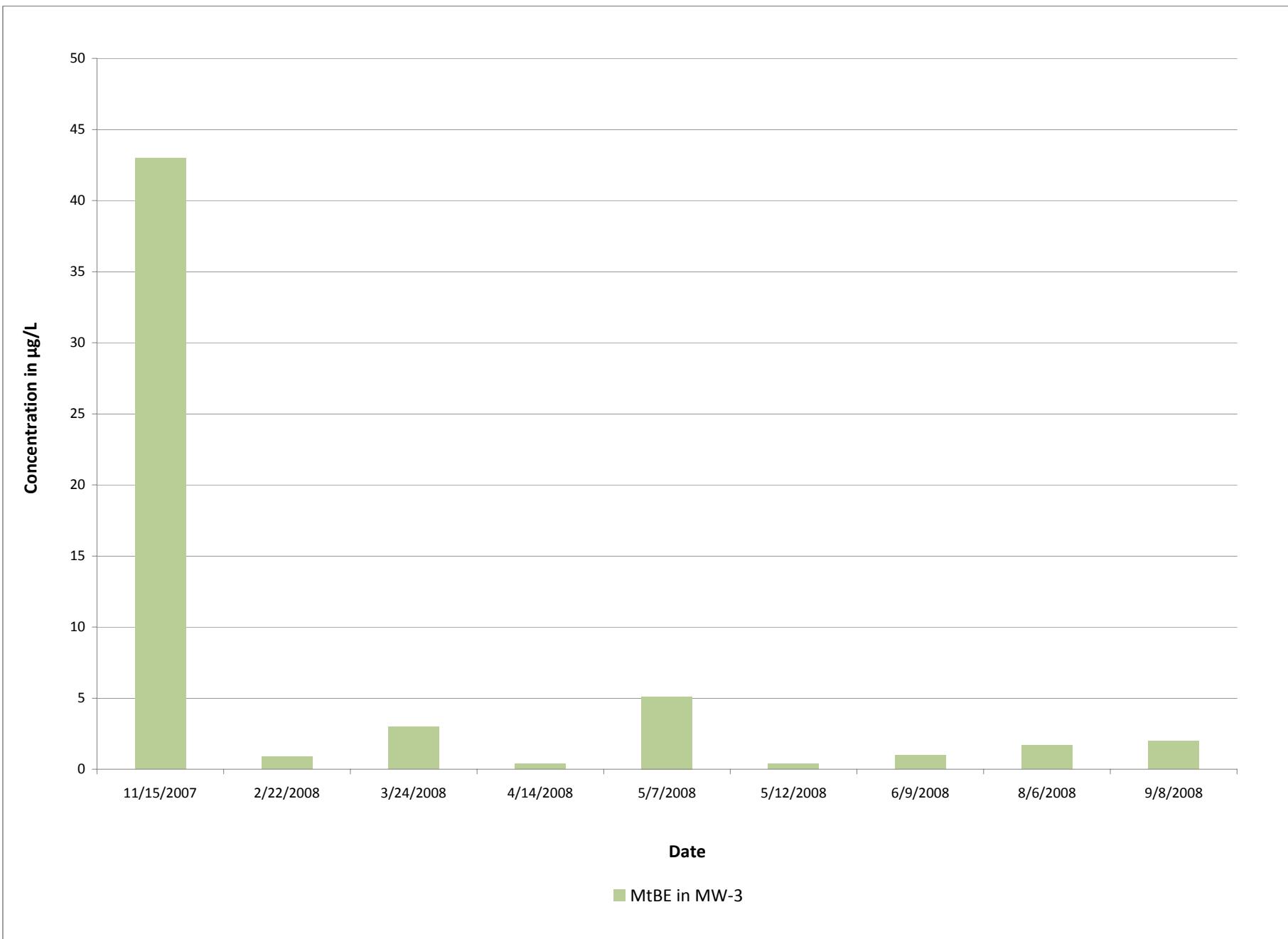


Figure 24: Comparison of MtBE Concentrations in MW-3

# **APPENDIX A**

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

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Third Quarter 2008: Groundwater Monitoring and Remediation System Report  
With Evaluation of Effectiveness of Monthly MPE

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

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.

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.

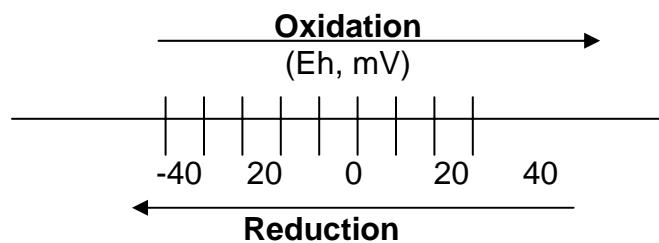
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater EC is directly related to the concentration of total dissolved solids (TDS) in solution.

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<sub>2</sub> 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<sub>2</sub> in the groundwater is consumed; however, the oxidizing agents (i.e., the constituents that undergo reduction) now become NO<sub>3</sub><sup>-</sup>, MnO<sub>2</sub>, Fe (OH)<sub>3</sub>, SO<sub>4</sub><sup>2-</sup> 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 ( $\text{Fe}^{+2}$ ), nitrate ( $\text{NO}_3^-$ ), and sulfate ( $\text{SO}_4^{+2}$ ) concentrations.

$\text{Fe}^{+2}$ ,  $\text{NO}_3^-$ , and  $\text{SO}_4^{+2}$  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.

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 development of air bubbles within the headspace. For TPH-d analysis, groundwater samples are collected using 1-L, amber, nonpreserved glass containers. Samples are placed in an ice-filled cooler and maintained at 4°C. A chain of custody form is prepared to be delivered with the samples, which are delivered promptly to a California state-certified analytical laboratory.

# **Appendix B**

## **Table of Elevations and Coordinates of Monitoring Wells and Field Measurements of Physical, Chemical, and Biodegradation Parameters of Groundwater**

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

SOMA ENVIRONMENTAL

Oakland-E. 14 the St. "International Blvd"

WELL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
FD-C	2109299.85	6064039.85	39.35 40.25	Notch on north side of PVC Punch north rim of box
FD-E	2109281.13	6064067.87	40.06 40.55	Notch on north side of PVC Punch north rim of box
FD-W	2109314.99	6064017.59	39.16 39.95	Notch on north side of PVC Punch north rim of box
MW-1	2109338.74	6064025.97	40.11 40.76	Notch on north side of PVC Punch north rim of box
MW-2	2109383.20	6064073.06	40.71 41.61	Notch on north side of PVC Punch north rim of box
MW-3	2109351.11	6064064.63	40.91 41.68	Notch on north side of PVC Punch north rim of box
MW-4	2109278.18	6064076.40	40.01 40.67	Notch on north side of PVC Punch north rim of box
MW-5	2109410.84	6064058.46	41.16 41.60	Notch on south side of PVC Punch south rim of box
MW-6	2109320.46	6064105.06	40.92 41.52	Notch on north side of PVC Punch north rim of box
MW-7	2109368.19	6064025.54	39.94 40.54	Notch on north side of PVC Punch north rim of box
MW-8	2109321.68	6064000.46	39.38 39.72	Notch on north side of PVC Punch north rim of box

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

SOMA ENVIRONMENTAL

Oakland-E. 14 the St. "International Blvd"

WELL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
MW-10	2109193.97	6063957.39	36.71 37.70	Notch on north side of PVC Punch north rim of box
MW-11	2109125.26	6064007.52	XXXX	<b>NO ELEVATION , BOAT ON TOP</b>
MW-12	2109121.85	6063865.00	36.84 36.87	Notch on north side of PVC

Bench mark: NGS Bench mark No.M 554. To reach the station from the intersection of Interstate Highway 880 and Hegenberger Rd in South Oakland go northeast on Hegenberger Rd for 0.5 MI to a side road right Baldwin St. Turn right and go south on Baldwin St for 0.35 MI to a T-intersection, 85th Ave. for 0.1 MI to a side road right, Railroad Ave. Turn right and go south on Railroad Ave. for 0.1 MI to the station on the left, east, side of the road in a large concrete headwall for a culvert.

Elevation = 14.20 NAVD88 Datum

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

*Harrington Surveys Inc.*

*Land Surveying & Mapping*

2278 Larkey Lane, Walnut Creek, Ca. 94597 Phone (925)935-7228 Fax (925)935-5118  
Cell (925)788-7359 E-Mail (ben5132@pacbell.net)

SOMA ENVIRONMENTAL ENGINEERING  
2680 BISHOP DR. # 203  
SAN RAMON, CA. 94583

MAY 20, 2005

ATTN: ELENA

3609 INTERNATIONAL BLVD.  
OAKLAND CA.

**SURVEY REPORT**

CONTROLLING POINTS FRON SURVEY BY KIER & WRIGHT, DATED 08-27-02:

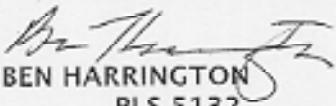
MW-5 NOTCH, CALIFORNIA COORDINATE SYSTEM, ZONE 3. NAD 83.  
NORTH 2,109,410.84 - EAST 6,064,058.45, LAT. N37°46'17.42024"  
W122°13'18.51054".  
ELEVATION 41.06, NAVD 88,

MW-7 NOTCH, CALIFORNIA COORDINATE SYSTEM, ZONE 3,  
NORTH 2,109,368.19 - EAST 6,064,025.54. LAT N37°46'30.32592",  
W122°13'18.88771"  
ELEVATION 39.94 NAVD 88,

INSTRUMENTATION:

TRIMBLE GPS, MODEL 5800 AND LEICA TCA 1800, 1" HORZ. & VERT.  
OBSERVATION: EPOCH = 180.

FIELD SURVEY: APRIL 20, 2005.

  
BEN HARRINGTON  
PLS 5132





**TABLE OF ELEVATIONS & COORDINATES**

DATE: 8/17/05

Job No. 07-014

DATE OF SURVEY 3/8/07

INSTRUMENTS: Leica SR530 L530, Leica -

TCRA 1102 - Total Station,

Leica - NA 3003 - Level

**3609 International Blvd., Oakland**

SOMA ENVIRONMENTAL, PROJECT # 2331

WELL ID #	NORTHING (FT.) / LATITUDE (D.M.S.)	EASTING (FT.) / LONGITUDE (D.M.S.)	ELEVATION (FT.)	DESCRIPTION
EX-1	2109341.80	6064034.13	40.51	Casing
			40.93	Vault
EX-1 DECIMAL DEGREES	37.7752931	-122.2218880		

**LOCAL CONTROL**

MW-7	2109368.62	6064025.48	39.94	Casing
	37.7753663	-122.2219197	40.54	Vault
MW-8	2109321.68	6064000.47	39.38	Casing
	37.7752361	-122.2220033	39.72	Vault

**NOTE**

THE VALUES FOR EX-1 ARE DERIVED FROM LOCAL CONTROL BASED UPON CONTROL VALUES

USED FROM THE PREVIOUS SITE SURVEY AS PROVIDED BY KIER AND WRIGHT DATED 08-27-2002

**BENCH MARK: NGS Bench mark No.M 554**

TO REACH THE STATION FROM THE INTERSECTION OF INTERSTATE HIGHWAY 880 AND HEGENBERGER RD IN SOUTH OAKLAND  
 GO NORTHEAST ON HEGENBERGER ROAD FOR 0.5MI TO A SITE ROAD RIGHT BALDWIN ST. TURN RIGHT AND GO SOUTH ON BALDWIN ST.  
 FOR 0.35MI TO A T-INTERSECTION, 85TH AVE. FOR 0.1MI TO A SIDE ROAD RIGHT, RAILROAD AVE. TURN RIGHT AND GO  
 SOUTH ON RAILROAD AVE. FOR 0.1MI TO THE STATION ON THE LEFT, EAST, SIDE OF THE ROAD IN A LARGE CONCRETE HEADWALL FOR A  
 CULVERT.

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

Elevation = 14.20 FEET NAVD88 Datum



PLS Surveys, Inc.  
 2220 Livingston Street, Suite 202  
 Oakland, CA 94606  
 510.261.0900



Well No.: MW -1  
 Casing Diameter: 2 inch  
 Depth of Well: 30.00 ft  
 Top of Casing Elevation: 40.11 ft  
 Depth to Groundwater: 13.43 ft  
 Groundwater Elevation: 26.68 ft  
 Water Column Height: 15.57 ft  
 Purged Volume: 8 gallons

Project No.: 2331  
 Address: Tony's Express Auto Service  
 3609 International Blvd  
 Oakland, CA  
 Date: August 6, 2008  
 Sampler: Ruchi Mathur

*Lizziethightower*

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe *slightly cloudy*

Sheen: No  Yes  Describe

Odor: No  Yes  Describe

#### Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> - (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
1126	Started Purgung									
1127	2	0.18	6.83	21.73	343	150	+173.1			
1128	4	0.19	6.30	21.81	364	266	+14.0			
1129	6	0.20	6.41	21.71	380	300	-4.3			
1130	8	0.29	6.54	21.88	336	206	-23.5			
1135	Sampled							0.87	0	0

Notes:



Well No.: MW-2  
Casing Diameter: 4 inch  
Depth of Well: 31.00 ft  
Top of Casing Elevation: 40.71 ft  
Depth to Groundwater: 13.39 ft  
Groundwater Elevation: 27.32 ft  
Water Column Height: 17.61 ft  
Purged Volume: 24 gallons

Project No.: 2331  
Address: Tony's Express Auto Service  
3609 International Blvd  
Oakland, CA  
Date: August 6, 2008  
Sampler: Ruchi Mathur

Lizzie Hightower

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

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

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

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

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe²⁺ (mg/L)	NO₃⁻ (mg/L)	SO₄²⁻ (mg/L)
1316			Started Purging Well							
1317	2	0.14	6.37	21.52	344	10.7	+56.2			
1319	6	0.16	6.12	21.57	411	11.1	+61.6			
1322	12	0.21	6.07	21.62	419	17.7	+74.4			
1325	18	0.26	6.06	21.62	449	17.8	+59.4			
1328	24	0.34	6.22	21.62	451	26.9	+27.8	0	0	0
1335			Sampled							

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-3  
Casing Diameter: 4 inch  
Depth of Well: 31.50 ft  
Top of Casing Elevation: 40.91 ft  
Depth to Groundwater: 14.09 ft  
Groundwater Elevation: 26.82 ft  
Water Column Height: 17.41 ft  
Purged Volume: 24 gallons

Project No.: 2331  
Address: Tony's Express Auto Service  
3609 International Blvd  
Oakland, CA  
Date: August 6, 2008  
Sampler: Ruchi Mathur  
*Lizzie Hightower*

Purging Method: Bailer

Pump

Sampling Method: Bailer

Pump

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

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

Odor: No  Yes  Describe *petro* \_\_\_\_\_

#### Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
13:50	Star fed purging well									
13:51	2	0.33	6.80	21.54	306	16.5	-81.3			
13:54	6	0.46	6.81	21.67	291	41.7	-98.6			
13:57	12	0.52	6.78	21.63	351	52.3	-106.4			
14:00	18	0.54	6.73	21.56	374	39.6	-109.5			
14:03	24	0.47	6.69	21.59	393	22.9	-109.4			
14:06	Sampled							2.95	0	0

Notes:



Well No.: MW-4R  
Casing Diameter: 2 inch  
Depth of Well: 26.00 ft  
Top of Casing Elevation: 40.34 ft  
Depth to Groundwater: 13.58 ft  
Groundwater Elevation: 26.76 ft  
Water Column Height: 12.42 ft  
Purged Volume: 6 gallons

Project No.: 2331  
Address: Tony's Express Auto Service  
3609 International Blvd  
Oakland, CA  
Date: August 5<sup>th</sup>, 2008  
Sampler: Ruchi Mathur

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

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

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

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

#### Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
1237	Started Purging									
1238	2	0.13	6.57	21.33	418	91	-40.1			
1239	4	0.13	6.37	21.15	421	65.9	-22.1			
1240	6	0.14	6.18	20.99	398	63.4	+2.7			
1245	Sampled							0.0	0.0	0.0

Notes:



Well No.: MW-5 Project No.: 2331  
Casing Diameter: 2 inch Address: Tony's Express Auto Service  
Depth of Well: 26.20 ft 3609 International Blvd  
Top of Casing Elevation: 41.16 ft Oakland, CA  
Depth to Groundwater: 13.64 ft Date: August 5<sup>th</sup>, 2008  
Groundwater Elevation: 27.52 ft Sampler: Ruchi Mathur  
Water Column Height: 12.56 ft  
Purged Volume: 6 gallons

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe cloudy brown

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

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

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
1420			<u>Started Purging</u>							
1424	2	0.15	5.55	22.50	478	597	+325.5			
1428	4	0.19	5.91	22.18	437	844	+299.2			
1432	6	0.18	5.65	21.76	440	1000	+313.7			
1440			<u>Sampled</u>					0	0	0

Notes:



Well No.: MW-6  
Casing Diameter: 2 inch  
Depth of Well: 25.00 ft  
Top of Casing Elevation: 40.92 ft  
Depth to Groundwater: 13.98 ft  
Groundwater Elevation: 26.94 ft  
Water Column Height: 11.02 ft  
Purged Volume: 5.5 gallons

Project No.: 2331  
Address: Tony's Express Auto Service  
3609 International Blvd  
Oakland, CA  
Date: August 5-~~8~~, 2008  
Sampler: Ruchi Mathur

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe Gray

Sheen: No  Yes  Describe Rainbow Sheen

Odor: No  Yes  Describe Petrol

#### Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> - (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
1500	Started Purging									
1507	2	0.17	5.98	21.78	462	393	+230.5			
1515	4	0.17	6.22	20.62	418	999	+216.4			
1520	5.5	0.17	6.12	20.24	412	999	+215.3			
1530	sampled							2.30	0	0

Notes:



Well No.: MW-7 Project No.: 2331  
 Casing Diameter: 2 inch Address: Tony's Express Auto Service  
 Depth of Well: 26.00 ft 3609 International Blvd  
 Top of Casing Elevation: 39.94 ft Oakland, CA  
 Depth to Groundwater: 13.03 ft Date: August 6, 2008  
 Groundwater Elevation: 26.91 ft Sampler: Ruchi Mathur  
 Water Column Height: 12.97 ft *Lizzie Hightower*  
 Purged Volume: 6 gallons

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

#### Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
11:53	Started purging well									
11:54	2	0.17	5.88	22.17	328	52.4	+223.9			
11:55	4	0.19	5.83	22.22	357	67.6	+206.4			
11:56	6	0.21	5.82	22.16	390	244	+227.7			
11:59	Sampled							0.42	0	84

Notes:



Well No.: MW-8 Project No.: 2331  
Casing Diameter: 2 inch Address: Tony's Express Auto Service  
Depth of Well: 26.50 ft 3609 International Blvd  
Top of Casing Elevation: 39.38 ft Oakland, CA  
Depth to Groundwater: 12.82 ft Date: August 6, 2008  
Groundwater Elevation: 26.56 ft Sampler: Ruchi Mathur  
Water Column Height: 13.68 ft  
Purged Volume: 8 gallons

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe grayish

Sheen: No  Yes  Describe

Odor: No  Yes  Describe Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> - (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
1058	Started Purging									
1059	2	0.20	7.07	21.01	362	143	-64.7			
1100	4	0.19	7.03	21.01	393	203	-72.7			
1101	6	Dried								
1102	8									
1107	Sampled							2.57	0	0

Notes:



Well No.: MW-10  
Casing Diameter: 2 inch  
Depth of Well: 23.40 ft  
Top of Casing Elevation: 36.71 ft  
Depth to Groundwater: 11.50 ft  
Groundwater Elevation: 25.21 ft  
Water Column Height: 11.90 ft  
Purged Volume: 6 gallons

Project No.: 2331  
Address: Tony's Express Auto Service  
3609 International Blvd  
Oakland, CA  
Date: August 5-6, 2008  
Sampler: Ruchi Mathur  
*Lizzietighttower*

Purging Method: Bailer

Pump

Sampling Method: Bailer

Pump

Color: No  Yes  Describe

Sheen: No  Yes  Describe

Odor: No  Yes  Describe

#### Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe²⁺ (mg/L)	NO₃⁻ (mg/L)	SO₄²⁻ (mg/L)
10:34	Start	4.00	5.78	20.31	383	17.6	+306.8			
10:35	2	0.16	5.78	20.31	383	17.6	+306.8			
10:36	4	0.17	5.71	20.32	390	8.90	+308.8			
10:37	6	0.17	5.69	20.31	394	7.53	+310.2			
10:40	Sampled							0.0	0	0

Notes:



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Well No.: MW-11 Project No.: 2331  
Casing Diameter: \_\_\_\_\_ inch Address: Tony's Express Auto Service  
Depth of Well: \_\_\_\_\_ ft 3609 International Blvd  
Top of Casing Elevation: \_\_\_\_\_ ft Oakland, CA  
Depth to Groundwater: \_\_\_\_\_ ft Date: August 5-6, 2008  
Groundwater Elevation: \_\_\_\_\_ ft Sampler: Ruchi Mathur  
Water Column Height: \_\_\_\_\_ ft  
Purged Volume: \_\_\_\_\_ gallons  
Not Purged

Purging Method: Bailer  Pump   
Sampling Method: Bailer  Pump  Not Sampled

Color: No  Yes  Describe Unknown  
Sheen: No  Yes  Describe Unknown  
Odor: No  Yes  Describe Unknown

## Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)

Notes: Gate with access to well Locked - Unable to get to well. Did not take any field measurements or sample.



Well No.: MW-12 Project No.: 2331  
Casing Diameter: 4 inch Address: Tony's Express Auto Service  
Depth of Well: 30.00 ft 3609 International Blvd  
Top of Casing Elevation: 36.84 ft Oakland, CA  
Depth to Groundwater: 12.15 ft Date: August 5-6, 2008  
Groundwater Elevation: 24.69 ft Sampler: Ruchi Mathur  
Water Column Height: 17.85 ft  
Purged Volume: 24 gallons

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

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

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

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

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> - (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)
1000	Started Purging									
1001	2	0.12	6.42	20.78	394	2.2	+182.4			
1003	6	0.12	6.17	20.76	396	11.8	+212.1			
1006	12	0.15	6.17	20.64	355	12.2	+224.9			
1009	18	0.13	6.05	20.79	397	5.85	+223.3			
1012	24	0.19	6.04	20.81	354	7.7	+234.7			
1017	Sampled							0.48	0	0

Notes:

Well No.: F.D. Center

Project No.: 2331

Casing Diameter: 4 inch

Address: Tony's Express Auto Service

Depth of Well: NM ft

3609 International Blvd

Top of Casing Elevation: 39.35 ft

Oakland, CA

Depth to Groundwater: 16.05 ft

Date: August 5-6, 2008

Groundwater Elevation: 23.30 ft

Sampler: Ruchi Mathur

Water Column Height: NM ftPurged Volume: - gallons*Not Purged*Purging Method: Bailer  Pump Sampling Method: Bailer  Pump  *Not Sampled*Color: No  Yes  Describe UnknownSheen: No  Yes  Describe UnknownOdor: No  Yes  Describe Unknown

## Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)

Notes: French Drain Center Riser is part of the remedial system, only depth to GW measurement taken.



Well No.: F. D. East Project No.: 2331  
Casing Diameter: 4 inch Address: Tony's Express Auto Service  
Depth of Well: NM ft 3609 International Blvd  
Top of Casing Elevation: 40.06 ft Oakland, CA  
Depth to Groundwater: 13.54 ft Date: August 5-~~5~~ 2008  
Groundwater Elevation: 26.52 ft Sampler: Ruchi Mathur  
Water Column Height: NM ft  
Purged Volume: — gallons  
Not Purged

Purging Method: Bailer  Pump   
Sampling Method: Bailer  Pump  Not Sampled

Color: No  Yes  Describe Unknown  
Sheen: No  Yes  Describe Unknown  
Odor: No  Yes  Describe Unknown

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)

Notes: French Drain East Riser is part of the French Drain remedial system, however, no active pump is within riser. Only GW measurements taken.



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Well No.: F.D.West Project No.: 2331  
Casing Diameter: 4 inch Address: Tony's Express Auto Service  
Depth of Well: NM ft 3609 International Blvd  
Top of Casing Elevation: 39.16 ft Oakland, CA  
Depth to Groundwater: 14.15 ft Date: August 5<sup>th</sup>, 2008  
Groundwater Elevation: 25.01 ft Sampler: Ruchi Mathur  
Water Column Height: NM ft  
Purged Volume: — gallons  
Not Purged

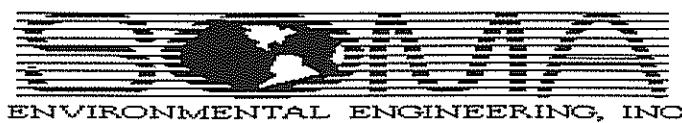
Purging Method: Bailer  Pump   
Sampling Method: Bailer  Pump  Not Sampled

Color: No  Yes  Describe Unknown  
Sheen: No  Yes  Describe Unknown  
Odor: No  Yes  Describe Unknown

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. ( $\mu$ S/cm)	Turb. NTU	ORP	$Fe^{+2}$ (mg/L)	$NO_3^-$ (mg/L)	$SO_4^{+2}$ (mg/L)

Notes: French Drain West Riser is part of the remedial system. Only depth to GW measurements taken.



ENVIRONMENTAL ENGINEERING, INC

Well No.: EX-1 Project No.: 2331  
Casing Diameter: 4 inch Address: Tony's Express Auto Service  
Depth of Well: NM ft 3609 International Blvd  
Top of Casing Elevation: 40.51 ft Oakland, CA  
Depth to Groundwater: 17.38 ft Date: August 5<sup>th</sup>, 2008  
Groundwater Elevation: 23.13 ft Sampler: Ruchi Mathur  
Water Column Height: NM ft  
Purged Volume: - gallons  
*Not Purged*

Purging Method: Bailer  Pump   
Sampling Method: Bailer  Pump  *Not Sampled*

Color: No  Yes  Describe Unknown  
Sheen: No  Yes  Describe Unknown  
Odor: No  Yes  Describe Unknown

## Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP	Fe <sup>+2</sup> (mg/L)	NO <sub>3</sub> <sup>-</sup> (mg/L)	SO <sub>4</sub> <sup>-2</sup> (mg/L)

Notes: Extraction Well EX-1 is part of the remedial System. Only depth to GW measurements taken.

# **Appendix C**

## **Chain of Custody Form and Laboratory Report**

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Third Quarter 2008: Groundwater Monitoring and Remediation System Report  
With Evaluation of Effectiveness of Monthly MPE

## CHAIN OF CUSTODY

Page \_1\_of \_1

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

**Project No:** 2331**Project Name:** 3609 International Blvd. Oakland CA**Turnaround Time:** StandardC&T LOGIN # 205144**Analysis****Sampler:****Report To:** Joyce Bobek**Company :** SOMA Environmental**Telephone:** 925-734-6400**Fax:** 925-734-6401

Lab No.	Sample ID.	Sampling Date	Time	Matrix			Preservative			
				Soil	Water	Waste	# of Containers	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>
1	MW-1	8/6/08	1135	*			3 Vials	*		*
2	MW-2	8/6/08	1335	*				*		*
3	MW-3	8/6/08	1406	*				*		*
4	MW-4R	8/5/08	1245	*				*		*
5	MW-5	8/5/08	1440	*				*		*
6	MW-6	8/5/08	1530	*				*		*
7	MW-7	8/6/08	1159	*				*		*
8	MW-8	8/6/08	1107	*				*		*
9	MW-10	8/6/08	1040	*				*		*
10	MW-12	8/6/08	1017	*			↓	*		*

<b>Notes:</b> EDF OUTPUT REQUIRED	<b>RELINQUISHED BY:</b>	<b>RECEIVED BY:</b>
	<i>Felicia Mather 8/6/08 1645</i> DATE/TIME	<i>Joyce Bobek 8/7/08 11:00</i> DATE/TIME
	<i>Joyce Bobek 8/7/08 11:00</i> DATE/TIME	DATE/TIME
		DATE/TIME

# COOLER RECEIPT CHECKLIST



Login # 205144 Date Received 8-7-08 Number of coolers 1  
Client SDMA Project 3609 International Blvd.

Date Opened 8-7-08 By (print) F Nichols (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  N/A

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:

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

Samples Received on ice & cold without a temperature blank

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

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

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

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

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

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

16. Was the client contacted concerning this sample delivery? ..... YES  NO

If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

## COMMENTS

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

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

**Laboratory Job Number 205144  
ANALYTICAL REPORT**

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

Project : 2331  
Location : 3609 Int'l Blvd., Oakland  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1	205144-001
MW-2	205144-002
MW-3	205144-003
MW-4R	205144-004
MW-5	205144-005
MW-6	205144-006
MW-7	205144-007
MW-8	205144-008
MW-10	205144-009
MW-12	205144-010

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 signatures. 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: Troy Baker  
Project Manager

Date: 08/21/2008

Signature: Jeanne R. Baker  
Senior Program Manager

Date: 08/28/2008

**CASE NARRATIVE**

Laboratory number: **205144**  
Client: **SOMA Environmental Engineering Inc.**  
Project: **2331**  
Location: **3609 Int'l Blvd., Oakland**  
Request Date: **08/07/08**  
Samples Received: **08/07/08**

This hardcopy data package contains sample and QC results for ten water samples, requested for the above referenced project on 08/07/08. The samples were received cold and intact.

**Volatile Organics by GC/MS (EPA 8260B):**  
No analytical problems were encountered.

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Field ID: MW-1 Batch#: 141376  
 Type: SAMPLE Sampled: 08/06/08  
 Lab ID: 205144-001 Analyzed: 08/13/08  
 Diln Fac: 2.000

Analyte	Result	RL
Gasoline C7-C12	3,400	100
MTBE	3.7	1.0
Benzene	17	1.0
Toluene	7.8	1.0
Ethylbenzene	73	1.0
m,p-Xylenes	240	1.0
o-Xylene	69	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-123
1,2-Dichloroethane-d4	90	76-138
Toluene-d8	101	80-120
Bromofluorobenzene	101	80-120

Field ID: MW-2 Batch#: 141286  
 Type: SAMPLE Sampled: 08/06/08  
 Lab ID: 205144-002 Analyzed: 08/11/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	1,900	50
MTBE	ND	0.50
Benzene	4.6	0.50
Toluene	6.7	0.50
Ethylbenzene	98	0.50
m,p-Xylenes	110	0.50
o-Xylene	4.7	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	89	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-120

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



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**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Field ID: MW-3 Lab ID: 205144-003  
 Type: SAMPLE Sampled: 08/06/08

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	3,000	50	1.000	141334	08/12/08
MTBE	1.7	0.50	1.000	141334	08/12/08
Benzene	140	1.3	2.500	141383	08/14/08
Toluene	21	0.50	1.000	141334	08/12/08
Ethylbenzene	97	1.3	2.500	141383	08/14/08
m,p-Xylenes	180	0.50	1.000	141334	08/12/08
o-Xylene	53	0.50	1.000	141334	08/12/08

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	96	80-123	1.000	141334	08/12/08
1,2-Dichloroethane-d4	84	76-138	1.000	141334	08/12/08
Toluene-d8	98	80-120	1.000	141334	08/12/08
Bromofluorobenzene	95	80-120	1.000	141334	08/12/08

Field ID: MW-4R Batch#: 141286  
 Type: SAMPLE Sampled: 08/05/08  
 Lab ID: 205144-004 Analyzed: 08/11/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	630	50
MTBE	ND	0.50
Benzene	33	0.50
Toluene	0.59	0.50
Ethylbenzene	13	0.50
m,p-Xylenes	2.0	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	85	76-138
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-120

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

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Field ID: MW-5 Batch#: 141376  
 Type: SAMPLE Sampled: 08/05/08  
 Lab ID: 205144-005 Analyzed: 08/13/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	96	80-123
1,2-Dichloroethane-d4	94	76-138
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-120

Field ID: MW-6 Batch#: 141376  
 Type: SAMPLE Sampled: 08/05/08  
 Lab ID: 205144-006 Analyzed: 08/14/08  
 Diln Fac: 4.000

Analyte	Result	RL
Gasoline C7-C12	7,900	200
MTBE	ND	2.0
Benzene	82	2.0
Toluene	6.9	2.0
Ethylbenzene	300	2.0
m,p-Xylenes	120	2.0
o-Xylene	6.3	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	88	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-120

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

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Field ID: MW-7 Batch#: 141334  
 Type: SAMPLE Sampled: 08/06/08  
 Lab ID: 205144-007 Analyzed: 08/12/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	0.91	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-123
1,2-Dichloroethane-d4	90	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-120

Field ID: MW-8 Lab ID: 205144-008  
 Type: SAMPLE Sampled: 08/06/08

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	2,900	170	3.333	141376	08/14/08
MTBE	13	0.50	1.000	141334	08/12/08
Benzene	97	1.7	3.333	141376	08/14/08
Toluene	11	0.50	1.000	141334	08/12/08
Ethylbenzene	170	1.7	3.333	141376	08/14/08
m,p-Xylenes	16	0.50	1.000	141334	08/12/08
o-Xylene	1.0	0.50	1.000	141334	08/12/08

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	96	80-123	1.000	141334	08/12/08
1,2-Dichloroethane-d4	85	76-138	1.000	141334	08/12/08
Toluene-d8	98	80-120	1.000	141334	08/12/08
Bromofluorobenzene	97	80-120	1.000	141334	08/12/08

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

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Field ID: MW-10 Batch#: 141376  
 Type: SAMPLE Sampled: 08/06/08  
 Lab ID: 205144-009 Analyzed: 08/13/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	200	50
MTBE	2.9	0.50
Benzene	3.2	0.50
Toluene	ND	0.50
Ethylbenzene	3.7	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-123
1,2-Dichloroethane-d4	94	76-138
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-120

Field ID: MW-12 Batch#: 141376  
 Type: SAMPLE Sampled: 08/06/08  
 Lab ID: 205144-010 Analyzed: 08/13/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	550	50
MTBE	13	0.50
Benzene	0.56	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	97	80-123
1,2-Dichloroethane-d4	90	76-138
Toluene-d8	98	80-120
Bromofluorobenzene	103	80-120

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

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Type: BLANK Batch#: 141286  
 Lab ID: QC454967 Analyzed: 08/11/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	95	80-123
1,2-Dichloroethane-d4	93	76-138
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120

Type: BLANK Batch#: 141334  
 Lab ID: QC455154 Analyzed: 08/12/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	94	80-123
1,2-Dichloroethane-d4	90	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	96	80-120

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

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Received:	08/07/08
Units:	ug/L		

Type: BLANK Batch#: 141376  
 Lab ID: QC455333 Analyzed: 08/13/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	97	80-123
1,2-Dichloroethane-d4	93	76-138
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-120

Type: BLANK Batch#: 141383  
 Lab ID: QC455344 Analyzed: 08/13/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	NA	
MTBE	ND	0.50
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	93	80-123
1,2-Dichloroethane-d4	104	76-138
Toluene-d8	93	80-120
Bromofluorobenzene	96	80-120

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

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141286
Units:	ug/L	Analyzed:	08/11/08
Diln Fac:	1.000		

Type: BS Lab ID: QC454959

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	23.27	93	60-136
Benzene	25.00	24.31	97	80-120
Toluene	25.00	25.31	101	80-121
Ethylbenzene	25.00	25.90	104	80-124
m,p-Xylenes	50.00	52.75	106	80-128
o-Xylene	25.00	25.99	104	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-123
1,2-Dichloroethane-d4	89	76-138
Toluene-d8	98	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC454960

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	21.39	86	60-136	8	20
Benzene	25.00	22.57	90	80-120	7	20
Toluene	25.00	23.30	93	80-121	8	20
Ethylbenzene	25.00	24.05	96	80-124	7	20
m,p-Xylenes	50.00	48.27	97	80-128	9	20
o-Xylene	25.00	23.81	95	80-123	9	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	87	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-120

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141286
Units:	ug/L	Analyzed:	08/11/08
Diln Fac:	1.000		

Type: BS Lab ID: QC454965

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	891.5	89	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	92	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-120

Type: BSD Lab ID: QC454966

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,000	971.6	97	80-120	9 20

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-123
1,2-Dichloroethane-d4	89	76-138
Toluene-d8	100	80-120
Bromofluorobenzene	97	80-120

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141334
Units:	ug/L	Analyzed:	08/12/08
Diln Fac:	1.000		

Type: BS Lab ID: QC455150

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	22.59	90	60-136
Benzene	25.00	22.94	92	80-120
Toluene	25.00	24.28	97	80-121
Ethylbenzene	25.00	24.55	98	80-124
m,p-Xylenes	50.00	49.41	99	80-128
o-Xylene	25.00	24.91	100	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-123
1,2-Dichloroethane-d4	90	76-138
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-120

Type: BSD Lab ID: QC455151

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	22.33	89	60-136	1	20
Benzene	25.00	22.45	90	80-120	2	20
Toluene	25.00	23.80	95	80-121	2	20
Ethylbenzene	25.00	24.17	97	80-124	2	20
m,p-Xylenes	50.00	48.30	97	80-128	2	20
o-Xylene	25.00	24.15	97	80-123	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-123
1,2-Dichloroethane-d4	88	76-138
Toluene-d8	98	80-120
Bromofluorobenzene	97	80-120

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141334
Units:	ug/L	Analyzed:	08/12/08
Diln Fac:	1.000		

Type: BS Lab ID: QC455152

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,006	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	89	76-138
Toluene-d8	98	80-120
Bromofluorobenzene	96	80-120

Type: BSD Lab ID: QC455153

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,000	994.9	99	80-120	1 20

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-123
1,2-Dichloroethane-d4	88	76-138
Toluene-d8	100	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141376
Units:	ug/L	Analyzed:	08/13/08
Diln Fac:	1.000		

Type: BS Lab ID: QC455331

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	21.07	84	60-136
Benzene	25.00	22.41	90	80-120
Toluene	25.00	23.78	95	80-121
Ethylbenzene	25.00	24.44	98	80-124
m,p-Xylenes	50.00	49.54	99	80-128
o-Xylene	25.00	24.57	98	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-123
1,2-Dichloroethane-d4	85	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-120

Type: BSD Lab ID: QC455332

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	20.87	83	60-136	1	20
Benzene	25.00	22.09	88	80-120	1	20
Toluene	25.00	23.56	94	80-121	1	20
Ethylbenzene	25.00	24.18	97	80-124	1	20
m,p-Xylenes	50.00	49.11	98	80-128	1	20
o-Xylene	25.00	23.90	96	80-123	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	88	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141383
Units:	ug/L	Analyzed:	08/13/08
Diln Fac:	1.000		

Type: BS Lab ID: QC455355

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.35	92	60-136
Benzene	20.00	20.78	104	80-120
Toluene	20.00	18.93	95	80-121
Ethylbenzene	20.00	20.07	100	80-124
m,p-Xylenes	40.00	39.15	98	80-128
o-Xylene	20.00	19.15	96	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	104	76-138
Toluene-d8	93	80-120
Bromofluorobenzene	94	80-120

Type: BSD Lab ID: QC455356

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.94	100	60-136	8	20
Benzene	20.00	21.15	106	80-120	2	20
Toluene	20.00	19.71	99	80-121	4	20
Ethylbenzene	20.00	19.97	100	80-124	0	20
m,p-Xylenes	40.00	37.42	94	80-128	5	20
o-Xylene	20.00	18.93	95	80-123	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-123
1,2-Dichloroethane-d4	101	76-138
Toluene-d8	91	80-120
Bromofluorobenzene	93	80-120

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	205144	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141376
Units:	ug/L	Analyzed:	08/13/08
Diln Fac:	1.000		

Type: BS Lab ID: QC455499

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	980.1	98	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	90	76-138
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120

Type: BSD Lab ID: QC455500

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,000	956.5	96	80-120	2 20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-123
1,2-Dichloroethane-d4	91	76-138
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-120

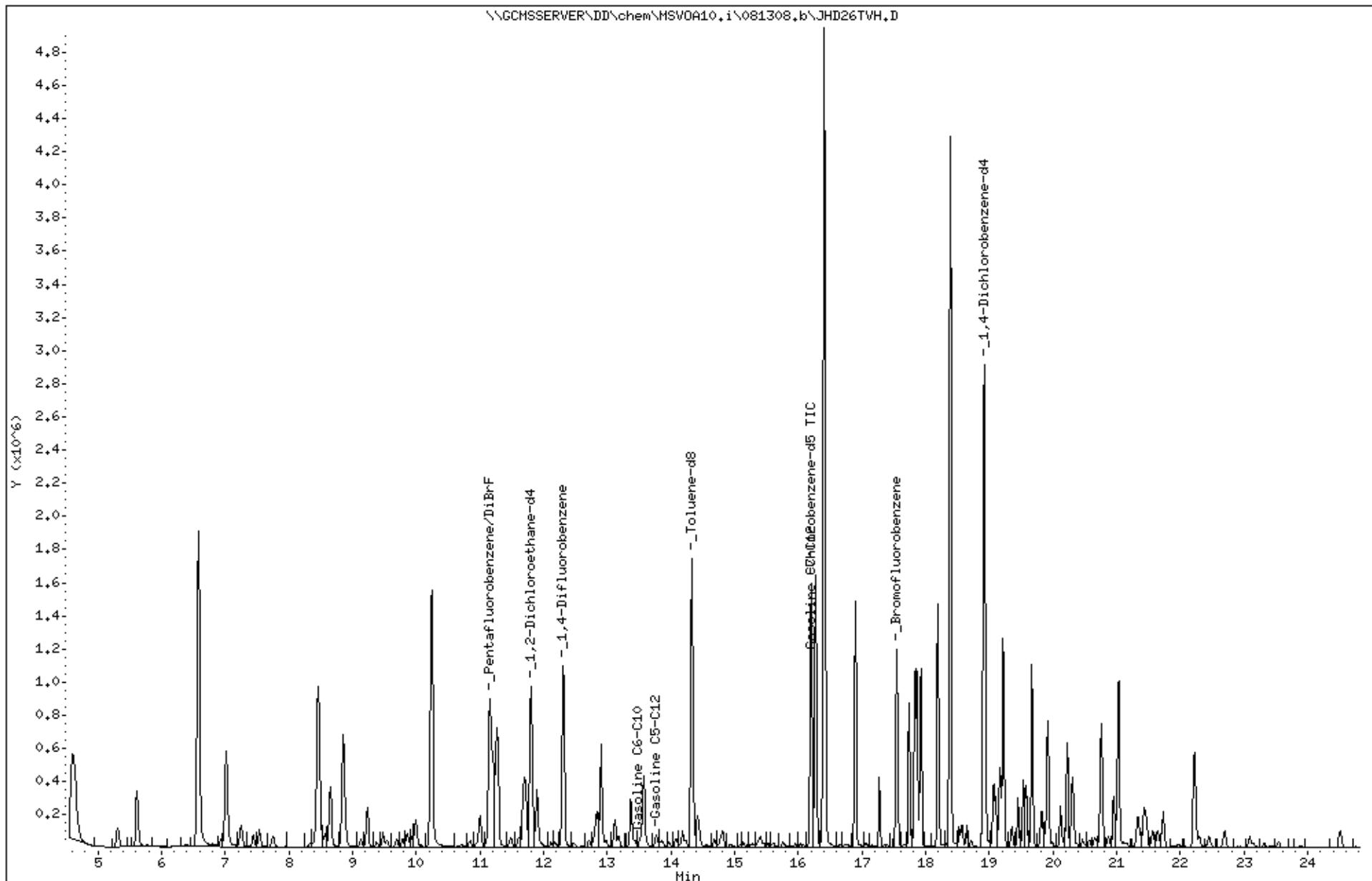
RPD= Relative Percent Difference

Data File: \\GCHSSERVER\\DD\\chem\\MSV0A10.i\\081308.b\\JHD26TVH.D  
Date : 13-AUG-2008 23:56  
Client ID: DYNAP&T  
Sample Info: S,205144-001

Column phase:

Instrument: MSV0A10.i  
Operator: VOA  
Column diameter: 2.00

Page 2

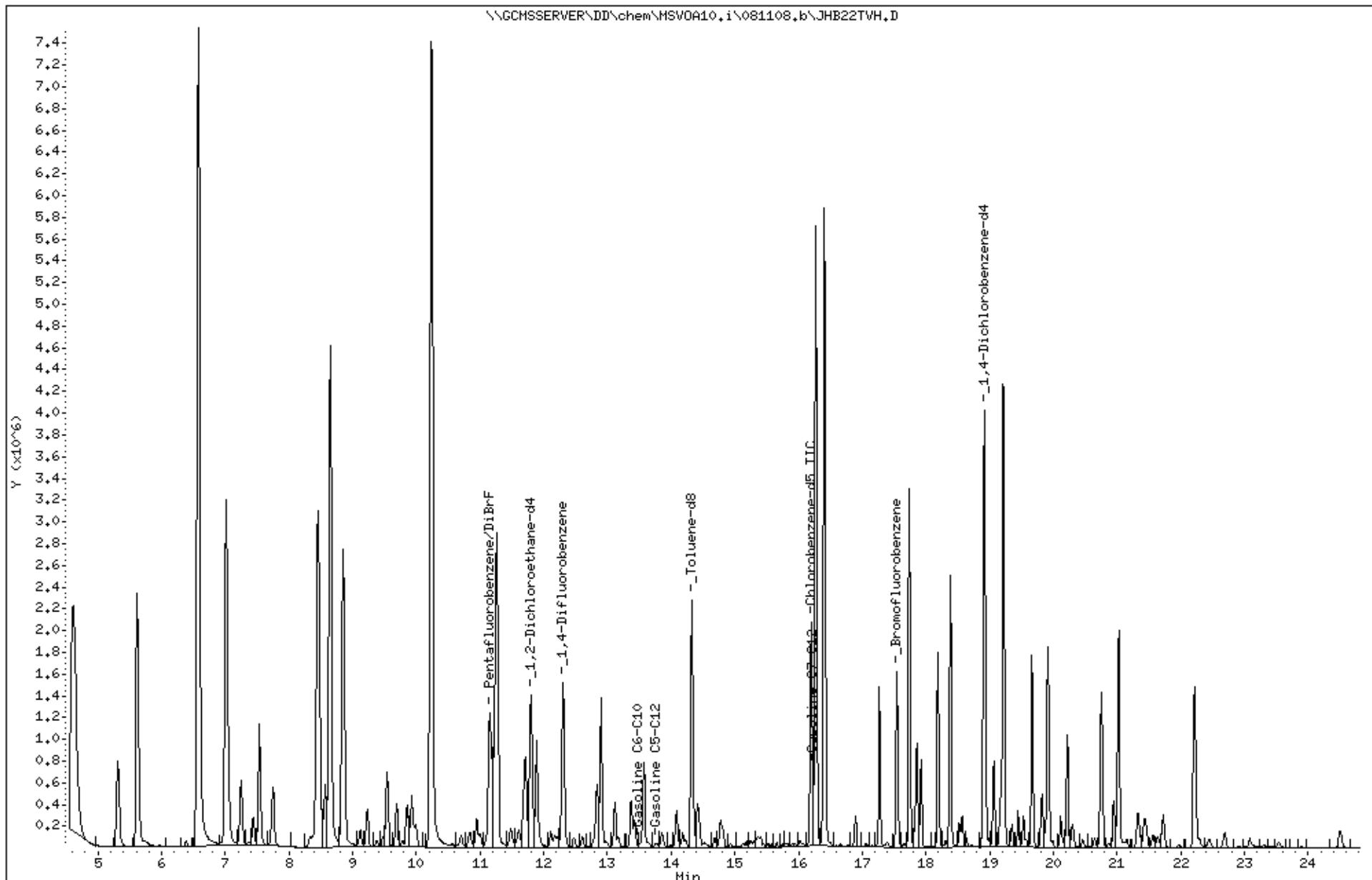


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Client ID: DYNAP&T  
Sample Info: S,205144-002

Column phase:

Instrument: MSV0A10.i  
Operator: VOA  
Column diameter: 2.00

Page 2

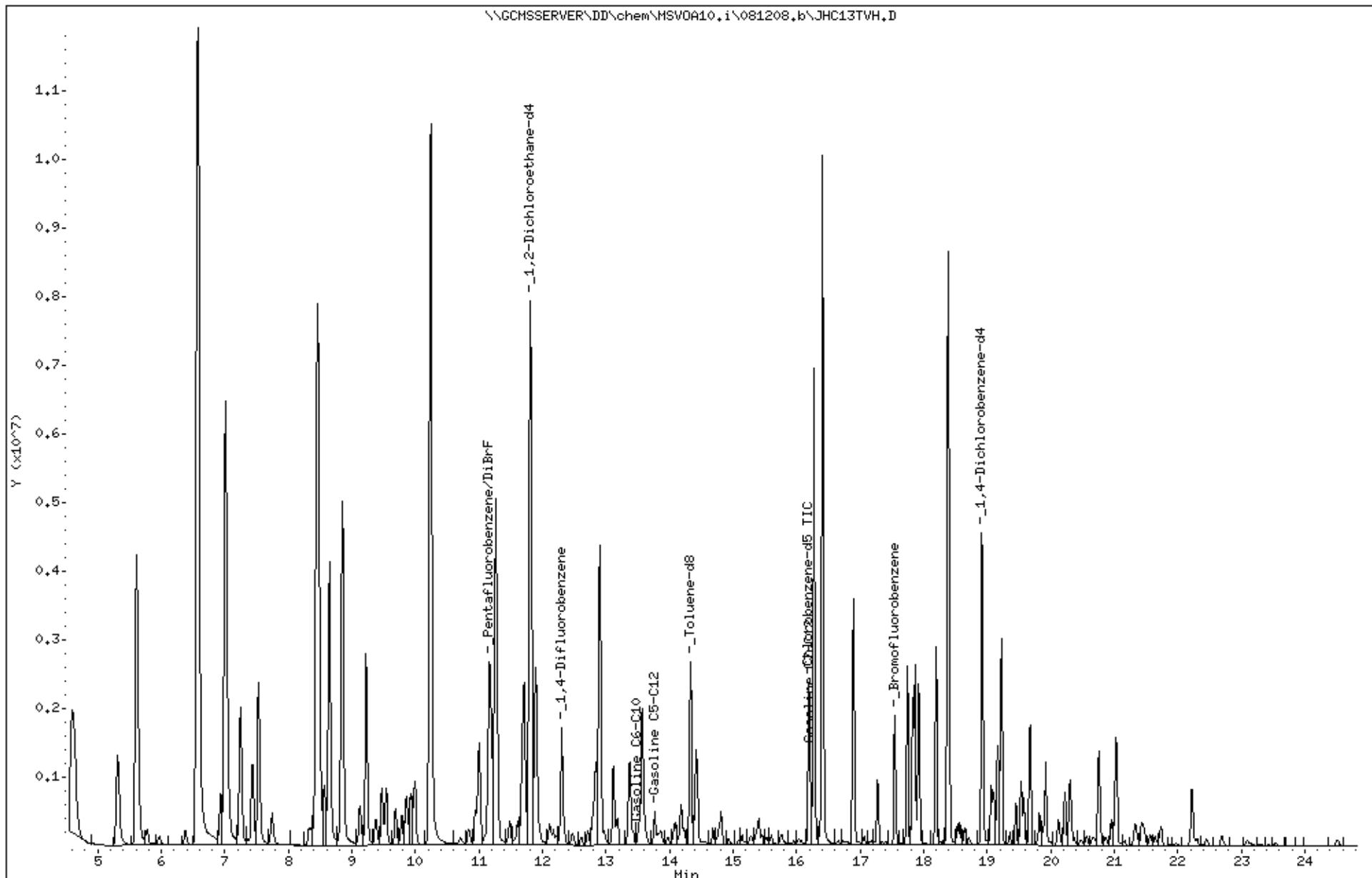


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Sample Info: S,205144-003

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Operator: VOA  
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Page 2

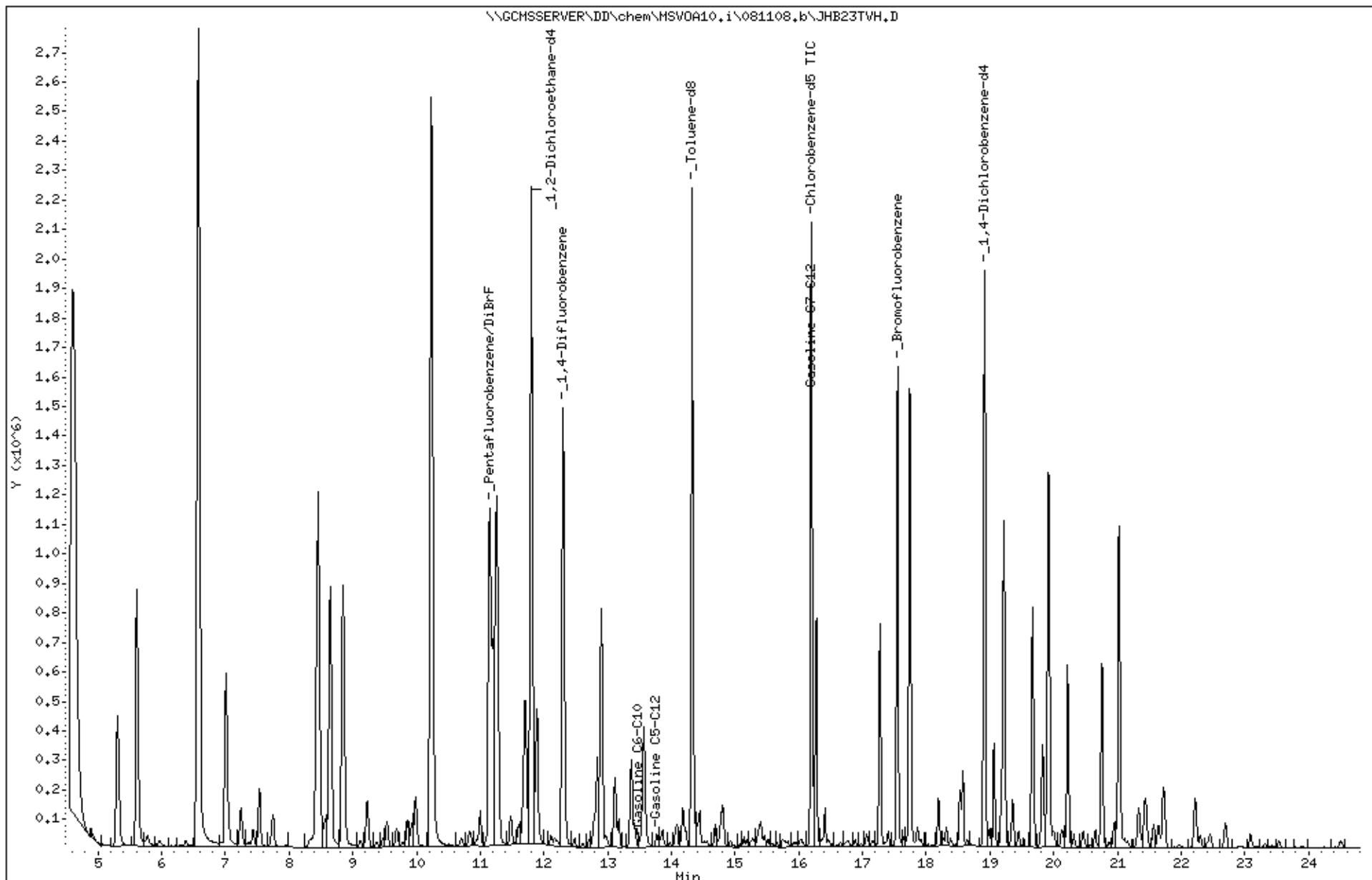


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Instrument: MSV0A10.i  
Operator: VOA  
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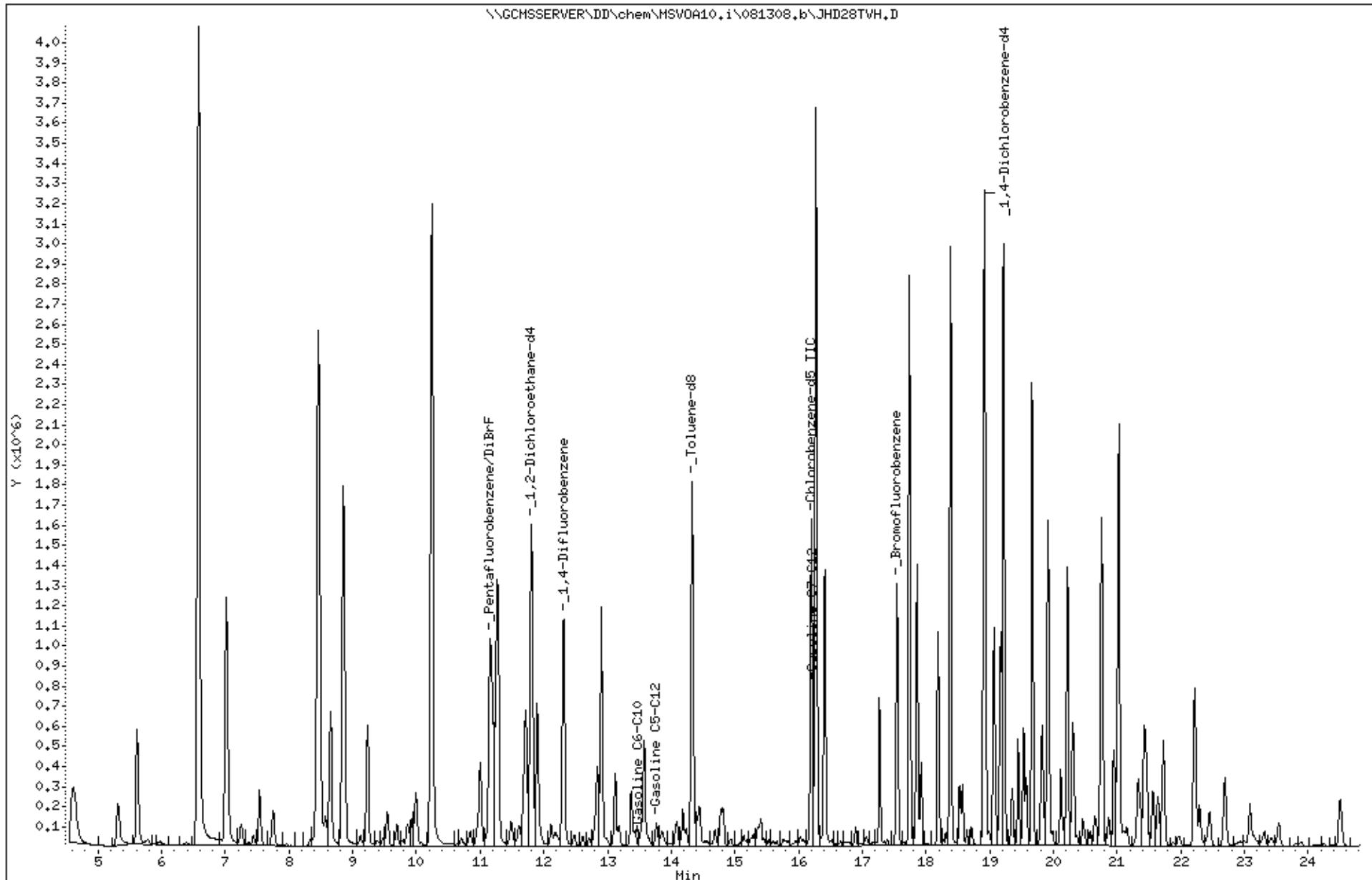


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Client ID: DYNAP&T  
Sample Info: S,205144-006

Column phase:

Instrument: MSV0A10.i  
Operator: VOA  
Column diameter: 2.00

Page 2

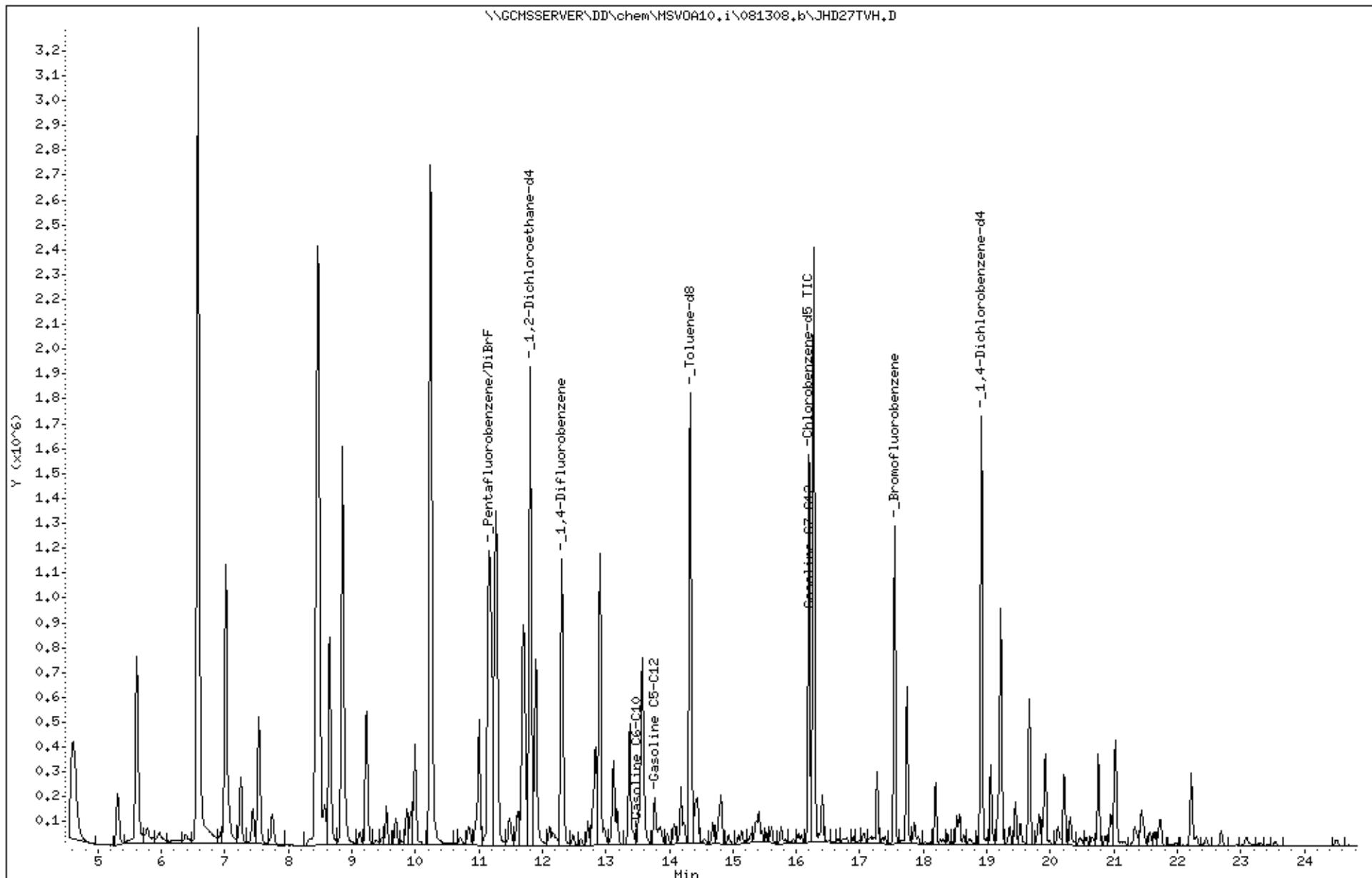


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Date : 14-AUG-2008 00:32  
Client ID: DYNAP&T  
Sample Info: S,205144-008

Column phase:

Instrument: MSV0A10.i  
Operator: VOA  
Column diameter: 2.00

Page 2

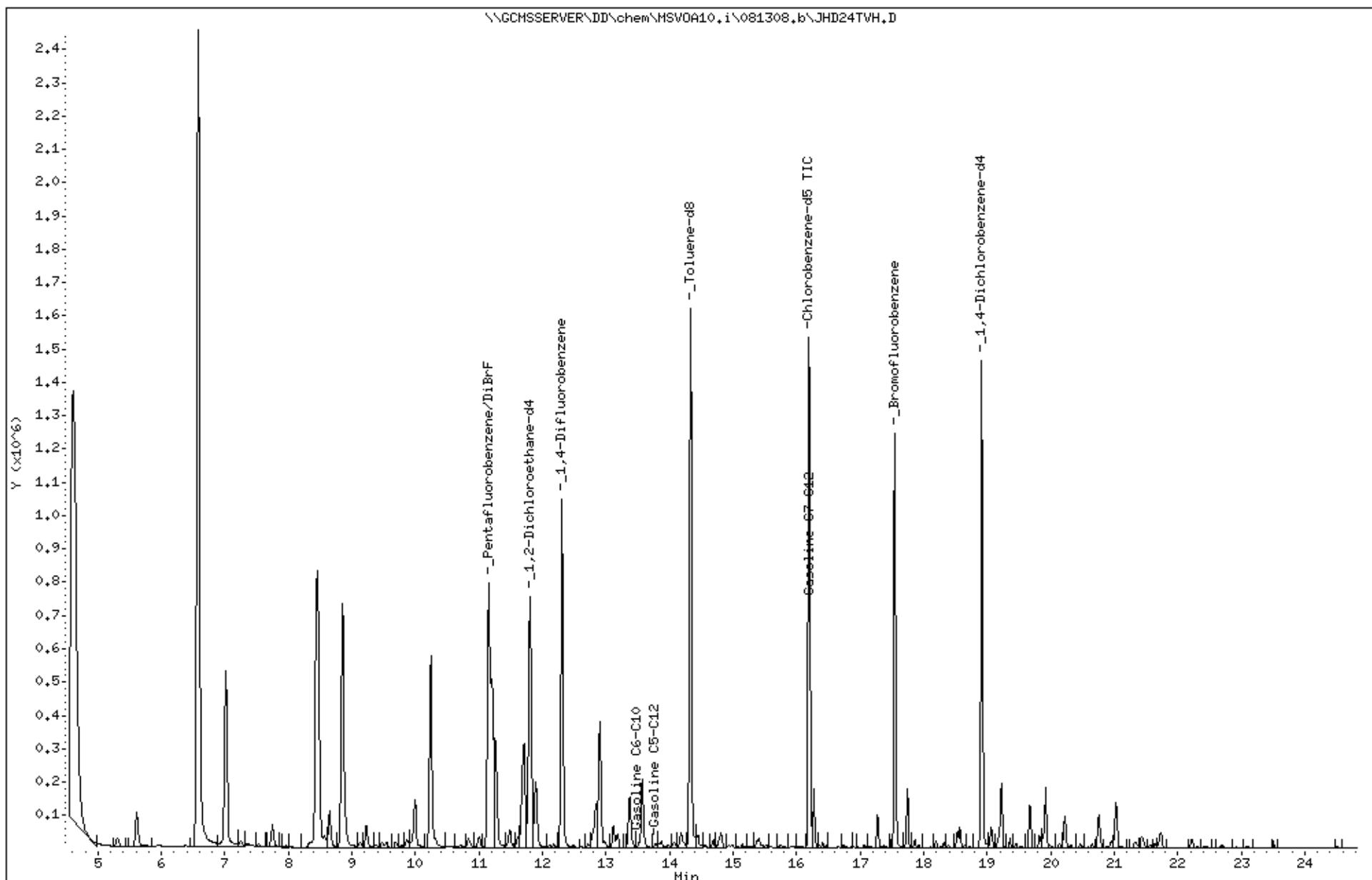


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Sample Info: S,205144-009

Page 2

Instrument: MSV0A10.i  
Operator: VOA  
Column diameter: 2.00

Column phase:

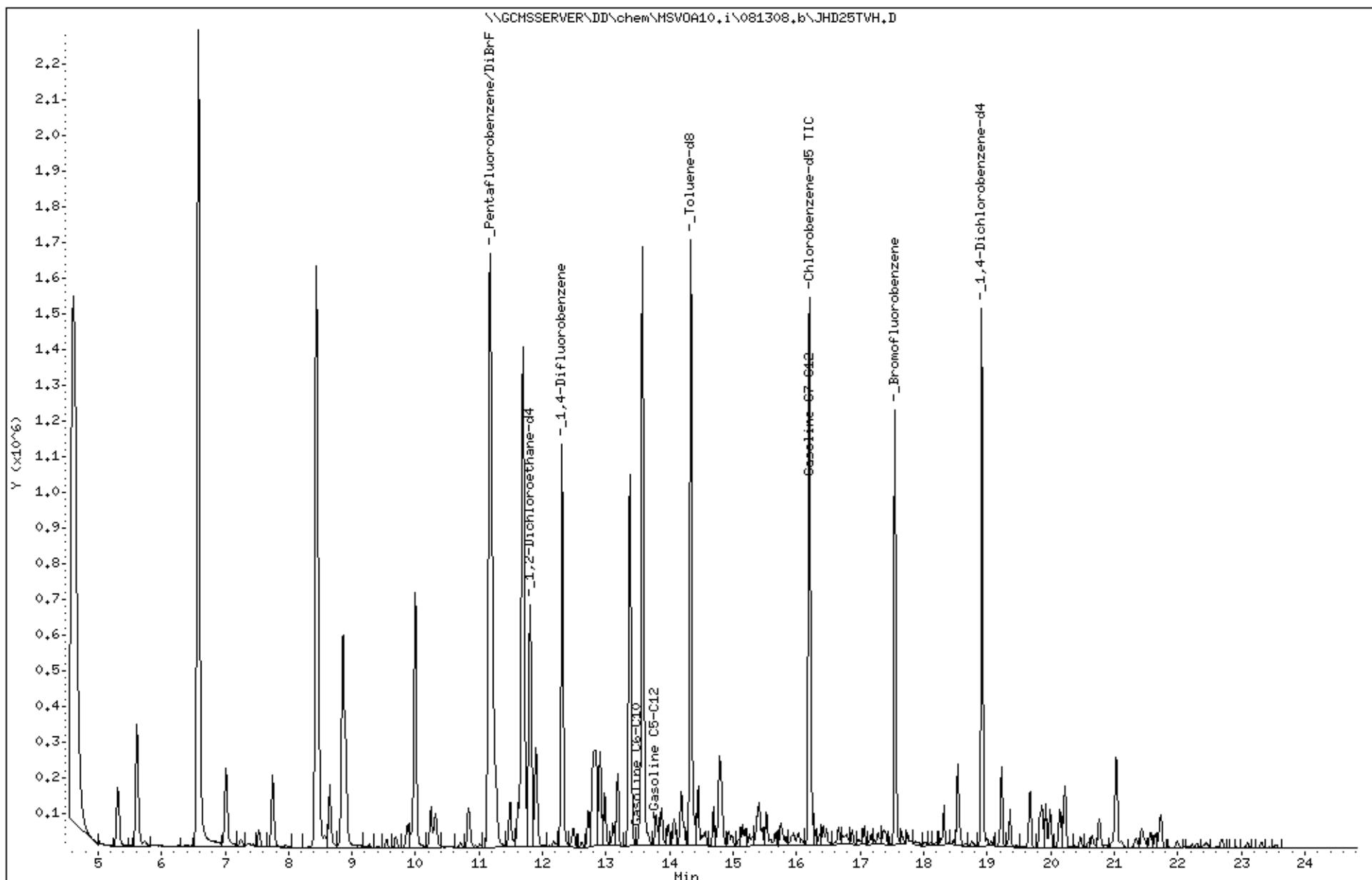


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Date : 13-AUG-2008 23:19  
Client ID: DYNAP&T  
Sample Info: S,205144-010

Page 2

Instrument: MSV0A10.i  
Operator: VOA  
Column diameter: 2.00

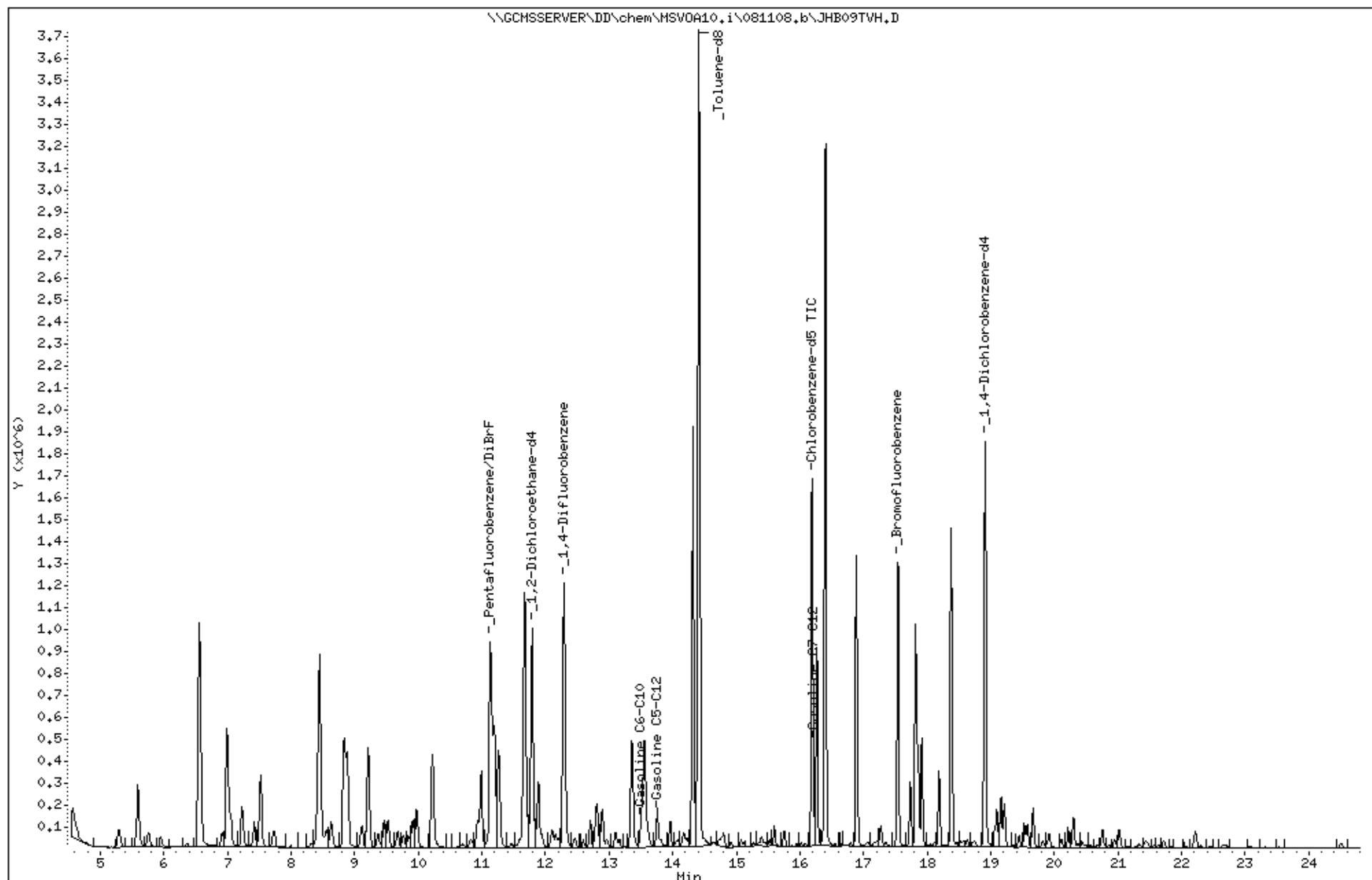
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Date : 11-AUG-2008 14:40  
Client ID: DYNA P&T  
Sample Info: CCV/BS,QC454965,141286,S9460,0.01/100,

Column phase:

Instrument: MSVOA10.i  
Operator: VOA  
Column diameter: 2.00



# **Appendix D**

**Chain of Custody Forms and Laboratory Reports  
for the Groundwater Extraction Treatment System**



## COOLER RECEIPT CHECKLIST



Login # 205878 Date Received 9-9-08 Number of coolers 1  
 Client SOMA Project 3609 International Blvd.  
 Date Opened 9-9-08 By (print) F Nichols (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  
 Cloth material

Foam blocks  
 Cardboard

Bags  
 Styrofoam

None  
 Paper towels

7. Temperature documentation:

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

Samples Received on ice & cold without a temperature blank

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

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

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

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

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

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

16. Was the client contacted concerning this sample delivery? ..... YES NO

If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

COMMENTS

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

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

**Laboratory Job Number 205878  
ANALYTICAL REPORT**

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

Project : 2333  
Location : 3609 International Blvd  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
PSP-1	205878-001
GAC-1	205878-002
INFLUENT	205878-003

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 signatures. 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: 

Date: 09/22/2008

Project Manager

Signature: 

Date: 09/22/2008

Senior Program Manager

**CASE NARRATIVE**

Laboratory number: **205878**  
Client: **SOMA Environmental Engineering Inc.**  
Project: **2333**  
Location: **3609 International Blvd**  
Request Date: **09/09/08**  
Samples Received: **09/09/08**

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 09/09/08. The samples were received cold and intact.

**Volatile Organics by GC/MS (EPA 8260B):**  
No analytical problems were encountered.

**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/08/08
Units:	ug/L	Received:	09/09/08
Diln Fac:	1.000		

Field ID: PSP-1 Batch#: 142316  
 Type: SAMPLE Analyzed: 09/10/08  
 Lab ID: 205878-001

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	102	80-125
1,2-Dichloroethane-d4	111	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	114	80-122

Field ID: GAC-1 Batch#: 142316  
 Type: SAMPLE Analyzed: 09/10/08  
 Lab ID: 205878-002

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	100	80-125
1,2-Dichloroethane-d4	109	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	116	80-122

**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/08/08
Units:	ug/L	Received:	09/09/08
Diln Fac:	1.000		

Field ID: INFLUENT                          Batch#: 142369  
 Type: SAMPLE                                  Analyzed: 09/11/08  
 Lab ID: 205878-003

Analyte	Result	RL
Gasoline C7-C12	300	50
MTBE	17	0.50
Benzene	13	0.50
Toluene	7.3	0.50
Ethylbenzene	4.9	0.50
m,p-Xylenes	25	0.50
o-Xylene	9.9	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	103	80-122

Type: BLANK                                  Batch#: 142316  
 Lab ID: QC459547                                  Analyzed: 09/10/08

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	98	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	112	80-122

ND= Not Detected  
 RL= Reporting Limit  
 Page 2 of 3

**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/08/08
Units:	ug/L	Received:	09/09/08
Diln Fac:	1.000		

Type: BLANK                      Batch#: 142369  
 Lab ID: QC459753                  Analyzed: 09/11/08

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	96	80-125
1,2-Dichloroethane-d4	104	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	112	80-122

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142316
Units:	ug/L	Analyzed:	09/10/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459548

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	25.49	102	70-125
Benzene	25.00	24.18	97	80-120
Toluene	25.00	24.60	98	80-120
Ethylbenzene	25.00	25.76	103	80-122
m,p-Xylenes	50.00	51.96	104	80-126
o-Xylene	25.00	25.41	102	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	106	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	104	80-122

Type: BSD Lab ID: QC459549

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	25.24	101	70-125	1	20
Benzene	25.00	23.18	93	80-120	4	20
Toluene	25.00	24.27	97	80-120	1	20
Ethylbenzene	25.00	24.96	100	80-122	3	20
m,p-Xylenes	50.00	51.08	102	80-126	2	20
o-Xylene	25.00	24.76	99	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	102	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	104	80-122

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142316
Units:	ug/L	Analyzed:	09/10/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459566

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,007	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	104	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-122

Type: BSD Lab ID: QC459567

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,000	986.7	99	80-120	2 20

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	101	80-122

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142369
Units:	ug/L	Analyzed:	09/11/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459754

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	25.69	103	70-125
Benzene	25.00	25.62	102	80-120
Toluene	25.00	25.84	103	80-120
Ethylbenzene	25.00	26.38	106	80-122
m,p-Xylenes	50.00	52.74	105	80-126
o-Xylene	25.00	26.06	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	103	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-122

Type: BSD Lab ID: QC459755

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	25.66	103	70-125	0	20
Benzene	25.00	26.81	107	80-120	5	20
Toluene	25.00	26.12	104	80-120	1	20
Ethylbenzene	25.00	25.72	103	80-122	3	20
m,p-Xylenes	50.00	52.13	104	80-126	1	20
o-Xylene	25.00	25.43	102	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	108	80-137
Toluene-d8	102	80-120
Bromofluorobenzene	104	80-122

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205878	Location:	3609 International Blvd
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142369
Units:	ug/L	Analyzed:	09/11/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459761

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,200	1,090	91	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-122

Type: BSD Lab ID: QC459762

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,200	1,079	90	80-120	1 20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	100	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	104	80-122

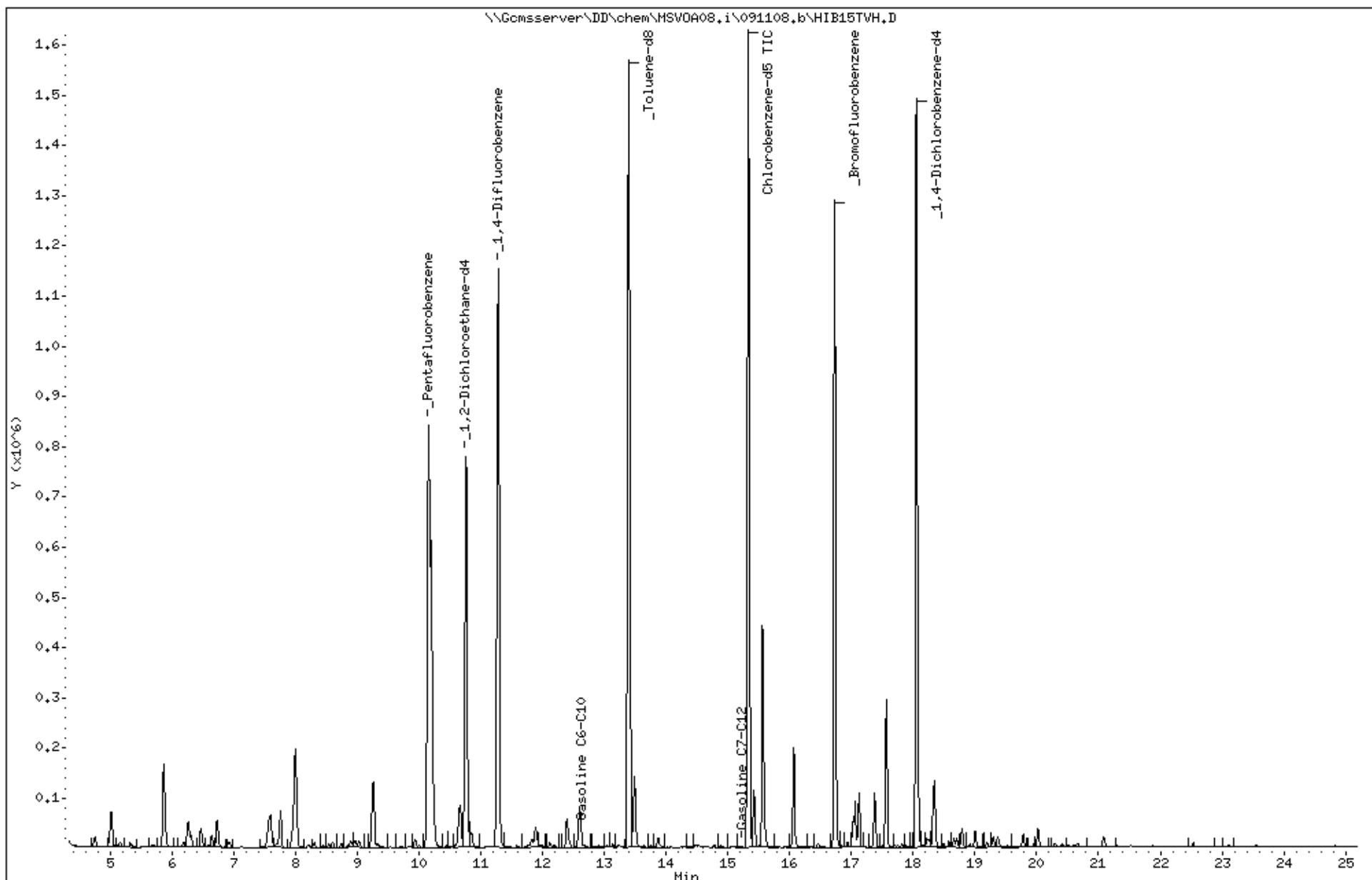
RPD= Relative Percent Difference

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Date : 11-SEP-2008 17:30  
Client ID: DYNAP&T  
Sample Info: S,205878-003

Page 2

Instrument: MSV0A08.i  
Operator: voc  
Column diameter: 2.00

Column phase:

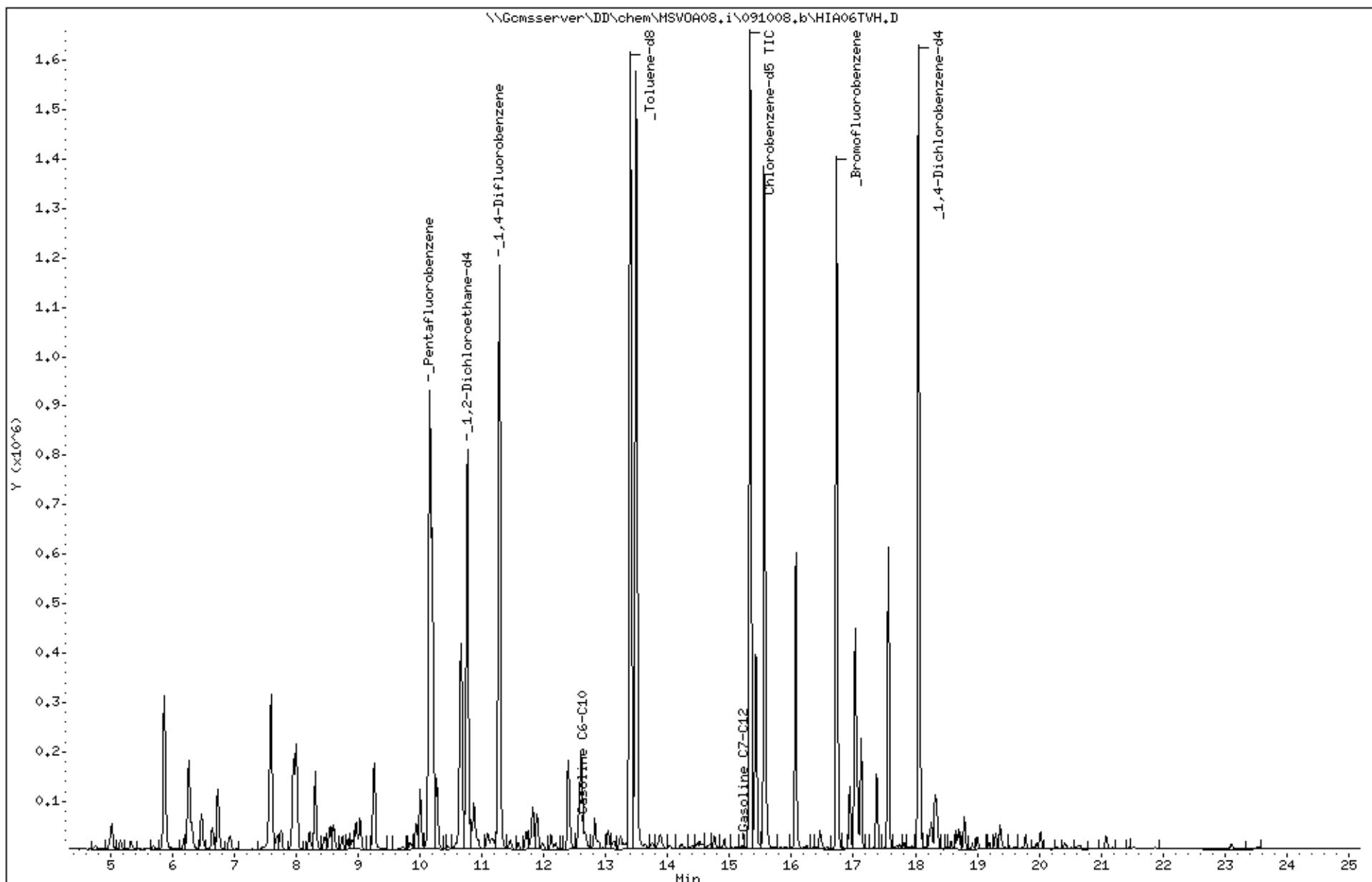


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Date : 10-SEP-2008 12:59  
Client ID: DYNAP&T  
Sample Info: CCV/BS, QC459566, 142316, S9460, 10000X

Page 2

Instrument: MSV0A08.i  
Operator: voc  
Column diameter: 2.00

Column phase:



# **Appendix E**

September 2008 MPE Event Field Data Sheets



SITE ADDRESS: 3609 International Blvd., Oakland  
 PROJECT #: 2335

MTS OPERATIONAL DATA										
DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
9/8/2008	1100	Start Event								
	1200	1646	173	18.1	21.7	122	30	92	4,110	0
	1300	1597	173	17.9	21.6	123	30	93	3,360	140
	1400	1576	171	18.7	21.9	119	20	99	3,150	279
	1500	1580	170	19.5	22.4	111	10	101	3,270	420
	1700	1573	180	20.3	22.9	103	0	103	3,140	703
	1800	1562	172	20.1	22.9	103	0	103	3,230	791
9/9/2008	800	1465	185	19.5	22.5	109	0	109	in = 2250; eff = 6	2,496
	900	1459	171	19.8	22.5	109	0	109	2,230	2,621
	1000	1464	171	19.6	22.4	111	0	111	2,280	2,731
	1100	1455	172	19.5	22.5	109	0	109	2,240	2,851
	1200	1454	172	19.6	22.5	109	0	109	2,210	2,941
	1300	1458	173	19.6	22.5	109	0	109	2,180	3,076
	1400	1454	172	19.5	22.5	109	0	109	2,100	3,165
	1500	1456	172	19.5	22.4	111	0	111	2,070	3,296
	1600	1455	172	19.4	22.5	109	0	109	2,030	3,384
	1630	1456	172	19.4	22.4	111	0	111	1,980	3,431
9/10/2008	800	1465	179	19.2	22.4	111	0	111	1,544	5,053
	900	1468	173	19.2	22.4	111	0	111	1,500	5,176
	1000	1452	173	19	22.3	112	0	112	1,580	5,301



SITE ADDRESS: 3609 International Blvd., Oakland  
PROJECT #: 2335

MTS OPERATIONAL DATA										
DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
9/10/2008	1100	1454	173	19.2	22.3	112	0	112	1,565	5,391
	1200	1463	171	19.2	22.4	111	0	111	1,548	5,481
	1300	1449	172	19.2	22.4	111	0	111	1,518	5,615
	1400	1463	173	19.4	22.3	112	0	112	1,458	5,701
	1500	1458	173	19.1	22.2	114	0	114	1,440	5,821
	1600	1460	173	19.1	22.2	114	0	114	1,428	5,921
	1630	1455	173	19.2	22.2	114	0	114	1,407	5,959
9/11/2008	800	1447	172	19	22.2	114	0	114	1,145	7,491
	900	1468	172	19.2	22.1	116	0	116	1,136	7,621
	1000	1450	172	19.2	22.1	116	0	116	1,131	7,731
	1100	1445	173	19	22.1	116	0	116	1,135	7,817
	1200	1466	173	19.2	22.2	114	0	114	1,100	7,906
	1300	1472	172	19	22	117	0	117	1,090	7,999
	1400	1452	173	19	22	117	0	117	1,080	8,121
	1500	1475	174	19	22	117	0	117	1,050	8,211
	1600	1470	173	19	22	117	0	117	1,050	8,301
	1630	1462	172	19	22.1	116	0	116	1,049	8,347
9/12/2008	730	1455	172	19	22	117	0	117	957	9,807
	830	1462	171	18.9	22	117	0	117	940	9,895



SITE ADDRESS: 3609 International Blvd., Oakland  
PROJECT #: 2335

**MTS OPERATIONAL DATA**

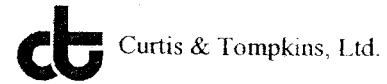
DATE	TIME	OXIDIZER TEMPERATURE (F)	PUMP/AIR TEMPERATURE (F)	STINGER VACUUM (IN-Hg)	PUMP VACUUM (IN-Hg)	TOTAL FLOW (SCFM)	DILUTION FLOW (SCFM)	WELL FLOW (SCFM)	INFLUENT CONCENTRATION (PPMV)	WATER TOTALIZER
9/12/2008	930	1413	171	19	22	117	0	117	933	9,984
	1030	1402	172	19	22	117	0	117	934	10,071
	1130	1405	172	18.9	22	117	0	117	924	10,201
	1230	1403	173	19	22	117	0	117	922	10,291
	1330	1404	173	19	22	117	0	117	918	10,397
	1430	1403	173	19	22	117	0	117	916	10,480
	1600	1395	170	19.4	22.6	108	0	108	1,063	10,616
		End at MW-1, MW-3, and MW-6; Collected post GW samples								

# **Appendix F**

**September 2008 MPE Event Laboratory Reports and Chain  
of Custody Forms**



# COOLER RECEIPT CHECKLIST



Login # 205976 Date Received 9-9-08 Number of coolers 1  
 Client SOMA Project 3609 International Blvd.

Date Opened 9-9-08 By (print) F Nichols (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:

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

Samples Received on ice & cold without a temperature blank

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

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

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

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

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

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

16. Was the client contacted concerning this sample delivery? ..... YES  NO

If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

## COMMENTS

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

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

**Laboratory Job Number 205876  
ANALYTICAL REPORT**

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

Project : 2335  
Location : 3609 International Blvd., Oakland, CA  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1	205876-001
MW-3	205876-002
MW-6	205876-003

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 signatures. 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: Troy Baker  
Project Manager

Date: 09/22/2008

Signature: Jeanne R. Baker  
Senior Program Manager

Date: 09/22/2008

**CASE NARRATIVE**

Laboratory number: **205876**  
Client: **SOMA Environmental Engineering Inc.**  
Project: **2335**  
Location: **3609 International Blvd., Oakland, CA**  
Request Date: **09/09/08**  
Samples Received: **09/09/08**

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 09/09/08. The samples were received cold and intact.

**Volatile Organics by GC/MS (EPA 8260B):**  
No analytical problems were encountered.



Curtis &amp; Tompkins, Ltd.

**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/08/08
Units:	ug/L	Received:	09/09/08

Field ID: MW-1 Diln Fac: 1.000  
Type: SAMPLE Batch#: 142369  
Lab ID: 205876-001 Analyzed: 09/11/08

Analyte	Result	RL
Gasoline C7-C12	170 Y	50
MTBE	ND	0.50
Benzene	0.68	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	100	80-125
1,2-Dichloroethane-d4	105	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	109	80-122

Field ID: MW-3 Diln Fac: 1.000  
Type: SAMPLE Batch#: 142369  
Lab ID: 205876-002 Analyzed: 09/11/08

Analyte	Result	RL
Gasoline C7-C12	2,200 Y	50
MTBE	1.5	0.50
Benzene	64	0.50
Toluene	14	0.50
Ethylbenzene	73	0.50
m,p-Xylenes	40	0.50
o-Xylene	63	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	100	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	105	80-122

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/08/08
Units:	ug/L	Received:	09/09/08

Field ID: MW-6 Diln Fac: 5.000  
 Type: SAMPLE Batch#: 142419  
 Lab ID: 205876-003 Analyzed: 09/12/08

Analyte	Result	RL
Gasoline C7-C12	4,600 Y	250
MTBE	ND	2.5
Benzene	340	2.5
Toluene	15	2.5
Ethylbenzene	120	2.5
m,p-Xylenes	110	2.5
o-Xylene	7.8	2.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	98	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	104	80-122

Type: BLANK Batch#: 142369  
 Lab ID: QC459753 Analyzed: 09/11/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	96	80-125
1,2-Dichloroethane-d4	104	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	112	80-122

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/08/08
Units:	ug/L	Received:	09/09/08

Type: BLANK Batch#: 142419  
 Lab ID: QC459970 Analyzed: 09/12/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	95	80-125
1,2-Dichloroethane-d4	99	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	112	80-122

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142369
Units:	ug/L	Analyzed:	09/11/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459754

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	25.69	103	70-125
Benzene	25.00	25.62	102	80-120
Toluene	25.00	25.84	103	80-120
Ethylbenzene	25.00	26.38	106	80-122
m,p-Xylenes	50.00	52.74	105	80-126
o-Xylene	25.00	26.06	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	103	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-122

Type: BSD Lab ID: QC459755

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	25.66	103	70-125	0	20
Benzene	25.00	26.81	107	80-120	5	20
Toluene	25.00	26.12	104	80-120	1	20
Ethylbenzene	25.00	25.72	103	80-122	3	20
m,p-Xylenes	50.00	52.13	104	80-126	1	20
o-Xylene	25.00	25.43	102	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	108	80-137
Toluene-d8	102	80-120
Bromofluorobenzene	104	80-122

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142369
Units:	ug/L	Analyzed:	09/11/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459761

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,200	1,090	91	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-122

Type: BSD Lab ID: QC459762

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,200	1,079	90	80-120	1 20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	100	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	104	80-122

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142419
Units:	ug/L	Analyzed:	09/12/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459971

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	24.40	98	70-125
Benzene	25.00	26.70	107	80-120
Toluene	25.00	26.67	107	80-120
Ethylbenzene	25.00	27.16	109	80-122
m,p-Xylenes	50.00	56.85	114	80-126
o-Xylene	25.00	26.53	106	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	99	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-122

Type: BSD Lab ID: QC459972

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	23.85	95	70-125	2	20
Benzene	25.00	25.28	101	80-120	5	20
Toluene	25.00	25.30	101	80-120	5	20
Ethylbenzene	25.00	25.80	103	80-122	5	20
m,p-Xylenes	50.00	54.09	108	80-126	5	20
o-Xylene	25.00	26.44	106	80-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-125
1,2-Dichloroethane-d4	96	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	102	80-122

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	205876	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142419
Units:	ug/L	Analyzed:	09/12/08
Diln Fac:	1.000		

Type: BS Lab ID: QC459988

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,500	1,581	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-125
1,2-Dichloroethane-d4	97	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	103	80-122

Type: BSD Lab ID: QC459989

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,500	1,524	102	80-120	4 20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-125
1,2-Dichloroethane-d4	96	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-122

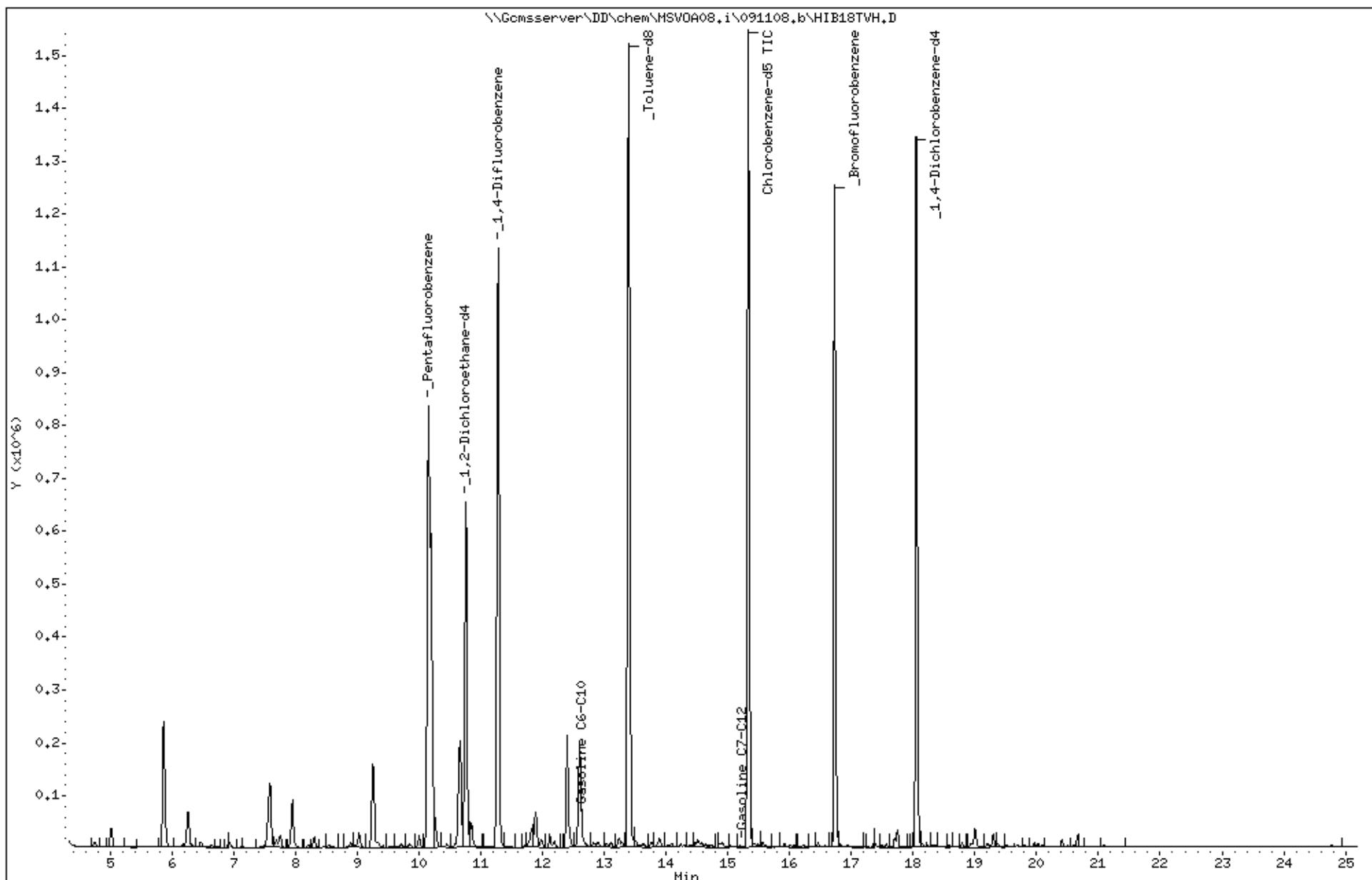
RPD= Relative Percent Difference

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Date : 11-SEP-2008 19:17  
Client ID: DYNAP&T  
Sample Info: S,205876-001

Page 2

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Operator: voc  
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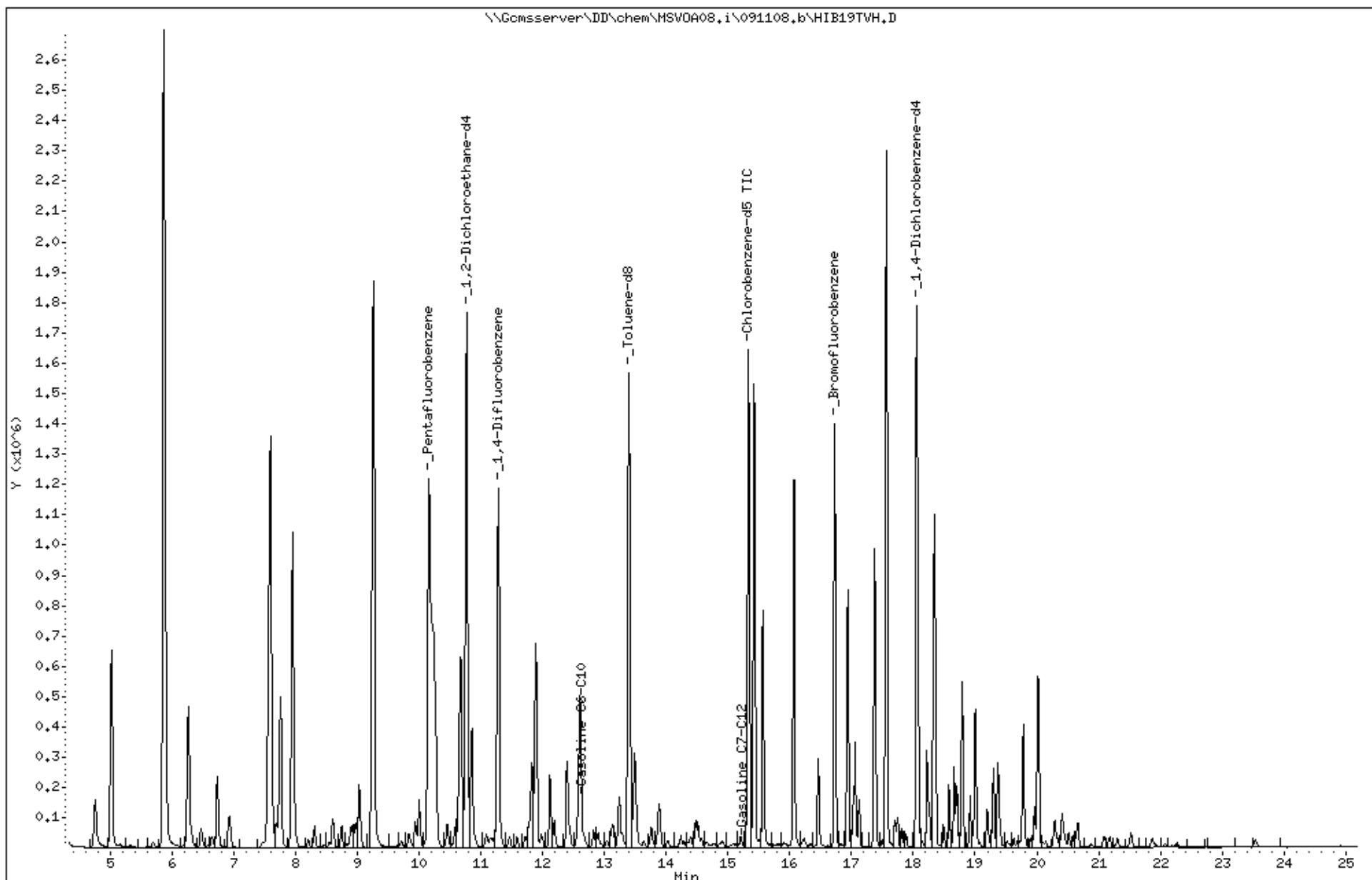


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Date : 11-SEP-2008 19:52  
Client ID: DYNAP&T  
Sample Info: S,205876-002

Page 2

Instrument: MSV0A08,i  
Operator: voc  
Column diameter: 2.00

Column phase:

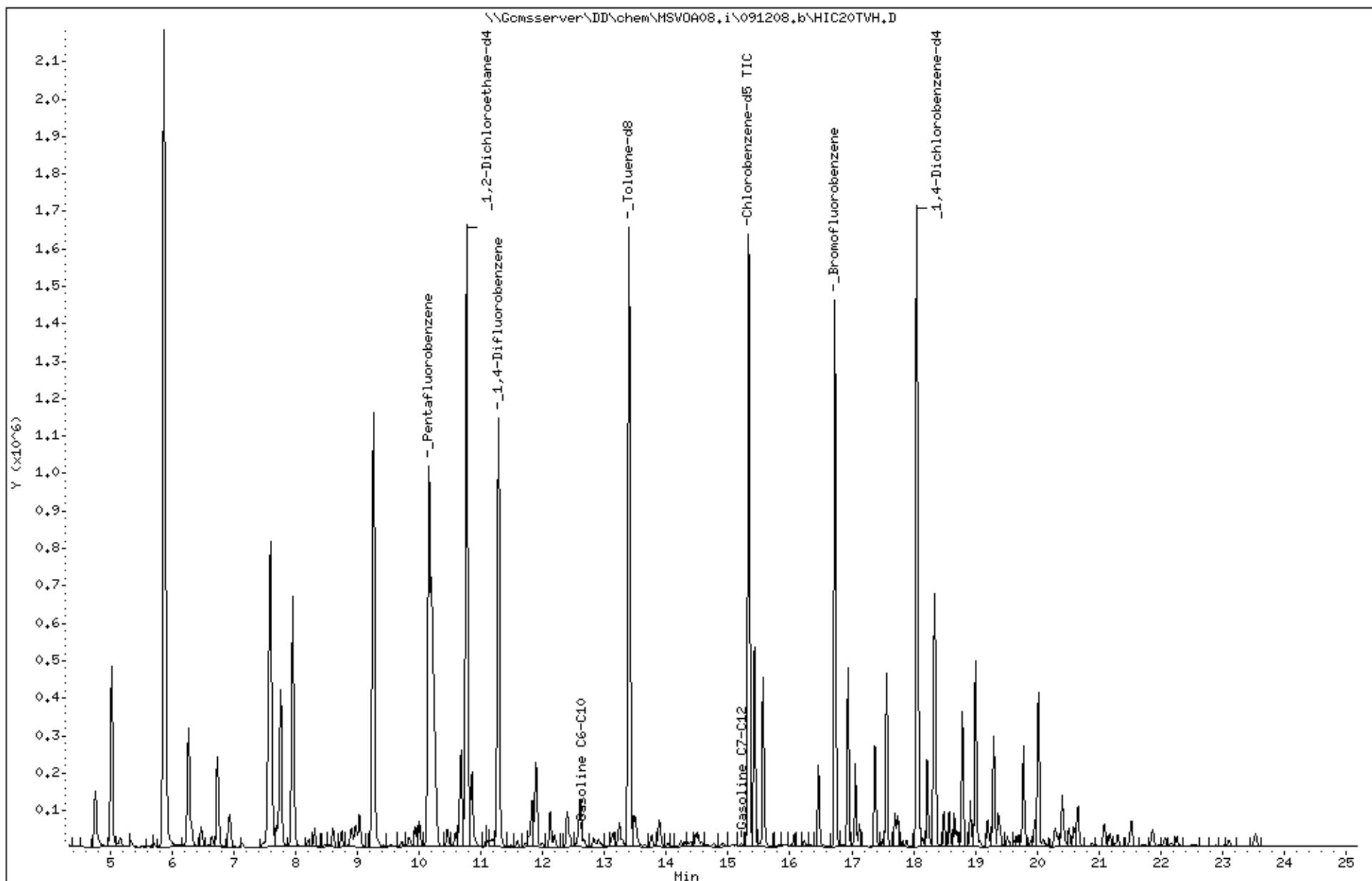


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Date : 12-SEP-2008 21:55  
Client ID: DYNA P&T  
Sample Info: S,205876-003

Page 2

Instrument: MSV0A08.i  
Operator: voc  
Column diameter: 2,00

Column phase:

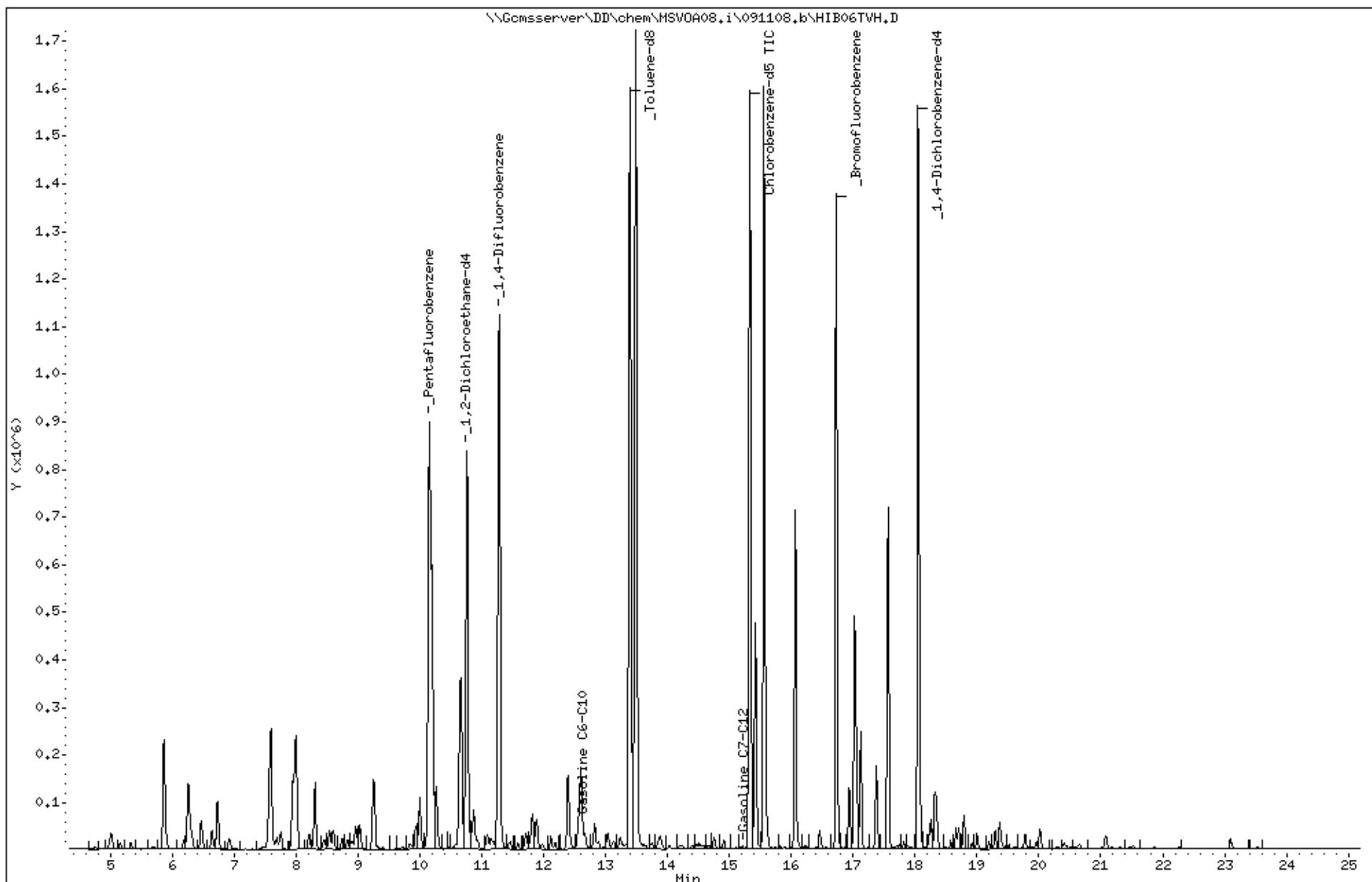


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Date : 11-SEP-2008 12:47  
Client ID: DYNAP&T  
Sample Info: CCV/BS, QC459761, 142369, S9460, 0, 012/100

Page 2

Instrument: MSV0A08.i  
Operator: voc  
Column diameter: 2.00

Column phase:





## COOLER RECEIPT CHECKLIST



Curtis &amp; Tompkins, Ltd.

Login # 204069  
Client 904X ENVI.

Date Received 9/16/08

Number of coolers 1

Project 3609 INTERNATIONAL BLVD. DALLAS, TX

Date Opened 9/16/08  
Date Logged in

By (print) M.VILLANUEVA (sign)

By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc)? ..... YES   
Shipping info2A. Were custody seals present? .....  YES (circle) on cooler  on samples  NO  
How many \_\_\_\_\_ Name \_\_\_\_\_ Date \_\_\_\_\_

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

3. Were custody papers dry and intact when received? ..... YES NO 4. Were custody papers filled out properly (ink, signed, etc)? ..... YES NO 5. Is the project identifiable from custody papers? (If so fill out top of form) ..... YES NO 

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

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

7. Temperature documentation:

Type of ice used:  Wet  Blue/Gel  None Temp(°C) \_\_\_\_\_ Samples Received on ice & cold without a temperature blank Samples received on ice directly from the field. Cooling process had begun8. Were Method 5035 sampling containers present? ..... YES 

If YES, what time were they transferred to freezer?

9. Did all bottles arrive unbroken/unopened? ..... YES NO 10. Are samples in the appropriate containers for indicated tests? ..... YES NO 11. Are sample labels present, in good condition and complete? ..... YES NO 12. Do the sample labels agree with custody papers? ..... YES NO 13. Was sufficient amount of sample sent for tests requested? ..... YES NO 14. Are the samples appropriately preserved? ..... YES NO N/A 15. Are bubbles > 6mm absent in VOA samples? ..... YES NO N/A 

16. Was the client contacted concerning this sample delivery? ..... YES NO

If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

## COMMENTS



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

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

**Laboratory Job Number 206069  
ANALYTICAL REPORT**

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

Project : 2335  
Location : 3609 International Blvd., Oakland, CA  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1	206069-001
MW-3	206069-002
MW-6	206069-003

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 signatures. 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: Troy Baker  
Project Manager

Date: 09/29/2008

Signature: Jeanne R. Baker  
Senior Program Manager

Date: 09/30/2008

**CASE NARRATIVE**

Laboratory number: 206069  
Client: SOMA Environmental Engineering Inc.  
Project: 2335  
Location: 3609 International Blvd., Oakland, CA  
Request Date: 09/16/08  
Samples Received: 09/16/08

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 09/16/08. The samples were received cold and intact.

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

Low recovery was observed for o-xylene in the MSD for batch 142692; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. No other analytical problems were encountered.



Curtis &amp; Tompkins, Ltd.

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/16/08
Units:	ug/L	Received:	09/16/08

Field ID: MW-1 Diln Fac: 1.000  
Type: SAMPLE Batch#: 142692  
Lab ID: 206069-001 Analyzed: 09/19/08

Analyte	Result	RL
Gasoline C7-C12	420 Y	50
MTBE	ND	0.50
Benzene	1.2	0.50
Toluene	0.75	0.50
Ethylbenzene	1.0	0.50
m,p-Xylenes	9.8	0.50
o-Xylene	6.1	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-125
1,2-Dichloroethane-d4	95	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	110	80-122

Field ID: MW-3 Diln Fac: 1.000  
Type: SAMPLE Batch#: 142692  
Lab ID: 206069-002 Analyzed: 09/19/08

Analyte	Result	RL
Gasoline C7-C12	320 Y	50
MTBE	4.6	0.50
Benzene	9.0	0.50
Toluene	0.82	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	11	0.50
o-Xylene	11	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-125
1,2-Dichloroethane-d4	94	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	109	80-122

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/16/08
Units:	ug/L	Received:	09/16/08

Field ID: MW-6 Diln Fac: 4.000  
 Type: SAMPLE Batch#: 142728  
 Lab ID: 206069-003 Analyzed: 09/20/08

Analyte	Result	RL
Gasoline C7-C12	5,800 Y	200
MTBE	ND	2.0
Benzene	300	2.0
Toluene	66	2.0
Ethylbenzene	110	2.0
m,p-Xylenes	420	2.0
o-Xylene	98	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-125
1,2-Dichloroethane-d4	99	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-122

Type: BLANK Batch#: 142692  
 Lab ID: QC461069 Analyzed: 09/19/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	101	80-125
1,2-Dichloroethane-d4	98	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	121	80-122

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/16/08
Units:	ug/L	Received:	09/16/08

Type: BLANK Batch#: 142692  
 Lab ID: QC461070 Analyzed: 09/19/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	98	80-125
1,2-Dichloroethane-d4	92	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	116	80-122

Type: BLANK Batch#: 142728  
 Lab ID: QC461244 Analyzed: 09/20/08  
 Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
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	102	80-125
1,2-Dichloroethane-d4	96	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	120	80-122

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC461071	Batch#:	142692
Matrix:	Water	Analyzed:	09/19/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	22.13	111	70-125
Benzene	20.00	21.90	110	80-120
Toluene	20.00	20.42	102	80-120
Ethylbenzene	20.00	20.36	102	80-122
m,p-Xylenes	40.00	42.02	105	80-126
o-Xylene	20.00	19.95	100	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-125
1,2-Dichloroethane-d4	103	80-137
Toluene-d8	102	80-120
Bromofluorobenzene	108	80-122

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142692
Units:	ug/L	Analyzed:	09/19/08
Diln Fac:	1.000		

Type: BS Lab ID: QC461073

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	800.0	817.0	102	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-125
1,2-Dichloroethane-d4	98	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	110	80-122

Type: BSD Lab ID: QC461074

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	800.0	757.3	95	80-120	8 20

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-125
1,2-Dichloroethane-d4	96	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	109	80-122

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	142692
MSS Lab ID:	205911-005	Sampled:	09/09/08
Matrix:	Water	Received:	09/10/08
Units:	ug/L	Analyzed:	09/19/08
Diln Fac:	1.000		

Type: MS Lab ID: QC461123

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.1000	25.00	25.58	102	74-124
Benzene	<0.1000	25.00	26.97	108	80-121
Toluene	0.2147	25.00	25.56	101	80-120
Ethylbenzene	0.3661	25.00	25.73	101	80-120
m,p-Xylenes	28.57	50.00	73.83	91	80-121
o-Xylene	28.80	25.00	49.13	81	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	87	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	108	80-122

Type: MSD Lab ID: QC461124

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	24.01	96	74-124	6	20
Benzene	25.00	26.21	105	80-121	3	20
Toluene	25.00	24.79	98	80-120	3	20
Ethylbenzene	25.00	25.00	99	80-120	3	20
m,p-Xylenes	50.00	72.72	88	80-121	2	20
o-Xylene	25.00	47.77	76 *	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-125
1,2-Dichloroethane-d4	85	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	108	80-122

\*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

**Batch QC Report**
**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC461245	Batch#:	142728
Matrix:	Water	Analyzed:	09/20/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.76	104	70-125
Benzene	20.00	20.55	103	80-120
Toluene	20.00	19.10	95	80-120
Ethylbenzene	20.00	19.62	98	80-122
m,p-Xylenes	40.00	40.18	100	80-126
o-Xylene	20.00	19.19	96	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-125
1,2-Dichloroethane-d4	93	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	107	80-122

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	142728
Units:	ug/L	Analyzed:	09/20/08
Diln Fac:	1.000		

Type: BS Lab ID: QC461246

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	900.0	867.6	96	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-125
1,2-Dichloroethane-d4	95	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	107	80-122

Type: BSD Lab ID: QC461247

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	900.0	885.9	98	80-120	2 20

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	94	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	108	80-122

RPD= Relative Percent Difference

## Batch QC Report

**Gasoline by GC/MS**

Lab #:	206069	Location:	3609 International Blvd., Oakland, CA
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2335	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	142728
MSS Lab ID:	205951-006	Sampled:	09/10/08
Matrix:	Water	Received:	09/11/08
Units:	ug/L	Analyzed:	09/20/08
Diln Fac:	1.000		

Type: MS Lab ID: QC461258

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.1000	25.00	25.84	103	74-124
Benzene	<0.1000	25.00	25.46	102	80-121
Toluene	<0.1000	25.00	24.39	98	80-120
Ethylbenzene	<0.1525	25.00	24.71	99	80-120
m,p-Xylenes	<0.1000	50.00	51.02	102	80-121
o-Xylene	<0.1000	25.00	24.93	100	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	89	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	102	80-122

Type: MSD Lab ID: QC461259

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	25.33	101	74-124	2	20
Benzene	25.00	24.57	98	80-121	4	20
Toluene	25.00	23.30	93	80-120	5	20
Ethylbenzene	25.00	24.03	96	80-120	3	20
m,p-Xylenes	50.00	49.69	99	80-121	3	20
o-Xylene	25.00	23.67	95	80-120	5	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-125
1,2-Dichloroethane-d4	88	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	104	80-122

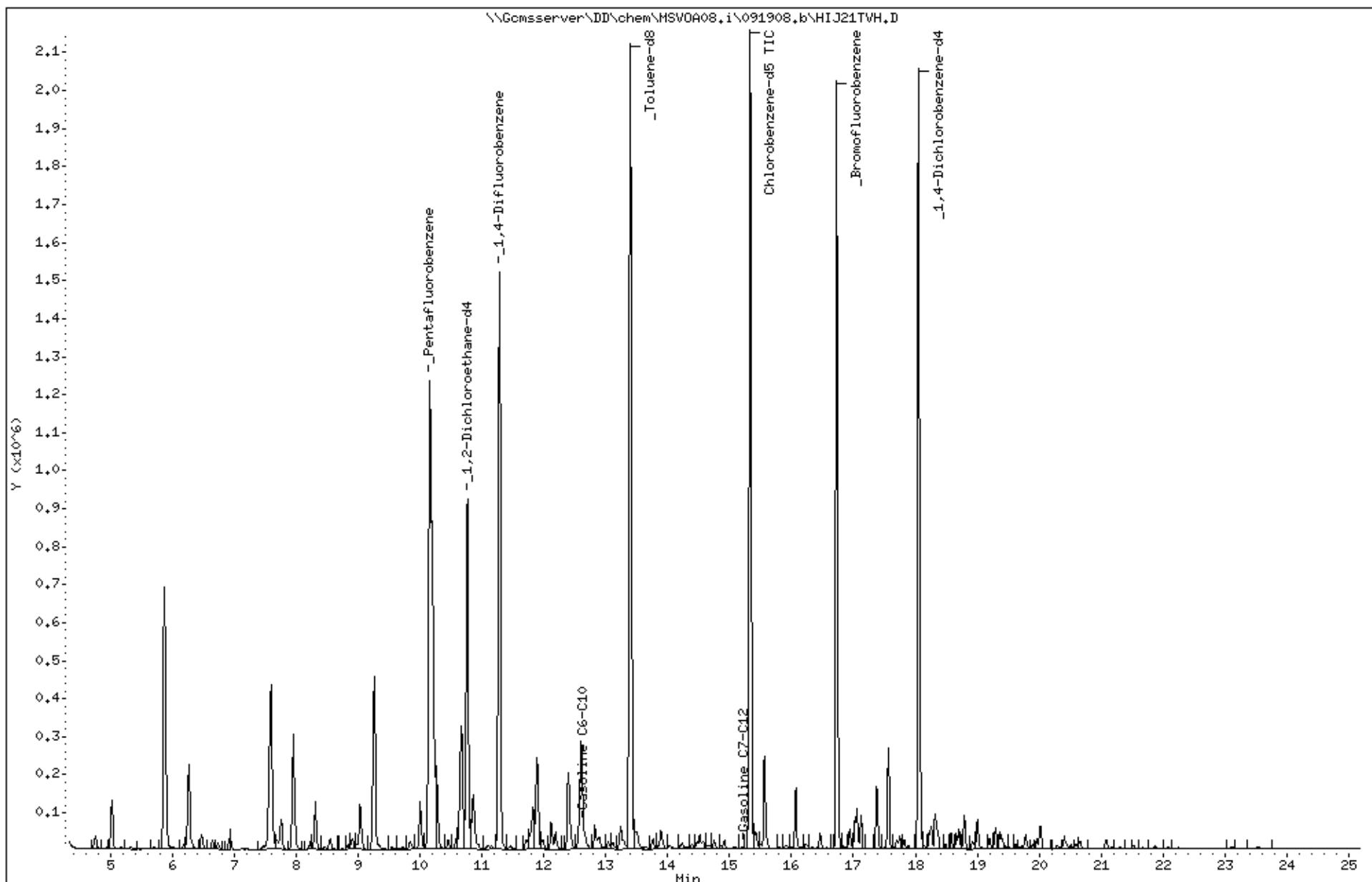
RPD= Relative Percent Difference

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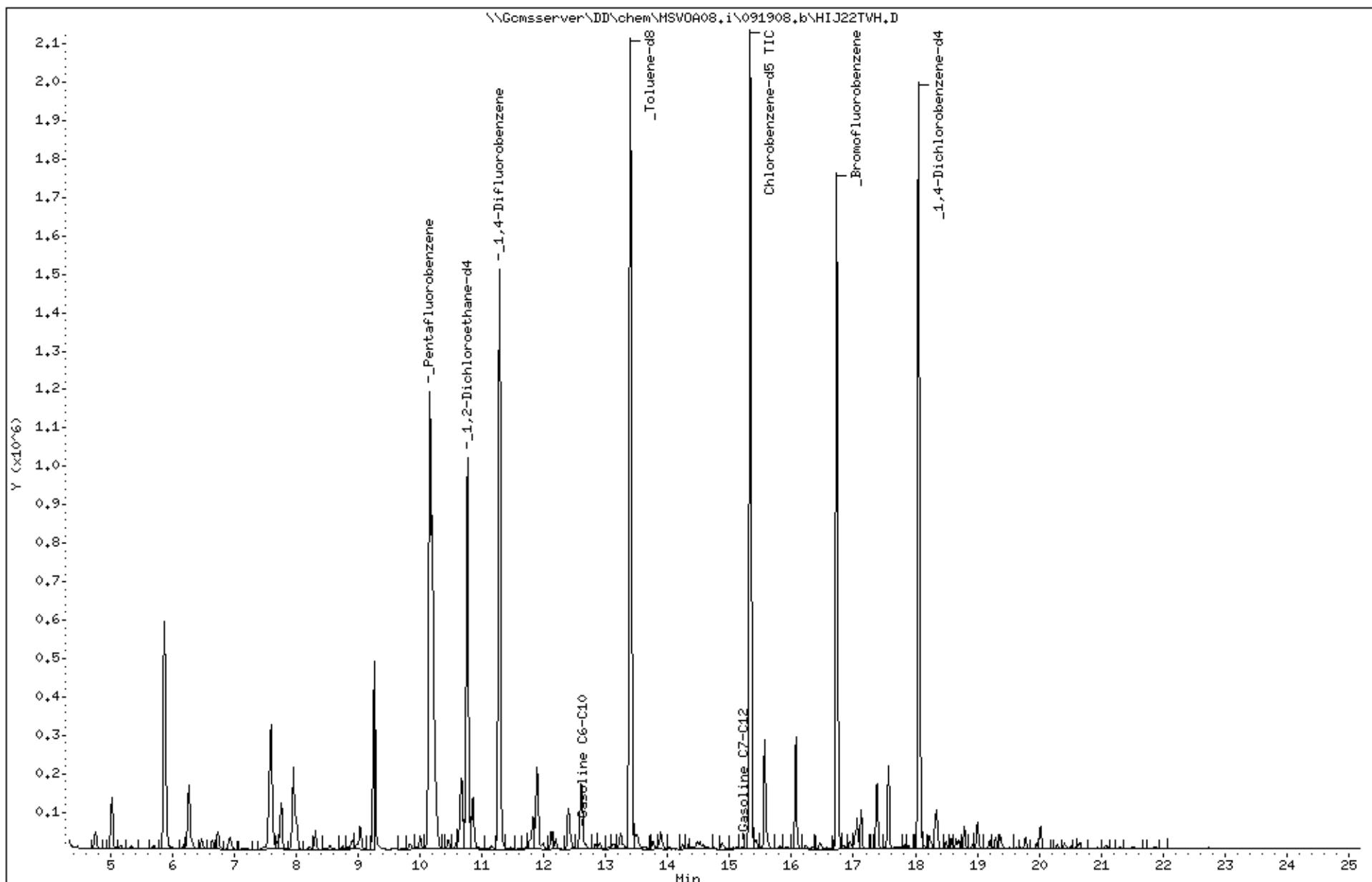


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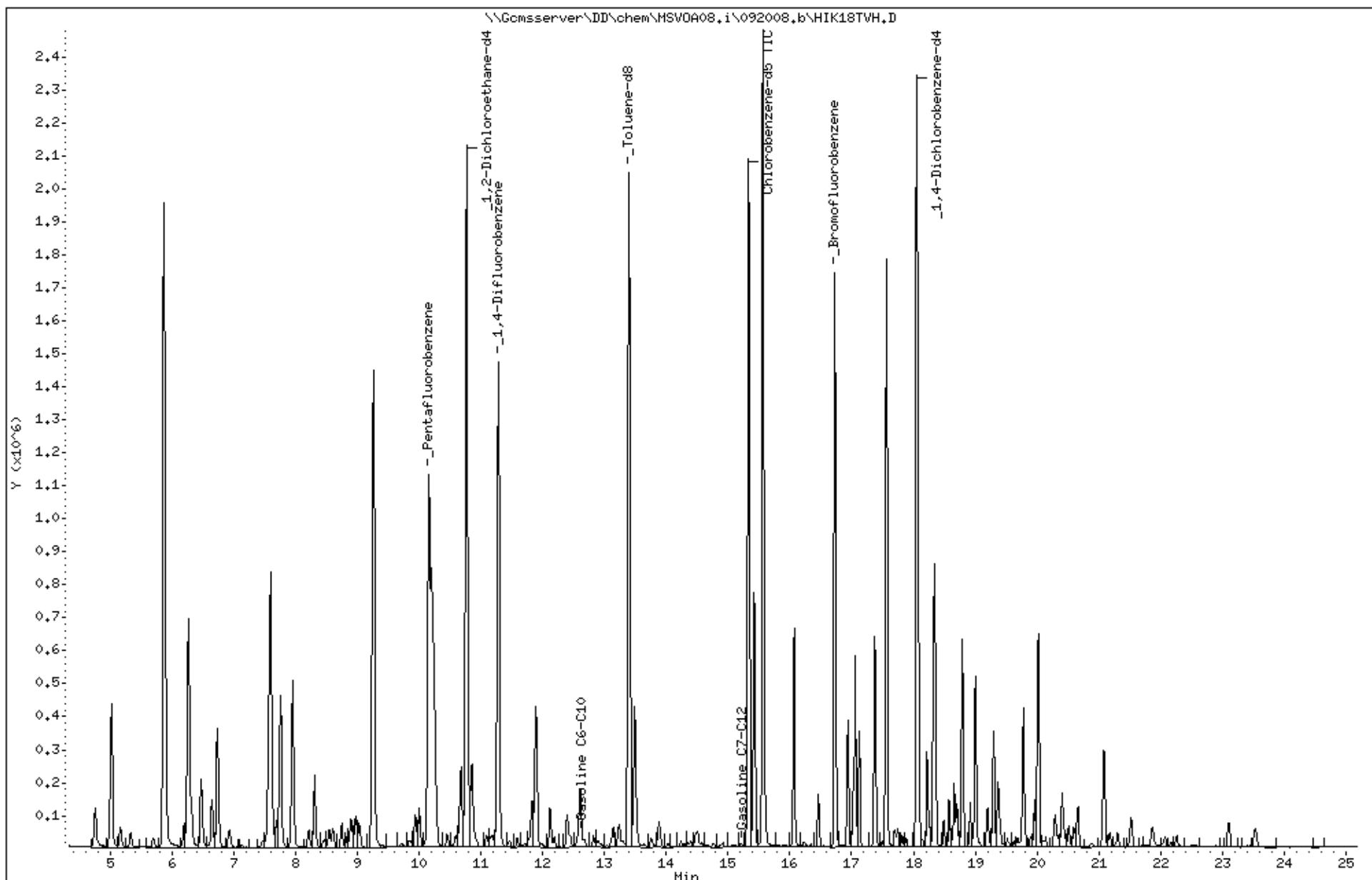


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Client ID: DYNAP&T  
Sample Info: CCV/BS, QC461073, 142692, S10222, 0.008/100

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Instrument: MSV0A08.i  
Operator: voc  
Column diameter: 2.00

Column phase:

