

Leland Douglas  
Douglas Parking Company  
1721 Webster Street  
Oakland, CA 94612

**RECEIVED**

9:39 am, Nov 04, 2010

Alameda County  
Environmental Health

Ms. Donna Drogos  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, California 94502

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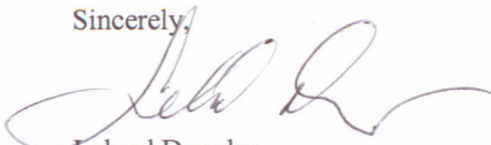
Re: **Douglas Parking Company**  
1721 Webster Street  
Oakland, California  
ACEH File No. 129

Dear Ms. Drogos:

I, Mr. Leland Douglas, have retained Pangea Environmental Services, Inc. (Pangea) as the environmental consultant for the project referenced above. Pangea is submitting the attached report on my behalf.

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

Sincerely,



Leland Douglas



October 29, 2010

***VIA ALAMEDA COUNTY FTP SITE***

Ms. Barbara Jakub  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, California 94502

Re: **Groundwater Monitoring and Remediation Summary Report – Second Half 2010**  
Douglas Parking Company, 1721 Webster Street, Oakland, California, ACEH File No. 129

Dear Ms. Jakub:

On behalf of the Douglas Parking Company, Pangea Environmental Services, Inc. has prepared this *Groundwater Monitoring and Remediation Summary Report – Second Half 2010* for the above-referenced site. The report describes groundwater monitoring and sampling, site remediation, and other site activities.

Pangea understands from our recent conversation that in the near future the ACEH plans to review our prior remediation recommends. In our last report Pangea recommends a *30-day pilot test of ozone sparging* using the existing sparge wells, piping and electrical service. If effective, ozone sparging could be incorporated into the downgradient and offsite remediation proposed within Pangea's *Investigation and Remediation Workplan* dated March 5, 2009. As you review our prior recommendations, please note that hydrocarbon concentrations reduced significantly this event in key wells MW-2 and MW-3, with concentrations highest in offsite well MW-6.

If you have any questions, please call me at (510) 435-8664.

Sincerely,

**Pangea Environmental Services, Inc.**

A handwritten signature in blue ink, appearing to read "Bob Clark-Riddell".

Bob Clark-Riddell, P.E.  
Principal Engineer

Attachment: *Groundwater Monitoring and Remediation Summary Report – Second Half 2010*

cc: Mr. Lee Douglas, Douglas Parking Company, 1721 Webster Street, Oakland, California 94612  
SWRCB Geotracker Database (electronic copy)

**PANGEA Environmental Services, Inc.**

1710 Franklin Street, Suite 200, Oakland, CA 94612 Telephone 510.836.3700 Facsimile 510.836.3709 [www.pangeaenv.com](http://www.pangeaenv.com)



**GROUNDWATER MONITORING AND REMEDIATION SUMMARY REPORT  
– SECOND HALF 2010**

**Douglas Parking Company  
1721 Webster Street  
Oakland, California  
File No. 4070**

**October 29, 2010**

*Prepared for:*

Mr. Lee Douglas  
1721 Webster Street  
Oakland, California 94612

*Prepared by:*

Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200  
Oakland, California 94612

*Written by:*



  
Morgan Gillies  
Project Manager

  
Bob Clark-Riddell, P.E.  
Principal Engineer

**PANGEA Environmental Services, Inc.**

## **INTRODUCTION**

On behalf of Douglas Parking Company, Pangea Environmental Services, Inc. (Pangea), performed groundwater monitoring and sampling, and remediation system operation and sampling during this half-year at the subject site (Figure 1). Current groundwater analytical results and elevation data are shown on Figure 2. Current and historical groundwater data are summarized on Table 1. Site remediation data are summarized on Table 2.

## **SITE BACKGROUND**

The site is currently being utilized as a parking garage, and is located between 17th and 19th Streets in downtown Oakland, California, approximately four miles east of San Francisco Bay and one quarter of a mile west of Lake Merritt (Figure 1). The site is relatively flat with an elevation of approximately 30 feet (ft) above mean sea level (msl).

Several former underground storage tank (UST) sites are located close to the site, including Prentiss Properties to the northeast at 1750 Webster Street, a former gas station to the east at 1700 Webster, and a former Chevron service station which is located approximately 400 feet to the southwest on the corner of 17<sup>th</sup> Street and Harrison Street.

On August 3 and 6, 1992, Parker Environmental Services removed one 1,000-gallon and two 500-gallon gasoline underground storage tanks (USTs) from the site. Up to 1,500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPHg) and up to 12 mg/kg benzene were detected in the soil samples collected from the UST excavation.

Several investigations have been completed at the site. On July 8 and September 8, 1994, Gen Tech/Piers Environmental, Inc. (Gen Tech) of San Jose, California drilled six exploratory borings and installed three groundwater monitoring wells (MW-1 through MW-3). In February and May 1996, Cambria Environmental Technology (Cambria) of Emeryville, California advanced seven geoprobe soil borings and installed two groundwater monitoring wells (MW-4 and MW-5). On June 27, 2003 Cambria installed two additional offsite monitoring wells (MW-6 and MW-7).

Limited site remediation has been conducted at the site. In January 1998, Cambria installed ORC socks in well MW-2 to enhance the natural attenuation of dissolved-phase hydrocarbons. Dissolved oxygen (DO) concentrations temporarily increased in well MW-2 following the ORC sock installation. In February and March 1999, a total of 120 gallons of 7.5% hydrogen peroxide solution was added into monitoring wells MW-2 and MW-3 to oxidize hydrocarbons and also increase DO levels to enhance biodegradation of

dissolved-phase hydrocarbons. The hydrogen peroxide *temporarily* increased groundwater DO levels, but hydrocarbon concentrations remained at elevated levels.

On March 4, 2003, Cambria installed a co-axial air sparging/soil vapor extraction well (SV-1/AS-1) and two angled air sparging wells (AS-2 and AS-3) to approximately 30 ft bgs (Figure 3). The wells were installed to facilitate feasibility testing and future site remediation. Site remediation via soil vapor extraction and air sparging began in October 2007. To improve system performance and further evaluate site conditions, Pangea submitted an *Investigation and Remediation Workplan* dated March 5, 2009, which proposed additional investigation, remediation system expansion, and evaluation of groundwater geochemistry.

## **GROUNDWATER MONITORING AND SAMPLING**

On July 13, 2010, Pangea conducted groundwater monitoring and sampling at the site. All site monitoring wells were gauged for depth to water. Following the reduced sampling protocol presented in Appendix A, groundwater samples were collected from four monitoring wells (MW-2, MW-3, MW-4 and MW-6).

Before well purging, the dissolved oxygen (DO) concentration was measured in each well. DO was measured by lowering a downwell sensor to the approximate middle of the water column, and allowing the reading to stabilize during gentle height adjustment. Prior to sample collection approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump or new polyethylene tubing with a check valve. During well purging field technicians measured pH, temperature and conductivity. A groundwater sample was collected from each well with a disposable bailer and decanted into the appropriate containers supplied by the analytical laboratory. Groundwater samples were labeled, placed in protective plastic bags, and stored on crushed ice at or below 4° C. All samples were transported under chain-of-custody to the State-certified analytical laboratory. Purge water was stored onsite in DOT-approved 55-gallon drums. Field data sheets are presented as Appendix B.

### **Monitoring Results**

Groundwater elevation and analytical data are described below and summarized on Table 1 and Figure 2. Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015C; and benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. Samples were analyzed by McCampbell Analytical, Inc. of Pittsburg, California, a State-certified laboratory. The laboratory analytical report is included as Appendix C.

## **Groundwater Flow Direction**

Based on depth-to-water measurements collected on July 13, 2010, groundwater beneath the site flowed *north-northeastwards* to *northeastwards* (Figure 2). The groundwater depth measurements and inferred flow direction during this event are consistent with historical site conditions. Groundwater depths at the site have historically ranged from approximately 14 to 23 ft below ground surface (bgs), equivalent to a groundwater elevation range from 5 to 13 feet above msl (Table 1).

## **Hydrocarbon and MTBE Distribution in Groundwater**

TPHg, benzene and MTBE concentrations in groundwater at the site are shown on Figure 2. During this event the maximum TPHg (12,000 µg/L) and benzene (260 µg/L) concentrations were detected in offsite well MW-6. TPHg and BTEX concentrations in site monitoring wells generally exhibit a stable long-term or decreasing trend, although recent site remediation may have significantly improved site conditions.

To evaluate site remediation effectiveness, TPHg and benzene concentration trends in key wells MW-2 and MW-3 are shown on Figure 3. TPHg and especially benzene concentrations have decreased in source area well MW-2 over the last two and a half years, likely as the result of site remediation efforts that commenced in October 2007. For well MW-2 located immediately downgradient of the remediation wells, the TPHg (1,900 µg/L) and benzene (3.5 µg/L) concentrations are the lowest in that well since October 2004. Note that historic concentration reductions and subsequent rebounding was presumably due to short-term hydrogen peroxide and ORC activities in well MW-2. For upgradient source well MW-3, TPHg concentrations are near historic low concentrations, and benzene concentrations remain low. Future monitoring will help evaluate long-term trends.

MTBE was not detected above reporting limits in any of the sampled wells this quarter. The only apparent historical MTBE detection at the site (48 µg/L in well MW-3 by EPA Method 8020) was interpreted to be a false positive, based on the results of confirmation testing using EPA Method 8260 on July 21, 2003. Since the tank was removed in 1992 and because of the lack of confirmed detectable historical MTBE, MTBE is not a compound of concern at this site.

## **REMEDIATION SYSTEM SUMMARY**

### **Soil Vapor Extraction/Air Sparge System**

The soil vapor extraction (SVE) remediation system consists of a blower that extracts soil vapor from well SVE-1. Extracted vapors are routed through a moisture separator then treated by two 2,000-lb canisters of granular activated carbon plumbed in series. The treated vapor is discharged to the atmosphere in accordance

with Bay Area Air Quality Management District (BAAQMD) requirements. The air sparging (AS) system consists of a compressor for injecting air into wells AS-1, AS-2 and/or AS-3. Injection into AS wells is controlled by timer-activated solenoid valves. Wells SVE-1 and AS-1 are constructed as vertical co-axial wells, with angled wells AS-2 and AS-3 located in the same vault. A cross section of the remediation wells is included as Figure 4. The remediation system layout is shown on Figure 5.

## **Operation and Performance**

SVE system operation commenced on October 29, 2007, and AS system operation started on November 12, 2007. On August 8, 2008, air sparge wells AS-1 and AS-3 were disconnected from the air compressor and air sparging was conducted solely in well AS-2 to target hydrocarbons in nearby well MW-2. The SVE system is monitored in accordance with air permit requirements of the *Authority to Construct* issued by the Bay Area Air Quality Management District (BAAQMD). The BAAQMD approved reduction of the monitoring frequency *daily* to *weekly* on November 27, 2007, and from *weekly* to *monthly* on June 26, 2009. System operation and performance data is summarized on Table 2.

As of September 22, 2010, the SVE/AS system operated for a total of about 19,174 hours (approximately 799 days). During the April 7, 2010 site visit, the technician noted that the AS compressor was not operating. Based on apparent reduced remedial effectiveness and the estimated cost and effort to repair or replace the compressor for repairs and the relatively low removal rates, Pangea is awaiting agency direction regarding Pangea's remediation recommendations presented below. If the ACEH approves expansion of the remediation system expansion as outlined in the *Investigation and Remediation Workplan* dated March 5, 2009, a larger air compressor would be required.

Based on laboratory analytical data, the TPHg removal rates observed during the second half 2010 (April 7, 2010 to September 22, 2010) ranged from 0.3 to 0.8 lbs/day. The benzene removal rate for the period was approximately 0.002 lbs/day. As of September 22, 2010, laboratory analytical data indicates that the system removed a total of approximately 3,208 lbs TPHg and 6.87 lbs benzene.

## **OTHER SITE ACTIVITIES**

### **Site Investigation, Remediation System Expansion and Bioparameter Evaluation**

Pangea understands from our recent conversation that in the near future the ACEH plans to review our prior remediation recommends. In our last monitoring report Pangea recommends a *30-day pilot test of ozone sparging* using the existing sparge wells, piping and electrical service. If effective, ozone sparging could be incorporated into the downgradient and offsite remediation proposed within Pangea's *Investigation and Remediation Workplan* dated March 5, 2009. As you review our prior recommendations, please note that

hydrocarbon concentrations reduced significantly this event in key wells MW-2 and MW-3, with concentrations highest in offsite well MW-6.

### **Semi-Annual Groundwater Monitoring**

Pangea will conduct semi-annual groundwater monitoring and sampling at the site in accordance with the approved monitoring program shown in Appendix A. All monitoring wells will be gauged for depth to water. Groundwater samples from program wells will be analyzed for TPHg, BTEX and MTBE by EPA Method 8015Cm/8021B. If well AS-1 is accessible for groundwater monitoring, Pangea recommends sampling of this well. Please comment on this recommendation.

### **ELECTRONIC REPORTING**

This report will be submitted to Alameda County Environmental Health via upload to the County's ftp site. Applicable data, maps, and reports for groundwater monitoring and other activities will be uploaded to the State Water Resource Control Board's Geotracker database. As requested, report hard copies will no longer be provided to local agencies.

### **ATTACHMENTS**

Figure 1 – Vicinity Map

Figure 2 – Groundwater Elevations and Hydrocarbon Concentration Map

Figure 3 – TPHg and Benzene Concentration Trends in Groundwater

Figure 4 – Cross Section of Remediation Wells

Figure 5 – Remediation System Layout

Table 1 – Groundwater Elevation and Analytical Data

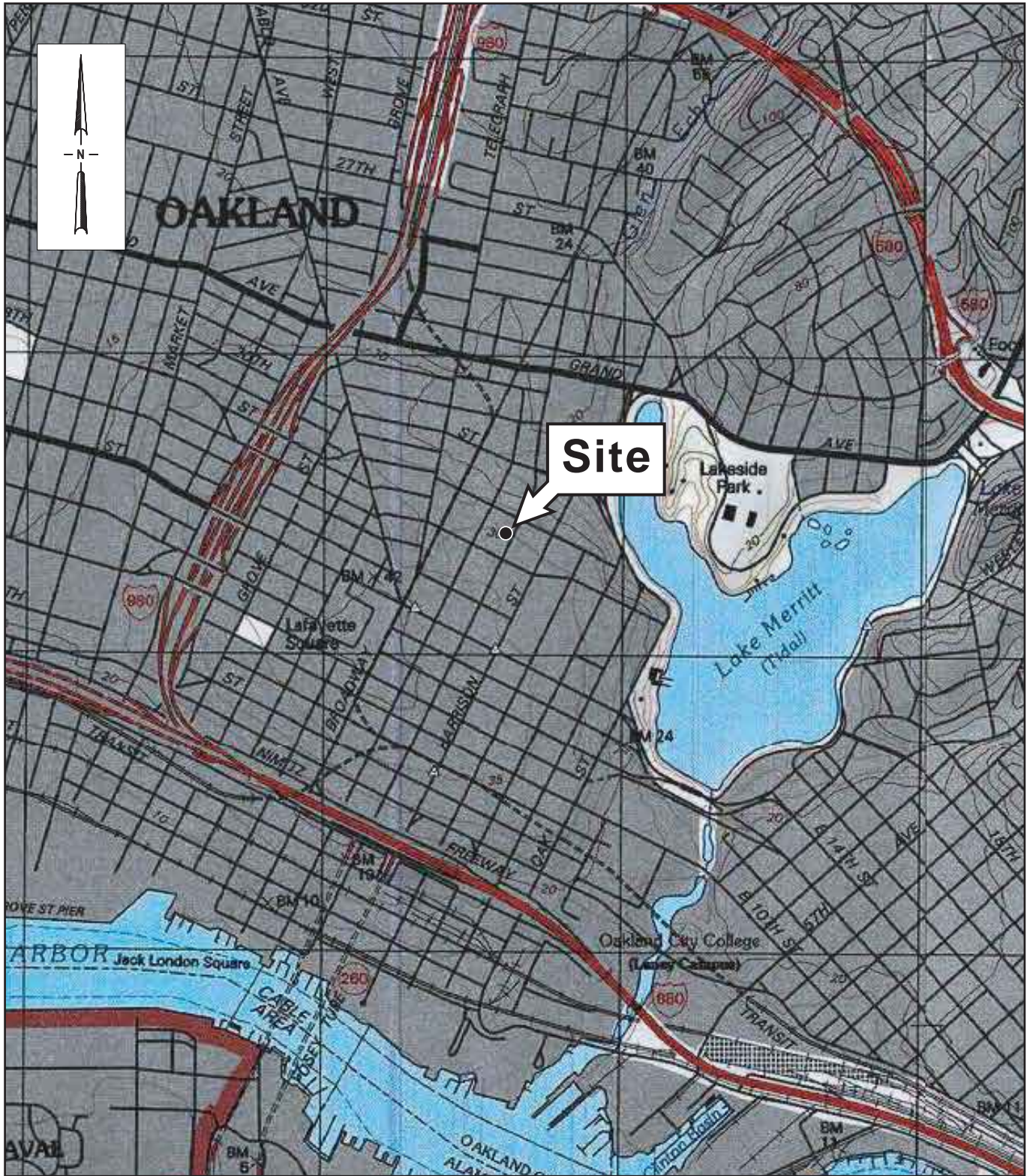
Table 2 – SVE System Performance Summary

Appendix A – Groundwater Monitoring Program

Appendix B – Groundwater Monitoring Field Data Sheets

Appendix C – Laboratory Analytical Reports





SOURCE: TOPOI MAPS



SCALE : 1" = 1/4 MILE

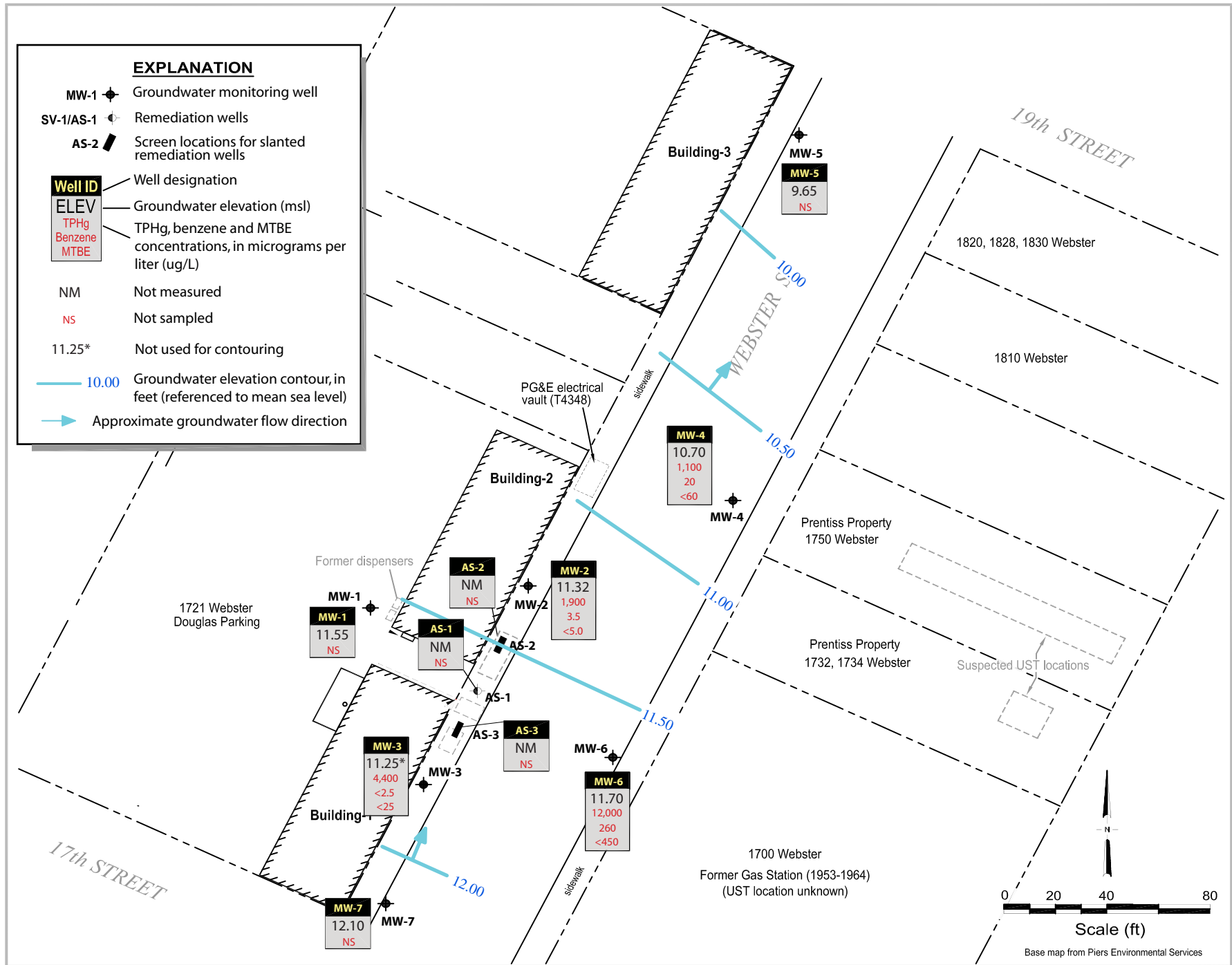
Figure

1

**Douglas Parking Facility**  
 1721 Webster Street  
 Oakland, California



Vicinity Map



**Douglas Parking**  
 1721 Webster Street  
 Oakland, California



**Groundwater Elevations and  
 Hydrocarbon Concentration Map**

July 13, 2010

FIGURE



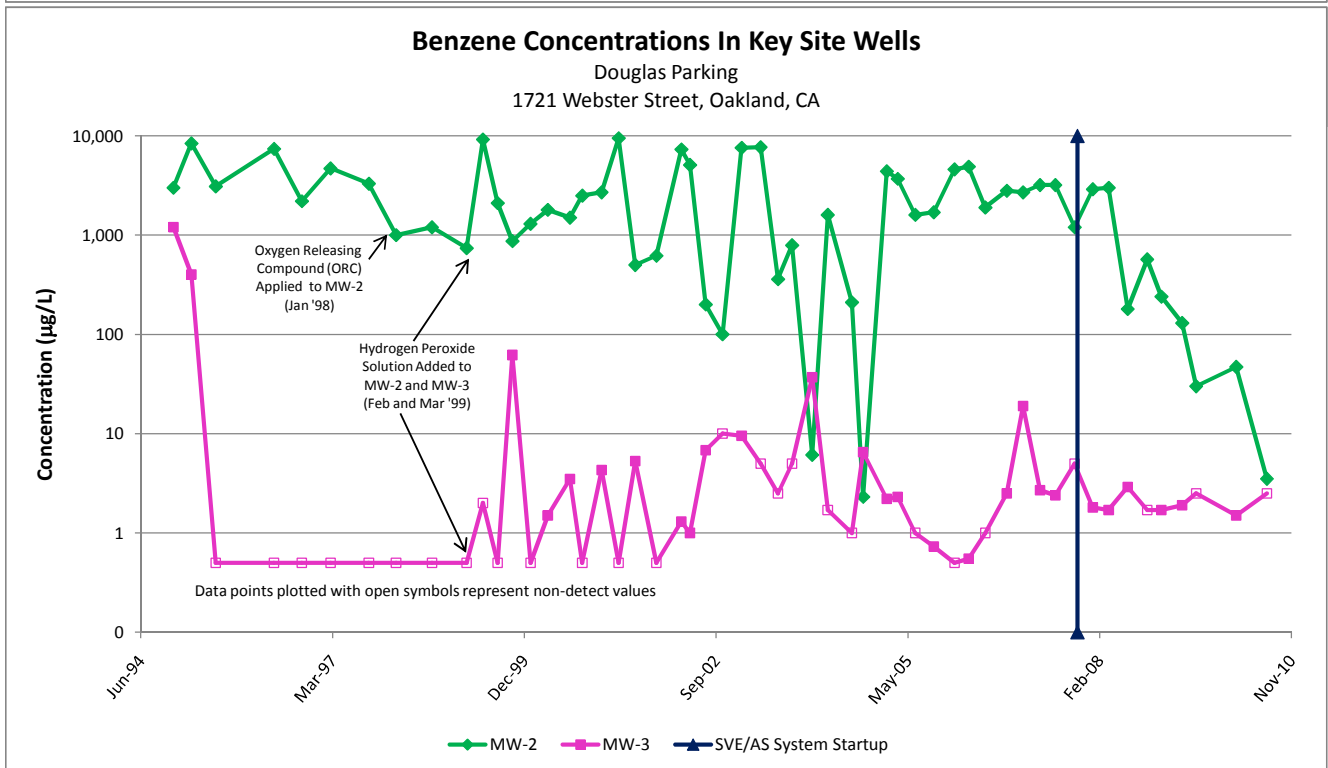
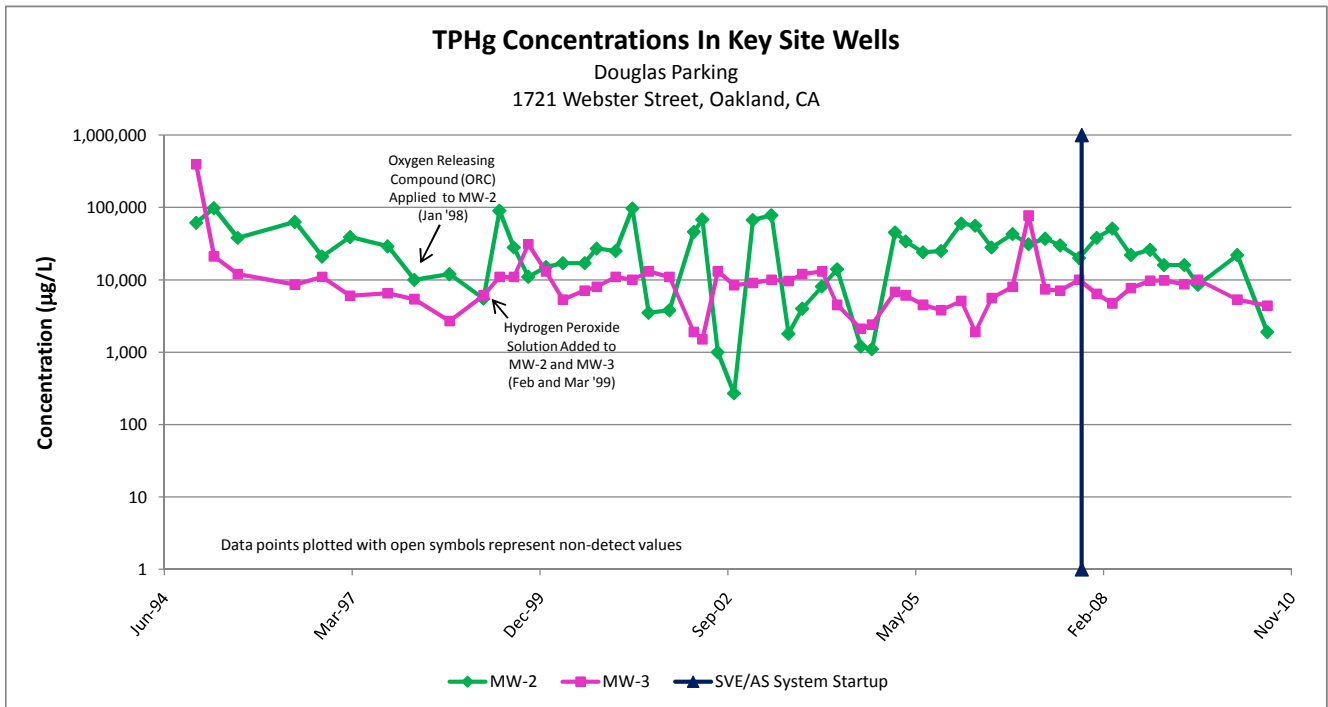


Figure 3 - TPHg and Benzene Concentration Trends in Groundwater

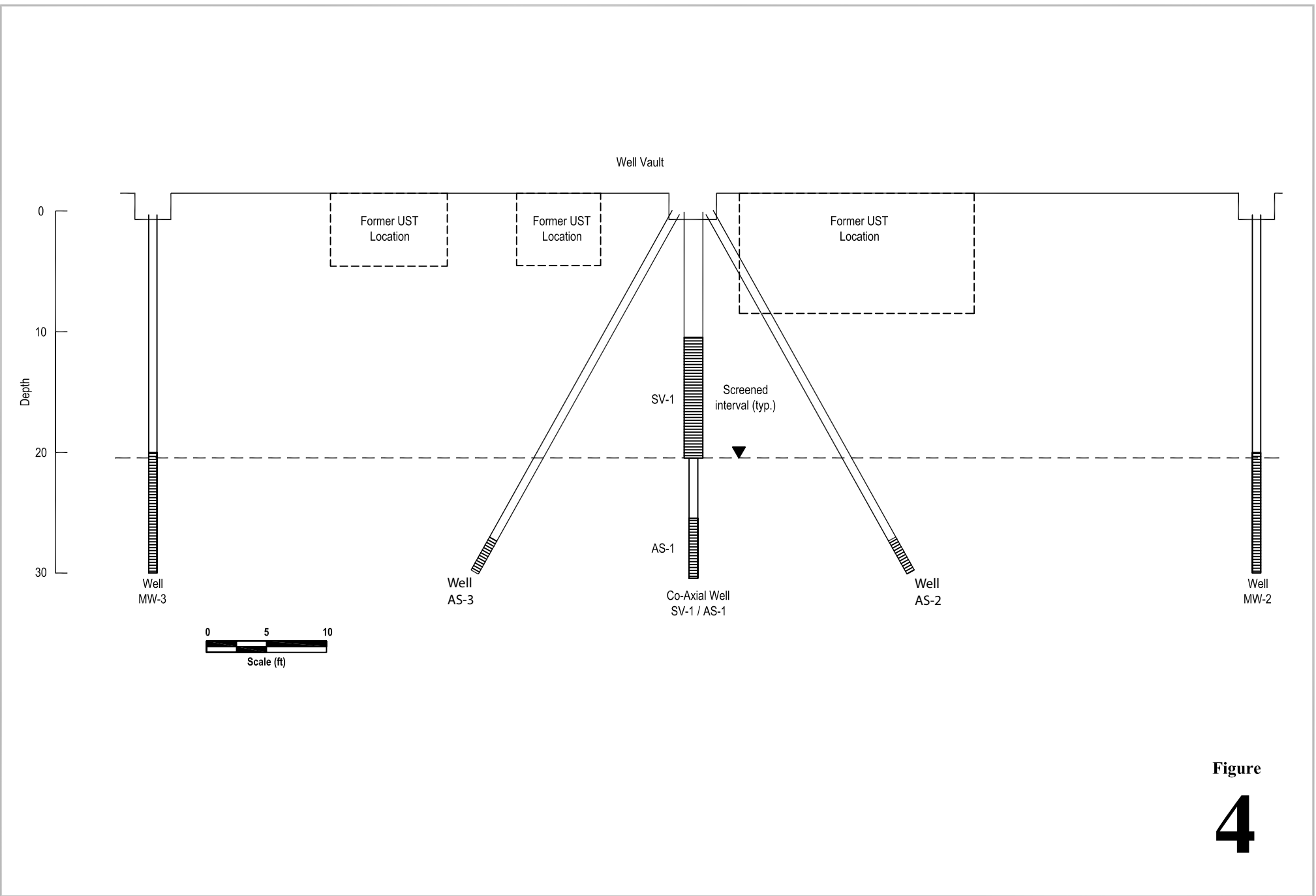

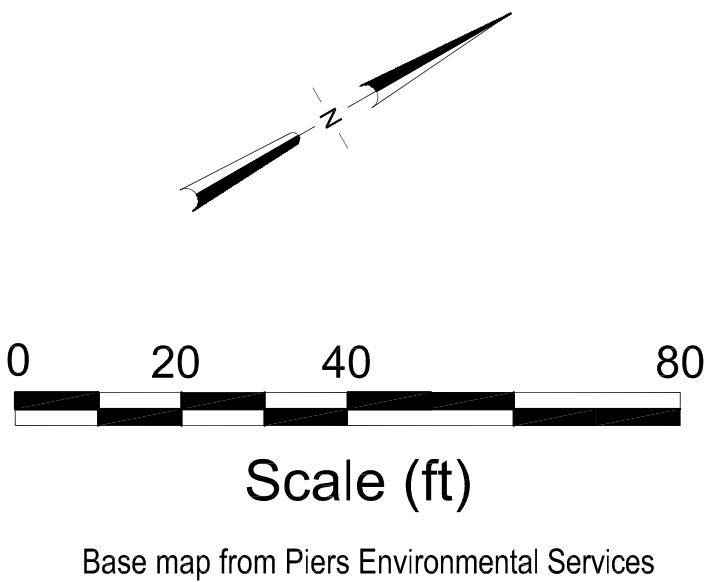
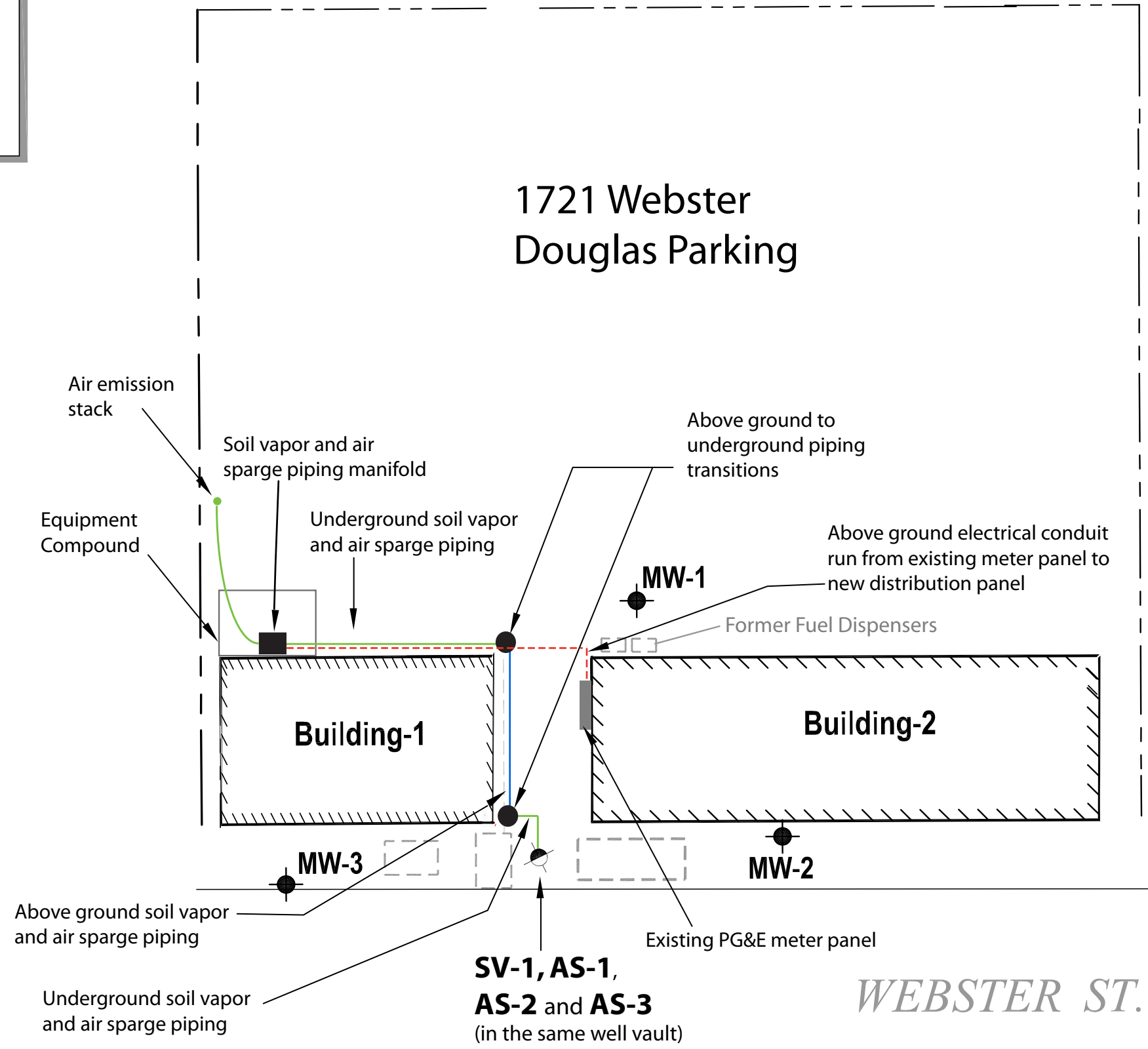


Figure  
**4**

EXPLANATION	
MW-1	Groundwater monitoring well
SV-1, AS-1	Remediation Wells
	Former Underground Storage Tanks / Dispensers



**Figure 5**

**Douglas Parking**  
 1721 Webster Street  
 Oakland, California



**Remediation System  
 Layout**

# PANGEA

**Table 1 - Groundwater Elevation and Analytical Data.**  
Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID TOC	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	Groundwater Analytical Data (µg/L)					
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-1	12/2/1994	19.42	9.83	ND	ND	ND	ND	ND	-
29.25	3/6/1995	20.69	9.04	ND	ND	ND	ND	ND	-
29.73	7/11/1995	20.65	9.16	ND	ND	ND	ND	ND	-
29.81	5/10/1996	20.80	9.01	ND	ND	ND	ND	ND	-
	10/2/1996	21.35	8.46	-	-	-	-	-	-
	2/28/1997	20.57	9.24	-	-	-	-	-	-
	9/16/1997	21.50	8.31	-	-	-	-	-	-
	2/5/1998	20.91	8.90	-	-	-	-	-	-
	8/11/1998	20.50	9.31	-	-	-	-	-	-
	2/8/1999	21.42	8.39	-	-	-	-	-	-
	2/24/1999	22.99	6.82	-	-	-	-	-	-
	3/3/1999	20.84	8.97	-	-	-	-	-	-
	3/10/1999	20.89	8.92	-	-	-	-	-	-
	3/17/1999	20.84	8.97	-	-	-	-	-	-
	5/4/1999	20.80	9.01	-	-	-	-	-	-
	7/20/1999	21.25	8.56	-	-	-	-	-	-
	10/5/1999	21.37	8.44	-	-	-	-	-	-
	1/7/2000	21.65	8.16	-	-	-	-	-	-
	4/6/2000	21.05	8.76	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/31/2000	21.13	8.68	-	-	-	-	-	-
	10/3/2000	21.69	8.12	-	-	-	-	-	-
	1/12/2001	22.00	7.81	-	-	-	-	-	-
	4/11/2001	22.16	7.65	-	-	-	-	-	-
	7/6/2001	22.57	7.24	-	-	-	-	-	-
	10/25/2001	22.71	7.10	-	-	-	-	-	-
	3/4/2002	22.53	7.28	-	-	-	-	-	-
	4/18/2002	22.81	7.00	-	-	-	-	-	-
	7/9/2002	22.95	6.86	-	-	-	-	-	-
	10/4/2002	23.13	6.68	-	-	-	-	-	-
	1/12/2003	22.05	7.76	-	-	-	-	-	-
	4/21/2003	21.17	8.64	-	-	-	-	-	-
32.75	7/21/2003	21.39	11.36	-	-	-	-	-	-
	10/2/2003	21.64	11.11	-	-	-	-	-	-
	1/15/2004	21.10	11.65	-	-	-	-	-	-
	4/5/2004	21.20	11.55	-	-	-	-	-	-
	8/9/2004	22.97	9.78	-	-	-	-	-	-
	10/7/2004	23.55	9.20	-	-	-	-	-	-
	2/7/2005	20.90	11.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2005	20.60	12.15	-	-	-	-	-	-
	7/6/2005	20.66	12.09	-	-	-	-	-	-
	10/10/2005	21.16	11.59	-	-	-	-	-	-
	1/26/2006	20.73	12.02	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/10/2006	20.05	12.70	-	-	-	-	-	-
	7/6/2006	20.90	11.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/26/2006	21.80	10.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/19/2007	22.02	10.73	--	--	--	--	--	--
	4/17/2007	22.13	10.62	--	--	--	--	--	--
	7/6/2007	21.83	10.92	--	--	--	--	--	--
	10/15/2007	22.28	10.47	--	--	--	--	--	--
	1/17/2008	22.33	10.42	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/9/2008	22.11	10.64	--	--	--	--	--	--
	7/17/2008	22.50	10.25	--	--	--	--	--	--
	10/27/2008	22.75	10.00	--	--	--	--	--	--
	1/9/2009	22.89	9.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/27/2009	22.40	10.35	--	--	--	--	--	--
	7/9/2009	22.55	10.20	--	--	--	--	--	--
	2/3/2010	22.08	10.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	<b>7/13/2010</b>	<b>21.20</b>	<b>11.55</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>

# PANGEA

**Table 1 - Groundwater Elevation and Analytical Data.**  
Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID TOC	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene Xylenes			MTBE
							(µg/L)			
MW-2	12/2/1994	19.50	7.60	61,300	3,000	3,900	160	4,500	-	
27.10	3/6/1995	18.49	8.61	98,000	8,400	16,000	2,000	2,600	-	
27.40	7/11/1995	18.45	8.95	38,000	3,100	7,500	940	3,700	-	
	5/10/1996	18.56	8.84	63,000	7,400	16,000	1,500	6,000	-	
	10/2/1996	19.15	8.25	21,000	2,200	3,400	430	1,600	-	
	2/28/1997	18.43	8.97	39,000	4,700	9,600	950	4,200	ND	
	9/16/1997	19.26	8.14	29,000	3,300	5,800	690	2,900	<620	
	2/5/1998	18.66	8.74	10,000	1,000	2,000	170	860	<330	
	8/11/1998	18.41	8.99	12,000	1,200	2,300	260	1,400	300	
	2/8/1999	19.84	7.56	5,500	740	1,200	150	780	60	
	2/17/1999	18.94	8.46	-	-	-	-	-	-	
	2/24/1999	20.76	6.64	-	-	-	-	-	-	
	3/3/1999	18.55	8.85	-	-	-	-	-	-	
	3/10/1999	20.74	6.66	-	-	-	-	-	-	
	3/17/1999	18.57	8.83	-	-	-	-	-	-	
	5/4/1999	18.55	8.85	90,000	9,200	21,000	1,600	10,000	560	
	7/20/1999	18.98	8.42	28,000	2,100	3,700	900	4,200	<860	
	10/5/1999	19.10	8.30	11,000	870	180	30	1,400	<110	
	1/7/2000	19.41	7.99	15,000	1,300	2,100	440	1,800	<14	
	4/6/2000	18.80	8.60	17,000	1,800	3,100	500	2,200	<50	
	7/31/2000	18.87	8.53	17,000	1,500	2,700	430	2,100	<200	
	10/3/2000	19.45	7.95	27,000	2,500	4,000	660	2,900	<50	
	1/12/2001	19.80	7.60	25,000	2,700	4,100	670	3,000	<200	
	4/11/2001	20.03	7.37	97,000	9,500	21,000	2,200	7,900	<200	
	7/6/2001	20.19	7.21	3,500	500	150	11	420	<5.0	
	10/25/2001	20.35	7.05	3,800	620	230	70	400	<50	
	3/4/2002	20.37	7.03	46,000	7,300	12,000	870	3,200	<500	
	4/18/2002	20.15	7.25	68,000	5,100	8,900	1,100	4,000	<1,000	
	7/9/2002	21.09	6.31	1,000	200	8.9	0.67	82	<10	
	10/4/2002	21.28	6.12	270	100	3.4	0.53	10	<5.0	
	1/12/2003	20.59	6.81	67,000	7,600	13,000	1,400	5,600	<500	
	4/21/2003	19.98	7.42	78,000	7,700	12,000	1,900	6,900	<500	
30.40	7/21/2003	20.08	10.32	1,800	360	16	<5.0	190	<50	
	10/2/2003	20.41	9.99	4,000	790	110	60	350	<50	
	1/15/2004	19.93	10.47	8,100	6.1	23	44	530	<50	
	4/5/2004	18.99	11.41	14,000	1,600	2,100	550	2,500	<500	
	8/9/2004	19.79	10.61	1,200	210	16	14	100	<20	
	10/7/2004	20.26	10.14	1,100	2.3	9.8	2.9	36	<5.0	
	2/7/2005	18.80	11.60	45,000	4,400	4,800	1,400	5,800	<200	
	4/5/2005	18.40	12.00	34,000	3,700	3,600	1,200	5,300	<500 (<5.0)	
	7/6/2005	18.48	11.92	24,000	1,600	1,700	570	2,800	<500	
	10/10/2005	19.00	11.40	25,000	1,700	2,100	710	3,200	<500	
	1/26/2006	18.58	11.82	60,000	4,600	7,200	1,600	6,900	<1,000	
	4/10/2006	17.84	12.56	56,000	4,900	7,500	1,200	7,400	<500	
	7/6/2006	18.76	11.64	28,000	1,900	1,700	720	2,900	<500	
	10/26/2006	19.60	10.80	43,000	2,800	2,500	1,700	7,600	<500	
	1/19/2007	19.84	10.56	31,000	2,700	2,400	1,400	5,800	<150	
	4/17/2007	19.90	10.50	37,000	3,200	2,900	1,600	6,400	<400	
	7/6/2007	19.63	10.77	30,000	3,200	2,000	1,500	5,200	<250	
	10/15/2007	20.11	10.29	20,000	1,200	990	650	2,300	<500	
	1/17/2008	20.10	10.30	38,000	2,900	5,100	1,200	5,000	<210	
	4/9/2008	20.12	10.28	51,000	3,000	6,400	1,700	6,500	<250	
	7/17/2008	20.01	10.39	22,000	180	500	660	2,100	<250	
	10/27/2008	20.61	9.79	26,000	570	2,100	670	3,400	<50	
	1/9/2009	20.80	9.60	16,000	240	680	460	3,000	<100	
	4/27/2009	20.17	10.23	16,000	130	660	570	3,600	<500	
	7/9/2009	20.36	10.04	8,500	30	110	250	1,400	<100	
	2/3/2010	19.84	10.56	22,000	47	140	500	3,000	<100	
	<b>7/13/2010</b>	<b>19.08</b>	<b>11.32</b>	<b>1,900</b>	<b>3.5</b>	<b>5.8</b>	<b>38</b>	<b>110</b>	<b>&lt;5.0</b>	

# PANGEA

**Table 1 - Groundwater Elevation and Analytical Data.**  
Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID TOC	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene (µg/L)	Xylenes	MTBE
MW-3	12/2/1994	22.15	7.35	394,000	1,200	ND	1,800	4,000	-
29.50	3/6/1995	20.09	9.16	21,000	400	150	24	62	-
29.25	7/11/1995	19.99	9.57	12,000	ND	10	16	99	-
29.56	5/10/1996	20.24	9.32	8,600	ND	7.6	16	84	-
	10/2/1996	20.90	8.66	11,000	ND	7.4	19	92	-
	2/28/1997	20.12	9.44	6,000	ND	4.4	17	88	50
	9/16/1997	20.97	8.59	6,500	<0.5	0.69	1.2	6.7	<5.0
	2/5/1998	20.39	9.17	5,400	<0.5	6.3	15	86	<63
	8/11/1998	19.95	9.61	2,700	<0.5	3.5	3.2	12	<10
	2/8/1999	20.58	8.98	6,100	<0.5	8.1	18	80	<140
	2/17/1999	20.53	9.03	-	-	-	-	-	-
	2/24/1999	22.53	7.03	-	-	-	-	-	-
	3/3/1999	20.28	9.28	-	-	-	-	-	-
	3/10/1999	22.45	7.11	-	-	-	-	-	-
	3/17/1999	20.26	9.30	-	-	-	-	-	-
	5/4/1999	20.24	9.32	11,000	<2	<2	9.8	140	<10
	7/20/1999	20.68	8.88	11,000	<0.5	3.1	13	88	<80
	10/5/1999	20.81	8.75	31,000	62	<0.5	21	170	<90
	1/7/2000	21.09	8.47	13,000	<0.5	<2	21	140	<80
	4/6/2000	20.48	9.08	5,300	1.5	1.4	9.8	60	<30
	7/31/2000	20.62	8.94	7,100	3.5	1.0	12	66	<5.0
	10/3/2000	21.13	8.43	8,000	<0.5	3.3	11	70	<40
	1/12/2001	21.45	8.11	11,000	4.3	6.7	11	73	<70
	4/11/2001	21.69	7.87	10,000	<0.5	<0.5	11	65	<10
	7/6/2001	21.60	7.96	13,000	5.3	1.6	11	58	<5.0
	10/25/2001	21.70	7.86	11,000	<0.5	3.0	15	70	<10
	3/4/2002	21.65	7.91	1,900	1.3	0.8	<0.5	15	<5.0
	4/18/2002	21.77	7.79	1,500	1.0	0.97	1.3	5.8	<5
	7/9/2002	22.03	7.53	13,000	6.8	5.7	13	59	<90
	10/4/2002	22.15	7.41	8,400	<10	<10	<10	42	<100
	1/12/2003	21.13	8.43	9,000	9.5	5.1	8.5	46	<90
	4/21/2003	20.63	8.93	10,000	<5.0	<5.0	8.5	32	<50
32.56	7/21/2003	20.68	11.88	9,600	<2.5	<2.5	7.4	39	48 (<1.0)
	10/2/2003	20.99	11.57	12,000	<5.0	<5.0	10	40	<90
	1/15/2004	20.74	11.82	13,000	37	41	78	930	<50
	4/5/2004	20.59	11.97	4,500	<1.7	<1.7	<1.7	12	<17
	8/9/2004	22.18	10.38	2,100	<1.0	3.7	<1.0	8.1	<10
	10/7/2004	22.79	9.77	2,400	6.5	26	7.5	89	<15
	2/7/2005	20.35	12.21	6,800	2.2	5.6	2.0	12	<30
	4/5/2005	19.95	12.61	6,100	2.3	2.6	1.3	8.3	<45 (<0.5)
	7/6/2005	19.93	12.63	4,500	<1.0	1.5	1.0	8.3	<10
	10/10/2005	20.45	12.11	3,800	0.73	<0.5	0.98	5.7	<15
	1/26/2006	20.05	12.51	5,100	<0.5	1.1	<0.5	6.6	<15
	4/10/2006	19.39	13.17	1,900	0.55	1.6	0.51	4.1	<10
	7/6/2006	20.25	12.31	5,600	<1.0	2.3	<1.0	6.4	<20
	10/26/2006	21.07	11.49	8,000	2.5	1.0	2.3	12	<35
	1/19/2007	21.38	11.18	77,000	19	40	9.5	130	<300
	4/17/2007	21.45	11.11	7,400	2.7	6.6	1.1	12	<40
	7/6/2007	21.29	11.27	7,100	2.4	5.6	0.85	10	<30
	10/15/2007	21.62	10.94	10,000	<5.0	<5.0	<5.0	14	<50
	1/17/2008	21.68	10.88	6,400	1.8	<0.5	1.0	8.4	23
	4/9/2008	21.42	11.14	4,700	1.7	2.2	<0.5	3.8	<18
	7/17/2008	22.10	10.46	7,700	2.9	3.1	1.4	11	<60
	10/27/2008	22.13	10.43	9,700	<1.7	1.8	2.3	11	<17
	1/9/2009	22.27	10.29	9,800	1.7	2.0	3.0	14	<17
	4/27/2009	21.74	10.82	8,700	1.9	3.3	<1.7	11	<50
	7/9/2009	21.92	10.64	10,000	<2.5	4.1	2.6	11	<60
	2/3/2010	21.55	11.01	5,300	1.5	2.3	<0.5	2.7	<25
	<b>7/13/2010</b>	<b>21.31</b>	<b>11.25</b>	<b>4,400</b>	<b>&lt;2.5</b>	<b>9.0</b>	<b>&lt;2.5</b>	<b>4.6</b>	<b>&lt;25</b>



# PANGEA

**Table 1 - Groundwater Elevation and Analytical Data.**  
Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID TOC	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene (µg/L)	Xylenes	MTBE
MW-4 25.29	5/10/1996	16.98	8.31	14,000	ND	1,200	720	3,100	-
	10/2/1996	17.65	7.64	12,000	ND	650	580	2,200	-
	2/28/1997	16.80	8.49	13,000	ND	1,100	750	2,700	110
	9/17/1997	17.93	7.36	13,000	<2.5	820	750	2,900	<190
	2/5/1998	16.78	8.51	13,000	<1.0	690	690	2,900	<170
	8/11/1998	16.59	8.70	15,000	<5	360	520	1,900	280
	2/8/1999	17.10	8.19	9,800	<5	680	770	2,200	300
	2/24/1999	18.95	6.34	-	-	-	-	-	-
	3/3/1999	16.80	8.49	-	-	-	-	-	-
	3/10/1999	16.86	8.43	-	-	-	-	-	-
	3/17/1999	16.82	8.47	-	-	-	-	-	-
	5/4/1999	16.86	8.43	11,000	46	600	620	1,900	<100
	7/20/1999	17.30	7.99	13,000	<0.5	470	7.0	2,000	<150
	10/5/1999	17.43	7.86	18,000	4.4	720	800	2,100	<120
	1/7/2000	17.78	7.51	18,000	<2	930	990	2,700	<30
	4/6/2000	17.17	8.12	8,000	31	390	530	1,300	<10
	7/31/2000	17.21	8.08	6,200	13	170	460	850	<10
	10/3/2000	18.00	7.29	14,000	42	820	730	2,000	<50
	1/12/2001	18.20	7.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/11/2001	18.31	6.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
7/6/2001	18.35	6.94	470	2.3	1.6	0.81	43	<5.0	
10/25/2001	18.47	6.82	110	0.70	<0.5	<0.5	3.3	<5.0	
3/4/2002	18.43	6.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
4/18/2002	18.61	6.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
7/9/2002	19.50	5.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
10/4/2002	19.83	5.46	310	2.0	2.9	13	16	<0.5	
1/12/2003	19.07	6.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
4/21/2003	18.71	6.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
28.29	7/21/2003	18.81	9.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/2/2003	19.02	9.27	59	0.78	<0.5	1.1	0.91	<5.0
	1/15/2004	18.68	9.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2004	17.41	10.88	6,200	29	250	450	730	<100
	8/9/2004	19.07	9.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/7/2004	19.65	8.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/7/2005	17.21	11.08	8,700	48	340	550	720	<100
	4/5/2005	16.78	11.51	6,900	27	290	520	660	<170 (<0.5)
	7/6/2005	16.98	11.31	5,600	<5.0	130	470	480	<50
	10/10/2005	17.59	10.70	6,300	23	78	530	430	<50
	1/26/2006	17.08	11.21	5,600	41	68	400	290	<120
	4/10/2006	16.27	12.02	2,900	39	32	200	140	<60
	7/6/2006	17.20	11.09	5,400	65	59	340	150	<120
	10/26/2006	18.06	10.23	7,200	72	46	460	200	<150
	1/19/2007	18.29	10.00	7,100	140	35	520	150	<200
	4/17/2007	18.30	9.99	4,900	90	32	290	89	<110
	7/6/2007	18.00	10.29	4,600	91	30	210	55	<90
	10/15/2007	18.52	9.77	8,600	200	62	480	110	<210
	1/17/2008	18.46	9.83	820	15	3.7	25	9.3	<10
	4/9/2008	18.23	10.06	3,600	55	20	160	64	<60
7/17/2008	18.72	9.57	6,500	210	47	510	180	<180	
10/27/2008	19.07	9.22	7,700	200	28	450	87	<150	
1/9/2009	19.12	9.17	4,400	180	34	180	93	<150	
4/27/2009	18.52	9.77	2,500	110	24	190	69	<150	
7/9/2009	18.78	9.51	5,600	150	34	270	83	<250	
2/3/2010	18.24	10.05	2,900	38	20	69	54	<50	
	<b>7/13/2010</b>	<b>17.59</b>	<b>10.70</b>	<b>1,100</b>	<b>20</b>	<b>7.6</b>	<b>43</b>	<b>26</b>	<b>&lt;60</b>



# PANGEA

**Table 1 - Groundwater Elevation and Analytical Data.**  
Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID TOC	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene (µg/L)	Xylenes	MTBE
MW-6 30.99	6/30/2003	19.60	11.39	68,000	950	6,000	2,400	10,000	<1,000
	7/21/2003	19.67	11.32	120,000	170	1,400	1,100	10,000	<1,000
	10/2/2003	19.97	11.02	16,000	7.6	200	38	1,800	<100
	1/15/2004	19.55	11.44	14,000	48	51	94	1,100	<50
	4/5/2004	19.17	11.82	24,000	180	900	430	1,800	<500
	8/9/2004	20.98	10.01	5,300	6.4	25	5.3	69	<17 (<0.5)
	10/7/2004	21.52	9.47	5,600	11	58	18	210	<50 (<0.5)
	2/7/2005	19.00	11.99	31,000	120	620	310	1,200	<500
	4/5/2005	18.60	12.39	21,000	170	1,100	350	1,300	<500 (<5.0)
	7/6/2005	18.56	12.43	26,000	130	920	320	1,200	<500
	10/10/2005	19.99	11.00	19,000	140	840	250	980	<500
	1/26/2006	18.70	12.29	10,000	140	1,100	270	1,200	<170
	4/10/2006	18.04	12.95	13,000	140	1,000	280	1,000	<250
	7/6/2006	18.80	12.19	17,000	150	1,000	290	1,000	<250
	10/26/2006	19.62	11.37	23,000	230	660	470	1,500	<500
	1/19/2007	19.92	11.07	18,000	190	620	350	1,100	<150
	4/17/2007	19.97	11.02	23,000	380	1,400	590	2,000	<450
	7/6/2007	19.81	11.18	28,000	600	3,000	900	2,700	<500
	10/15/2007	20.15	10.84	25,000	290	680	410	1,100	<250
	10/15/2007	20.15	10.84	25,000	290	680	410	1,100	<250
	1/17/2007	20.22	10.77	16,000	200	130	130	460	<150
	4/9/2008	19.86	11.13	18,000	320	870	480	1,500	<250
	7/17/2008	20.36	10.63	18,000	320	510	420	1,200	<500
	10/27/2008	20.69	10.30	31,000	320	320	410	990	<350
	1/9/2009	20.83	10.16	22,000	340	390	560	1,400	<250
	4/27/2009	20.27	10.72	13,000	110	97	380	1,100	<350
7/9/2009	20.43	10.56	18,000	250	520	470	1,300	<450	
2/3/2010	20.14	10.85	6,200	82	180	190	550	<150	
	<b>7/13/2010</b>	<b>19.29</b>	<b>11.70</b>	<b>12,000</b>	<b>260</b>	<b>420</b>	<b>480</b>	<b>1,600</b>	<b>&lt;450</b>
MW-7 33.11	6/30/2003	21.40	11.71	170	<0.5	2.1	2.0	8.7	<5.0
	7/21/2003	21.44	11.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/2/2003	21.73	11.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/15/2004	21.57	11.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2004	20.84	12.27	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	8/9/2004	22.68	10.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/7/2004	23.27	9.84	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/7/2005	20.60	12.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2005	20.22	12.89	<50	<0.5	0.75	<0.5	<0.5	<5.0 (<0.5)
	7/6/2005	20.25	12.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/10/2005	20.70	12.41	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/26/2006	20.32	12.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/10/2006	19.62	13.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2006	20.47	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/26/2006	21.30	11.81	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/19/2007	21.62	11.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/17/2007		11.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2007	21.59	11.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/15/2007	21.85	11.26	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/17/2007	21.90	11.21	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/9/2008	21.61	11.50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/17/2008	22.09	11.02	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/27/2008	22.39	10.72	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/9/2009	22.52	10.59	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/27/2009	21.98	11.13	--	--	--	--	--	--
	7/9/2009	22.18	10.93	--	--	--	--	--	--
2/3/2010	21.87	11.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	<b>7/13/2010</b>	<b>21.01</b>	<b>12.10</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>

# PANGEA

**Table 1 - Groundwater Elevation and Analytical Data.**

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID TOC	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	← (µg/L) →					
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
AS-1	7/6/2006	19.53	--	18,000	2,700	570	700	1,900	<500
	10/26/2006	20.33	--	15,000	1,900	340	360	1,400	<250
	1/19/2007	20.64	--	5,700	1,100	110	88	630	<50
	1/19/2007	20.64	--	5,700	1,100	110	88	630	<50
	4/17/2007	20.71	--	--	--	--	--	--	--
	7/16/2007	--	--	--	--	--	--	--	--
	10/15/2007	--	--	--	--	--	--	--	--
	1/17/2008	--	--	--	--	--	--	--	--
	4/9/2008	--	--	--	--	--	--	--	--
AS-2	7/6/2006	22.26	--	2,100	6.1	<0.5	33	200	<20
	10/26/2006	23.25	--	280	1.1	<0.5	<0.5	6.0	<15
	1/19/2007	23.61	--	2,100	2.3	<0.5	96	310	<35
	4/17/2007	23.70	--	--	--	--	--	--	--
	7/16/2007	--	--	--	--	--	--	--	--
	10/15/2007	--	--	--	--	--	--	--	--
	1/17/2008	--	--	--	--	--	--	--	--
	4/9/2008	--	--	--	--	--	--	--	--
	AS-3	7/6/2006	21.77	--	<50	<0.5	<0.5	<0.5	<0.5
10/26/2006		22.66	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
1/19/2007		22.97	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
4/17/2007		23.06	--	--	--	--	--	--	--
7/16/2007		--	--	--	--	--	--	--	--
10/15/2007		--	--	--	--	--	--	--	--
1/17/2008		--	--	--	--	--	--	--	--
4/9/2008		--	--	--	--	--	--	--	--
Trip Blank		01/12/01	-	-	<50	<0.5	<0.5	<0.5	<0.5
	4/11/2001	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2001	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/4/2002	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/2/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/15/2007	--	--	--	--	--	--	--	--

**Notes and Abbreviations:**

TOC = Top of casing elevations in feet above mean sea level.

ft amsl = Measured in feet above mean sea level

µg/L = Micrograms per liter.

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015C.

BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021B.

MTBE = Methyl tertiary butyl ether by EPA Method 8021B, and by EPA Method 8260 in parenthesis.

<0.5 = Concentration not detected above specific laboratory reporting limit.

-- = Not analyzed, not sampled, or not applicable.

ND = Not detected.

Data prior to 7/11/95 from Gen Tech and Piers Environmental Quarterly Groundwater Monitoring Reports dated December 2, 1994 and March 6, 1995, respectively.

On July 31, 2003, Virgil Chavez Land Surveying of Vallejo, California surveyed monitoring wells using a benchmark in the top of the curb near the SW return of the NW corner of 34th and Broadway.

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California													
Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
10/29/07	N/A	1.0	0	0	0	0	0	0	0	0	0	no	System start up
10/29/07	SYS-INF SYS-MID SYS-EFF	1.5	104	68	3,400 8 0	9,600 23 27	76 ND<0.077 0.15	320.3	6.7	2.30	0.05	no	
10/30/07	SYS-INF SYS-MID SYS-EFF	24.3	50	27	37,000 635 700	9,000 ND<7.0 60	74 ND<0.077 0.29	144.4	143.8	1.08	1.07	no	Readings upon arrival
10/30/07	SYS-INF SYS-MID SYS-EFF	25.2	45	27	3,200 620 530	1,500 ND<7.0 ND<7.0	11 ND<0.077 ND<0.077	21.7	144.6	0.14	1.08	no	Readings after dilution air introduced to reduce noise and limit hydrocarocarbon loading on carbon (prevent thermal
10/31/07	SYS-INF SYS-MID SYS-EFF	48.8	40	27	922* 0* 0*	880 ND<7.0 ND<7.0	8.6 ND<0.077 ND<0.077	11.3	155.7	0.10	1.17	no	Dilution airflow set at ~25% of total flow
11/01/07	SYS-INF SYS-MID SYS-EFF	78.8	39	27	1,475 14 9	--- --- ---	---	11.0	169.5	0.10	1.30	no	
11/02/07	SYS-INF SYS-MID SYS-EFF	100.2	40	27	736 19 10	--- --- ---	---	11.3	179.6	0.10	1.39	no	Shut system down at 100.5 hours for weekend
11/05/07	SYS-INF SYS-MID SYS-EFF	100.9	38	27	1,546 30 4	--- --- ---	---	10.7	179.9	0.10	1.39	no	Restart system at 100.5 hours on 11/5/07
11/06/07	SYS-INF SYS-MID SYS-EFF	126.7	38	27	213 0 0	--- --- ---	---	10.7	191.4	0.10	1.49	no	
11/07/07	SYS-INF SYS-MID SYS-EFF	154.7	45	27	170 0 0	--- --- ---	---	12.7	206.2	0.11	1.62	no	
11/08/07	SYS-INF SYS-MID SYS-EFF	178.2	47	27	160 0 0	--- --- ---	---	13.3	219.2	0.12	1.74	no	Lab analysis performed for methane; 2.4 ul/L detected in SYS EFF
11/09/07	SYS-INF SYS-MID SYS-EFF	200.3	45	31	163 0 0	--- --- ---	---	12.7	230.9	0.11	1.84	no	Shut system down at 200.3 hours for weekend
11/12/07	SYS-INF SYS-MID SYS-EFF	206.3	42	28	211 0 2	--- --- ---	---	11.9	233.9	0.11	1.87	yes	Restart system at 200.3 hours on 11/12/07; start air sparge system
11/13/07	SYS-INF SYS-MID SYS-EFF	225.6	46	28	2,937 0 4	--- --- ---	---	13.0	244.3	0.12	1.96	yes	
11/14/07	SYS-INF SYS-MID SYS-EFF	253.0	45	28	4,113 0 0	--- --- ---	---	12.7	258.9	0.11	2.09	yes	

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Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
11/15/07	SYS-INF SYS-MID SYS-EFF	278.4	45	28	2,810 0 0	---	---	12.7	272.3	0.11	2.21	yes	
11/16/07	SYS-INF SYS-MID SYS-EFF	301.4	43	28	2,570 0 0	---	---	12.1	283.9	0.11	2.31	yes	
11/17/07	SYS-INF SYS-MID SYS-EFF	327.1	42	41	11 0 0	---	---	11.9	296.6	0.11	2.42	yes	
11/18/07	SYS-INF SYS-MID SYS-EFF	352.1	44	41	530 0 0	---	---	12.4	309.6	0.11	2.54	yes	
11/19/07	SYS-INF SYS-MID SYS-EFF	375.2	42	41	24 0 0	22 ---	<0.077 ---	0.3	309.9	0.00	2.54	yes	
11/20/07	SYS-INF SYS-MID SYS-EFF	398.8	49	68	660 0 0	---	---	0.3	310.2	0.00	2.54	yes	Increased system vacuum by closing off recirculation valve on blower.
11/26/07	SYS-INF SYS-MID SYS-EFF	426.3	49	68	1,800 0 0	---	---	0.3	310.6	0.00	2.54	yes	Received verbal approval from BAAQMD to decrease monitoring from daily to weekly.
12/03/07	SYS-INF SYS-MID SYS-EFF	593.5	48	61	1,300 0 0	---	---	0.3	313.0	0.00	2.54	yes	
12/14/07	SYS-INF SYS-MID SYS-EFF	853.0	52	54	280 0 0	280 <7.0 <7.0	0.17 <0.077 <0.077	4.7	363.5	0.003	2.57	yes	
12/21/07	SYS-INF SYS-MID SYS-EFF	1,021.5	58	54	0 0 0	170 <7.0 <7.0	0.14 <0.077 <0.077	3.2	385.7	0.00	2.58	yes	SVE shutdown after reading, restarted
12/27/07	SYS-INF SYS-MID SYS-EFF	1,163.5	40	54	NM NM NM	---	---	2.2	398.6	0.00	2.59	yes	SVE shutdown on arrival, restart and monitor
12/28/07	SYS-INF SYS-MID SYS-EFF	1,188.5	50	54	14 0 0	14 <7.0 <7.0	<0.077 <0.077 <0.077	0.2	398.8	0.00	2.59	yes	
01/03/08	SYS-INF SYS-MID SYS-EFF	1,329.5	51	54	50 0 0	50 15 <7.0	<0.077 <0.077 <0.077	0.8	403.6	0.00	2.59	yes	
01/10/08	SYS-INF SYS-MID SYS-EFF	1,430.2	50	54	0 0 0	16 13 <7.0	<0.077 <0.077 <0.077	0.3	404.7	0.00	2.59	no	AS system off while sampling
1/15/2008*	SYS-INF SYS-MID SYS-EFF	1,546.0	50	81	--	1,200 7.7 <7.0	2.1 <0.077 <0.077	19.2	497.6	0.03	2.74	yes	

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California													
Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
1/23/2008*	SYS-INF SYS-MID SYS-EFF	1,694.5	50	95	--	1,300 11 <7.0	1.6 <0.077 <0.077	20.9	626.6	0.02	2.88	yes	
01/30/08	SYS-INF SYS-MID SYS-EFF	1,864.6	49	81	--	2,300 24 <7.0	2.6 <0.077 <0.077	36.2	882.9	0.04	3.15	yes	
02/06/08	SYS-INF SYS-MID SYS-EFF	2,027.5	50	81	--	1,700 43 <7.0	2.9 <0.077 <0.077	27.3	1,068.0	0.04	3.43	yes	
02/12/08	SYS-INF SYS-MID SYS-EFF	2,173.3	60	95	--	1,500 520 28	1.7 1.1 <0.077	28.9	1,243.4	0.03	3.61	yes	
02/21/08	SYS-INF SYS-MID SYS-EFF	2,394.1	65	95	--	---	---	31.3	1,531.2	0.03	3.91	yes	Samples not picked up by the laboratory courier before hold time expired.
02/29/08	SYS-INF SYS-MID SYS-EFF	2,580.5	27	95	--	1,100 890 <7.0	1.4 5.3 <0.077	9.5	1,605.2	0.01	3.99	yes	System shut down for future changeout of carbon in first vessel.
04/07/08	SYS-INF SYS-MID SYS-EFF	2,581.4	44	7.5	--	1,100 ---	1.4 ---	15.5	1,605.8	0.02	3.99	yes	Restart system after carbon changeout
04/10/08	SYS-INF SYS-MID SYS-EFF	2,650.3	26	7	--	1,200 <7.0 <7.0	3.6 <0.077 <0.077	10.0	1,634.5	0.03	4.07	yes	
04/17/08	SYS-INF SYS-MID SYS-EFF	2,826.1	28	8	962 3 3	---	---	10.8	1,713.5	0.03	4.29	yes	
04/23/08	SYS-INF SYS-MID SYS-EFF	2,969.4	26	7.5	--	1,100 <7.0 <7.0	1.5 <0.077 <0.077	9.2	1,768.2	0.01	4.36	yes	
04/30/08	SYS-INF SYS-MID SYS-EFF	3,136.8	23	7.5	--	780 <7.0 <7.0	1.4 <0.077 <0.077	5.8	1,808.4	0.01	4.42	yes	
05/07/08	SYS-INF SYS-MID SYS-EFF	3,304.6	28	8	378 0 0	---	---	7.0	1,857.4	0.01	4.50	yes	
05/14/08	SYS-INF SYS-MID SYS-EFF	3,472.2	26	8	523 6 0	---	---	6.5	1,902.8	0.01	4.57	yes	
05/23/08	SYS-INF SYS-MID SYS-EFF	3,690.2	28	7	264 0 0	---	---	7.0	1,966.5	0.01	4.68	yes	
05/30/08	SYS-INF SYS-MID SYS-EFF	3,859.2	36	7	317 1 0	---	---	9.0	2,029.9	0.01	4.78	yes	

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Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
06/05/08	SYS-INF SYS-MID SYS-EFF	3,999.6	38	7	350 0 0	---	---	9.5	2,085.5	0.02	4.87	yes	
06/13/08	SYS-INF SYS-MID SYS-EFF	4,193.1	38	7	--	700 <7.0 <7.0	1.6 <0.077 <0.077	8.5	2,154.3	0.02	5.01	yes	
06/19/08	SYS-INF SYS-MID SYS-EFF	4336.7	25	7	349 -- 0	---	---	5.6	2,187.9	0.01	5.08	yes	
06/27/08	SYS-INF SYS-MID SYS-EFF	4,529.7	25	7	335 0 0	---	---	5.6	2,233.1	0.01	5.18	yes	
07/10/08	SYS-INF SYS-MID SYS-EFF	4,839.0	56	8	256 40 0	---	---	12.6	2,395.2	0.03	5.51	yes	
07/18/08	SYS-INF SYS-MID SYS-EFF	5,032.0	33	8	330 174 0	---	---	7.4	2,454.8	0.02	5.64	yes	
7/24/2008**	SYS-INF SYS-MID SYS-EFF	5,178.0	33	8	360 187 0	---	---	7.4	2,499.8	0.02	5.73	yes	
8/1/2008**	SYS-INF SYS-MID SYS-EFF	5,368.0	33	8	248 193 0	---	---	7.4	2,558.5	0.02	5.85	yes	Lowered motor speed of blower to reduce noise within garage per client request.
8/8/2008**	SYS-INF SYS-MID SYS-EFF	5,536.7	17	4.5	146 153 0	---	---	3.8	2,585.3	0.01	5.91	yes	Stopped air sparging to wells AS-1 & AS-3. Sparging in well AS-2 full time.
8/18/2008**	SYS-INF SYS-MID SYS-EFF	5,774.1	17	4.5	365 170 0	840 140 <7.0	1.1 <0.077 <0.077	4.6	2,630.7	0.01	5.96	yes	
08/22/08	SYS-INF SYS-MID SYS-EFF	5,873.9	17	4	325 207 0	---	---	4.6	2,649.7	0.01	5.98	yes	
09/05/08	SYS-INF SYS-MID SYS-EFF	6,208.4	14	5	385 219 23	---	---	3.6	2,700.4	0.004	6.05	yes	System shutdown for carbon changeout
10/06/08	SYS-INF SYS-MID SYS-EFF	6,211.0	13	5	443 23 0	1,000 ---	1.8 ---	3.4	2,700.8	0.004	6.05	yes	System restarted; samples collected after system ran for approximately 1 hour
10/14/08	SYS-INF SYS-MID SYS-EFF	6,405.0	15	5	215 0 0	---	---	4.7	2,738.4	0.00	6.05	yes	
10/23/08	SYS-INF SYS-MID SYS-EFF	6,615.7	14	5	205 0 0	---	---	4.5	2,777.8	0.01	6.11	yes	



Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California													
Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
10/29/08	SYS-INF SYS-MID SYS-EFF	6,760.3	21	5	160 0 0	---	---	6.6	2,817.5	0.01	6.17	yes	
11/17/08	SYS-INF SYS-MID SYS-EFF	7,221.4	20	5	98 0 0	---	---	6.3	2,937.6	0.01	6.37	yes	
11/25/08	SYS-INF SYS-MID SYS-EFF	7,413.9	19	5	24 0 0	---	---	6.1	2,986.5	0.01	6.45	yes	
12/05/08	SYS-INF SYS-MID SYS-EFF	7,652.3	15	5	74 0 0	---	---	4.8	3,034.3	0.01	6.53	yes	Shutdown system to conduct maintenance on blower. Greased fittings and lowered motor speed at owner request
12/16/08	SYS-INF SYS-MID SYS-EFF	7,915.0	15	5	21 0 0	77 ---	<-0.077 ---	0.4	3,038.4	0.00	6.53	yes	
12/23/08	SYS-INF SYS-MID SYS-EFF	8,079.4	20	5	22 0 0	---	---	0.5	3,041.7	0.00	6.53	yes	
12/31/08	SYS-INF SYS-MID SYS-EFF	8,277.1	30	5	24 0 0	---	---	0.7	3,047.8	0.00	6.53	yes	
01/06/09	SYS-INF SYS-MID SYS-EFF	8,416.9	27	5	28 0 0	---	---	0.7	3,051.6	0.00	6.53	yes	Greased blower
01/20/09	SYS-INF SYS-MID SYS-EFF	8,756.6	27	5	NM ---	---	---	0.7	3,061.1	0.00	6.53	yes	Shutdown system to evaluate effectiveness of remediation on groundwater.
02/06/09	SYS-INF SYS-MID SYS-EFF	8,756.6	25	5	50 0 0	50 ---	<-0.077 ---	0.4	3,061.1	0.00	6.53	yes	Restart system
02/26/09	SYS-INF SYS-MID SYS-EFF	9,002.6	22	5	13 1 0	---	---	0.3	3,064.6	0.00	6.53	yes	Restart system, off on arrival
03/06/09	SYS-INF SYS-MID SYS-EFF	9,197.4	23	5	5 0 0	---	---	0.4	3,067.6	0.00	6.53	yes	
03/13/09	SYS-INF SYS-MID SYS-EFF	9,360.4	22	5	NM NM NM	20 <-7.0 <-7.0	<-0.077 <-0.077 <-0.077	0.1	3,068.5	0.00	6.53	yes	
03/18/09	SYS-INF SYS-MID SYS-EFF	9,480.4	21	5	5 0 0	---	---	0.1	3,069.2	0.00	6.53	yes	
03/26/09	SYS-INF SYS-MID SYS-EFF	9,675.1	21	5	5 0 0	---	---	0.1	3,070.3	0.00	6.53	yes	
04/03/09	SYS-INF SYS-MID SYS-EFF	9,868.7	21	5	4 0 0	---	---	0.1	3,071.4	0.00	6.53	yes	

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California													
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		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
04/10/09	SYS-INF SYS-MID SYS-EFF	10,035.7	22	5	1 0 0	---	---	0.1	3,072.4	0.00	6.53	yes	
04/17/09	SYS-INF SYS-MID SYS-EFF	10,203.7	21	5	4 0 0	---	---	0.1	3,073.3	0.00	6.53	yes	
04/24/09	SYS-INF SYS-MID SYS-EFF	10,366.7	19	5	4 0 0	---	---	0.1	3,074.2	0.00	6.53	yes	Shut AS/SVE off for upcoming QM
05/01/09	SYS-INF SYS-MID SYS-EFF	10,366.7	20	5	3 0 0	---	---	0.1	3,074.2	0.00	6.53	yes	Restart SVE/AS
05/08/09	SYS-INF SYS-MID SYS-EFF	10,543.3	21	5	15 0 0	---	---	0.1	3,075.1	0.00	6.53	yes	
05/15/09	SYS-INF SYS-MID SYS-EFF	10,711.8	20	5	32 0 0	---	---	0.1	3,076.0	0.00	6.53	yes	
05/22/09	SYS-INF SYS-MID SYS-EFF	10,879.5	0	0	NM NM NM	---	---	0.0	3,076.0	0.00	6.53	no	AS compressor down; shut SVE off
09/18/09	SYS-INF SYS-MID SYS-EFF	10,879.5	22	5	41 0 0	---	---	0.1	3,076.0	0.00	6.53	yes	Restart AS and SVE after repairing AS comp
10/30/09	SYS-INF SYS-MID SYS-EFF	11,889.8	20	5	35 0 0	---	---	0.1	3,081.5	0.00	6.53	no	SVE on, AS comp has blown fuse
11/30/09	SYS-INF SYS-MID SYS-EFF	12,631.8	20	5	31 0 0	---	---	0.1	3,085.4	0.00	6.53	yes	Replace fuse, restart AS
12/16/09	SYS-INF SYS-MID SYS-EFF	13,017.6	22	5	22 0 0	---	---	0.1	3,087.7	0.00	6.53	yes	
01/18/10	SYS-INF SYS-MID SYS-EFF	13,808.6	24	5	27 0 0	---	---	0.2	3,092.8	0.00	6.53	yes	
02/03/10	SYS-INF SYS-MID SYS-EFF	14,193.0	12	4	34 0 0	72 <7.0	0.25 <0.077	0.3	3,097.2	0.00	6.53	yes	Serviced SVE blower, collected lab samples
04/07/10	SYS-INF SYS-MID SYS-EFF	15,701.1	12	5	45 0 0	---	---	0.3	3,114.6	0.00	6.58	no	AS off, compressor non-op
05/07/10	SYS-INF SYS-MID SYS-EFF	16,425.2	27	0	43 0 0	---	---	0.6	3,133.4	0.00	6.64	no	AS off, compressor non-op
06/07/10	SYS-INF SYS-MID SYS-EFF	17,168.0	27	0	46 0 0	84 <7.0	0.29 <0.077	0.7	3,155.5	0.00	6.71	no	AS off, compressor non-op
07/15/10	SYS-INF SYS-MID SYS-EFF	18,075.8	23	0	4 2 0	---	---	0.6	3,179.1	0.00	6.79	no	AS off, compressor non-op
08/18/10	SYS-INF SYS-MID SYS-EFF	18,434.1	30	0	26 2 0	---	---	0.8	3,191.3	0.00	6.82	no	Restart system, off on arrival
09/22/10	SYS-INF SYS-MID SYS-EFF	19,173.6	25	0	17 2 0	66 <7.0	0.21 <0.077	0.5	3,208.0	0.00	6.87	no	Restart system, off on arrival

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California													
Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H2O)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
<p>Notes:</p> <p>NM = not measured</p> <p>cfm = cubic feet per minute.</p> <p>ppmv = Parts per million by volume</p> <p>lbs = Pounds</p> <p>"H2O = Inches of water</p> <p>SVE/AS = Soil vapor extraction and air sparge</p> <p>FID = Flame Ionization Detector.</p> <p>Hydrocarbon Removal/Emission Rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.</p> <p>Rate = vapor analytical concentration (ppmv) x system flowrate (scfm) x (1lb-mole/386 ft<sup>3</sup>) x molecular weight (86 lb/lb-mole for TPH-Gas hexane) x 1440 min/day x 1/1,000,000.</p> <p>* = Subtracted carbon tip readings of 28, 17, and 10, respectively, from influent, midpoint and effluent readings without carbon tip to account for methane.</p> <p>(-) = not sampled</p> <p>*Soil vapor flow rates were not measured on 1/15/08 and 1/23/08 due to equipment breakage. For hydrocarbon mass removal calculation purposes, the flow rate recorded during the 1/10/08 visit was used.</p> <p>**Vapor flow meter being serviced from 7-24-2008 through 8-18-2008. Flow rates assumed from previous data, field observations, and adjustments made to system.</p>													

## **APPENDIX A**

### Groundwater Monitoring Program

**Table A - Groundwater Monitoring Program**  
Douglas Parking Company, 1721 Webster Street, Oakland, CA.

Well ID	Well Type	Screened Interval (ft bgs)	Well Location for Monitoring	Casing Diam. (in)	Gauge Frequency	Sample Frequency	TPHg/BTEX/MTBE	TAME/TBA/DIPE/ETBE/MTBE
<b>Onsite Monitoring and Remediation Wells</b>								
MW-1	Mon	17-30	Source Area	2	1st, 3rd	1st	1st	---
MW-2	Mon	19.5-29.5	Downgradient	2	1st, 3rd	1st, 3rd	1st, 3rd	---
MW-3	Mon	20-30	Upgradient	2	1st, 3rd	1st, 3rd	1st, 3rd	---
AS-1	Rem	27-30	Source Area	1	---	---	---	---
AS-2	Rem	27-30	Source Area	2	---	---	---	---
AS-3	Rem	27-30	Source Area	2	---	---	---	---
<b>Offsite Monitoring Wells</b>								
MW-4	Mon	15-30	Mid-Downgradient	2	1st, 3rd	1st, 3rd	1st, 3rd	---
MW-5	Mon	10-25	Downgradient	2	1st, 3rd	1st	1st	---
MW-6	Mon	15-30	Crossgradient	2	1st, 3rd	1st, 3rd	1st, 3rd	---
MW-7	Mon	15-30	Upgradient	2	1st, 3rd	1st	1st	---

Notes and Abbreviations:

1st = Sampled during the 1st quarter, typically January

1st, 3rd = Sampled during the 1st and 3rd quarters, typically January and July

Mon = Groundwater Monitoring Only

Rem= Remediation Well Only

--- = None or not applicable

AS-1 = Air Sparging Well

## **APPENDIX B**

Groundwater Monitoring Field Data Sheets

Well Gauging Data Sheet

Project.Task #: 1135.001			Project Name: DOUGLAS PARKING				
Address 1721 Webster Street						Date: 7/13/10	
Name: TINA DE LA FUENTE			Signature: <i>Tina De la Fuente</i>				
Well ID	Well Size (in.)	Time	Depth to Immiscible Liquid (ft)	Thickness of Immiscible Liquid (ft)	Depth to Water (ft)	Total Depth (ft)	Measuring Point
MW-1	2	0728 <del>0700</del>			21.20 <del>15.34</del>	25.98 <del>21.58</del>	
MW-2	2	0725			19.08	25.46	
MW-3	2	0723			21.31	26.10	
MW-4	2	0746 <del>0717</del> TDR			17.59 <del>19.29</del> TDR	29.45 <del>24.55</del> TDR	
MW-5	2	0700			15.34	24.58	
MW-6	2	0711			19.29	24.55	
MW-7	2	0717			21.01	25.15	

Comments:

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## MONITORING FIELD DATA SHEET

Well ID: MW- 4

Project.Task #: 1135.001		Project Name: DOUGLAS PARKING						
Address: 1721 Webster St, Oakland								
Date: 7/13/10		Weather: OVERCAST						
Well Diameter: 2	Volume/ft.							
	1" = 0.04	3" = 0.37	6" = 1.47					
	2" = 0.16	4" = 0.65	radius <sup>2</sup> * 0.163					
Total Depth (TD): 29.45		Depth to Product:						
Depth to Water (DTW): 17.59		Product Thickness:						
Water Column Height: 11.06		1 Casing Volume: 1.89 gallons						
Reference Point: NTOC		3 Casing Volumes: 5.67 gallons						
Purging Device: disposable bailer								
Sampling Device: "								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0756					4.79			
0805	18.8°	6.26	844.0				1.9	
0811	18.9°	6.64	556.1				3.8	
0817	18.9	6.70	491.8				6	

Comments:

DO READING SEEMS ANAMOLOUS

Sample ID: MW- 4	Sample Time: 0819
Laboratory: McCampbell Analytical	Sample Date: 7/13/10
Containers/Preservative: 3 VOA w/ HCL	
Analyzed for: TPHg, BTEX, MTBE - 8015Cm / 8021B	
Sampler Name: TIF	Signature: <i>[Handwritten Signature]</i>



## MONITORING FIELD DATA SHEET

Well ID: MW-6

Project.Task #: 1135.001		Project Name: DOUGLAS PARKING						
Address: 1721 Webster St, Oakland								
Date: 7/13/10		Weather: Overcast						
Well Diameter: 2"		Volume/ft. 1" = 0.04 3" = 0.37 6" = 1.47 2" = 0.16 4" = 0.65 radius <sup>2</sup> * 0.163						
Total Depth (TD): 24.55		Depth to Product:						
Depth to Water (DTW): 19.29		Product Thickness:						
Water Column Height: 5.26		1 Casing Volume: 0.84 gallons						
Reference Point: NTOC		3 Casing Volumes: 2.52 gallons						
Purging Device: Disposable Bailer								
Sampling Device: " "								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0842					0.97			
0849	18.9	6.58	417.5				1	
0853	19.3	6.68	403.7				1.75	
0856	19.3	6.70	415.5				2.5	

Comments:

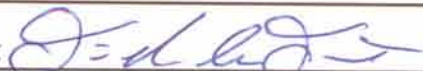
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Sample ID: MW-6	Sample Time: 0858
Laboratory: McCampbell Analytical	Sample Date: 7/13/10
Containers/Preservative: 3 VOA w/ HCL	
Analyzed for: TPHg, BTEX, MTBE - 8015Cm / 8021B	
Sampler Name: TINA DE LA FUENTE	Signature: 

## MONITORING FIELD DATA SHEET

Well ID: MW-3

Project.Task #: 1135.001				Project Name: DOUGLAS PARKING				
Address: 1721 Webster St, Oakland								
Date: 7/13/10				Weather: overcast				
Well Diameter: 2"				Volume/ft.		radius <sup>2</sup> 0.163		
		1" = 0.04		3" = 0.37		6" = 1.47		
		2" = 0.16		4" = 0.65				
Total Depth (TD): 26.10				Depth to Product:				
Depth to Water (DTW): 21.31				Product Thickness:				
Water Column Height: 4.79				1 Casing Volume: .77		gallons		
Reference Point: NTOC				3 Casing Volumes: 2.3		gallons		
Purging Device: Disposable Bailer								
Sampling Device: " "								
Time	Temp (°C)	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0918					0.44			
0925	19.2	6.49	393.5				.75	
0927	19.5	6.65	381.2				1.5	
0930	19.5	6.69	392.1				<del>2.5</del> 2.5	

Comments:

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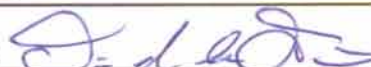
Sample ID: MW- 6		Sample Time: 0031 0931 TdIF	
Laboratory: McCampbell Analytical		Sample Date: 7/13/10	
Containers/Preservative: 3 VOA w/ HCL			
Analyzed for: TPHg, BTEX, MTBE - 8015Cm / 8021B			
Sampler Name: TdIF		Signature: 	

## MONITORING FIELD DATA SHEET

Well ID: MW- 2

Project.Task #: 1135.001		Project Name: DOUGLAS PARKING						
Address: 1721 Webster St, Oakland								
Date: 7/13/10				Weather: Overcast				
Well Diameter: 2"				Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	
				2" = 0.16	4" = 0.65	radius <sup>2</sup> * 0.163		
Total Depth (TD): 25.46				Depth to Product:				
Depth to Water (DTW): 19.08				Product Thickness:				
Water Column Height: 6.38				1 Casing Volume: 1.02		gallons		
Reference Point: NTOC				3 Casing Volumes: 3.06		gallons		
Purging Device: Disposable Bailer								
Sampling Device: " "								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0950					0.39			
0958	19.4	6.65	898.7				1	
1001	19.5	6.62	890.0				2	
1005	19.6	6.80	818.8				3	
1008	19.7	6.77	821.3				3.5	

Comments: Shown in first purge

Sample ID: MW- 2		Sample Time: 10/10	
Laboratory: McCampbell Analytical		Sample Date: 7/13/10	
Containers/Preservative: 3 VOA w/ HCL			
Analyzed for: TPHg, BTEX, MTBE - 8015Cm / 8021B			
Sampler Name: TdIF		Signature: 	

## **APPENDIX C**

Laboratory Analytical Reports



**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1135.001; Douglas-Webster St	Date Sampled: 07/13/10
		Date Received: 07/13/10
	Client Contact: Tina De La Fuente	Date Reported: 07/20/10
	Client P.O.:	Date Completed: 07/20/10

**WorkOrder: 1007323**

July 20, 2010

Dear Tina:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#1135.001; Douglas-Webster St,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



1007323

**McCAMPBELL ANALYTICAL, INC.**

1534 Willow Pass Road  
Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: main@mccampbell.com

Telephone: (925) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**

RUSH 24 HR  48 HR  72 HR  5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Tina de la Fuente Bill To: Pangea Analysis Request Other Comments

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612 E-Mail: tdelafuente@pangeaenv.com

Tele: (510) 836-3700 Fax: (510) 836-3709

Project #: 1135.001 Project Name: Douglas - Webster St

Project Location: 1721 Webster St., Oakland, CA

Sampler Signature: *[Signature]*

SAMPLING

LOCATION (Field Point Name)

Date Time # Containers

Type Containers

MATRIX

METHOD PRESERVED

Water Soil Air Sludge Other ICE HCL HNO<sub>3</sub> Other

BTEX & TPH as Gas (602/8020 + 8015)/MTBE

TPH as Diesel (8015) w/ Silica Gel Cleanup

Total Petroleum Oil & Grease (5520 E&F/B&F)

Total Petroleum Hydrocarbons (418.1)

EPA 601 / 8010 / 8021

BTEX ONLY (EPA 602 / 8020)

EPA 608 / 8081

EPA 608 / 8082 PCB's ONLY

EPA 8140 / 8141

EPA 8150 / 8151

EPA 524.2 / 624 / 8260

EPA 525 / 625 / 8270

PAH's / PNA's by EPA 625 / 8270 / 8310

CAM-17 Metals (6010 / 6020)

LUFT 5 Metals (6010 / 6020)

Lead (200.8 / 200.9 / 6010)

Five fuel oxygenates by EPA Method 8260

Filter Samples for Metals analysis: Yes / No

Relinquished By: *[Signature]* Date: 7/13/10 Time: 1010 Received By: *[Signature]* COMMENTS: ICE/c° 8.2

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS

PRESERVED IN LAB

VOAS O&G METALS OTHER PRESERVATION pH<2

# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 1007323**

**ClientCode: PEO**

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b>		<b>Bill to:</b>	<b>Requested TAT: 5 days</b>
Tina De La Fuente	Email: tdelafuente@pangeaenv.com	Bob Clark-Riddell	
Pangea Environmental Svcs., Inc.	cc:	Pangea Environmental Svcs., Inc.	<b>Date Received: 07/13/2010</b>
1710 Franklin Street, Ste. 200	PO:	1710 Franklin Street, Ste. 200	<b>Date Printed: 07/13/2010</b>
Oakland, CA 94612	ProjectNo: #1135.001; Douglas-Webster St	Oakland, CA 94612	
(510) 836-3700    FAX (510) 836-3709			

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1007323-001	MW-2	Water	7/13/2010 10:10	<input type="checkbox"/>	A	A											
1007323-002	MW-3	Water	7/13/2010 9:31	<input type="checkbox"/>	A												
1007323-003	MW-4	Water	7/13/2010 8:19	<input type="checkbox"/>	A												
1007323-004	MW-6	Water	7/13/2010 8:58	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTX_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Ana Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **7/13/2010 4:03:26 PM**

Project Name: **#1135.001; Douglas-Webster St**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **1007323** Matrix Water

Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
  - Container/Temp Blank temperature Cooler Temp: 8.2°C NA
  - Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
  - Sample labels checked for correct preservation? Yes  No
  - Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
  - Samples Received on Ice? Yes  No
- (Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:







**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 51760

WorkOrder 1007323

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1007296-009A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>f</sup>	ND	60	88	89.7	1.93	89.5	81.4	9.49	70 - 130	20	70 - 130	20
MTBE	ND	10	119	121	2.34	119	118	0.895	70 - 130	20	70 - 130	20
Benzene	ND	10	96.6	96.5	0.117	94.4	93.4	1.11	70 - 130	20	70 - 130	20
Toluene	ND	10	87.7	86.9	0.900	84	82.2	2.23	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	87	87.2	0.198	83.1	80.6	3.07	70 - 130	20	70 - 130	20
Xylenes	ND	30	99.6	99	0.579	97	93.4	3.81	70 - 130	20	70 - 130	20
%SS:	99	10	96	98	1.85	93	95	2.00	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 51760 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1007323-001A	07/13/10 10:10 AM	07/15/10	07/15/10 9:15 PM	1007323-002A	07/13/10 9:31 AM	07/15/10	07/15/10 8:44 PM
1007323-003A	07/13/10 8:19 AM	07/17/10	07/17/10 1:01 AM	1007323-004A	07/13/10 8:58 AM	07/16/10	07/16/10 4:53 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1135.001; Douglas-Webster St	Date Sampled: 09/22/10
		Date Received: 09/22/10
	Client Contact: Tina De La Fuente	Date Reported: 09/27/10
	Client P.O.:	Date Completed: 09/24/10

**WorkOrder: 1009593**

September 27, 2010

Dear Tina:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#1135.001; Douglas-Webster St,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 1009593**

**ClientCode: PEO**

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b>		<b>Bill to:</b>	<b>Requested TAT: 5 days</b>
Tina De La Fuente	Email: tdelafuente@pangeaenv.com	Bob Clark-Riddell	
Pangea Environmental Svcs., Inc.	cc:	Pangea Environmental Svcs., Inc.	<b>Date Received: 09/22/2010</b>
1710 Franklin Street, Ste. 200	PO:	1710 Franklin Street, Ste. 200	<b>Date Printed: 09/22/2010</b>
Oakland, CA 94612	ProjectNo: #1135.001; Douglas-Webster St	Oakland, CA 94612	
(510) 836-3700    FAX (510) 836-3709			

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1009593-001	INF	Air	9/22/2010 11:39	<input type="checkbox"/>	A	A											
1009593-002	MID	Air	9/22/2010 11:38	<input type="checkbox"/>	A												
1009593-003	EFF	Air	9/22/2010 11:36	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTEX AIR	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

The following SampleIDs: 001A, 002A, 003A contain testgroup.

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **9/22/2010 3:34:29 PM**

Project Name: **#1135.001; Douglas-Webster St**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **1009593** Matrix Air

Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
- Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:





# McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1135.001; Douglas-Webster St	Date Sampled: 09/22/10
	Client Contact: Tina De La Fuente	Date Received: 09/22/10
	Client P.O.:	Date Extracted: 09/22/10-09/23/10
		Date Analyzed: 09/22/10-09/23/10

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1009593

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF	A	66	ND	0.21	0.31	ND	0.42	1	116	d1
002A	MID	A	ND	ND	ND	ND	ND	ND	1	94	
003A	EFF	A	ND	ND	ND	ND	ND	ND	1	97	

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L, water samples and all TCLP & SPLP extracts are reported in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

%SS = Percent Recovery of Surrogate Standard  
DF = Dilution Factor

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant





**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 53294

WorkOrder 1009593

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1009594-003A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	60	92.3	89.9	2.61	90.8	91.2	0.497	70 - 130	20	70 - 130	20
MTBE	ND	10	106	112	5.71	101	108	6.41	70 - 130	20	70 - 130	20
Benzene	ND	10	95.3	95.7	0.332	94.9	94	0.987	70 - 130	20	70 - 130	20
Toluene	ND	10	92.8	93.6	0.850	93.8	94.6	0.823	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	92.4	93.2	0.903	94.4	94.1	0.322	70 - 130	20	70 - 130	20
Xylenes	ND	30	96.2	96.8	0.710	96.7	97.4	0.693	70 - 130	20	70 - 130	20
%SS:	102	10	99	98	0.842	98	94	4.31	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 53294 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1009593-001A	09/22/10 11:39 AM	09/22/10	09/22/10 7:13 PM	1009593-002A	09/22/10 11:38 AM	09/22/10	09/22/10 7:46 PM
1009593-003A	09/22/10 11:36 AM	09/23/10	09/23/10 6:52 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1135.001; Douglas-Webster St	Date Sampled: 06/07/10
		Date Received: 06/08/10
	Client Contact: Morgan Gillies	Date Reported: 06/11/10
	Client P.O.:	Date Completed: 06/09/10

**WorkOrder: 1006203**

June 11, 2010

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#1135.001; Douglas-Webster St,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

1006203

**McCAMPBELL ANALYTICAL, INC.**

1534 Willow Pass Road  
Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (925) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Morgan Gillies Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612  
E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)  
Tele: (510) 836-3702 Fax: (510) 836-3709  
Project #: 1135.001 Project Name: Douglas - Webster St  
Project Location: 1721 Webster St., Oakland, CA  
Sampler Signature: *[Signature]*

Analysis Request

Other

Comments

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED									
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other						
EFF		6/7/10	1430	1	red bag		X													
MID		↓	↓	1	↓		X													
INF		↓	↓	1	↓		X													

BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015) w/ Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)	Five fuel oxygenates by EPA Method 8260
--	--	---	--------------------------------------	-----------------------	----------------------------	----------------	---------------------------	-----------------	-----------------	------------------------	----------------------	--	-----------------------------	-----------------------------	-----------------------------	---

Filter Samples for Metals analysis: Yes / No

Relinquished By: *[Signature]* Date: 6/8/10 Time: 1520 Received By: *[Signature]*  
Relinquished By: *[Signature]* Date: 6/8/10 Time: 1700 Received By: *[Signature]*  
Relinquished By: *[Signature]* Date: Time: Received By:

ICE/IC *NA* COMMENTS: Report results in ppmv.  
GOOD CONDITION \_\_\_\_\_  
HEAD SPACE ABSENT \_\_\_\_\_  
DECHLORINATED IN LAB \_\_\_\_\_  
APPROPRIATE CONTAINERS \_\_\_\_\_  
PRESERVED IN LAB \_\_\_\_\_  
VOAS O&G METALS OTHER  
PRESERVATION pH<2

# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 1006203**

**ClientCode: PEO**

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b>	<b>Bill to:</b>	<b>Requested TAT: 5 days</b>
Morgan Gillies	Bob Clark-Riddell	
Pangea Environmental Svcs., Inc.	Pangea Environmental Svcs., Inc.	<b>Date Received: 06/08/2010</b>
1710 Franklin Street, Ste. 200	1710 Franklin Street, Ste. 200	<b>Date Printed: 06/08/2010</b>
Oakland, CA 94612	Oakland, CA 94612	
(510) 836-3700    FAX (510) 836-3709		

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1006203-001	EFF	Air	6/7/2010 14:30	<input type="checkbox"/>	A	A											
1006203-002	MID	Air	6/7/2010 14:30	<input type="checkbox"/>	A												
1006203-003	INF	Air	6/7/2010 14:30	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTEX AIR	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

The following SamplIDs: 001A, 002A, 003A contain testgroup.

**Prepared by: Ana Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



**Sample Receipt Checklist**

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **6/8/2010 4:40:25 PM**

Project Name: **#1135.001; Douglas-Webster St**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **1006203** Matrix Air

Carrier: Rob Pringle (MAI Courier)

**Chain of Custody (COC) Information**

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
- Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1135.001; Douglas-Webster St	Date Sampled: 06/07/10
	Client Contact: Morgan Gillies	Date Received: 06/08/10
	Client P.O.:	Date Extracted: 06/08/10-06/09/10
		Date Analyzed: 06/08/10-06/09/10

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1006203

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	EFF	A	ND	ND	ND	0.29	ND	ND	1	101	
002A	MID	A	ND	ND	ND	ND	ND	ND	1	104	
003A	INF	A	300	ND	0.94	2.6	0.74	10	1	122	d1

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	0.25	μg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples are reported in μg/L, soil/sludge/solid samples in mg/kg, wipe samples in μg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



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	Client Contact: Morgan Gillies	Date Received: 06/08/10
	Client P.O.:	Date Extracted: 06/08/10-06/09/10
		Date Analyzed: 06/08/10-06/09/10

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1006203

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	EFF	A	ND	ND	ND	0.076	ND	ND	1	101	
002A	MID	A	ND	ND	ND	ND	ND	ND	1	104	
003A	INF	A	84	ND	0.29	0.67	0.17	2.3	1	122	d1

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L, water samples and all TCLP & SPLP extracts are reported in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 51105

WorkOrder 1006203

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1006184-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	60	82.7	80.1	3.22	77.2	90.2	15.5	70 - 130	20	70 - 130	20
MTBE	ND	10	114	110	3.65	120	119	0.395	70 - 130	20	70 - 130	20
Benzene	ND	10	102	101	1.63	105	100	4.31	70 - 130	20	70 - 130	20
Toluene	ND	10	88.6	90.5	2.21	93.7	95.3	1.69	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	88.7	90	1.48	93.2	88.5	5.22	70 - 130	20	70 - 130	20
Xylenes	ND	30	100	102	2.05	106	97.1	8.60	70 - 130	20	70 - 130	20
%SS:	102	10	104	102	1.79	101	108	6.26	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 51105 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1006203-001A	06/07/10 2:30 PM	06/08/10	06/08/10 7:08 PM	1006203-002A	06/07/10 2:30 PM	06/08/10	06/08/10 7:38 PM
1006203-003A	06/07/10 2:30 PM	06/09/10	06/09/10 5:15 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.