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Alameda County  
Environmental Health



August 20, 2007

***VIA ALAMEDA COUNTY FTP SITE***

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

Re: **Groundwater Monitoring Report – Second Quarter 2007**

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

Dear Ms. Drogos:

On behalf of the Douglas Parking Company, Pangea Environmental Services, Inc., has prepared this *Groundwater Monitoring Report – Second Quarter 2007* for the above-referenced site. The report describes groundwater monitoring, sampling, and other site activities.

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

Sincerely,

**Pangea Environmental Services, Inc.**

A handwritten signature in blue ink that reads "Bob Clark-Riddell".

Bob Clark-Riddell, P.E.  
Principal Engineer

Attachment: *Groundwater Monitoring Report – Second Quarter 2007*

cc: Mr. Lee Douglas, Douglas Parking Company, 1721 Webster Street, Oakland, California 94612 (2 copies)  
SWRCB Geotracker Database (electronic copy)

**PANGEA Environmental Services, Inc.**

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



## GROUNDWATER MONITORING REPORT – SECOND QUARTER 2007

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

**August 20, 2007**

*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 the Douglas Parking Company, Pangea Environmental Services, Inc. (Pangea), performed groundwater monitoring and sampling during this quarter at the subject site (Figure 1). The purpose of the monitoring and sampling is to evaluate dissolved contaminant concentrations and the site groundwater flow direction. Current groundwater analytical results and elevation data are shown on Figure 2. Current and historical data are summarized on Table 1.

## SITE BACKGROUND

The site is currently being utilized as a parking garage, and is located at 1721 Webster Street between 17th and 19th Streets in downtown Oakland, California, approximately five miles east of San Francisco Bay and half 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 .

Several former 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 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.

## **GROUNDWATER MONITORING AND SAMPLING**

On April 17, 2007, Pangea conducted groundwater monitoring and sampling at the site. Site monitoring wells were gauged for depth to water. Groundwater samples were collected from monitoring wells MW-2 through MW-7. Monitoring well MW-1 is sampled annually during the first quarter of the year.

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 A.

## **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 Environmental Protection Agency (EPA) Method SW8015C, and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary-butyl ether (MTBE) by EPA Method SW8021B by McCampbell Analytical, Inc. of Pittsburg, California, a State-certified laboratory. The laboratory analytical report is included as Appendix B. Dissolved oxygen concentrations in groundwater monitoring wells ranged from 0.25 mg/L (MW-5) to 0.70 mg/L (MW-3).

## **Groundwater Flow Direction**

Based on depth-to-water measurements collected on April 17, 2007, groundwater beneath the site flowed towards the northeast (Figure 2). The groundwater depth measurements and inferred flow direction this quarter are consistent with historical site conditions. Groundwater depths at the site have historically ranged from approximately 13 to 23 ft bgs, equivalent to a groundwater elevation range from 5 to 13 feet above mean sea level (Table 1) over nine years of monitoring. The historical inferred flow direction has consistently been northeastwards.

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

The maximum TPHg concentration detected this quarter was in well MW-2 (37,000 µg/L). The highest benzene concentration detected this quarter was 3,200 µg/L in well MW-2. The distribution of TPHg and benzene in groundwater at the site is shown on Figure 2. No hydrocarbons were detected in perimeter wells MW-5 and MW-7. All detected hydrocarbon concentrations in site wells this quarter were within historical ranges. Generally, TPHg and BTEX concentrations in site monitoring wells exhibit a stable long-term trend. MTBE was not detected above reporting limits in any of the sampled wells and is not a compound of concern at this site.

## **OTHER SITE ACTIVITIES**

### **Groundwater Monitoring**

Pangea will continue quarterly groundwater monitoring and sampling at the site in accordance with the approved sampling frequency. Well MW-1 will be sampled annually during the first quarter of each year to help control costs. All other site monitoring wells will be gauged for depth to water and groundwater samples will be analyzed for TPHg, BTEX and MTBE by EPA Method 8015Cm/8021B.

### **Interim Remedial Action**

Pangea is currently making final preparations for installation of the soil vapor and air sparging system. System installation commenced in July 2007.

## **ELECTRONIC REPORTING**

This report will be submitted to the 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 – Site Vicinity Map

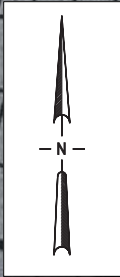
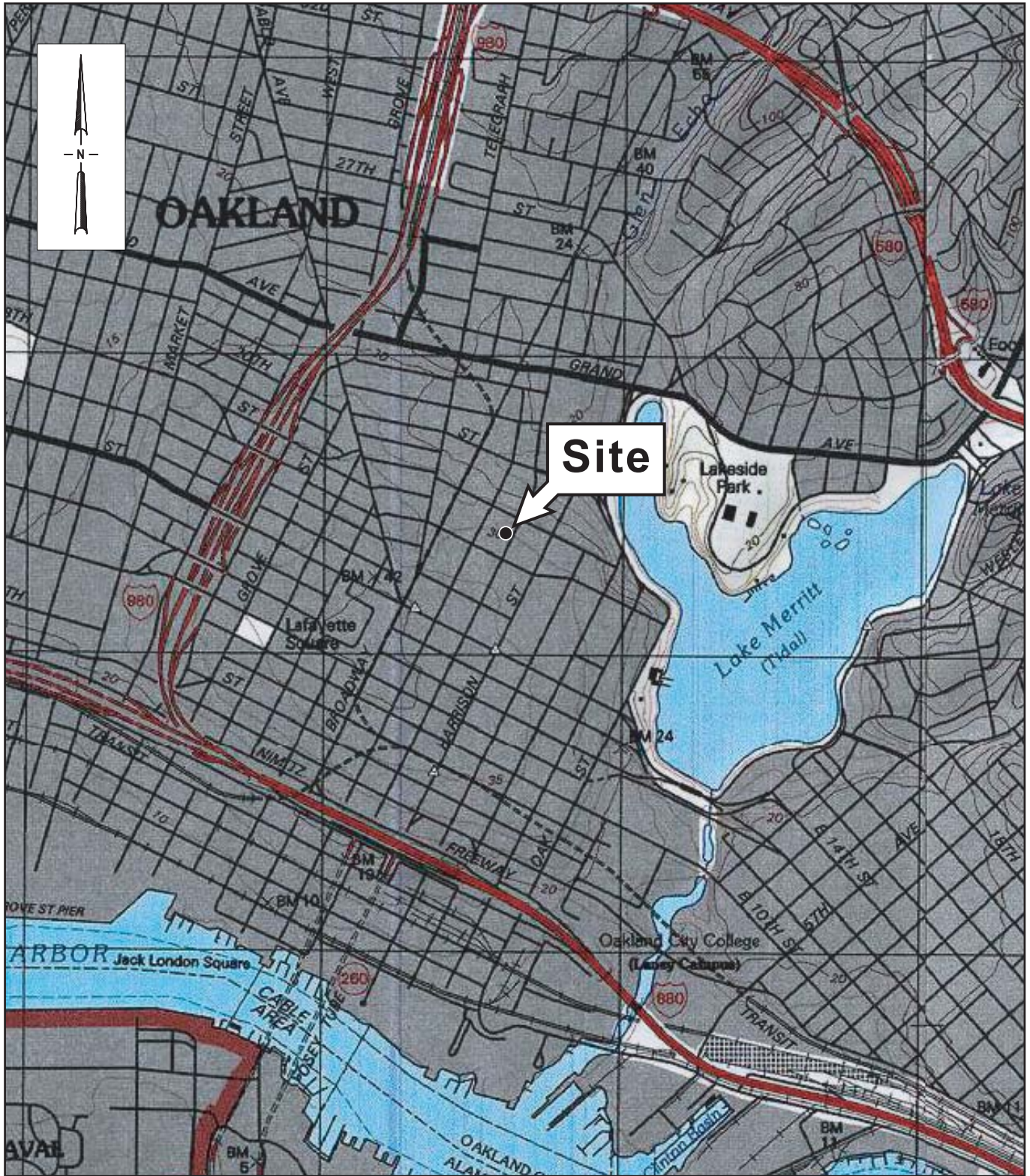
Figure 2 – Groundwater Elevation Contour and Hydrocarbon Concentration Map

Figure 3 – Cross Section of Remediation Wells

Table 1 – Groundwater Elevation and Analytical Data

Appendix A – Groundwater Monitoring Field Data Sheets

Appendix B – Laboratory Analytical Report.



**Site**

SOURCE: TOPOI MAPS



SCALE : 1" = 1/4 MILE

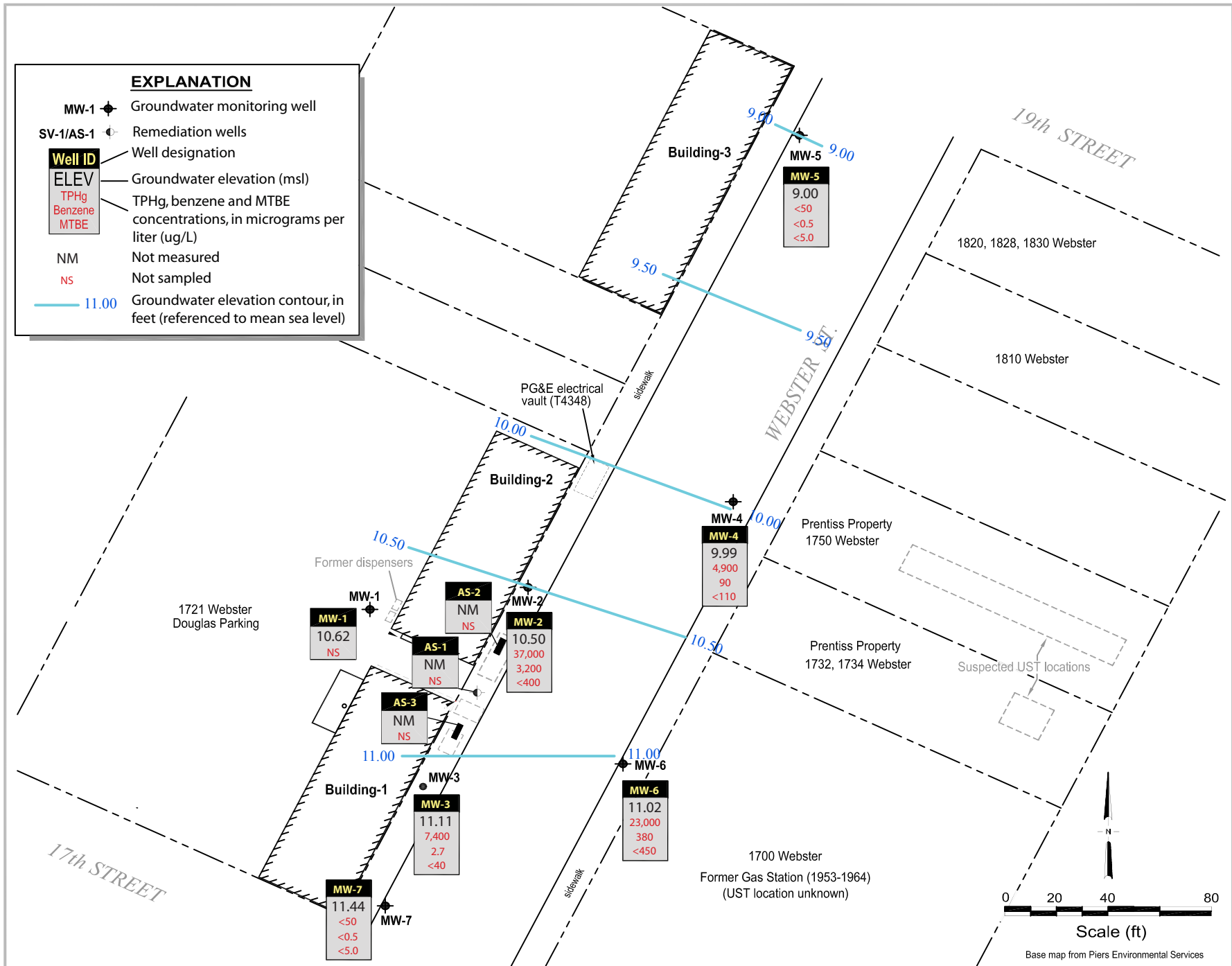
Figure

**1**

Vicinity Map

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





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



**Groundwater Elevations and  
 Hydrocarbon Concentration Map**

April 17, 2007

FIGURE



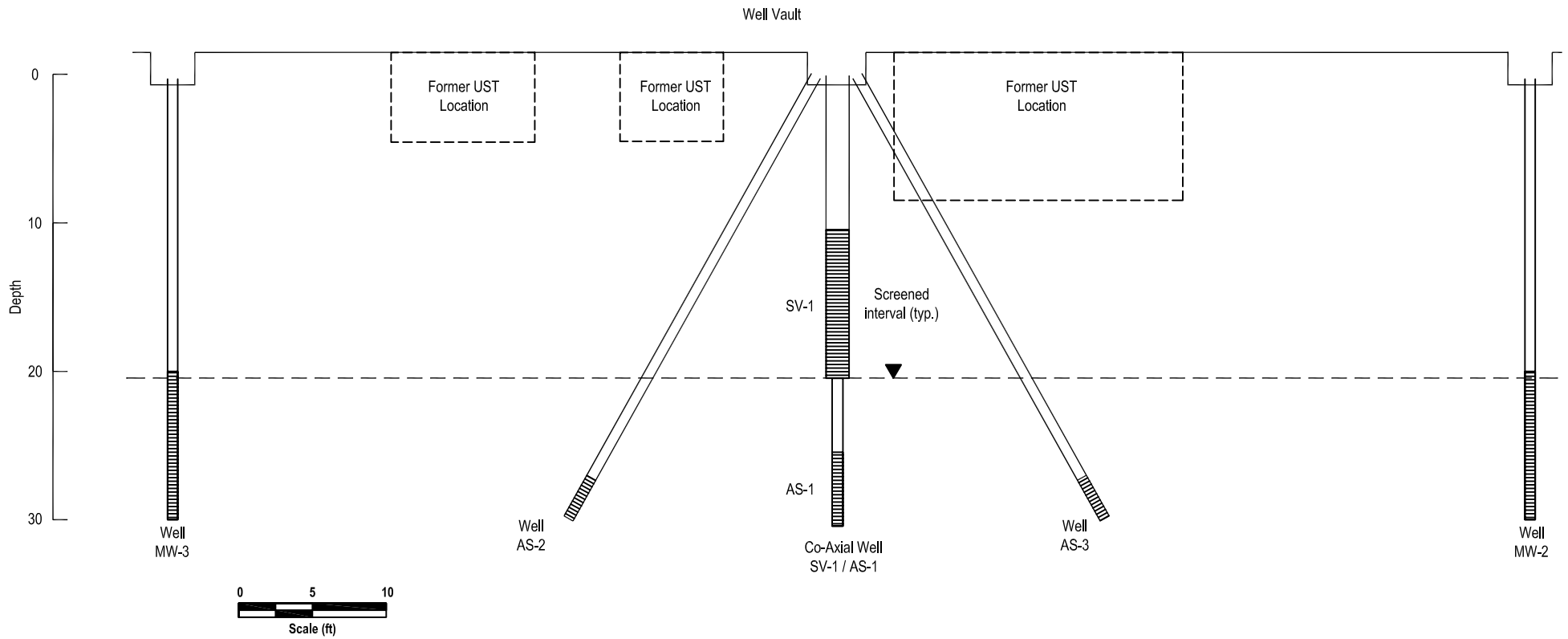


Figure  
3

# 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
Groundwater Monitoring Well Samples									
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	--	--	--	--	--	--
	<b>4/17/2007</b>	<b>22.13</b>	<b>10.62</b>	--	--	--	--	--	--
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

# 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)	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">←</div> <div style="text-align: center;">                     TPHg    Benzene    Toluene    Ethylbenzene    Xylenes    MTBE                 </div> <div style="margin-left: 10px;">→</div> </div> (µg/L)					
				MW-2	9/16/1997	19.26	8.14	29,000	3,300
(cont'd)	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
	<b>4/17/2007</b>	<b>19.90</b>	<b>10.50</b>	<b>37,000</b>	<b>3,200</b>	<b>2,900</b>	<b>1,600</b>	<b>6,400</b>	<b>&lt;400</b>
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	-	-	-	-	-	-

# 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-3	3/10/1999	22.45	7.11	-	-	-	-	-	-
(cont'd)	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
	<b>4/17/2007</b>	<b>21.45</b>	<b>11.11</b>	<b>7,400</b>	<b>2.7</b>	<b>6.6</b>	<b>1.1</b>	<b>12</b>	<b>&lt;40</b>
MW-4	5/10/1996	16.98	8.31	14,000	ND	1,200	720	3,100	-
25.29	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

# 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-4	7/6/2001	18.35	6.94	470	2.3	1.6	0.81	43	<5.0	
(cont'd)	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	
	<b>4/17/2007</b>	<b>18.30</b>	<b>9.99</b>	<b>4,900</b>	<b>90</b>	<b>32</b>	<b>290</b>	<b>89</b>	<b>&lt;110</b>	
MW-5	5/10/1996	14.60	7.37	ND	ND	ND	ND	ND	-	
21.97	10/2/1996	15.25	6.72	ND	ND	ND	ND	ND	-	
	2/28/1997	14.31	7.66	ND	ND	ND	ND	ND	ND	
	9/17/1997	15.18	6.79	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/5/1998	13.64	8.33	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/11/1998	13.92	8.05	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/8/1999	14.19	7.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/24/1999	16.18	5.79	-	-	-	-	-	-	
	3/3/1999	14.23	7.74	-	-	-	-	-	-	
	3/10/1999	14.32	7.65	-	-	-	-	-	-	
	3/17/1999	14.25	7.72	-	-	-	-	-	-	
	5/4/1999	14.41	7.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/20/1999	14.44	7.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/5/1999	14.79	7.18	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/7/2000*	15.23	6.74	-	-	-	-	-	-	
	4/6/2000	14.74	7.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/31/2000	14.52	7.45	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/3/2000	15.37	6.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/12/2001	15.70	6.27	6,400	13	290	450	1,100	<40	
	4/11/2001	15.78	6.19	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/6/2001	15.97	6.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/25/2001	16.05	5.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/4/2002	16.21	5.76	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	4/18/2002	16.59	5.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/9/2002	16.94	5.03	170	1.0	0.65	2.1	4.0	<15	
	10/4/2002	17.14	4.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/12/2003	16.58	5.39	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	4/21/2003	15.90	6.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
24.99	7/21/2003	16.03	8.96	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/2/2003	16.33	8.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/15/2004	16.21	8.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

# 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-5 (cont. d)	4/5/2004	15.01	9.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/9/2004	16.85	8.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/7/2004	17.48	7.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/7/2005	16.52	8.47	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	4/5/2005	14.45	10.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0 (<0.5)	
	7/6/2005	14.85	10.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/10/2005	15.44	9.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/26/2006	14.96	10.03	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	4/10/2006	14.01	10.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/6/2006	15.17	9.82	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/26/2006	15.94	9.05	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/19/2007	16.05	8.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	<b>4/17/2007</b>	<b>15.99</b>	<b>9.00</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>	
	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		
<b>4/17/2007</b>	<b>19.97</b>	<b>11.02</b>	<b>23,000</b>	<b>380</b>	<b>1,400</b>	<b>590</b>	<b>2,000</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		
<b>4/17/2007</b>	<b>21.67</b>	<b>11.44</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>		

# 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)			
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	
	<b>4/17/2007</b>	<b>20.71</b>	--	--	--	--	--	--	--	
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	
	<b>4/17/2007</b>	<b>23.70</b>	--	--	--	--	--	--	--	
AS-3	7/6/2006	21.77	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	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	
	<b>4/17/2007</b>	<b>23.06</b>	--	--	--	--	--	--	--	
Trip Blank	01/12/01	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	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	

**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

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

<n = Concentration not detected above laboratory reporting limit of n

-- = 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.

## **APPENDIX A**

Groundwater Monitoring Field Data Sheets



Well Gauging Data Sheet

Project.Task #: 1135.001 211			Project Name: Douglas Parking						
Address: 1721 Webster Street, Oakland, CA						Date: 4-17-07			
Name: Sanjiv Gill			Signature: <i>[Signature]</i>						
Well ID	Well Size (in.)	Time	Depth to Water (ft)	Time	Depth to Water (ft)	Time	Depth to Water (ft)	Total Depth (ft)	Measuring Point
MW-1	2"	6:28	22.11	6:45	22.13			26.65	TOC
MW-2		1:57	19.91	2:37	19.90			25.95	
MW-3		2:00	21.45	2:41	21.45			26.90	
MW-4		1:53	18.32	2:34	18.30			29.42	
MW-5		1:39	15.98	2:20	15.99			24.50	
MW-6		2:04	19.99	2:45	19.97			25.79	
MW-7	↓	1:33	21.69	2:15	21.67			28.46	
AS-1	1"	1:46	20.73	2:26	20.71			30.18	
AS-2	2"	1:49	23.70	2:28	23.70			33.02	
AS-3	2"	1:44	23.05	2:24	23.06			33.85	μ

Comments: DO = mg/L / MW-1 , AS-1 , AS-2 , AS-3

## MONITORING FIELD DATA SHEET

Well ID: *MN-2*

Project.Task #: 1135.001				Project Name: Douglas Parking				
Address: 1721 Webster Street, Oakland, CA								
Date: <i>4-17-07</i>				Weather: <i>Clear</i>				
Well Diameter: <i>2"</i>				Volume/ft.	<i>1" = 0.04</i>	<i>3" = 0.37</i>	<i>6" = 1.47</i>	
					<i>2" = 0.16</i>	<i>4" = 0.65</i>	<i>radius<sup>2</sup> = 0.163</i>	
Total Depth (TD): <i>25.95</i>				Depth to Product:				
Depth to Water (DTW): <i>19.90</i>				Product Thickness:				
Water Column Height: <i>6.05</i>				1 Casing Volume: <i>0.96</i> gallons				
Reference Point: TOC				3 Casing Volumes: <i>2.90</i> gallons				
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp (C)	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>4:45</i>	<i>17.5</i>	<i>7.19</i>	<i>590</i>				<i>1</i>	
<i>4:50</i>	<i>18.0</i>	<i>7.23</i>	<i>579</i>				<i>2</i>	
<i>4:55</i>	<i>17.7</i>	<i>7.20</i>	<i>583</i>				<i>3</i>	

Comments: Oakton DO meter pre purge DO = *0.34* mg/l  
post purge DO =  mg/l


Sample ID: <i>MN-2</i>				Sample Time: <i>5:00</i>				
Laboratory: McCampbell Analytical, INC.				Sample Date: <i>4-17-07</i>				
Containers/Preservative: <i>Vo/HCl</i>								
Analyzed for: <i>8015, 8021, 8260</i>								
Sampler Name: <i>Sanjiv Gill</i>				Signature:				

## MONITORING FIELD DATA SHEET

Well ID: *MW-3*

Project Task #: 1135.001				Project Name: Douglas Parking				
Address: 1721 Webster Street, Oakland, CA								
Date: <i>4-17-07</i>				Weather: <i>clear</i>				
Well Diameter: <i>2"</i>				Volume/ft.		radius <sup>2</sup> = 0.163		
				1" = 0.04		3" = 0.37		
				2" = 0.16		4" = 0.65		
Total Depth (TD): <i>26.9D</i>				Depth to Product:				
Depth to Water (DTW): <i>21.45</i>				Product Thickness:				
Water Column Height: <i>5.45</i>				1 Casing Volume: <i>0.87</i>		gallons		
Reference Point: TOC				3 Casing Volumes: <i>2.61</i>		gallons		
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp °C	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>5:15</i>	<i>17.3</i>	<i>7.19</i>	<i>659</i>				<i>1</i>	
<i>5:20</i>	<i>17.7</i>	<i>7.27</i>	<i>613</i>				<i>2.0</i>	
<i>5:25</i>	<i>17.5</i>	<i>7.31</i>	<i>648</i>				<i>2.5</i>	

Comments: Oakton DO meter      pre purge DO = *0.70* mg/l  
 post purge DO =      mg/l


Sample ID: <i>MW-3</i>	Sample Time: <i>5:30</i>
Laboratory: McCampbell Analytical, INC.	Sample Date: <i>4-17-07</i>
Containers/Preservative: <i>Voac/HCl</i>	
Analyzed for: <i>8015, 8021, 8260</i>	
Sampler Name: Sanjiv Gill	Signature: 

## MONITORING FIELD DATA SHEET

Well ID: MW-4

Project Task #: 1135.001		Project Name: Douglas Parking						
Address: 1721 Webster Street, Oakland, CA								
Date: <u>4-17-07</u>		Weather: <u>clear</u>						
Well Diameter: <u>2"</u>		Volume/ft. 1" = 0.04   3" = 0.37   6" = 1.47 2" = 0.16   4" = 0.65   radius' = 0.163						
Total Depth (TD): <u>29.42</u>		Depth to Product:						
Depth to Water (DTW): <u>18.30</u>		Product Thickness:						
Water Column Height: <u>11.12</u>		1 Casing Volume: <u>1.77</u> gallons						
Reference Point: TOC		3 Casing Volumes: <u>5.33</u> gallons						
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp (°C)	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>4:15</u>	<u>14.9</u>	<u>7.19</u>	<u>510</u>				<u>1.5</u>	
<u>4:20</u>	<u>18.8</u>	<u>7.24</u>	<u>536</u>				<u>3</u>	
<u>4:25</u>	<u>18.8</u>	<u>7.21</u>	<u>519</u>				<u>5</u>	

Comments: Oakton DO meter      pre purge DO = 0.67 mg/l  
 post purge DO =      mg/l

Sample ID: <u>MW-4</u>	Sample Time: <u>4:30</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>4-17-07</u>
Containers/Preservative: <u>Voac/HCl</u>	
Analyzed for: 8015, 8021, 8260	
Sampler Name: Sanjiv Gill	Signature: 

## MONITORING FIELD DATA SHEET

Well ID: *MW-5*

Project Task #: 1135.001				Project Name: Douglas Parking				
Address: 1721 Webster Street, Oakland, CA								
Date: <i>4-17-07</i>				Weather: <i>clear</i>				
Well Diameter: <i>2"</i>				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): <i>24.50</i>				Depth to Product:				
Depth to Water (DTW): <i>15.99</i>				Product Thickness:				
Water Column Height: <i>8.51</i>				1 Casing Volume: <i>1.36</i>			gallons	
Reference Point: TOC				3 Casing Volumes: <i>4.08</i>			gallons	
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>3:40</i>	<i>18.1</i>	<i>7.26</i>	<i>720</i>				<i>1.5</i>	
<i>3:45</i>	<i>18.9</i>	<i>7.30</i>	<i>709</i>				<i>3</i>	
<i>3:50</i>	<i>19.1</i>	<i>7.33</i>	<i>688</i>				<i>4</i>	

Comments: Oakton DO meter      pre purge DO = *0.25* mg/l  
 post purge DO =      mg/l

Sample ID: <i>MW-5</i>		Sample Time: <i>3:55</i>	
Laboratory: McCampbell Analytical, INC.		Sample Date: <i>4-17-07</i>	
Containers/Preservative: <i>Voal/HCl</i>			
Analyzed for: 8015, 8021, 8260			
Sampler Name: Sanjiv Gill		Signature:	


## MONITORING FIELD DATA SHEET

Well ID: **MW-6**

Project Task #: 1135.001				Project Name: Douglas Parking				
Address: 1721 Webster Street, Oakland, CA								
Date: 4-17-07				Weather: <b>clear</b>				
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): 25.79				Depth to Product:				
Depth to Water (DTW): 19.97				Product Thickness:				
Water Column Height: 5.82				1 Casing Volume: 0.93		gallons		
Reference Point: TOC				3 Casing Volumes: 2.79		gallons		
Purging Device: Disposable Bailer, 3" PVC Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp @	pH	Cond (us)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
5:50	18.7	7.02	640				1	
5:55	18.9	7.02	648				2	
6:00	18.9	7.07	652				3	

Comments: Oakton DO meter pre purge DO = **0.41** mg/l  
 post purge DO =      mg/l

*very turbid*

Sample ID: <b>MW-6</b>	Sample Time: <b>6:05</b>
Laboratory: McCampbell Analytical, INC.	Sample Date: <b>4-17-07</b>
Containers/Preservative: Voal/HCl	
Analyzed for: 8015, 8021, 8260	
Sampler Name: Sanjiv Gill	Signature: 

## MONITORING FIELD DATA SHEET

Well ID: MN-7

Project Task #: 1135.001		Project Name: Douglas Parking	
Address: 1721 Webster Street, Oakland, CA			
Date: <u>4-17-07</u>		Weather: <u>clear</u>	
Well Diameter: <u>2"</u>		Volume/ft. <u>1" = 0.04</u> <u>3" = 0.37</u> <u>6" = 1.47</u> <u>2" = 0.16</u> <u>4" = 0.65</u> radius** <u>0.163</u>	
Total Depth (TD): <u>28.46</u>		Depth to Product:	
Depth to Water (DTW): <u>21.67</u>		Product Thickness:	
Water Column Height: <u>6.79</u>		1 Casing Volume: <u>1.08</u> gallons	
Reference Point: TOC		3 Casing Volumes: <u>3.24</u> gallons	
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, What Pump			

Sampling Device: Disposable Bailer

Time	Temp (°C)	pH	Cond (µs)	NTU	DO (mg/L)	ORP (mV)	Vol (gal)	DTW
<u>3:10</u>	<u>18.6</u>	<u>7.20</u>	<u>590</u>				<u>1</u>	
<u>3:15</u>	<u>18.4</u>	<u>7.29</u>	<u>572</u>				<u>2</u>	
<u>3:20</u>	<u>18.3</u>	<u>7.29</u>	<u>596</u>				<u>3</u>	

Comments: Oakton DO meter      pre purge DO = 0.50 mg/l

post purge DO =      mg/l

very turbid, silty

Sample ID: <u>MN-7</u>		Sample Time: <u>3:25</u>	
Laboratory: McCampbell Analytical, INC.		Sample Date: <u>4-17-07</u>	
Containers/Preservative: <u>Voac/HCl</u>			
Analyzed for: <u>8015, 8021, 8260</u>			
Sampler Name: Sanjiv Gill		Signature:	

## **APPENDIX B**

Laboratory Analytical Report





## **McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: [www.mcccampbell.com](http://www.mcccampbell.com) E-mail: [main@mcccampbell.com](mailto: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; 1721 Webster St. Oakland Ca	Date Sampled: 04/17/07
		Date Received: 04/18/07
	Client Contact: Bob Clark-Riddell	Date Reported: 04/23/07
	Client P.O.:	Date Completed: 04/23/07

**WorkOrder: 0704346**

April 23, 2007

Dear Bob:

Enclosed are:

- 1). the results of **6** analyzed samples from your **#1135.001; 1721 Webster St. Oakland Ca project,**
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill 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 please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

0704346

### McCAMPBELL ANALYTICAL, INC.

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
 PACHECO, CA 94553-5560

Website: www.mccampbell.com Email: main@mccampbell.com  
 Telephone: (925) 798-1620 Fax: (925) 798-1622

### CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH  24 HR  48 HR  72 HR  5 DAY

EDF Required? Yes No

Report To: Bob Clark-Riddel Bill To: Pangea Environmental Analysis Request Other Comments

Company: Pangea Environmental Services Inc.  
 1710 Franklin Street Suite 200  
 Oakland, CA 94612 E-Mail: bcr@pangeaenv.com  
 Tele: 510-836-3702 Fax: 510-836-3709  
 Project #: 1135001 Project Name: 1721 Webster St. Oakland, CA  
 Project Location: 1721 Webster St. Oakland, CA  
 Sampler Signature: Muskan Environmental Sampling

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		CONTAINERS		MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments	
		Date	Time	# Containers	Type Containers	Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other				
MW-2		4-17-07	5:00	3	VOCS	X					X	X		X				Filter Samples for Metals analysis: Yes / No
MW-3			5:30	1														
MW-4			4:30	1														
MW-5			3:55	1														
MW-6			6:05	1														
MW-7		X	3:25	X	X	X				X	X		X					

Relinquished By: *[Signature]* Date: 4-18-07 Time: 8:18 Received By: *[Signature]*

ICE/c<sup>o</sup> 10.6  
 GOOD CONDITION yes APPROPRIATE CONTAINERS yes  
 HEAD SPACE ABSENT yes PRESERVED IN LAB  
 DECHLORINATED IN LAB

VOAS O&G METALS OTHER

**McC Campbell Analytical, Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0704346**

**ClientID: PEO**

EDF     Excel     Fax     Email     HardCopy     ThirdParty

<b>Report to:</b> Bob Clark-Riddell Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	<b>Email:</b> bcr@pangeaenv.com TEL: (510) 836-370    FAX: (510) 836-370 ProjectNo: #1135.001; 1721 Webster St. Oakland PO:	<b>Bill to:</b> Bob Clark-Riddell Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	<b>Requested TAT: 5 days</b>  <b>Date Received: 04/18/2007</b> <b>Date Printed: 04/24/2007</b>
---	--	---	---

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0704346-001	MW-2	Water	4/17/2007 5:00:00	<input type="checkbox"/>	A	A											
0704346-002	MW-3	Water	4/17/2007 5:30:00	<input type="checkbox"/>	A												
0704346-003	MW-4	Water	4/17/2007 4:30:00	<input type="checkbox"/>	A												
0704346-004	MW-5	Water	4/17/2007 3:55:00	<input type="checkbox"/>	A												
0704346-005	MW-6	Water	4/17/2007 6:05:00	<input type="checkbox"/>	A												
0704346-006	MW-7	Water	4/17/2007 3:25:00	<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: Rosa Venegas**

**Comments:**

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



**Sample Receipt Checklist**

Client Name: **Pangea Environmental Svcs., Inc.**  
Project Name: **#1135.001; 1721 Webster St. Oakland Ca**  
WorkOrder N°: **0704346** Matrix Water

Date and Time Received: **4/18/2007 9:23:51 AM**  
Checklist completed and reviewed by: Rosa Venegas  
Carrier: Client Drop-In

**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

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; 1721 Webster St. Oakland Ca	Date Sampled: 04/17/07
	Client Contact: Bob Clark-Riddell	Date Received: 04/18/07
	Client P.O.:	Date Extracted: 04/18/07-04/19/07
		Date Analyzed: 04/18/07-04/19/07

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0704346

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-2	W	37,000,a,i	ND<400	3200	2900	1600	6400	20	112
002A	MW-3	W	7400,a,m	ND<40	2.7	6.6	1.1	12	1	115
003A	MW-4	W	4900,a,m	ND<110	90	32	290	89	1	115
004A	MW-5	W	ND,i	ND	ND	ND	ND	ND	1	90
005A	MW-6	W	23,000,a,h,i	ND<450	380	1400	590	2000	50	110
006A	MW-7	W	ND,i	ND	ND	ND	ND	ND	1	88

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/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: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; p) see attached narrative.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0704346

EPA Method SW8021B/8015Cm	Extraction SW5030B			BatchID: 27495			Spiked Sample ID: 0704336-001A					
	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	104	96.9	7.37	103	103	0	70 - 130	30	70 - 130	30
MTBE	ND	10	109	110	1.27	104	111	6.14	70 - 130	30	70 - 130	30
Benzene	ND	10	110	104	5.77	106	115	7.43	70 - 130	30	70 - 130	30
Toluene	ND	10	108	102	5.57	108	111	2.96	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	105	97.8	6.91	106	107	1.11	70 - 130	30	70 - 130	30
Xylenes	ND	30	96.3	91.7	4.96	96.7	96.3	0.345	70 - 130	30	70 - 130	30
%SS:	90	10	109	106	2.89	107	116	7.44	70 - 130	30	70 - 130	30

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

#### BATCH 27495 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0704346-001A	04/17/07 5:00 AM	04/18/07	04/18/07 6:12 PM	0704346-002A	04/17/07 5:30 AM	04/19/07	04/19/07 3:27 AM
0704346-003A	04/17/07 4:30 AM	04/19/07	04/19/07 4:00 AM	0704346-004A	04/17/07 3:55 AM	04/19/07	04/19/07 4:33 AM
0704346-005A	04/17/07 6:05 AM	04/18/07	04/18/07 6:43 PM	0704346-006A	04/17/07 3:25 AM	04/19/07	04/19/07 5:05 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.