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10:25 am, May 05, 2011

Alameda County  
Environmental Health

Mr. Paresh Khatri  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Re: Former Exxon Station**

5175 Broadway  
Oakland, California  
ACHCSA Fuel Leak Case No. RO0000139  
SFRWQCB Site No. 01-0958  
UST Fund Claim No. 003406

Dear Mr. Khatri:

I, Mr. Ernie Nadel of Rockridge Heights, LLC, 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.

*Feb. 15, 2011*

Sincerely,



Ernie Nadel  
Rockridge Heights, LLC



May 3, 2011

***VIA ALAMEDA COUNTY FTP SITE***

Ms. Donna Drogos  
Alameda County Environmental Health  
1331 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Re: **Groundwater Monitoring and Remediation Report – First Quarter 2011**  
5175 Broadway Street  
Oakland, California  
ACEH Fuel Leak Case No. RO#0000139

Dear Ms. Drogos:

On behalf of Rockridge Heights LLC, Pangea Environmental Services, Inc., has prepared this *Groundwater Monitoring Report – First Quarter 2011*. The report describes groundwater monitoring, sampling, site remediation, and other site activities.

Due to the commencement of active remediation in December 2010, Pangea has commenced *quarterly* monitoring of key site wells to evaluate system performance. Additional information about the groundwater monitoring program is summarized herein and in Appendix A. If you have any questions or comments, 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 Report – First Quarter 2011*

cc: Rockridge Heights, LLC, C/O Ernie Nadel, 6100 Pinewood Road, Oakland, California 94611  
SWRCB Geotracker (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 REPORT  
– FIRST QUARTER 2011**

**5175 Broadway  
Oakland, California**

**May 3, 2011**

*Prepared for:*

Rockridge Heights, LLC  
C/O Ernie Nadel  
6100 Pinewood Road  
Oakland, California 94611


*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.**

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

## **INTRODUCTION**

On behalf of Rockridge Heights, LLC, Pangea Environmental Services, Inc. (Pangea) conducted groundwater monitoring and sampling, and remediation system operation and sampling during this quarter at the subject site (Figure 1). The purpose of the monitoring and sampling is to evaluate dissolved contaminant concentrations, determine the groundwater flow direction, and inspect site wells for separate-phase hydrocarbons (SPH). The purpose of the remediation is to clean up petroleum hydrocarbons from a historic fuel release. Current groundwater analytical results and elevation data are shown on Figures 2 and 3. Current and historical groundwater data are summarized on Table 1. Site remediation data are summarized on Tables 3 and 4.

## **SITE BACKGROUND**

The subject property is located at 5175 Broadway Street, at the southwest corner of the intersection of Broadway and Coronado Avenue in Oakland, California in Alameda County (Figure 1). The site is approximately 0.6 miles south-southeast of Highway 24 and approximately 2.3 miles east of Interstate 80 and the San Francisco Bay. The property is relatively flat lying, with a slight slope to the south-southwest, and lies at an elevation of approximately 160 feet above mean sea level. Topographic relief in the area surrounding the site also slopes generally towards the south-southwest. The western site boundary is the top of an approximately 10 foot high retaining wall that separates the site from an adjacent apartment complex.

The property has been vacant since 1979 and was formerly occupied by an Exxon Service Station used for fuel sales and automobile repair. The site is approximately 13,200 square feet in area and the majority of the ground surface is paved with concrete and/or asphalt, although the former tank location is not paved. Land use to the west and northwest is residential, including apartment buildings and single family homes. Properties to the northeast, east and south of the site are commercial. The site and adjacent properties are shown on Figure 2.

Environmental compliance work commenced when the site USTs were removed in January 1990. Three 8,000-gallon steel single-walled USTs, associated piping, and a 500-gallon steel single-walled waste oil tank were removed. Tank Project Engineering, Inc. (TPE) conducted the tank removal and observed holes in all four tanks. Approximately 700 tons of contaminated soil was excavated during tank removal and was subsequently remediated and reused for onsite backfill by TPE. In April 1990, TPE installed and sampled monitoring wells MW-1, MW-2 and MW-3. In June 1991, Soil Tech Engineering (STE), subsequently renamed Environmental Soil Tech Consultants (ESTC), installed monitoring wells STMW-4 and STMW-5. Groundwater monitoring was conducted on the site intermittently until October 2002. Golden Gate Tank Removal (GGTR) performed additional assessment in January and February 2006. In June 2006, the property

was purchased by Rockridge Heights, LLC. Pangea commenced quarterly groundwater monitoring at the site in July 2006. MTBE is not considered to be a contaminant of concern because use of the site for fuel sales predates widespread use of MTBE in gasoline and because analytical results have not shown significant detections of MTBE.

In January and March 2007, Pangea installed twelve wells (MW-2C, MW-3A, MW-3C, MW-4A, MW-5A, MW-5B, MW-5C, MW-6A, MW-7B, MW-7C, MW-8A and MW-8C) and three offsite soil borings to help define the vertical and lateral extent of groundwater contamination. Pangea also abandoned four monitoring wells (MW-2, MW-3, STMW-4 and STMW-5) to reduce the risk of vertical contaminant migration and improve the quality of monitoring data. New wells installed at the site were categorized according to the depths of their screen intervals. Shallow (A-zone) wells have screen intervals of approximately 10 to 15 feet bgs, which generally straddle the top of the water table and are generally screened in surficial fill and alluvium. Intermediate-depth (B-zone) wells are screened at approximately 15 to 20 feet bgs, either in surficial strata or underlying fractured bedrock, while deep (C-zone) wells are generally screened at approximately 20 to 25 feet bgs and into fractured bedrock. Well MW-1 is screened across both the A-zone and B-zone.

In April 2007, Pangea performed a dual-phase extraction (DPE) pilot test to evaluate whether DPE is an appropriate remedial technology to remove residual hydrocarbons from beneath the site. In July 2007, Pangea submitted an Interim Remedial Action Plan for site corrective action.

In August 2007, Pangea installed three offsite monitoring wells (MW-9A, MW-9C and MW-10A) and conducted subslab vapor sampling in the commercial building located immediately south of the site. The purpose of the offsite well installation was to determine the downgradient extent of contaminant migration, and to help evaluate downgradient effects of any future remediation conducted onsite. The purpose of the subslab vapor sampling was to determine whether vapor migrating from underlying groundwater had impacted soil vapor. Soil gas sampling was also conducted near the southern and western edge of the property. Soil gas sampling and offsite monitoring well installation is described in Pangea's *Soil Gas Sampling and Well Installation Report* dated October 23, 2007. Further subslab/soil gas sampling was conducted at the two adjacent properties in June 2008 and reported in Pangea's *Additional Soil Gas Sampling Report* dated July 14, 2008.

In response to a letter from ACEH dated June 10, 2008, Pangea submitted a *Revised Site Conceptual Model and Corrective Action Plan* (Revised CAP) dated July 23, 2008. ACEH commented on the Revised CAP in a letter dated July 31, 2008 and Pangea prepared a *Corrective Action Plan Addendum* dated August 11, 2008 to address ACEH comments. In a letter dated August 22, 2008, ACEH approved the CAP and Addendum as a 'Draft CAP' and initiated the public-participation process. The *Final Corrective Action Plan* dated March 25, 2009 recommended remediation via DPE and air sparging. In response to an ACEH letter dated April 16,

2009, Pangea submitted a *Final Corrective Action Plan – Addendum* dated May 18, 2009, which provided justification for the recommended remedial action. ACEH approved the *Final CAP Addendum* in a letter dated June 18, 2009. On August 19, 2009, Pangea oversaw installation of six dual-phase extraction (DPE) wells and one air sparging (AS) well to facilitate implementation of the approved corrective action plan. Operation of the DPE system began on December 8, 2010 and operation of the AS system began on March 16, 2011.

## **GROUNDWATER MONITORING AND SAMPLING**

On March 1 and 2, 2011, Pangea conducted groundwater monitoring and sampling at the site in accordance with the groundwater monitoring program in Appendix A. Site monitoring wells were gauged for depth-to-water and inspected for separate-phase hydrocarbons (SPH). To obtain water levels representative of the piezometric surface, technicians removed all well caps (allowing water levels to equilibrate) and turned off the remediation system one day prior to sampling.

Prior to sample collection, approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump, or a clean PVC bailer (although fewer casing volumes were purged if the well dewatered). During well purging, field technicians measured the pH, temperature and conductivity of the water. 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. Groundwater monitoring field data sheets, including purge volumes and field parameter measurements, are presented in Appendix B.

## **MONITORING RESULTS**

Current and historical groundwater elevation and analytical data are described below and summarized on Table 1, Figure 2 and Figure 3. To facilitate data evaluation, well construction details are summarized on Table 2. Groundwater samples were analyzed for total petroleum hydrocarbons as diesel (TPHd) by EPA Method 8015C with silica gel cleanup; total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015C; and benzene, toluene, ethylbenzene, 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 in Appendix C.

### **Groundwater Flow Direction**

Based on depth-to-water data collected on March 1, 2011, shallow groundwater (A-zone) flows generally

*southeastwards* throughout most of the site and downgradient from the site, as shown on Figure 2. The relatively high groundwater elevation measured in well MW-6A suggests that shallow groundwater is mounded in the former UST excavation and that the local flow direction radiates outwards away from the former excavation area towards the northeast corner of the site in the direction of MW-4A. These observations are interpreted as indicating that the unpaved former UST excavation has acted as a collector for rainwater and that the asphalt pavement covering the remainder of the site serves to reduce infiltration elsewhere while directing rainwater to the unpaved UST excavation area. The current inferred flow direction in shallow groundwater is generally consistent with previous monitoring results. In addition, groundwater flow direction may be affected by dual-phase extraction (DPE) from site wells, which was performed on wells on the southeastern portion of the site just prior to this monitoring event.

Groundwater flow in deep groundwater (C-zone) is generally *southeastwards* to *southwards* across the site and beneath the adjacent commercial property, as shown on Figure 3. Generally, the elevation of the piezometric surface for C-zone wells is lower than elevations for A-zone wells, indicating that a downward gradient is present. The inferred flow direction is generally consistent with previous monitoring results, and may be affected by DPE at the site.

### **Hydrocarbon Distribution in Groundwater**

Current Distribution: The maximum TPHg, TPHd and benzene concentrations detected this quarter were 27,000 µg/L, 51,000 µg/L and 1,400 µg/L, respectively, in source area remediation well DPE-3. Hydrocarbon concentrations were generally within historic ranges and trends in most site wells, except for low concentrations described below. No measurable thickness of separate-phase hydrocarbons (SPH) was observed in any monitoring wells this quarter, although an immeasurable sheen was observed by the laboratory in the samples from monitoring wells MW-3C, MW-7B and DPE-3.

Most importantly, *historic low* concentrations of TPHg and benzene were detected in wells shallow wells MW-3A, MW-4A and MW-8A, and in deep source area well MW-3C. These historic low concentrations are attributed to the recently commenced DPE and AS remediation. For example, benzene concentrations in well MW-4A reduced from 16,000 µg/L to 310 µg/L, while TPHg concentrations similarly reduced from 23,000 µg/L to 270 µg/L since the prior monitoring event. TPHg and benzene concentration trends for key shallow and deep wells are illustrated on Figures 5 and 6, respectively.

Historic Distribution: Shallow (A-zone) groundwater contains petroleum hydrocarbons at elevated concentrations in two primary areas near the former UST excavation: a northern area in the vicinity of well MW-4A, and a southwestern area in the vicinity of wells MW-3A and MW-8A. Prior shallow grab groundwater sampling data also indicates that the southern area of contamination extends to the southern site boundary in the vicinity of wells MW-7B and MW-7C (where *benzene* concentrations are apparently

biodegrading in these deeper wells). The non-detect concentrations of hydrocarbons in wells MW-9A and MW-10A indicate that offsite migration of petroleum hydrocarbons in shallow groundwater is minimal. The observed distribution of hydrocarbons in A-zone groundwater is presumably due to plume migration radially away from the excavation area, likely caused by mounding of groundwater within the uncapped former UST excavation during the rainy season.

Contaminant distribution in deeper groundwater differs significantly from the distribution of hydrocarbons in shallow groundwater. Elevated contaminant concentrations within deeper groundwater (B-zone and C-zone) are apparently present in the vicinity of wells MW-3C, MW-7B and MW-7C in the central and southern portions of the site. Again, the apparent biodegradation of benzene and select other compounds in wells MW-7B and MW-7C suggests that deeper hydrocarbons are attenuating. Site remediation is also likely improving site conditions. Well screen intervals for shallow and deep wells are summarized on Table 2.

### **Fuel Oxygenate Distribution in Groundwater**

No MTBE was detected above reporting limits in any samples obtained from site monitoring wells this monitoring event. MTBE is not a contaminant of concern at this site both due to the lack of detections, and because the USTs were removed in 1990 prior to widespread use of MTBE as a fuel oxygenate.

## **REMEDIATION SYSTEM SUMMARY**

### **Dual Phase Extraction/Air Sparging System**

The dual phase extraction (DPE) remediation system simultaneously extracts groundwater and soil vapor from site remediation wells. The remediation system layout is shown on Figure 4. Extraction and treatment is performed using a 25 hp liquid ring vacuum pump with a 400 cubic foot per minute (cfm) electric catalytic oxidizer. To maximize groundwater depression, a “stinger” (vacuum tube inserted below the water table) is used to both depress the water table and extract soil vapor in each of the 10 remediation wells (DPE-1 through DPE-6 and MW-3A, MW-4A, MW-7B and MW-8A). Extracted vapors are routed through an air/water separator and then treated by the electric catalytic oxidizer. The treated vapor is discharged to the atmosphere in accordance with Bay Area Air Quality Management District (BAAQMD) requirements. Groundwater captured within the air/water separator is pumped through two 200-lb canisters of granular activated carbon plumbed in series. The treated groundwater is discharged into the sewer in accordance with East Bay Municipal Utility District’s (EBMUD) requirements.

The air sparging (AS) system consists of a 5 hp Ingersoll-Rand rotary-screw air compressor capable of injecting 16 cfm of air and reaching pressures of 125 psig. Injection into the seven air sparge wells (AS-1, MW-1, MW-2C, MW-3C, MW-5B, MW-7C and MW-8C) is controlled by timer-activated solenoid valves



and individual well needle valves on the well flow meters. The remediation system layout is shown on Figure 4.

## **Operation and Performance**

DPE and AS system operation commenced on December 8, 2010 and March 16, 2011, respectively. The DPE system was initially operated to target elevated impact within the northern portion of the site (wells DPE-1, MW-3A, MW-4A and MW-8A). After initial contaminant mass removal rates decreased, DPE remediation was focused on the southern portion of the site, and AS was commenced soon thereafter. AS was initiated on wells MW-2C and MW-3C near the center of the site, and later expanded to include well MW-7C and well MW-8C. System operation and performance data is summarized on Tables 3 and 4.

As of March 31, 2011, the DPE system operated for a total of about 2,091 hours (approximately 87 days). Laboratory analytical and performance data indicates that soil vapor removal rates observed during this reporting period ranged from 1.5 to 27.1 lbs/day TPHg and 0.00 to 0.23 lbs/day benzene. As of March 31, 2011, the vapor-phase portion of the DPE system removed a total of approximately 761 lbs TPHg and 5.6 lbs benzene. During this reporting period, the groundwater portion of the DPE system removed approximately 0.23 lbs TPHg and 0.006 lbs benzene.

The DPE/AS system is monitored in accordance with air permit requirements of the *Authority to Construct Permit* issued by the Bay Area Air Quality Management District (BAAQMD) and groundwater discharge requirements of the *Wastewater Discharge Permit* issued by East Bay Municipal Utility District.

## **Evaluation of Remediation Effectiveness**

The calculated hydrocarbon mass removal and reported concentration reduction in groundwater suggest that the DPE/AS system is effectively remediating the site subsurface. Hydrocarbon mass removal and concentration reduction are described above. Pangea plans to continue operation and optimization of the DPE/AS system. Future groundwater monitoring will also help evaluate the effectiveness of air sparging, which commenced in March 2011 after the current monitoring event. The TPHg and benzene concentration trends for key shallow and deep groundwater wells are illustrated on Figures 5 and 6.

## **OTHER SITE ACTIVITIES**

### **Groundwater Monitoring**

Due to the commencement of active remediation in December 2010, Pangea has commenced *quarterly* monitoring of key site wells. Quarterly monitoring is commonly required during active remediation to evaluate remediation effectiveness and facilitate modification/adjustment of the remediation efforts. Pangea

proposed quarterly monitoring of key wells and annual monitoring of other wells in the *Groundwater Monitoring Report – Second Half 2010* dated October 31, 2010 and requested regulatory concurrence.

Unless otherwise directed by the ACEH, Pangea will continue *quarterly* groundwater monitoring and sampling at the site in accordance with the monitoring program shown in Appendix A. The program includes *quarterly* monitoring of twelve site wells (MW-1, MW-3A, MW-3C, MW-4A, MW-7B, MW-7C, MW-8A, MW-8C, MW-9C, DPE-2, DPE-3 and DPE-4) and *annual* monitoring (third quarter) of seven wells (MW-2C, MW-5A, MW-5B, MW-5C, MW-6A, MW-9A and MW-10A). The program may be expanded to include other wells upon completion of site remediation to help assess conditions during the case closure evaluation period. Groundwater samples will be analyzed for TPHg/BTEX/MTBE by EPA Method 8015Cm/8021B, and for TPHd by EPA Method 8015C with silica gel cleanup. Pangea will summarize groundwater monitoring activities and results in a groundwater monitoring report.

### **Electronic Reporting**

This report will be uploaded to the Alameda County FTP site. The report, laboratory data, and other applicable information will also be uploaded to the State Water Resource Control Board's Geotracker database. As requested, report hard copies will no longer be provided to the local agencies.

### **ATTACHMENTS**

- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Contour and Hydrocarbon Concentration Map (Shallow)
- Figure 3 – Groundwater Elevation Contour and Hydrocarbon Concentration Map (Deep)
- Figure 4 – Remediation System Layout
- Figure 5 – TPHg and Benzene Concentration Trends in Shallow Groundwater
- Figure 6 – TPHg and Benzene Concentration Trends in Deep Groundwater

- Table 1 – Groundwater Analytical Data
- Table 2 – Well Construction Details
- Table 3 – SVE System Performance Data
- Table 4 – GWE System Performance Data

- Appendix A – Groundwater Monitoring Program
- Appendix B – Groundwater Monitoring Field Data Sheets
- Appendix C – Laboratory Analytical Reports

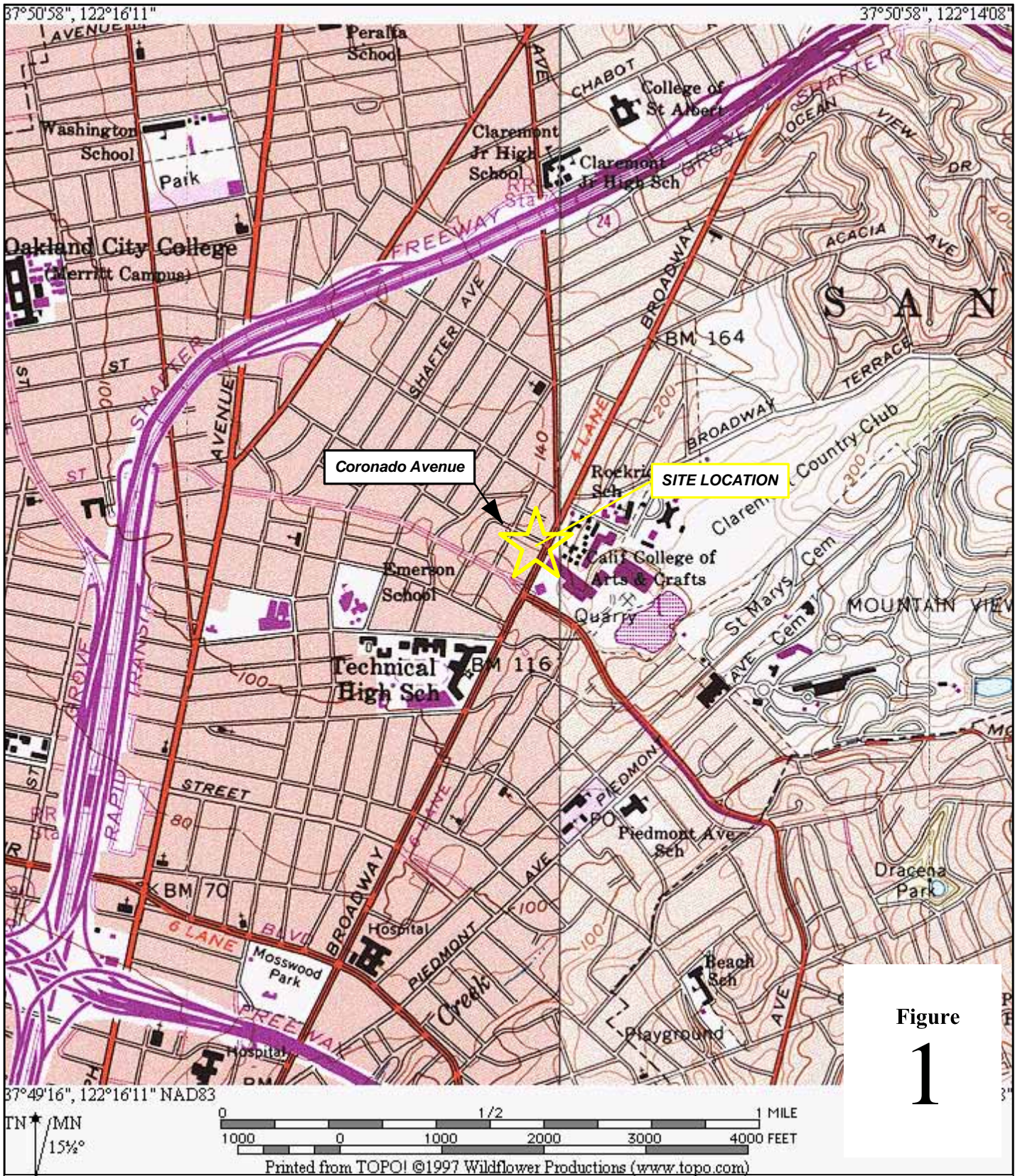


Figure  
**1**

Former Exxon Station  
5175 Broadway  
Oakland, California



Site Location Map

Feiner/Broadway site loc.ai 8/30/06

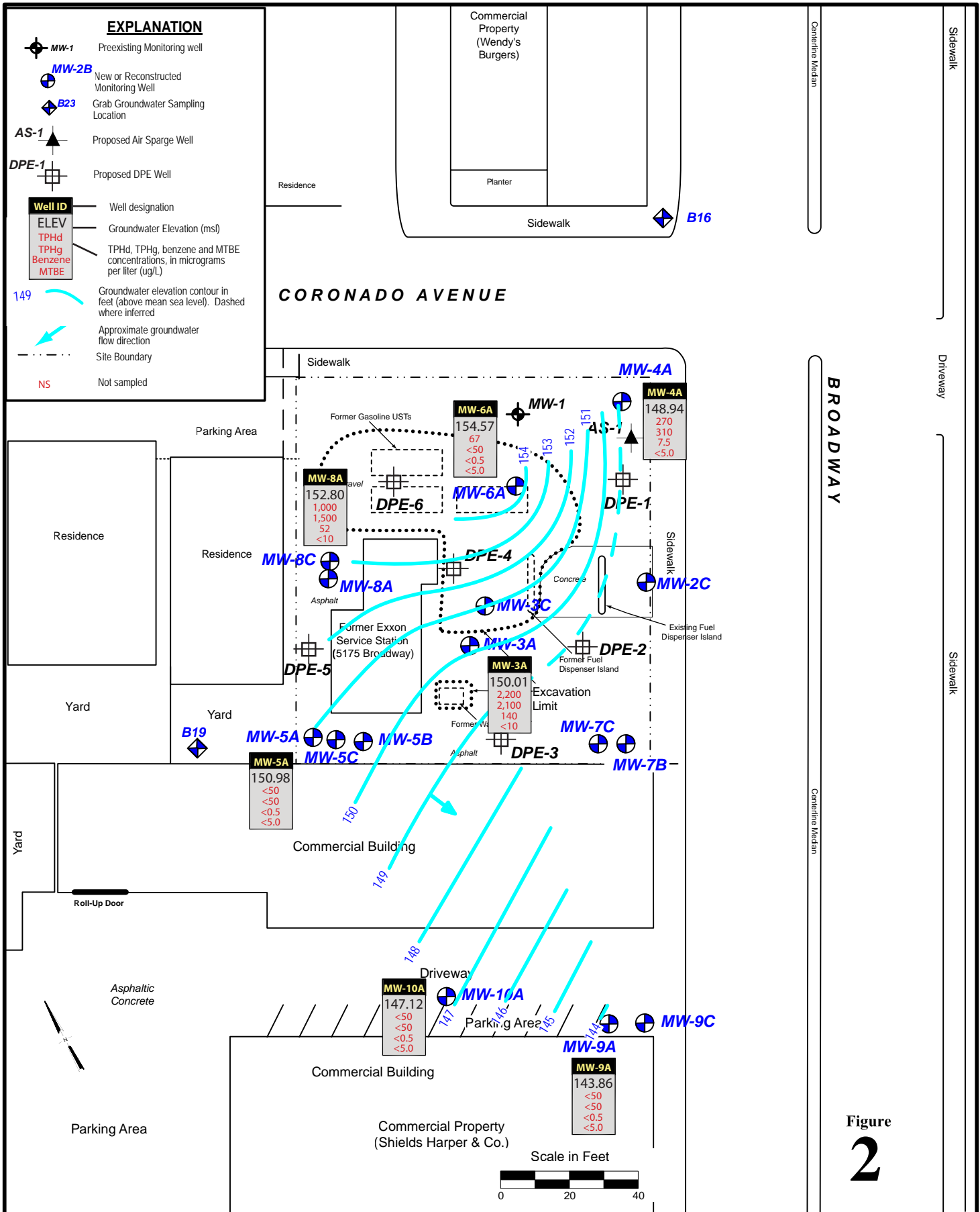
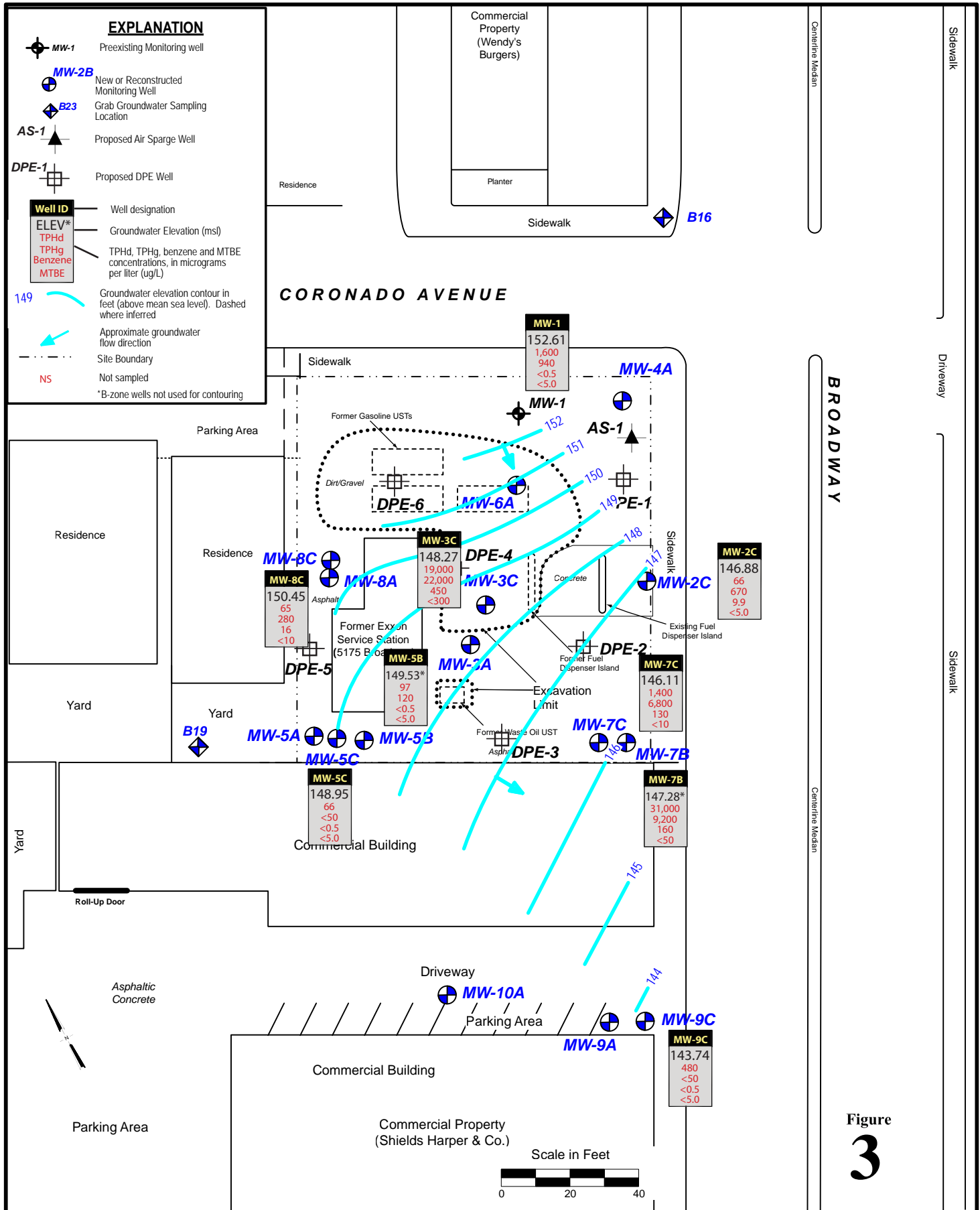


Figure  
**2**

**Former Exxon Station**  
5175 Broadway  
Oakland, California

**Groundwater Elevation Contour and Hydrocarbon Concentration Map (Shallow)**  
March 1, 2011





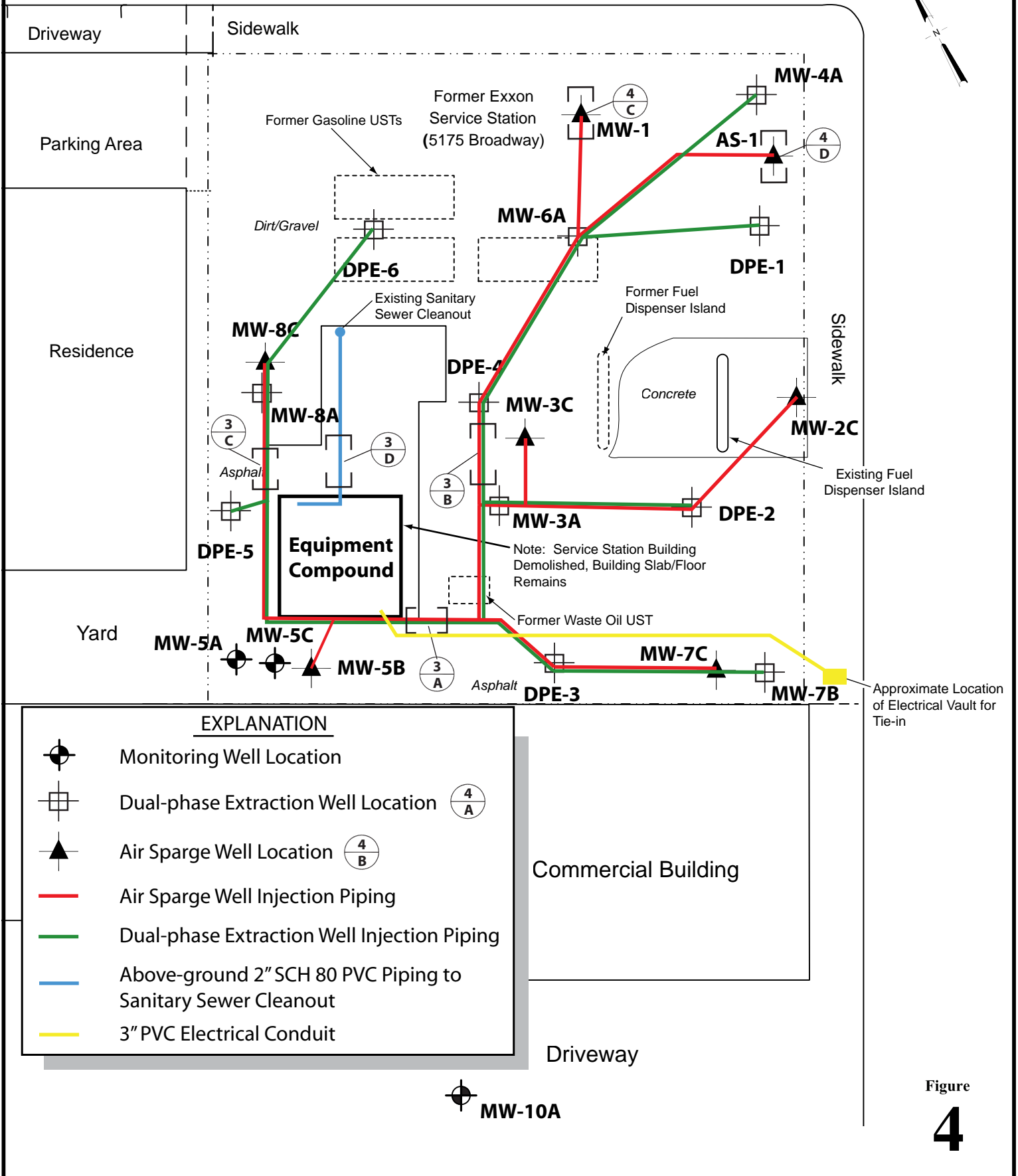
Former Exxon Station  
5175 Broadway  
Oakland, California

Groundwater Elevation Contour and  
Hydrocarbon Concentration Map (Deep)








March 1, 2011



# CORONADO AVENUE



### EXPLANATION

-  Monitoring Well Location
-  Dual-phase Extraction Well Location (4/A)
-  Air Sparge Well Location (4/B)
-  Air Sparge Well Injection Piping
-  Dual-phase Extraction Well Injection Piping
-  Above-ground 2" SCH 80 PVC Piping to Sanitary Sewer Cleanout
-  3" PVC Electrical Conduit

 MW-10A

Figure

# 4

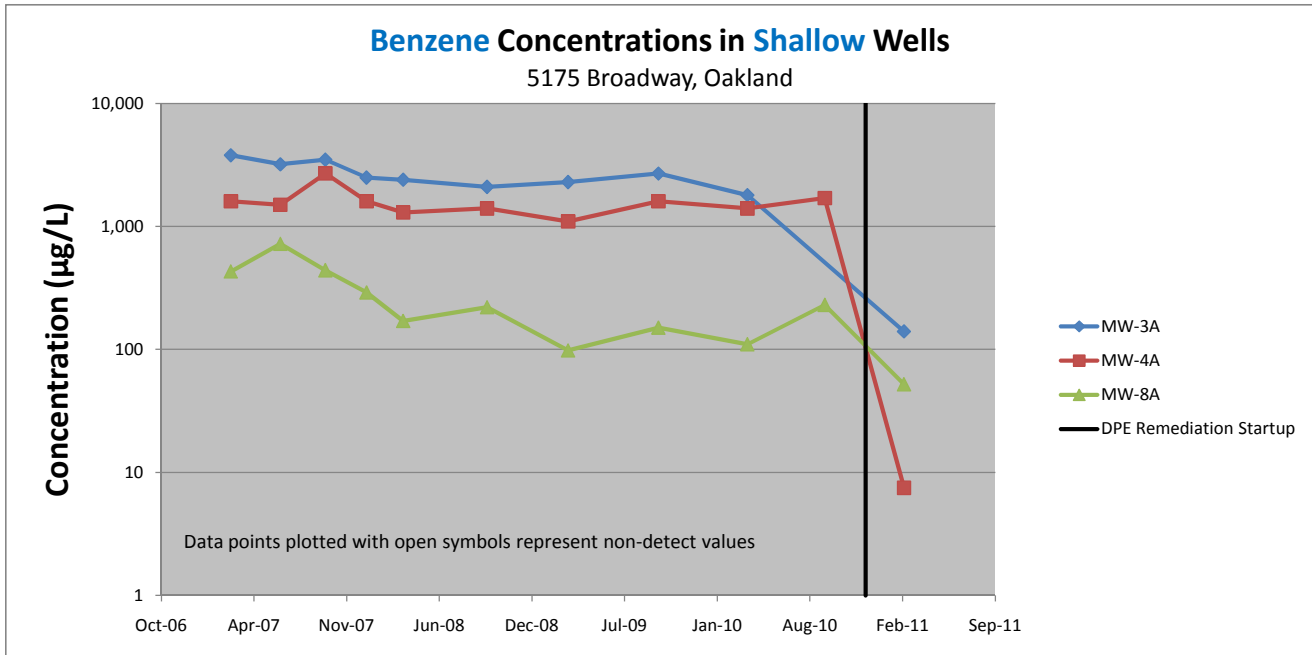
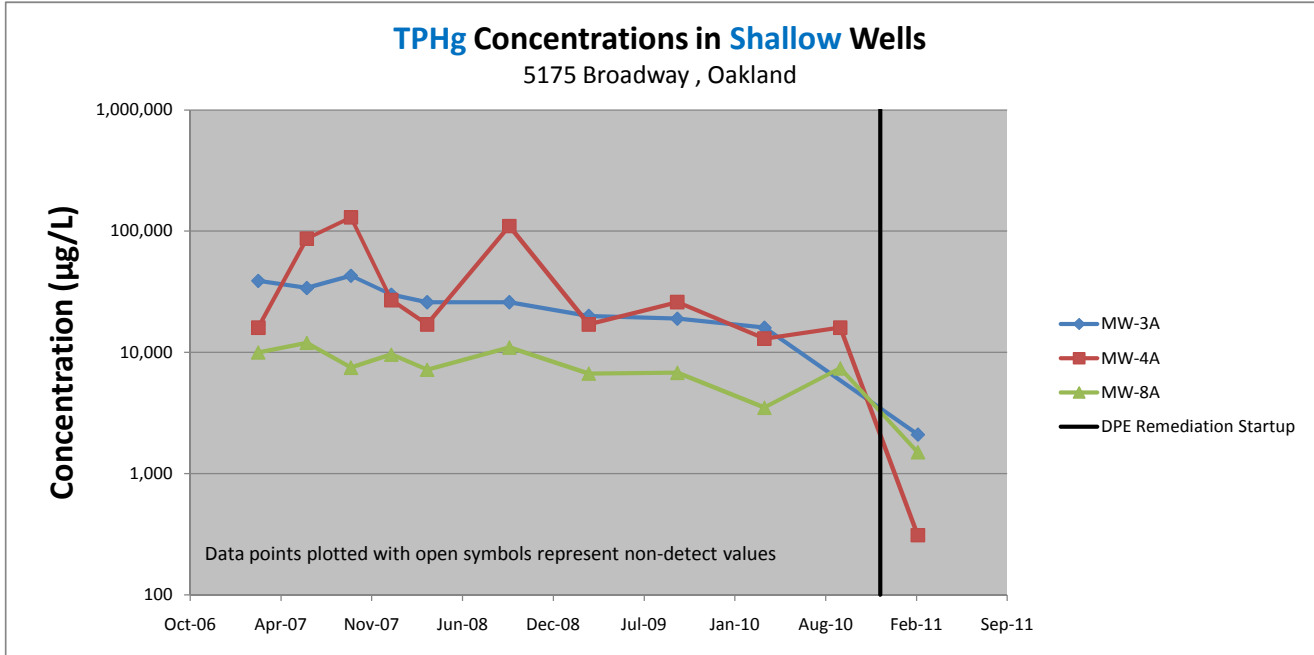


Figure 5. TPHg and Benzene Concentration Trends in Shallow Groundwater

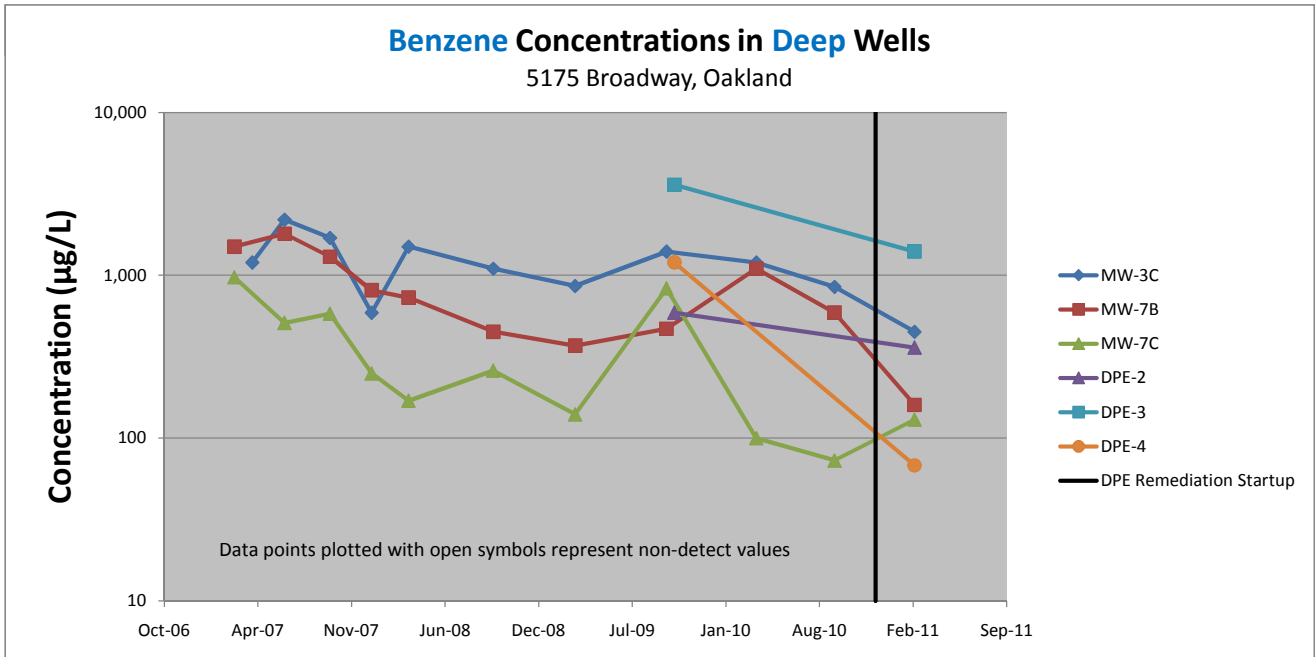
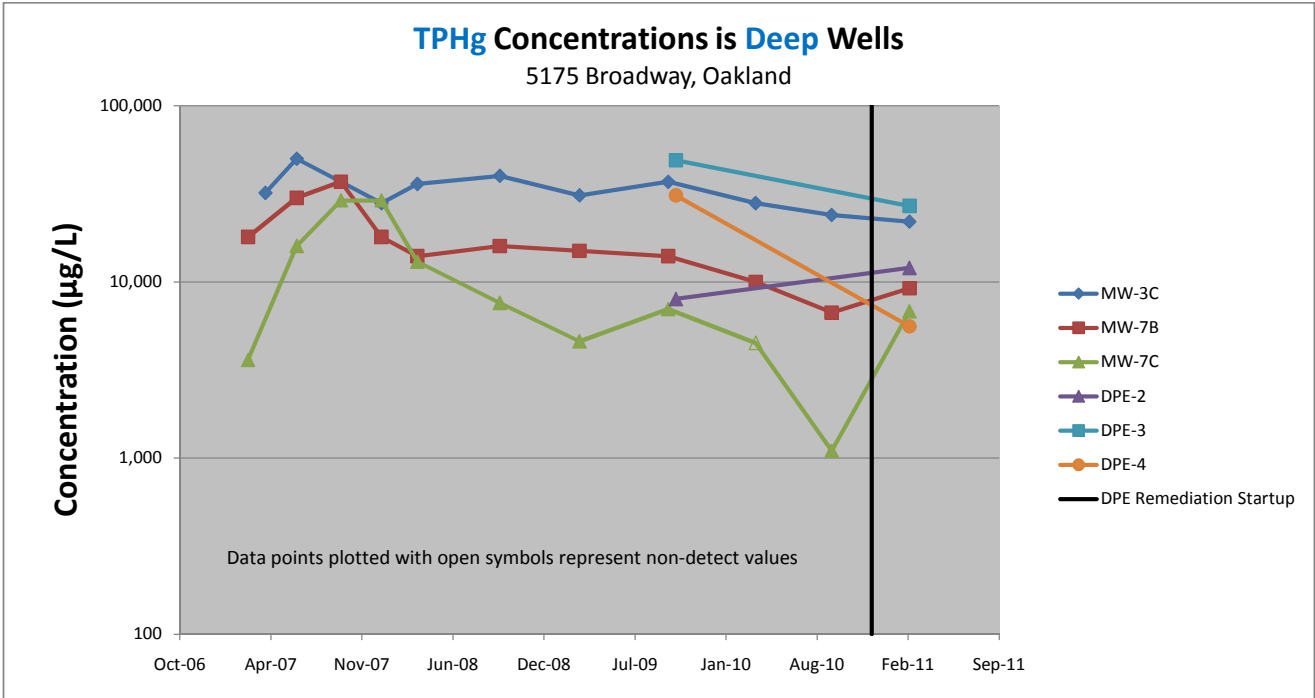


Figure 6. TPHg and Benzene Concentration Trends in Deep Groundwater



# Pangea

**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID TOC Elev (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd ←	TPHg	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	DIPE	1,2-DCA →	Dissolved Oxygen mg/L	
<b>SHALLOW WELLS</b>															
MW-3A	03/09/07	--	152.20	9.35	4,500	39,000	3,800	220	830	2,800	<500	--	--	--	
(161.55)	03/26/07	--	152.33	9.22	--	--	--	--	--	--	--	--	--	--	
(161.57)	06/24/07	--	151.61	9.94	11,000	34,000	3,200	330	990	3,200	<250	--	--	--	
	09/29/07	--	150.21	11.36	11,000	43,000	3,500	150	730	2,200	<1,000	--	--	--	
	12/27/07	--	150.20	11.37	8,700	30,000	2,500	24	520	930	<100	--	--	--	
	03/15/08	--	152.27	9.30	10,000	26,000	2,400	110	700	1,200	<250	--	--	--	
	09/12/08	--	149.57	12.00	9,000	26,000	2,100	29	560	280	<100	--	--	--	
	03/06/09	--	152.66	8.91	6,500	20,000	2,300	59	740	410	<180	--	--	--	
	09/17/09	--	149.47	12.10	6,900	19,000	2,700	33	660	110	<250	--	--	--	
	03/28/10	--	152.50	9.07	4,300	16,000	1,800	38	220	340	<100	--	--	--	
	09/11/10	--	149.44	12.13	Insufficient water to sample									--	--
	<b>03/01/11</b>	--	<b>150.01</b>	<b>11.56</b>	<b>2,200</b>	<b>2,100</b>	<b>140</b>	<b>10</b>	<b>37</b>	<b>97</b>	<b>&lt;10</b>	--	--	--	
MW-4A	03/09/07	--	152.88	9.56	3,600	16,000	1,600	36	37	150	<250	--	--	--	
(162.44)	03/26/07	--	152.56	9.88	--	--	--	--	--	--	--	--	--	--	
	06/24/07	--	152.02	10.42	110,000	87,000	1,500	59	290	800	<500	--	--	--	
	09/29/07	--	151.33	11.11	170,000	130,000	2,700	69	400	1,400	<240	--	--	--	
	12/27/07	--	152.33	10.11	19,000	27,000	1,600	31	100	320	<90	--	--	--	
	03/15/08	--	152.51	9.93	38,000	17,000	1,300	<50	120	380	<500	--	--	--	
	09/12/08	--	151.72	10.72	120,000	110,000	1,400	<50	210	660	<500	--	--	--	
	03/06/09	--	153.84	8.60	32,000	17,000	1,100	15	<10	190	<100	--	--	--	
	09/17/09	--	151.44	11.00	25,000	26,000	1,600	63	140	320	<350	--	--	--	
	03/28/10	--	152.69	9.75	9,200	13,000	1,400	29	16	160	<100	--	--	--	
	09/11/10	--	151.34	11.10	23,000	16,000	1,700	43	140	330	<250	--	--	--	
	<b>03/01/11</b>	--	<b>148.94</b>	<b>13.50</b>	<b>270</b>	<b>310</b>	<b>7.5</b>	<b>1.0</b>	<b>&lt;0.5</b>	<b>7.7</b>	<b>&lt;5.0</b>	--	--	--	
MW-5A	03/09/07	--	150.40	10.42	56	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	
(160.82)	03/26/07	--	150.00	10.82	--	--	--	--	--	--	--	--	--	--	
	06/24/07	--	148.94	11.88	<50	180	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	
	09/29/07	--	147.86	12.96	--	--	--	--	--	--	--	--	--	--	
	12/27/07	--	148.40	12.42	--	--	--	--	--	--	--	--	--	--	
	03/15/08	--	149.96	10.86	<50	180	0.91	<0.5	<0.5	<0.5	<5.0	--	--	--	
	09/12/08	--	147.50	13.32	Insufficient water to sample									--	--
	03/06/09	--	151.33	9.49	230	460	2.0	3.0	0.68	1.9	<5.0	--	--	--	
	09/17/09	--	148.02	12.80	Insufficient water to sample									--	--
	03/28/10	--	150.30	10.52	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	
	09/11/10	--	147.72	13.10	Insufficient water to sample									--	--
	<b>03/01/11</b>	--	<b>150.98</b>	<b>9.84</b>	<b>&lt;50</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;5.0</b>	--	--	--	

# Pangea

**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID TOC Elev (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd ←	TPHg	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
MW-6A (161.58)	03/09/07	--	154.91	6.67	380	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/26/07	--	154.41	7.17	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	153.79	7.79	590	140	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	152.84	8.74	540	52	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	154.27	7.31	170	94	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	154.42	7.16	150	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	152.92	8.66	510	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	155.76	5.82	110	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	152.89	8.69	280	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	154.55	7.03	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	152.99	8.59	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	--	<b>154.57</b>	<b>7.01</b>	<b>67</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-8A (161.57)  (161.59)	03/09/07	--	152.05	9.52	4,200	10,000	430	18	<10	88	<100	--	--	--
	03/26/07	--	151.74	9.83	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	151.40	10.17	17,000	12,000	720	500	230	880	<300	--	--	--
	09/29/07	--	150.64	10.95	5,300	7,500	440	67	26	240	<90	--	--	--
	12/27/07	--	152.00	9.59	13,000	9,600	290	100	90	360	<100	--	--	--
	03/15/08	--	152.00	9.59	7,500	7,200	170	28	270	110	<100	--	--	--
	09/12/08	--	150.27	11.32	9,900	11,000	220	31	110	180	<50	--	--	--
	03/06/09	--	153.01	8.58	5,500	6,700	98	17	57	63	<50	--	--	--
	09/17/09	--	150.83	10.76	5,200	6,800	150	19	10	35	<25	--	--	--
	03/28/10	--	151.86	9.73	2,600	3,500	110	7.2	<1.7	19	<17	--	--	--
	09/11/10	--	150.43	11.16	4,800	7,400	230	25	15	40	<90	--	--	--
	<b>03/01/11</b>	--	<b>152.80</b>	<b>8.79</b>	<b>1,000</b>	<b>1,500</b>	<b>52</b>	<b>3.5</b>	<b>24</b>	<b>11</b>	<b>&lt;10</b>	--	--	--
MW-9A (155.37)	09/29/07	--	142.76	12.61	86	<50	2.6	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	143.51	11.86	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	143.35	12.02	<50	<50	0.85	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	142.60	12.77	<50	<50	1.2	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	144.18	11.19	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	142.91	12.46	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	143.49	11.88	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	142.71	12.66	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	--	<b>143.86</b>	<b>11.51</b>	<b>&lt;50</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-10A (154.88)	09/29/07	--	144.35	10.53	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--
12/27/07		--	145.50	9.38	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
03/15/08		--	145.96	8.92	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
09/12/08		--	143.82	11.06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
03/06/09		--	147.45	7.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
09/17/09		--	144.11	10.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--

# Pangea

**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID TOC Elev (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd ←	TPHg	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
MW-10A	03/28/10	--	146.25	8.63	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
(cont.)	09/11/10	--	144.19	10.69	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	--	<b>147.12</b>	<b>7.76</b>	<b>&lt;50</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;5.0</b>	--	--	--
<b>DEEP WELLS</b>														
MW-1 (97.71)	04/30/89	--	--	--	--	200	18	5	2	12	--	--	--	--
	05/17/90	--	88.45	9.26	--	--	--	--	--	--	--	--	--	--
	09/26/90	--	87.79	9.92	--	1,300	55	31	120	100	--	--	--	--
(102.04)	01/14/91	--	88.17	9.54	--	3,100	350	83	86	130	--	--	--	--
	07/03/91	--	92.62	9.42	--	580	32	41	40	55	--	--	--	--
	11/11/91	--	92.59	9.45	--	330	20	2	2	11	--	--	--	--
(101.83)	03/04/92	--	93.90	7.93	--	810	11	5	10	23	--	--	--	--
	06/02/92	--	92.85	8.98	--	2,200	93	32	40	120	--	--	--	--
	09/28/92	--	92.54	9.29	--	2,900	24	78	19	37	--	--	--	--
	01/11/93	--	94.27	7.56	--	1,700	5.7	6	11	28	--	--	--	--
	08/15/94	--	92.64	9.19	--	2,000	120	3	6	16	--	--	--	--
(97.50)	11/07/96	--	88.77	8.73	270	1,200	3	1.1	1.5	3.8	<0.5	--	--	--
	02/12/97	--	89.58	7.92	<50	1,800	13	5.7	4.8	17	<0.5	--	--	--
	06/16/97	--	88.46	9.04	<50	330	27	<0.5	<0.5	1.2	<0.5	--	--	--
	09/30/97	--	89.94	7.56	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
(97.50)	01/27/98	--	89.54	7.96	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	04/24/98	--	89.52	7.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/17/98	--	88.52	8.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	11/16/98	--	88.60	8.90	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	02/16/99	--	88.86	8.64	<50	110	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	05/17/99	--	89.00	8.50	--	280	1.1	0.6	<0.5	<0.5	<0.5	--	--	--
	08/17/99	--	88.26	9.24	86	790	5.6	4.3	4.5	11	<5.0	--	--	--
	11/17/99	--	87.06	10.44	--	1,300	3.6	1.9	2.7	6.6	<1.0	--	--	--
	02/17/00	--	89.02	8.48	--	580	1.1	2.3	3.6	4.9	<5.0	--	--	--
	05/17/00	--	89.26	8.24	--	1,500	130	6.8	6.1	<5.0	<5.0	--	--	--
	08/17/00	--	88.73	8.77	--	550	160	<25	<25	<25	<25	--	--	--
	11/15/00	--	88.46	9.04	--	130	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--
	02/16/01	--	89.90	7.60	--	400	26	<5.0	<5.0	<5.0	<5.0	--	--	--
	01/11/02	--	89.42	8.08	160	600	74	53	14	52	110	--	--	--
(161.03)	07/01/02	--	152.01	9.02	280	670	25	<5.0	<5.0	<5.0	<5.0	--	--	--
	10/04/02	--	151.29	9.74	520	1,800	130	7.8	8.1	14	<5.0	--	--	--
	07/28/06	--	151.93	9.10	86	250	42	1.7	1.4	3.1	<1.0	51	1.5	0.21
	10/16/06	--	151.98	9.05	110	390	16	<0.5	1.5	2.2	<0.5	41	1.6	0.17
(161.10)	01/09/07	--	152.90	8.20	160	530	21	1.7	2.8	5.1	--	--	--	0.22
	03/26/07	--	152.84	8.26	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	152.12	8.98	220	500	24	1.1	2.2	4.2	<5.0	--	--	--

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**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID <i>TOC Elev</i> (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd ←	TPHg	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
MW-1	09/29/07	--	151.44	9.66	180	540	19	1.2	2.3	5.3	<5.0	--	--	--
<i>(cont.)</i>	12/27/07	--	152.60	8.50	200	290	10	0.65	1.2	3.0	<5.0	--	--	--
	03/15/08	--	152.72	8.38	340	680	24	1.1	1.9	2.9	<10	--	--	--
	09/12/08	--	151.86	9.24	320	1,000	13	<0.5	0.61	1.4	<5.0	--	--	--
	03/06/09	--	154.40	6.70	2,700	2,500	28	3.2	4.8	10	<17	--	--	--
	09/17/09	--	151.67	9.43	170	300	4.4	<0.5	<0.5	2.3	<5.0	--	--	--
	03/28/10	--	153.05	8.05	290	1,000	16	1.2	1.1	4.2	<5.0	--	--	--
	09/11/10	--	151.50	9.60	190	270	6.9	<0.5	0.75	2.1	<5.0	--	--	--
	<b>03/01/11</b>	--	<b>152.61</b>	<b>8.49</b>	<b>1,600</b>	<b>940</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>0.55</b>	<b>2.0</b>	<b>&lt;5.0</b>	--	--	--
MW-2C	03/09/07	--	152.24	8.41	140	450	40	9.3	2.9	16	<10	--	--	--
<i>(160.65)</i>	03/26/07	--	151.93	8.72	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	151.21	9.44	160	440	30	1.8	5.9	7.4	<5.0	--	--	--
	09/29/07	--	150.45	10.20	120	200	13	<0.5	<0.5	2.0	<5.0	--	--	--
	12/27/07	--	151.42	9.23	83	190	13	0.83	<0.5	1.9	<5.0	--	--	--
	03/15/08	--	151.83	8.82	120	250	24	2.2	5.2	4.5	<5.0	--	--	--
	09/12/08	--	150.73	9.92	<50	130	7.1	<0.5	1.2	0.83	<5.0	--	--	--
	03/06/09	--	153.21	7.44	95	180	8.0	1.1	1.5	2.8	<5.0	--	--	--
	09/17/09	--	150.57	10.08	<50	64	4.3	<0.5	0.62	0.88	<5.0	--	--	--
	03/28/10	--	152.02	8.63	<50	94	4.6	<0.5	0.77	1.2	<5.0	--	--	--
	09/11/10	--	150.31	10.34	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	--	<b>146.88</b>	<b>13.77</b>	<b>66</b>	<b>670</b>	<b>9.9</b>	<b>&lt;0.5</b>	<b>0.92</b>	<b>0.58</b>	<b>&lt;5.0</b>	--	--	--
MW-3C	03/26/07	--	151.15	10.64	--	--	--	--	--	--	--	--	--	--
<i>(161.79)</i>	04/16/07	--	150.87	10.92	36,000	32,000	1,200	710	600	1,900	<500	--	--	--
	06/24/07	--	149.43	12.36	200,000	50,000	2,200	4,100	860	6,100	<500	--	--	--
	09/29/07	--	148.33	13.46	48,000	37,000	1,700	3,300	830	4,800	<1,000	--	--	--
	12/27/07	--	149.79	12.00	29,000	28,000	590	900	630	2,000	<500	--	--	--
	03/15/08	--	150.70	11.09	21,000	36,000	1,500	2,400	570	3,700	<500	--	--	--
	09/12/08	--	148.37	13.42	11,000	40,000	1,100	1,200	600	3,000	<500	--	--	--
	03/06/09	--	152.04	9.75	13,000	31,000	860	420	540	2,200	<500	--	--	--
	09/17/09	--	148.59	13.20	14,000	37,000	1,400	690	400	4,300	<1,200	--	--	--
	03/28/10	--	151.15	10.64	10,000	28,000	1,200	540	750	3,200	<150	--	--	--
	09/11/10	--	148.48	13.31	13,000	24,000	850	390	550	3,100	<1,000	--	--	--
	<b>03/01/11</b>	--	<b>148.27</b>	<b>13.52</b>	<b>19,000</b>	<b>22,000</b>	<b>450</b>	<b>110</b>	<b>600</b>	<b>1,500</b>	<b>&lt;300</b>	--	--	--
MW-5B	03/09/07	--	146.42	15.08	59	140	1.3	0.77	<0.5	1.6	<5.0	--	--	--
<i>(161.50)</i>	03/26/07	--	148.88	12.62	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	147.98	13.52	53	52	1.1	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	146.60	14.90	<50	<50	0.95	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	148.41	13.09	<50	58	1.4	<0.5	0.60	<0.5	<5.0	--	--	--
	03/15/08	--	148.95	12.55	<50	61	2.6	1.1	1.1	3.0	<5.0	--	--	--

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**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID TOC Elev (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd ←	TPHg	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
MW-5B (cont.)	09/12/08	--	146.35	15.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	150.36	11.14	<50	67	2.0	1.4	1.3	3.3	<5.0	--	--	--
	09/17/09	--	146.94	14.56	<50	58	0.66	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	149.38	12.12	<50	110	2.7	0.78	<0.5	1.6	<5.0	--	--	--
	09/11/10	--	145.55	15.95	<50	110	0.56	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	--	<b>149.53</b>	<b>11.97</b>	<b>97</b>	<b>120</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	--	--	--
MW-5C (161.03)	03/09/07	--	148.12	12.91	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/26/07	--	148.41	12.62	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	147.58	13.45	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	146.41	14.62	66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	148.10	12.93	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	148.48	12.55	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	146.04	14.99	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	149.73	11.30	<50	<50	0.52	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	146.60	14.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	148.68	12.35	<50	<50	1.3	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	146.22	14.81	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
<b>03/01/11</b>	--	<b>148.95</b>	<b>12.08</b>	<b>66</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;5.0</b>	--	--	--	
MW-7B (159.15)  (159.02)	03/09/07	--	147.97	11.18	930	18,000	1,500	1,600	140	1,800	<600	--	--	--
	03/26/07	--	148.10	11.05	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	147.54	11.61	40,000	30,000	1,800	2,400	240	2,800	<700	--	--	--
	09/29/07	--	146.91	12.11	16,000	37,000	1,300	1,500	180	2,700	<500	--	--	--
	12/27/07	--	147.37	11.65	7,700	18,000	810	880	38	1,600	<50	--	--	--
	03/15/08	--	147.66	11.36	7,900	14,000	730	820	110	1,200	<250	--	--	--
	09/12/08	--	146.87	12.15	27,000	16,000	450	340	19	1,300	<120	--	--	--
	03/06/09	--	147.90	11.12	15,000	15,000	370	270	13	1,000	<150	--	--	--
	09/17/09	--	146.94	12.08	10,000	14,000	470	330	44	1,100	<170	--	--	--
	03/28/10	--	148.17	10.85	2,300	10,000	1,100	750	46	1,100	<300	--	--	--
	09/11/10	--	146.81	12.21	2,900	6,700	590	260	84	550	<210	--	--	--
<b>03/01/11</b>	--	<b>147.28</b>	<b>11.74</b>	<b>31,000</b>	<b>9,200</b>	<b>160</b>	<b>96</b>	<b>53</b>	<b>510</b>	<b>&lt;50</b>	--	--	--	
MW-7C (158.53)	03/09/07	--	145.44	13.09	190	3,600	970	100	12	90	<120	--	--	--
	03/26/07	--	147.53	11.00	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	146.65	11.88	7,100	16,000	510	520	190	1,300	<100	--	--	--
	09/29/07	--	146.21	12.32	11,000	29,000	580	1,400	600	4,800	<1,000	--	--	--
	12/27/07	--	146.74	11.79	56,000	29,000	250	410	430	3,300	<50	--	--	--
	03/15/08	--	147.45	11.08	7,000	13,000	170	58	170	1,300	<100	--	--	--
	09/12/08	--	146.02	12.51	2,600	7,600	260	38	76	330	<50	--	--	--
	03/06/09	--	147.65	10.88	1,900	4,600	140	21	15	93	<15	--	--	--
09/17/09	--	146.23	12.30	2,200	7,000	830	38	23	90	<100	--	--	--	

# Pangea

**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID <i>TOC Elev</i> (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd ←	TPHg	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
MW-7C	03/28/10	--	147.32	11.21	940	4,500	<100	79	2.0	59	66	--	--	--
<i>(cont.)</i>	09/11/10	--	145.77	12.76	350	1,100	73	3.6	2.0	5.2	<15	--	--	--
	<b>03/01/11</b>	<b>--</b>	<b>146.11</b>	<b>12.42</b>	<b>1,400</b>	<b>6,800</b>	<b>130</b>	<b>9.6</b>	<b>3.1</b>	<b>8.0</b>	<b>&lt;10</b>	<b>--</b>	<b>--</b>	<b>--</b>
MW-8C	03/09/07	--	149.18	12.15	<50	150	9.8	1.3	2.0	3.9	<5.0	--	--	--
<i>(161.33)</i>	03/26/07	--	149.56	11.77	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	148.96	12.37	<50	<50	0.57	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	148.35	12.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	149.84	11.49	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	149.94	11.39	<50	110	6.0	1.7	2.4	2.4	<5.0	--	--	--
	09/12/08	--	148.18	13.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	151.25	10.08	<50	<50	2.1	<0.5	0.87	0.76	<5.0	--	--	--
	09/17/09	--	148.63	12.70	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	149.94	11.39	<50	84	6.6	0.89	2.9	2.7	<5.0	--	--	--
	09/11/10	--	148.33	13.00	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	<b>--</b>	<b>150.45</b>	<b>10.88</b>	<b>65</b>	<b>280</b>	<b>16</b>	<b>3.7</b>	<b>7.9</b>	<b>6.2</b>	<b>&lt;10</b>	<b>--</b>	<b>--</b>	<b>--</b>
MW-9C	09/29/07	--	142.67	12.27	390	68	2.2	0.88	<0.5	<0.5	<5.0	--	--	--
<i>(154.94)</i>	12/27/07	--	143.40	11.54	<50	<50	0.84	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	143.98	10.96	<50	<50	0.55	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	142.53	12.41	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	144.09	10.85	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	142.84	12.10	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	143.34	11.60	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	139.13	15.81	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	<b>03/01/11</b>	<b>--</b>	<b>143.74</b>	<b>11.20</b>	<b>480</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;5.0</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>REMEDATION WELLS</b>														
AS-1	10/04/09	--	--	11.38	--	<50	3.6	<0.5	<0.5	<0.5	<5.0	--	--	--
DPE-1	10/04/09	--	--	10.38	--	1,600	210	4.4	5.1	34	<35	--	--	--
DPE-2	10/04/09	--	--	11.33	--	8,000	590	220	92	760	<250	--	--	--
	<b>03/01/11</b>	<b>--</b>	<b>--</b>	<b>16.10</b>	<b>14,000</b>	<b>12,000</b>	<b>360</b>	<b>130</b>	<b>96</b>	<b>1,700</b>	<b>&lt;50</b>	<b>--</b>	<b>--</b>	<b>--</b>
DPE-3	10/04/09	--	--	11.85	--	49,000	3,600	4,400	1,300	6,500	<2,500	--	--	--
	<b>03/01/11</b>	<b>--</b>	<b>--</b>	<b>11.37</b>	<b>51,000</b>	<b>27,000</b>	<b>1,400</b>	<b>810</b>	<b>870</b>	<b>3,300</b>	<b>&lt;700</b>	<b>--</b>	<b>--</b>	<b>--</b>
DPE-4	10/04/09	--	--	11.50	--	31,000	1,200	2,900	530	4,700	<1,200	--	--	--
	<b>03/01/11</b>	<b>--</b>	<b>--</b>	<b>13.88</b>	<b>5,100</b>	<b>5,600</b>	<b>68</b>	<b>100</b>	<b>42</b>	<b>350</b>	<b>&lt;50</b>	<b>--</b>	<b>--</b>	<b>--</b>

# Pangea

**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID	Date	Groundwater	Depth	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved	
<i>TOC Elev</i>	<i>Sampled</i>	<i>SPH</i>	<i>Elevation</i>	<i>to Water</i>	<i>µg/L</i>									<i>Oxygen</i>
<i>(ft)</i>		<i>(ft)</i>	<i>(ft)</i>											<i>mg/L</i>
DPE-5	10/04/09	--	--	14.46	--	2,900	78	71	29	260	<50	--	--	
DPE-6	10/04/09	--	--	11.05	--	1,800	6.7	5.2	2.6	34	<5.0	--	--	
<b>DESTROYED WELLS</b>														
MW-2	04/30/89	--	--	--	--	230	39	18	5	23	--	--	--	
(97.78)	05/17/90	--	87.78	10.00	--	--	--	--	--	--	--	--	--	
	09/29/90	--	86.95	10.83	--	850	970	5	25	47	--	--	--	
	01/14/91	--	87.15	10.63	--	3,100	30	52	24	34	--	--	--	
(102.02)	07/03/91	--	91.94	10.08	--	1,590	30	52	24	34	--	--	--	
	11/11/91	--	91.81	10.21	--	960	320	15	4	29	--	--	--	
	03/04/92	--	93.32	8.70	--	1,500	9.5	8.4	9.8	22	--	--	--	
	06/02/92	--	92.50	9.52	--	2,800	84	41	59	95	--	--	--	
	09/28/92	--	91.93	10.09	--	1,600	47	20	47	97	--	--	--	
	01/11/93	--	93.50	8.52	--	2,500	8.6	10	17	32	--	--	--	
(97.49)	08/15/94	--	87.58	9.91	--	6,000	450	60	100	95	--	--	--	
	11/07/96	--	87.47	10.02	780	4,200	25	4.9	8.1	14	<0.5	--	--	
	02/12/97	--	88.58	8.91	5,700	1,800	16	3.1	3.4	8.8	<0.5	--	--	
	06/16/97	--	87.74	9.75	<50	2,500	22	5.1	7.8	11	<0.5	--	--	
	09/30/97	--	89.60	7.89	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	01/27/98	--	89.11	8.38	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	04/24/98	--	88.81	8.68	1,400	2,100	18	6.5	4.8	21	<0.5	--	--	
	08/17/98	--	87.75	9.74	<50	2,900	5.1	4.5	5.8	17	<0.5	--	--	
	11/16/98	--	87.35	10.14	<50	1,400	2.1	1.9	2.3	4.8	<0.5	--	--	
	02/16/99	--	88.57	8.92	<50	1,600	82	16	<2.5	40	59	--	--	
	05/17/99	--	88.23	9.26	--	8,200	43	73	140	100	<250	--	--	
	08/17/99	--	87.45	10.04	260	2,900	20	81	17	38	<5.0	--	--	
	11/17/99	--	85.97	11.52	<50	2,600	7	3.7	5.3	12.9	<1.0	--	--	
	02/17/00	--	87.99	9.50	--	1,700	3.2	6.8	11	12.3	<5.0	--	--	
	05/17/00	--	88.65	8.84	--	3,800	450	65	110	80	<25	--	--	
	08/17/00	--	88.99	8.50	--	4,300	440	<50	78	<50	<50	--	--	
	11/15/00	--	87.55	9.94	--	5,800	320	41	78	64	<25	--	--	
	02/16/01	--	88.97	8.52	--	2,200	110	20	38	33	<5.0	--	--	
	01/11/02	--	88.67	8.82	620	3,100	280	86	84	110	<50	--	--	
(160.98)	07/01/02	--	151.34	9.64	940	2,600	300	29	45	27	<10	--	--	
	10/04/02	--	150.46	10.52	390	4,000	440	66	140	120	<25	--	--	
	07/28/06	--	150.96	10.02	340	1,300	150	9.9	6	18	<0.5	3.6	<0.5	
	10/16/06	--	150.45	10.53	76	150	16	1.0	3.5	2.2	<0.5	1.2	<0.5	
	01/09/07	--	151.65	9.33	84	210	27	2.6	8.1	6.8	--	--	0.14	
	01/25/07	--												

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**Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA**

Well ID TOC Elev (ft)	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
<div style="text-align: center;"> <math>\longleftarrow</math> <math>\mu\text{g/L}</math> <math>\longrightarrow</math> </div>														
MW-3 (98.14)	04/30/90	--	--	--	--	56,000	3,600	8,600	1,300	7,200	--	--	--	--
	05/17/90	--	85.72	12.42	--	--	--	--	--	--	--	--	--	--
	09/26/90	--	84.64	13.50	--	54,000	5,100	420	1,600	8,000	--	--	--	--
	01/14/91	--	85.56	12.58	--	35,000	2,600	6,600	1,500	5,700	--	--	--	--
(102.46)	07/03/91	--	90.38	12.08	--	33,000	4,120	4,300	1,400	4,800	--	--	--	--
	11/11/91	--	90.17	12.29	--	57,000	3,900	8,400	2,100	14,000	--	--	--	--
(102.18)	03/04/92	--	91.92	10.26	--	57,000	720	870	81	3,100	--	--	--	--
(97.94)	06/02/92	--	86.54	11.40	--	50,000	240	240	220	740	--	--	--	--
	09/28/92	--	85.30	12.64	--	64,000	110	93	97	250	--	--	--	--
	01/11/93	--	87.84	10.10	--	68,000	210	280	360	990	--	--	--	--
	08/15/94	--	85.74	12.20	--	50,000	870	1,200	1,300	3,000	--	--	--	--
	11/07/96	--	85.54	12.40	470	68,000	33	27	63	120	<0.5	--	--	--
	02/12/97	--	87.71	10.23	3,500	25,000	39	43	15	91	<0.5	--	--	--
	06/16/97	--	86.15	11.79	<50	9,700	26	29	45	81	<0.5	--	--	--
	09/30/97	--	88.54	9.40	1,600	6,000	43	36	12	11	<0.5	--	--	--
	01/27/98	--	88.14	9.80	560	380	5.7	4.1	1.7	9.1	<0.5	--	--	--
	04/24/98	--	88.04	9.90	680	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/17/98	--	86.48	11.46	<50	16,000	200	18	31	82	<0.5	--	--	--
	11/16/98	--	85.54	12.40	<50	68,000	86	54	69	130	<0.5	--	--	--
	02/16/99	--	87.22	10.72	<50	33,000	270	110	<5.0	770	170	--	--	--
	05/17/99	--	87.40	10.54	--	72,000	280	230	320	890	<250	--	--	--
	08/17/99	--	85.99	11.95	1,800	20,000	51	41	61	130	<5.0	--	--	--
	11/17/99	--	84.34	13.60	--	1,700	39	22	31	84	<1.0	--	--	--
	02/17/00	--	87.26	10.68	--	8,800	16	39	74	90	<5.0	--	--	--
	05/17/00	--	87.69	10.25	--	22,000	300	260	410	940	<5.0	--	--	--
	08/17/00	--	86.10	11.84	--	15,000	230	140	470	750	<50	--	--	--
	11/15/00	--	86.12	11.82	--	12,000	250	210	390	700	<25	--	--	--
	02/16/01	--	88.26	9.68	--	7,400	40	72	700	250	<25	--	--	--
	01/11/02	--	88.36	9.58	1,900	9,300	230	200	290	580	<25	--	--	--
(161.43)	07/01/02	--	150.29	11.14	5,200	13,000	230	220	450	890	<13	--	--	--
	10/04/02	--	148.61	12.82	4,900	11,000	280	170	450	730	<25	--	--	--
	07/28/06	--			Not Sampled - Unable to locate well									
	10/16/06	--			Not Sampled - Unable to locate well									
	01/09/07	--			Not Sampled - Unable to locate well									
	01/22/07	--	149.81	11.62	93,000	34,000	770	250	760	2,000	<1,000	--	--	--
	03/16/07	--			Well Destroyed									
STMW-4 (103.58)	07/03/91	--	92.58	11.00	--	3,100	610	62	39	150	--	--	--	--
	11/11/91	--	92.50	11.08	--	3,600	990	15	2.6	180	--	--	--	--
(101.08)	03/04/92	--	91.64	9.44	--	5,000	35	20	22	71	--	--	--	--
(98.80)	06/02/92	--	88.48	10.32	--	13,000	140	45	63	210	--	--	--	--
	09/28/92	--	88.04	10.76	--	40,000	35	20	48	110	--	--	--	--









**Table 2 – Well Use and Construction Details–5175 Broadway, Oakland, CA**

Well ID	Total Depth of Well (feet bgs)	Screened Interval (ft bgs)	Well Casing Nominal Diameter (inches)	Sand & Slot Size
<b>DPE – Existing Wells</b>				
MW-3A (DPE)	14	9-14	2	#2/12 – 0.01 Slot
MW-4A (DPE)	15	8-15	2	#2/12 – 0.01 Slot
MW-6A (DPE)	17	8-17	2	#2/12 – 0.01 Slot
MW-7B (DPE)	18.5	15.5-18.5	2	#2/12 – 0.01 Slot
MW-8A (DPE)	15	8-15	2	#2/12 – 0.01 Slot
<b>DPE – New Wells</b>				
DPE 1 – DPE 6	19 – 20	10-13/19-20	2	#2/12 – 0.01 Slot
<b>AIR SPARGING – Existing Wells</b>				
MW-1 (AS)	23	13-23	4	8x20 – 0.02 Slot
MW-2C (AS)	23	18-23	2	#2/12 – 0.01 Slot
MW-3C (AS)	27	22-27	2	#2/12 – 0.01 Slot
MW-5B (AS)	20	17-20	2	#2/12 – 0.01 Slot
MW-7C (AS)	25	20-25	2	#2/12 – 0.01 Slot
MW-8C (AS)	25	20-25	2	#2/12 – 0.01 Slot
<b>AIR SPARGING –New Well</b>				
AS-1	20	16-20	1	#2/12 – 0.01 Slot
<b>GROUNDWATER MONITORING ONLY</b>				
MW-5A	14	10-14	2	#2/12 – 0.01 Slot
MW-5C	27	22-27	2	#2/12 – 0.01 Slot
MW-9A	15.5	7.5-15.5	2	#2/12 – 0.01 Slot
MW-9C	21	17-21	2	#2/12 – 0.01 Slot
MW-10A	18	8-18	2	#2/12 – 0.01 Slot

bgs = below ground surface

# Pangea

Table 3. SVE (DPE) Performance Data - 5175 Broadway, Oakland, CA											Removal				Emission Reporting						
Date	Wells	Oxidizer		Interval Time (days)	System		Lab Sample ID	Influent	Influent	Influent	SVE TPHg	SVE Benzene	Cumulative	Cumulative	Effluent	Effluent	TPHg	Benzene	Benzene	Cumulative	
		Hr Meter Reading (hours)	Total Time (days)		Vapor Flow Rate (cfm)	Applied Vacuum ("Hg)		TPHg Data (ppmv)	Benzene Data (ppmv)	OVA Reading (ppmv)	Removal Rate (lbs/day)	Removal Rate (lbs/day)	Removal (lbs)	Removal (lbs)	TPHg Lab (ppmv)	Benzene Lab Data (ppmv)	Abatement Efficiency (lbs/day)	Benzene Abatement Efficiency (lbs/day)	Benzene Emission Rate (lbs/day)	Vapor Flow (cf)	
12/08/10	DPE-1, MW-3A, 4A, 8A	5041	0.0	0.0	65	22	INF-V	<b>1,300</b>	<b>6.4</b>	1,270	27.1	0.12	0.0	0	---	---	---	---	---	---	0
12/10/10	DPE-1, MW-3A, 4A, 8A	5052	0.5	0.5	65	22	---	900	5.7	916	18.8	0.11	8.6	0.05	---	---	---	---	---	---	42,900
12/13/10	DPE-1, MW-3A, 4A, 8A	5121	3.3	2.9	93	20	INF-V	<b>430</b>	<b>1.7</b>	---	12.8	0.05	45.5	0.18	< <b>7.0</b>	< <b>0.077</b>	> <b>98.4</b>	> <b>95.5</b>	< <b>0.002</b>	---	427,920
12/22/10	DPE-1, MW-3A, 4A, 8A	5337	12	9.0	125	17	INF-V	<b>440</b>	<b>5.2</b>	758	17.6	0.19	204.6	1.89	---	---	---	---	---	---	2,050,920
01/07/11	DPE-1, 4	5585	23	10.3	31	25	INF-V	<b>640</b>	<b>6.1</b>	1,000	6.4	0.06	270.3	2.46	---	---	---	---	---	---	2,511,828
02/02/11	DPE-1, 4	6019	41	18.1	31	18	INF-V	<b>1,200</b>	<b>6.1</b>	1,168	11.9	0.06	486.3	3.45	---	---	---	---	---	---	3,319,812
02/22/11	DPE-1, 2, 4, MW-4A	6490	60	19.6	50	18	INF-V	<b>370</b>	<b>1.8</b>	632	5.9	0.03	602.7	3.96	---	---	---	---	---	---	4,731,912
02/28/11	DPE-1, 2, 4, MW-4A	6634	66	6.0	30	24	---	160	1.0	---	1.5	0.01	611.9	4.02	---	---	---	---	---	---	4,990,212
03/09/11	DPE-1, 2, 4, MW-4A	6797	73	6.8	86	18	INF-V	<b>77</b>	<b>0.12</b>	54	2.1	0.00	626.4	4.04	---	---	---	---	---	---	5,833,872
03/15/11	DPE-1, 2, 4, MW-4A	6941	79	6.0	86	21	--	77	0.12	63	2.1	0.00	639.1	4.06	---	---	---	---	---	---	6,574,848
03/16/11	DPE-2, 3, 4, MW-7B	6967	80	1.1	60	22	--	160	0.12	200	3.1	0.00	642.4	4.06	---	---	---	---	---	---	6,667,728
03/21/11	DPE-2, 3, 4, MW-7B	7081	85	4.8	53	23	INF-V	<b>420</b>	<b>4.8</b>	367	7.1	0.07	676.5	4.41	---	---	---	---	---	---	7,032,156
03/31/11	DPE-2, 3, 4, MW-7B	7131	87	6.9	98	26	--	550	8.0	603	17.3	0.23	761.2	5.62	---	---	---	---	---	---	7,636,752

Notes:  
 ALL = Wells DPE-1 through DPE-6, MW-3A, MW-4A, MW-7B and MW-8A  
 NA = not analyzed; NM = not measured; --- = not available  
 System data estimated when specific data not available.  
 cfm = actual cubic feet (cf) per minute based on anemometer readings (from vacuum side of vacuum pump during SVE).  
 ppmv = parts per million on volume to volume basis. Actual lab data shown in **bold**. Lab data estimated for dates without lab data to allow mass removal calculation.  
 lbs = Pounds  
 "Hg = Inches of mercury vacuum  
 SVE = Soil Vapor Extraction  
 OVA = Organic Vapor Analyzer (Horiba Model MEXA 324JU)  
 TPHg and Benzene Removal Rates = For dates where no laboratory analytical data was collected, the lab data is estimated based on prior lab data and OVA readings to calculate period and cumulative mass removal.  
 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.  
 Rate = lab concentration (ppmv) x system flowrate (scfm) x (1lb-mole/386 ft³) x molecular weight (86 lb/lb-mole for TPH-Gas hexane) x 1440 min/day x 1/1,000,000.

# Pangea

**Table 4. GWE (DPE) System Performance Summary - 5175 Broadway, Oakland, California**

Well ID	Date	Totalizer Reading <sup>1</sup> (gallons)	Interval Flow Volume (gallons)	Interval Duration (days)	Average Flow Rate (gpm)	TPHg Concentration (ug/L)	Benzene Concentration (ug/L)	MTBE Concentration (ug/L)	TPHg Removed (Lbs)	Benzene Removed (Lbs)	MTBE Removed (Lbs)	Comments	
<b>System</b>	12/08/10	0	0	0	--	---	---	---	0.000	0.000	0.000	System startup testing, water not discharged to sewer yet. Startup water sampling of influent (12/14) System shutdown 1/14 due to noise complaint Off on arrival; restart.	
<b>Influent</b>	12/10/10	248	248	2	0.09	---	---	---	0.000	0.000	0.000		
	12/14/10	1,120	872	4	0.15	<b>300</b>	<b>4.6</b>	<b>ND(&lt;5.0)</b>	0.002	0.000	0.000		
	12/22/10	3,585	2,465	8	0.21	---	---	---	0.006	0.000	0.000		
	01/07/11	7,622	4,037	16	0.18	---	---	---	0.010	0.000	0.000		
	02/02/11	16,840	9,218	26	0.25	<b>1,300</b>	<b>52</b>	<b>ND(&lt;10)</b>	0.100	0.004	0.000		
	02/22/11	25,427	8,587	20	0.30	<b>680</b>	<b>8.4</b>	<b>ND(&lt;5.0)</b>	0.049	0.001	0.000		
	02/28/11	28,855	3,428	6	0.40	---	---	---	0.019	0.000	0.000		
	03/09/11	31,981	3,126	9	0.24	---	---	---	0.018	0.000	0.000		
	03/15/11	34,398	2,417	6	0.28	---	---	---	0.014	0.000	0.000		
	03/16/11	34,961	563	1	0.39	---	---	---	0.003	0.000	0.000		
	03/31/11	36,763	1,802	15	0.08	---	---	---	0.010	0.000	0.000		
									<b>0.231</b>	<b>0.006</b>	<b>0.000</b>		<b>Total Cumulative Removal (Lbs)</b>
<b>System</b>	12/08/10	---	---	---	---	---	---	---	---	---	---		Startup water sampling of effluent (12/14)
<b>Effluent</b>	12/14/10	---	---	---	---	<b>ND (&lt;50)</b>	<b>ND (&lt;0.5)</b>	<b>ND (&lt;5.0)</b>	---	---	---		
	02/22/11	---	---	---	---	<b>ND (&lt;50)</b>	<b>ND (&lt;0.5)</b>	<b>ND (&lt;5.0)</b>	---	---	---		

<b>Discharge Limits (ug/L):</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>Total Xylenes</i>

**ABBREVIATIONS AND NOTES:**

1 = Initial totalizer reading was 23,559. Therefore, shown reading above 0 is actual reading minus 23,559. The 12/10/10 reading of 23,807 less 23,559 equals 248 gallons discharged.

gpm = Gallons per minute

TPHd = Total Petroleum Hydrocarbon as Diesel analyzed by EPA Method 8015B with silica gel cleanup

TPHg = Total Petroleum Hydrocarbon as Gasoline analyzed by EPA Method 8015B

Benzene analyzed by EPA Method 8021B

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021 Cm

Toulene, Ethylbenzene and Total Xylenes analyzed by EPA Method 8015B

-- = not measured/not available

\* Estimated contaminant mass calculated by multiplying average concentration detected during period (Table 1) by volume of extracted groundwater. Uses most recent lab data.

\*\*Unless noted Toulene, Ethylbenzene and Total Xylenes non-detect (<0.5)

## **APPENDIX A**

### Groundwater Monitoring Program

**Table A. Quarterly Groundwater Monitoring Program During Active Remediation**  
**Rockridge Heights, 5175 Broadway, Oakland, CA**

Well ID	Well Type	Screened Interval (ft bgs)	Well Location for Monitoring	Casing Diam. (in)	Gauge Frequency	Sample Frequency <sup>1</sup>
<b>Shallow Wells</b>						
MW-3A	Mon + DPE	9-14	Downgradient (Onsite)	2	Q	Q
MW-4A	Mon + DPE	8-15	NE Corner, Upgradient (Onsite)	2	Q	Q
MW-5A	Mon	10-14	SW Corner, Downgradient (Onsite)	2	Q	A
MW-6A	Mon + DPE	8-17	Source Area, Upgradient (Onsite)	2	Q	A
MW-8A	Mon + DPE	8-15	W Boundary, Downgradient (Onsite)	2	Q	Q
MW-9A	Mon	7.5-15.5	Downgradient (Offsite)	2	Q	A
MW-10A	Mon	7.5-15.5	Downgradient (Offsite)	2	Q	A
<b>Deep Wells</b>						
MW-1	Mon + AS	13-23	N Boundary, Upgradient (Onsite)	2	Q	Q
MW-2C	Mon + AS	18-23	E Boundary, Downgradient (Onsite)	2	Q	A
MW-3C	Mon + AS	22-27	Source Area, Downgradient (Onsite)	2	Q	Q
MW-5B	Mon + AS	17-20	SW Corner, Downgradient (Onsite)	2	Q	A
MW-5C	Mon	22-27	SW Corner, Downgradient (Onsite)	2	Q	A
MW-7B	Mon + DPE	15.5-18.5	SE Corner, Downgradient (Onsite)	2	Q	Q
MW-7C	Mon + AS	20-25	SE Corner, Downgradient (Onsite)	2	Q	Q
MW-8C	Mon + AS	20-25	W Boundary, Crossgradient (Onsite)	2	Q	Q
MW-9C	Mon	17-21	Downgradient (Offsite)	2	Q	Q
AS-1	AS	16-20	NE Corner, Upgradient (Onsite)	1	---	---
DPE-1	DPE	9-19	NE Corner, Upgradient (Onsite)	4	---	---
DPE-2	DPE	9-19	E Boundary, Downgradient (Onsite)	4	Q	Q
DPE-3	DPE	10-20	S Boundary, Downgradient (Onsite)	4	Q	Q
DPE-4	DPE	13-18	Source Area, Downgradient (Onsite)	4	Q	Q
DPE-5	DPE	9-19	W Boundary, Crossgradient (Onsite)	4	---	---
DPE-6	DPE	14-19	Source Area (Onsite)	4	---	---

Notes and Abbreviations:

**I= Sample Analytes:** Total Petroleum Hydrocarbons as Gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8015Cm/8021B and Total Petroleum Hydrocarbons as Diesel (TPHd) by EPA Method 8015C with silica gel clean-up.

Q = Quarterly (Typically March, June, September and December)

A = Annually (Typically September)

Mon = Groundwater Monitoring Well

N, S, W, E = Cardinal directions North, South, West, East and other directions (e.g., Northeast = NE)

DPE = Dual Phase Extraction Well

AS = Air Sparge Well



## **APPENDIX B**

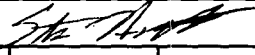
Groundwater Monitoring Field Data Sheets

Well Gauging Data Sheet

Project.Task #:1145.001.226				Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA						Date: 3/1/11	
Name: Steve Hunter				Signature: <i>Steve Hunter</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	1053			8.49	22.85	
MW-2C	2	1040			13.77	23.50	
MW-3A	2	1058			11.56	13.88	
MW-3C	2	1103			13.52	26.99	
MW-4A	2	1117			13.50	14.74	
MW-5A	2	1000		9.34	<del>13.62</del> 13.62	13.62	
MW-5B	2	1015			11.97	19.31	
MW-5C	2	1010			12.08	26.82	
MW-6A	2	1031			7.01	14.86	
MW-7B	2	1111			11.74	13.42	
MW-7C	2	1047			12.42	24.67	

Comments: All wells opened on 2/28/11

Well Gauging Data Sheet

Project.Task #:1145.001.226				Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA						Date: 3/1/11	
Name: Steve Hunter				Signature: 			
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-8A	2	1123			8.79 <del>14.65</del>	14.65	
MW-8C	2	1023			10.88	25.02	
MW-9A	2	0941			11.51	15.00	
MW-9C	2	0930			11.20	20.55	
MW-10A	2	0947			7.76	18.07	
DPE-2	4	1127			16.10	19.59	
DPE-3	4	1136			11.37	19.55	
DPE-4	4	1142			13.88	16.94	

Comments: All wells opened on 2/28/11

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**MONITORING FIELD DATA SHEET**

Well ID: *MW-1*

Project.Task #: 1145.001.226		Project Name: Rockridge Heights							
Address: 5175 Broadway, Oakland, CA									
Date: 3/1/11 -3/2/11		Weather: <i>Rain</i>							
Well Diameter: <i>2"</i>		Volume/ft. <table border="1"> <tr> <td>1" = 0.04</td> <td>3" = 0.37</td> <td>6" = 1.47</td> </tr> <tr> <td>2" = 0.16</td> <td>4" = 0.65</td> <td>radius<sup>2</sup>* 0.163</td> </tr> </table>		1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius <sup>2</sup> * 0.163
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>22.85</i>		Depth to Product:							
Depth to Water (DTW): <i>8.49</i>		Product Thickness:							
Water Column Height: <i>14.36</i>		1 Casing Volume: <i>2.30</i> gallons							
Reference Point: T.O.C		Casing Volumes: <i>7</i> gallons							
Purging Device: Disposable Bailer									
Sampling Device: Disposable Bailer									
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
<i>0841</i>	<i>15.9</i>	<i>7.18</i>	<i>1541</i>			<i>-94</i>	<i>2.5</i>		
<i>0846</i>	<i>17.1</i>	<i>7.14</i>	<i>1539</i>			<i>-100</i>	<i>5</i>		
<i>0853</i>	<i>17.4</i>	<i>7.15</i>	<i>1521</i>			<i>-105</i>	<i>7</i>		

Comments: *DTW @ sampling: 12.32*

Sample ID: <i>MW-1</i>	Sample Time: <i>0905</i>
Laboratory: McCampbell	Sample Date: <i>3-2-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>Steve Hunter</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-2C*

Project.Task #: 1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <i>Rain</i>				
Well Diameter: <i>2"</i>				Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	radius <sup>2</sup> * 0.163
				2" = 0.16	4" = 0.65			
Total Depth (TD): <i>23.50</i>				Depth to Product:				
Depth to Water (DTW): <i>12.77</i>				Product Thickness:				
Water Column Height: <i>9.73</i>				1 Casing Volume: <i>1.56</i>		gallons		
Reference Point: T.O.C				Casing Volumes: <i>4.67</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>0731</i>	<i>16.8</i>	<i>6.48</i>	<i>764</i>		<i>-20</i>			
<i>0736</i>	<i>17.3</i>	<i>6.76</i>	<i>813</i>		<i>-54</i>			
<i>0742</i>	<i>17.1</i>	<i>6.81</i>	<i>815</i>		<i>-62</i>			

Comments: *DTW @ sampling: 10.52*

Sample ID: <i>MW-2C</i>		Sample Time: <i>0747</i>	
Laboratory: McCampbell		Sample Date: <i>3-2-11</i>	
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)			
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up			
Sampler Name: Steve Hunter		Signature: <i>[Signature]</i>	

## MONITORING FIELD DATA SHEET

Well ID: *MW-3A*

Project.Task #:1145.001.226				Project Name: Rockridge Heights					
Address: 5175 Broadway, Oakland, CA									
Date: 3/1/11 -3/2/11				Weather: <i>cloudy</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>13.88</i>				Depth to Product:					
Depth to Water (DTW): <i>11.56</i>				Product Thickness:					
Water Column Height: <i>2.32</i>				1 Casing Volume: <i>0.37</i>		gallons			
Reference Point: T.O.C				Casing Volumes: <i>1.25</i>					gallons
Purging Device: Disposable Bailer									
Sampling Device: Disposable Bailer									
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
<i>1354</i>	<i>17.8</i>	<i>7.34</i>	<i>1206</i>			<i>-75</i>	<i>0.50</i>		
<i>1359</i>	<i>17.9</i>	<i>7.11</i>	<i>1229</i>			<i>-76</i>	<i>1.00</i>		
<i>1403 well dewatered @ 1.25 gallons</i>									

Comments: *DTW @ sampling: 12.19*

Sample ID: <i>MW-3A</i>		Sample Time: <i>1455</i>	
Laboratory: McCampbell		Sample Date: <i>3-2-11</i>	
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)			
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up			
Sampler Name: Steve Hunter		Signature: <i>[Signature]</i>	

## MONITORING FIELD DATA SHEET

Well ID: *MW-3C*

Project.Task #: 1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <i>cloudy</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>26.99</i>				Depth to Product:				
Depth to Water (DTW): <i>13.52</i>				Product Thickness:				
Water Column Height: <i>13.47</i>				1 Casing Volume: <i>2.16</i>		gallons		
Reference Point: T.O.C				3 Casing Volumes: <i>6.5</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1417</i>	<i>18.4</i>	<i>6.74</i>	<i>1611</i>			<i>-100</i>	<i>2.5</i>	
<i>1422</i>	<i>18.1</i>	<i>6.59</i>	<i>1744</i>			<i>-90</i>	<i>4.5</i>	
<i>1428</i>	<i>18.0</i>	<i>6.55</i>	<i>17.53</i>			<i>-87</i>	<i>6.5</i>	

Comments: *PTW @ Sampling: 15.32*

Sample ID: <i>MW-36</i>	Sample Time: <i>1440</i>
Laboratory: McCampbell	Sample Date: <i>3-2-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>SH Hunter</i>

**MONITORING FIELD DATA SHEET**

Well ID: *MW-4A*

Project.Task #:1145.001.226		Project Name: Rockridge Heights						
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11		Weather: <i>Rain</i>						
Well Diameter: <i>2</i>	Volume/ft.	1" = 0.04 2" = 0.16	3" = 0.37 4" = 0.65 6" = 1.47 radius <sup>2</sup> * 0.163					
Total Depth (TD): <i>17.74</i>	Depth to Product:							
Depth to Water (DTW): <i>13.50</i>	Product Thickness:							
Water Column Height: <i>4.24</i>	1 Casing Volume: <i>0.68</i>		gallons					
Reference Point: T.O.C	Casing Volumes: <i>2.25</i>		gallons					
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp (°C)	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1611</i>	<i>16.7</i>	<i>7.74</i>	<i>1013</i>			<i>18</i>	<i>0.75</i>	
<i>1616</i>	<i>16.9</i>	<i>7.63</i>	<i>1052</i>			<i>17</i>	<i>1.50</i>	
<i>1621</i>	<i>Well dewatered</i>						<i>0.2</i>	

Comments: *dewatered @ 2 gallons*  
*DTW @ sampling: 14.13*

Sample ID: <i>MW-4A</i>	Sample Time: <i>1645</i>
Laboratory: McCampbell	Sample Date: <i>3-2-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>



## MONITORING FIELD DATA SHEET

Well ID: *MW-5A*

Project.Task #: 1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				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>1362</i>				Depth to Product:				
Depth to Water (DTW): <i>9.84</i>				Product Thickness:				
Water Column Height: <i>3.78</i>				1 Casing Volume: <i>0.60</i>		gallons		
Reference Point: T.O.C				Casing Volumes: <i>2</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1441</i>	<i>14.6</i>	<i>6.92</i>	<i>2124</i>			<i>-7</i>	<i>1</i>	
<i>1446</i>	<i>14.9</i>	<i>6.91</i>	<i>2114</i>			<i>-29</i>	<i>1.5</i>	
<i>1450</i>	<i>15.0</i>	<i>6.92</i>	<i>2106</i>			<i>-22</i>	<i>2</i>	

Comments: *DTW @ sampling: 3 1042*

Sample ID: <i>MW-5A</i>	Sample Time: <i>1503</i>
Laboratory: McCampbell	Sample Date: <i>3-1-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-5B*

Project.Task #: 1145.001.226		Project Name: Rockridge Heights	
Address: 5175 Broadway, Oakland, CA			
Date: 3/1/11 -3/2/11		Weather: <i>clear</i>	
Well Diameter: <i>2"</i>	Volume/ft.	1" = 0.04 2" = 0.16	3" = 0.37 4" = 0.65 radius** 0.163
Total Depth (TD): <i>19.31</i>	Depth to Product:		
Depth to Water (DTW): <i>11.97</i>	Product Thickness:		
Water Column Height: <i>7.34</i>	1 Casing Volume: <i>1.18</i>		gallons
Reference Point: T.O.C	<i>3</i> Casing Volumes: <i>3.5</i>		gallons

Purging Device: Disposable Bailer

Sampling Device: Disposable Bailer

Time	Temp @	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1513</i>	<i>15.6</i>	<i>7.04</i>	<i>3496</i>			<i>6</i>	<i>1.5</i>	
<i>1518</i>	<i>16.2</i>	<i>6.68</i>	<i>4531</i>			<i>16</i>	<i>2.5</i>	
							<del><i>3.5</i></del>	

Comments: *Well dewatered @ 2.5 gallons  
DTW @ Sampling 8.93*

Sample ID: <i>MW-5B</i>	Sample Time: <i>1540</i>
Laboratory: McCampbell	Sample Date: <i>3-1-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-5C*

Project.Task #:1145.001.226		Project Name: Rockridge Heights	
Address: 5175 Broadway, Oakland, CA			
Date: 3/1/11 -3/2/11		Weather: <i>Clear</i>	
Well Diameter: <i>2"</i>	Volume/ft.	1" = 0.04	3" = 0.37
		2" = 0.16	4" = 0.65
		6" = 1.47	
		radius <sup>2</sup> * 0.163	
Total Depth (TD): <i>2682</i>	Depth to Product:		
Depth to Water (DTW): <i>1208</i>	Product Thickness:		
Water Column Height: <i>14.74</i>	1 Casing Volume: <i>23</i>	gallons	
Reference Point: T.O.C	<i>3</i> Casing Volumes: <i>7</i>	gallons	

Purging Device: Disposable Bailer

Sampling Device: Disposable Bailer

Time	Temp (°C)	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1402</i>	<i>18.0</i>	<i>6.84</i>	<i>1706</i>			<i>148</i>	<i>2.5</i>	
<i>1408</i>	<i>17.8</i>	<i>6.58</i>	<i>1724</i>			<i>120</i>	<i>5</i>	
<i>1414</i>	<i>17.7</i>	<i>6.53</i>	<i>1729</i>			<i>116</i>	<i>7</i>	

Comments: *DTW Sampling - 16-23*

Sample ID: <i>MW-5C</i>	Sample Time: <i>1427</i>
Laboratory: McCampbell	Sample Date: <i>3-1-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-GA*

Project.Task #: 1145.001.226				Project Name: Rockridge Heights						
Address: 5175 Broadway, Oakland, CA										
Date: 3/1/11 -3/2/11				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>14.86</i>				Depth to Product:						
Depth to Water (DTW): <i>7.01</i>				Product Thickness:						
Water Column Height: <i>7.85</i>				1 Casing Volume: <i>1.25</i> gallons						
Reference Point: T.O.C				<i>3</i> Casing Volumes: <i>4</i> gallons						
Purging Device: Disposable Bailer										
Sampling Device: Disposable Bailer										
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW		
<i>1553</i>	<i>16.2</i>	<i>7.28</i>	<i>856</i>			<i>57</i>				
<i>1557</i>	<i>16.6</i>	<i>7.19</i>	<i>853</i>			<i>53</i>				
<i>1600</i>	<i>16-8</i>	<i>7.19</i>	<i>901</i>			<i>53</i>				

Comments: *DTW @ Sampling: 7.62*

Sample ID: <i>MW-GA</i>	Sample Time: <i>1610</i>
Laboratory: McCampbell	Sample Date: <i>3-1-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-7B*

Project.Task #: 1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather :				
Well Diameter: <i>21</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>18.42</i>				Depth to Product:				
Depth to Water (DTW): <i>11.74</i>				Product Thickness:				
Water Column Height: <i>6.68</i>				1 Casing Volume: <i>1.07</i>		gallons		
Reference Point: T.O.C				Casing Volumes: <i>3.25</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1146</i>	<i>17.0</i>	<i>7.66</i>	<i>230</i>			<i>-15</i>	<i>1</i>	
<i>1151</i>	<i>17.6</i>	<i>7.64</i>	<i>267</i>			<i>-55</i>	<i>2</i>	
<i>1203</i>		<i>well dewatered</i>						

Comments: *Well dewatered at 2.5 gallons*  
*DTW @ sampling: 14.19*

Sample ID: <i>MW-7B</i>	Sample Time: <i>1255</i>
Laboratory: McCampbell	Sample Date: <i>3-2-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-7C*

Project.Task #: 1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <i>Rain</i>				
Well Diameter: <i>2 1/4</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>24.67</i>			Depth to Product:					
Depth to Water (DTW): <i>12.42</i>			Product Thickness:					
Water Column Height: <i>12.25</i>			1 Casing Volume: <i>2</i>			gallons		
Reference Point: T.O.C			3 Casing Volumes: <i>6</i>			gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp @	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>0803</i>	<i>15.9</i>	<i>6.85</i>	<i>1356</i>			<i>-88</i>	<i>2</i>	
<i>0807</i>	<i>17.5</i>	<i>6.77</i>	<i>1482</i>			<i>-91</i>	<i>4</i>	
<i>0814</i>	<i>17.7</i>	<i>6.73</i>	<i>1476</i>			<i>-99</i>	<i>6</i>	

Comments: *DTW @ sampling: 15.31*

Sample ID: <del>MW-76</del> <i>MW-7C</i>	Sample Time: <i>0830</i>
Laboratory: McCampbell	Sample Date: <i>3-2-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: MW-84

Project.Task #:1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <i>Cloudy</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>1465</i>		Depth to Product:						
Depth to Water (DTW): <i>8.79</i>		Product Thickness:						
Water Column Height: <del>1465</del> <i>5.86</i>		1 Casing Volume:		<i>1</i>		gallons		
Reference Point: T.O.C		Casing Volumes:		<i>3</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>0911</i>	<i>15.1</i>	<i>6.88</i>	<i>1619</i>			<i>-87</i>		
<i>0915</i>	<i>16.2</i>	<i>6.81</i>	<i>1687</i>			<i>-105</i>		
<i>0920</i>	<i>16.3</i>	<i>6.81</i>	<i>1693</i>			<i>-111</i>		

Comments: *DTW Sampling: 10.31*

Sample ID: <i>MW-84</i>	Sample Time: <i>0930</i>
Laboratory: McCampbell	Sample Date: <i>3-2-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>

## MONITORING FIELD DATA SHEET

Well ID: *MW-8C*

Project.Task #:1145.001.226		Project Name: Rockridge Heights							
Address: 5175 Broadway, Oakland, CA									
Date: 3/1/11 -3/2/11		Weather: <i>Clear</i>							
Well Diameter: <i>2"</i>		Volume/ft. <table border="1"> <tr> <td>1" = 0.04</td> <td>3" = 0.37</td> <td>6" = 1.47</td> </tr> <tr> <td>2" = 0.16</td> <td>4" = 0.65</td> <td>radius<sup>2</sup>* 0.163</td> </tr> </table>		1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius <sup>2</sup> * 0.163
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>25.02</i>		Depth to Product:							
Depth to Water (DTW): <i>10.80</i>		Product Thickness:							
Water Column Height: <i>14.14</i>		1 Casing Volume: <i>2.26</i> gallons							
Reference Point: T.O.C		Casing Volumes: <i>7</i> gallons							
Purging Device: Disposable Bailer									
Sampling Device: Disposable Bailer									
Time	Temp (°C)	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
<i>1626</i>	<i>17.4</i>	<i>7.12</i>	<i>1503</i>			<i>19</i>	<i>2.5</i>		
<i>1632</i>	<i>18.1</i>	<i>6.85</i>	<i>1516</i>			<i>-11</i>	<i>4.5</i>		
<i>1639</i>	<i>18.1</i>	<i>6.86</i>	<i>1498</i>			<i>-13</i>	<i>7.0</i>		

Comments: *Well began to deaerate and purge water became heavy.*  
*DTW @ sampling: 19.36*

Sample ID: <i>MW-8C</i>	Sample Time: <i>1705</i>
Laboratory: McCampbell	Sample Date: <i>3/1/11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <i>[Signature]</i>



## MONITORING FIELD DATA SHEET

Well ID: *MW-9A*

Project.Task #:1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <i>clear/windy</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>15 <del>00</del></i>				Depth to Product:				
Depth to Water (DTW): <i>11.51</i>				Product Thickness:				
Water Column Height: <i>3.49</i>				1 Casing Volume: <i>0.56</i>		gallons		
Reference Point: T.O.C				3 Casing Volumes: <i>1.75</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1243</i>	<i>16.0</i>	<i>7.13</i>	<i>1643</i>		<del>18</del>	<i>18</i>	<i>0.50</i>	
<i>1251</i>	<i>17.1</i>	<i>6.97</i>	<i>1651</i>		<del>18</del>	<i>11</i>	<i>1.25</i>	
<i>1258</i>	<i>17.2</i>	<i>6.96</i>	<i>1647</i>		<del>18</del>	<i>7</i>	<i>1.75</i>	

Comments: *DTW @ sampling = 13-21*

Sample ID: <i>MW-9A</i>		Sample Time: <i>1310</i>	
Laboratory: McCampbell		Sample Date: <i>3/1/11</i>	
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)			
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up			
Sampler Name: Steve Hunter		Signature: <i>[Signature]</i>	

## MONITORING FIELD DATA SHEET

Well ID: *MW-9C*

Project.Task #:1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather :				
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>20.55</i>				Depth to Product:				
Depth to Water (DTW): <i>11.20</i>				Product Thickness:				
Water Column Height: <del>9.35</del> <i>9.35</i>				1 Casing Volume: <i>1.5</i>		gallons		
Reference Point: T.O.C				3 Casing Volumes: <i>4.5</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1202</i>	<i>17.1</i>	<i>6.94</i>	<i>1732</i>		<i>9</i>	<i>18</i>	<i>1.5</i>	
<i>1208</i>	<i>16.9</i>	<i>6.87</i>	<i>1729</i>			<i>20</i>	<i>3.0</i>	
<i>1212</i>	<i>17.0</i>	<i>6.69</i>	<i>1721</i>			<i>16</i>	<i>4.5</i>	

Comments: *DTW @ Sampling: 13.62*

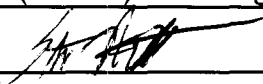
Sample ID: <i>MW-9C</i>		Sample Time: <i>1230</i>	
Laboratory: McCampbell		Sample Date: <i>3/1/11</i>	
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)			
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up			
Sampler Name: Steve Hunter		Signature: <i>[Signature]</i>	

## MONITORING FIELD DATA SHEET

Well ID: *MW-10A*

Project.Task #:1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <i>Clear/Windy</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>13.07</i>				Depth to Product:				
Depth to Water (DTW): <i>7.76</i>				Product Thickness:				
Water Column Height: <i>14.31</i>				1 Casing Volume: <i>1.65</i>		gallons		
Reference Point: T.O.C				Casing Volumes: <i>5</i>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<i>1323</i>	<i>16.8</i>	<i>6.83</i>	<i>1496</i>			<i>11</i>	<i>1.5</i>	
<i>1330</i>	<i>16.6</i>	<i>6.79</i>	<i>1531</i>			<i>3</i>	<i>3.5</i>	
<i>1340</i>	<i>16.7</i>	<i>6.73</i>	<i>1542</i>			<i>-2</i>	<i>5.0</i>	

Comments: *DTW & Sampling 8.32*

Sample ID: <i>MW-10A</i>	Sample Time: <i>1348</i>
Laboratory: McCampbell	Sample Date: <i>3-1-11</i>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: 

## MONITORING FIELD DATA SHEET

Well ID: DPE-2

Project.Task #:1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <u>Rain</u>				
Well Diameter: <u>4"</u>				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): <u>19.59</u>				Depth to Product:				
Depth to Water (DTW): <u>16.10</u>				Product Thickness:				
Water Column Height: <u>3.49</u>				1 Casing Volume: <u>2.3</u>		gallons		
Reference Point: T.O.C				Casing Volumes: <u>7</u>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>1449</u>	<u>17.4</u>	<u>6.43</u>	<u>1437</u>		<u>-6</u>		<u>2.5</u>	
<u>1453</u>	<u>17.7</u>	<u>6.75</u>	<u>1459</u>		<u>-3</u>		<u>5.0</u>	
<u>1500</u>	<u>Well dewatered:</u>						<u>6.0</u>	

Comments: dewatered @ 6 gallons  
DTW @ sampling 17.21

Sample ID: <u>DPE-2</u>	Sample Time: <u>1515</u>
Laboratory: McCampbell	Sample Date: <u>3-2-11</u>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <u>[Signature]</u>

## MONITORING FIELD DATA SHEET

Well ID: DPE-3

Project.Task #: 1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <u>cloudy</u>				
Well Diameter: <u>4"</u>		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): <u>19.55</u>				Depth to Product:				
Depth to Water (DTW): <u>11.37</u>				Product Thickness:				
Water Column Height: <del>19.55</del> <u>8.18</u>				1 Casing Volume: <del>13</del> <u>532</u> gallons				
Reference Point: T.O.C. <del>SA</del>				3 Casing Volumes: <del>16</del> <u>16</u> gallons				
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>1212</u>	<u>16.6</u>	<u>6.87</u>	<u>1648</u>		<u>30</u>			
<u>1224</u>	<u>16.9</u>	<u>6.89</u>	<u>1625</u>		<u>-37</u>			
<u>1235</u>	<u>well dewatered @</u>				<u>13 gallons</u>			

Comments: DTW @ sampling: 15-16

Sample ID: <u>DPE-3</u>	Sample Time: <u>1310</u>
Laboratory: McCampbell	Sample Date: <del>3</del> <u>3-2-11</u>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <u>SA Hunter</u>

## MONITORING FIELD DATA SHEET

Well ID: DPE-4

Project.Task #:1145.001.226				Project Name: Rockridge Heights				
Address: 5175 Broadway, Oakland, CA								
Date: 3/1/11 -3/2/11				Weather: <u>Rain</u>				
Well Diameter: <u>4"</u>				Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	radius** 0.163
				2" = 0.16	4" = 0.65			
Total Depth (TD): <u>16.94</u>				Depth to Product:				
Depth to Water (DTW): <u>13.88</u>				Product Thickness:				
Water Column Height: <del>3.06</del> <u>3.06</u>				1 Casing Volume: <u>2</u>		gallons		
Reference Point: T.O.C				Casing Volumes: <u>6</u>		gallons		
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>1532</u>	<u>17.3</u>	<u>7.15</u>	<u>1534</u>			<u>18</u>	<u>2</u>	
<u>1539</u>	<u>17.7</u>	<u>7.12</u>	<u>1543</u>			<u>18</u>	<u>4</u>	
<u>1544</u>	<u>17.9</u>	<u>7.13</u>	<u>1546</u>			<u>19</u>	<u>6</u>	

Comments: DTW @ Sampling = 12-11

Sample ID: <u>DPE-4</u>	Sample Time: <u>1600</u>
Laboratory: McCampbell	Sample Date: <u>3-2-11</u>
Containers/Preservative: 3-VOA's (HCL), 1-1Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE (8015Cm/8021), TPHd (8015C) w/silica gel clean-up	
Sampler Name: Steve Hunter	Signature: <u>[Signature]</u>

## **APPENDIX C**

Laboratory Analytical Report



**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: #1145.001; Rockridge Heights	Date Sampled: 03/01/11-03/02/11
		Date Received: 03/03/11
	Client Contact: Tina De La Fuente	Date Reported: 03/10/11
	Client P.O.:	Date Completed: 03/10/11

**WorkOrder: 1103112**

March 10, 2011

Dear Tina:

Enclosed within are:

- 1) The results of the **19** analyzed samples from your project: **#1145.001; Rockridge Heights,**
- 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.



1103112

### McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd.  
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: Tina Delafuente Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612  
E-Mail: [tdelafuente@pangeaenv.com](mailto:tdelafuente@pangeaenv.com)  
Tele: (510) 836-3702 Fax: (510) 836-3709  
Project #: 1145.001 Project Name: Rockridge Heights  
Project Location: ~~795 5th Ave, Redwood City, CA~~ 5175 Broadway, Oakland, CA  
Sampler Signature: *[Signature]*

Analysis Request										Other	Comments						
TPH <sub>g</sub> /BTEX/MTBE (8015Cm/8021)	TPHd (8015C) w/ Silica gel clean up	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)	5 Oxygenates (TAME, TBA, DIPE, ETBE, MTBE) by 8260.	Filter Samples for Metals analysis: Yes / No

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
MW-1		3-2-11	0905	4	✓	X					X	X					
MW-2C		3-2-11	0747	4	✓	X					X	X					
MW-3A		3-2-11	1455	4	✓	X					X	X					
MW-3C		3-2-11	1440	4	✓	X					X	X					
MW-4A		3-2-11	1645	4	✓	X					X	X					
MW-5A		3-1-11	1503	4	✓	X					X	X					
MW-5B		3-1-11	1540	4	✓	X					X	X					
MW-5C		3-1-11	1427	4	✓	X					X	X					
MW-6A		3-1-11	1610	4	✓	X					X	X					
MW-7B		3-2-11	1255	4	✓	X					X	X					
MW-7C		3-2-11	0830	4	✓	X					X	X					
MW-8A		3-2-11	0930	4	✓	X					X	X					
MW-8C		3-1-11	1705	4	✓	X					X	X					
MW-9A		3-1-11	1310	4	✓	X					X	X					

Relinquished By: *[Signature]* Date: 3-3-11 Time: 1510 Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: 3-3-11 Time: 1600 Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/r# 2.6c  
 GOOD CONDITION ✓  
 HEAD SPACE ABSENT ✓  
 DECHLORINATED IN LAB ✓  
 APPROPRIATE CONTAINERS ✓  
 PRESERVED IN LAB ✓  
 COMMENTS:  
 VQS O&G METALS OTHER  
 PRESERVATION pH<2

• both samples labelled MW-3C but I was able to distinguish by the time sampled

# McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd.  
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

EDF Required? Coef (Normal) No RUSH 24 HR 48 HR 72 HR 5 DAY  
Write On (DW) No

Report To: Tina Delafuente Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612  
E-Mail: [tdelafuente@pangeaenv.com](mailto:tdelafuente@pangeaenv.com)  
Tele: (510) 836-3702 Fax: (510) 836-3709  
Project #: 1145.001 Project Name: Rockridge Heights  
Project Location: 795 5<sup>th</sup> Ave, Redwood City, CA 5175 Broadway, Oakland, CA  
Sampler Signature: *Sita*

Analysis Request										Other	Comments						
TPH <sub>g</sub> /BTEX/MTBE (8015C.m/8021)	TPH <sub>d</sub> (8015C) w/ Silica gel clean up	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)	5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.	Filter Samples for Metals analysis: Yes / No

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
MW-9C		3-1-11	1230	4	Water	X					X	X					
MW-10A		3-1-11	1348	4	Water	X					X	X					
DPE-2		3-2-11	1515	4	Water	X					X	X					
DPE-3		3-2-11	1310	4	Water	X					X	X					
DPE-4		3-2-11	1600	4	Water	X					X	X					

Relinquished By: *[Signature]* Date: 3-3-11 Time: 1510 Received By: *[Signature]*  
Relinquished By: *[Signature]* Date: 3/3/11 Time: 1600 Received By: *Mike Vall*  
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/r<sup>p</sup> \_\_\_\_\_ COMMENTS: \_\_\_\_\_  
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: 1103112

ClientCode: PEO

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Tina De La Fuente  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700    FAX (510) 836-3709

Email: tdelafuente@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1145.001; Rockridge Heights

**Bill to:**

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Requested TAT: 5 days**

**Date Received: 03/03/2011**

**Date Printed: 03/03/2011**

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
1103112-001	MW-1	Water	3/2/2011 9:05	<input type="checkbox"/>	A	A	B									
1103112-002	MW-2C	Water	3/2/2011 7:47	<input type="checkbox"/>	A		B									
1103112-003	MW-3A	Water	3/2/2011 14:55	<input type="checkbox"/>	A		B									
1103112-004	MW-3C	Water	3/2/2011 14:40	<input type="checkbox"/>	A		B									
1103112-005	MW-4A	Water	3/2/2011 16:45	<input type="checkbox"/>	A		B									
1103112-006	MW-5A	Water	3/1/2011 15:03	<input type="checkbox"/>	A		B									
1103112-007	MW-5B	Water	3/1/2011 15:40	<input type="checkbox"/>	A		B									
1103112-008	MW-5C	Water	3/1/2011 14:27	<input type="checkbox"/>	A		B									
1103112-009	MW-6A	Water	3/1/2011 16:10	<input type="checkbox"/>	A		B									
1103112-010	MW-7B	Water	3/2/2011 12:55	<input type="checkbox"/>	A		B									
1103112-011	MW-7C	Water	3/2/2011 8:30	<input type="checkbox"/>	A		B									
1103112-012	MW-8A	Water	3/2/2011 9:30	<input type="checkbox"/>	A		B									
1103112-013	MW-8C	Water	3/1/2011 17:05	<input type="checkbox"/>	A		B									
1103112-014	MW-9A	Water	3/1/2011 13:10	<input type="checkbox"/>	A		B									

**Test Legend:**

1	G-MBTEX_W	2	PREDF REPORT	3	TPH(D)WSG_W	4		5	
6		7		8		9		10	
11		12							

**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.

# McC Campbell Analytical, Inc.



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1103112

ClientCode: PEO

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Tina De La Fuente  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700    FAX (510) 836-3709

**Email:**    tdelafuente@pangeaenv.com  
**cc:**  
**PO:**  
**ProjectNo:** #1145.001; Rockridge Heights

**Bill to:**  
 Bob Clark-Riddell  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612

**Requested TAT:**    **5 days**  
**Date Received:**    **03/03/2011**  
**Date Printed:**    **03/03/2011**

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
1103112-015	MW-9C	Water	3/1/2011 12:30	<input type="checkbox"/>	A		B									
1103112-016	MW-10A	Water	3/1/2011 13:48	<input type="checkbox"/>	A		B									
1103112-017	DPE-2	Water	3/2/2011 15:15	<input type="checkbox"/>	A		B									
1103112-018	DPE-3	Water	3/2/2011 13:10	<input type="checkbox"/>	A		B									
1103112-019	DPE-4	Water	3/2/2011 16:00	<input type="checkbox"/>	A		B									

**Test Legend:**

1	G-MBTX_W	2	PREDF REPORT	3	TPH(D)WGS_W	4		5	
6		7		8		9		10	
11		12							

**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: **3/3/2011 5:11:31 PM**

Project Name: **#1145.001; Rockridge Heights**

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

WorkOrder N°: **1103112** 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: 2.6°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: I received two samples labelled MW-3C and none labelled MW-3A. I was able to tell which sample was which by the time sampled.



# 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: #1145.001; Rockridge Heights	Date Sampled: 03/01/11-03/02/11
	Client Contact: Tina De La Fuente	Date Received: 03/03/11
	Client P.O.:	Date Extracted: 03/04/11-03/08/11
		Date Analyzed: 03/04/11-03/08/11

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1103112

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-1	W	940	ND	ND	ND	0.55	2.0	1	116	d7,d9
002A	MW-2C	W	670	ND	9.9	ND	0.92	0.58	1	112	d1
003A	MW-3A	W	2100	ND<10	140	10	37	97	2	100	d1
004A	MW-3C	W	22,000	ND<300	450	110	600	1500	20	106	d1,b6,b1
005A	MW-4A	W	310	ND	7.5	1.0	ND	7.7	1	101	d1
006A	MW-5A	W	ND	ND	ND	ND	ND	ND	1	108	
007A	MW-5B	W	120	ND	ND	ND	ND	ND	1	104	d6,b1
008A	MW-5C	W	ND	ND	ND	ND	ND	ND	1	102	
009A	MW-6A	W	ND	ND	ND	ND	ND	ND	1	102	
010A	MW-7B	W	9200	ND<50	160	96	53	510	10	112	d1,b6
011A	MW-7C	W	6800	ND<10	130	9.6	3.1	8.0	2	95	d1
012A	MW-8A	W	1500	ND<10	52	3.5	24	11	1	92	d1
013A	MW-8C	W	280	ND<10	16	3.7	7.9	6.2	1	116	d1
014A	MW-9A	W	ND	ND	ND	ND	ND	ND	1	105	
015A	MW-9C	W	ND	ND	ND	ND	ND	ND	1	103	
016A	MW-10A	W	ND	ND	ND	ND	ND	ND	1	105	b1

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	0.5	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 ug/L, soil/sludge/solid samples in mg/kg, wipe samples in μg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %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:

b1) aqueous sample that contains greater than ~1 vol. % sediment  
b6) lighter than water immiscible sheen/product is present  
d1) weakly modified or unmodified gasoline is significant  
d6) one to a few isolated non-target peaks present in the TPH(g) chromatogram  
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram  
d9) no recognizable pattern



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"When Quality Counts"

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 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: #1145.001; Rockridge Heights	Date Sampled: 03/01/11-03/02/11
	Client Contact: Tina De La Fuente	Date Received: 03/03/11
	Client P.O.:	Date Extracted: 03/04/11-03/08/11
		Date Analyzed: 03/04/11-03/08/11

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1103112

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
017A	DPE-2	W	12,000	ND<50	360	130	96	1700	10	114	d1
018A	DPE-3	W	27,000	ND<700	1400	810	870	3300	10	121	d1,b6
019A	DPE-4	W	5600	ND<50	68	100	42	350	10	103	d1

Reporting Limit for DF =1;	W	50	5.0	0.5	0.5	0.5	0.5	0.5	μg/L
ND means not detected at or above the reporting limit	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %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:

b1) aqueous sample that contains greater than ~1 vol. % sediment  
 b6) lighter than water immiscible sheen/product is present  
 d1) weakly modified or unmodified gasoline is significant  
 d6) one to a few isolated non-target peaks present in the TPH(g) chromatogram  
 d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram  
 d9) no recognizable pattern



# McC Campbell Analytical, Inc.

"When Quality Counts"

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

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1145.001; Rockridge Heights	Date Sampled: 03/01/11-03/02/11
	Client Contact: Tina De La Fuente	Date Received: 03/03/11
	Client P.O.:	Date Extracted: 03/03/11
		Date Analyzed 03/04/11-03/09/11

### Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\*

Extraction method SW3510C/3630C

Analytical methods: SW8015B

Work Order: 1103112

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1103112-001B	MW-1	W	1600	1	101	e11,e2
1103112-002B	MW-2C	W	66	1	105	e2,e4
1103112-003B	MW-3A	W	2200	1	100	e11,e2,e7
1103112-004B	MW-3C	W	19,000	1	119	e4/e11,b6,b1
1103112-005B	MW-4A	W	270	1	105	e11,e2
1103112-006B	MW-5A	W	ND	1	99	
1103112-007B	MW-5B	W	97	1	100	e2,b1
1103112-008B	MW-5C	W	66	1	102	e2
1103112-009B	MW-6A	W	67	1	101	e11,e2
1103112-010B	MW-7B	W	31,000	10	82	e11,b6
1103112-011B	MW-7C	W	1400	1	102	e4/e11
1103112-012B	MW-8A	W	1000	1	102	e4/e11,e7,e2
1103112-013B	MW-8C	W	65	1	100	e4
1103112-014B	MW-9A	W	ND	1	101	
1103112-015B	MW-9C	W	480	1	100	e7,e2

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

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

%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:

- b1) aqueous sample that contains greater than ~1 vol. % sediment
- b6) lighter than water immiscible sheen/product is present
- e2) diesel range compounds are significant; no recognizable pattern
- e4) gasoline range compounds are significant.; and/or e11) stoddard solvent/mineral spirit (?)
- e7) oil range compounds are significant





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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1145.001; Rockridge Heights	Date Sampled: 03/01/11-03/02/11
	Client Contact: Tina De La Fuente	Date Received: 03/03/11
	Client P.O.:	Date Extracted: 03/03/11
		Date Analyzed 03/04/11-03/09/11

**Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\***

Extraction method SW3510C/3630C

Analytical methods: SW8015B

Work Order: 1103112

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1103112-016B	MW-10A	W	ND	1	100	b1
1103112-017B	DPE-2	W	14,000	5	107	e4/e11,e2
1103112-018B	DPE-3	W	51,000	20	96	e4/e11,b6
1103112-019B	DPE-4	W	5100	1	114	e11,e7,e2

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

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

%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:

b1) aqueous sample that contains greater than ~1 vol. % sediment  
b6) lighter than water immiscible sheen/product is present  
e2) diesel range compounds are significant; no recognizable pattern  
e4) gasoline range compounds are significant.; and/or e11) stoddard solvent/mineral spirit (?)  
e7) oil range compounds are significant



**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56584

WorkOrder 1103112

EPA Method SW8015B		Extraction SW3510C/3630C							Spiked Sample ID: N/A			
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-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	107	108	0.178	N/A	N/A	70 - 130	30
%SS:	N/A	625	N/A	N/A	N/A	92	92	0	N/A	N/A	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 56584 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1103112-001B	03/02/11 9:05 AM	03/03/11	03/04/11 2:10 AM	1103112-002B	03/02/11 7:47 AM	03/03/11	03/09/11 3:52 PM
1103112-003B	03/02/11 2:55 PM	03/03/11	03/04/11 3:18 AM	1103112-004B	03/02/11 2:40 PM	03/03/11	03/04/11 4:26 AM
1103112-005B	03/02/11 4:45 PM	03/03/11	03/04/11 9:49 PM	1103112-006B	03/01/11 3:03 PM	03/03/11	03/04/11 6:42 AM
1103112-007B	03/01/11 3:40 PM	03/03/11	03/04/11 7:50 AM	1103112-008B	03/01/11 2:27 PM	03/03/11	03/04/11 2:38 PM
1103112-009B	03/01/11 4:10 PM	03/03/11	03/04/11 7:24 PM	1103112-010B	03/02/11 12:55 PM	03/03/11	03/07/11 6:21 PM
1103112-011B	03/02/11 8:30 AM	03/03/11	03/04/11 1:21 AM	1103112-012B	03/02/11 9:30 AM	03/03/11	03/04/11 12:11 AM
1103112-013B	03/01/11 5:05 PM	03/03/11	03/04/11 3:39 AM	1103112-014B	03/01/11 1:10 PM	03/03/11	03/04/11 2:30 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.  
 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.



QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56658

WorkOrder 1103112

Table with columns: EPA Method SW8021B/8015Bm, Extraction SW5030B, Spiked Sample ID: 1103112-016A, Analyte, Sample, Spiked, MS, MSD, MS-MSD, LCS, LCSD, LCS-LCSD, Acceptance Criteria (%).

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

BATCH 56658 SUMMARY

Table with columns: Lab ID, Date Sampled, Date Extracted, Date Analyzed, Lab ID, Date Sampled, Date Extracted, Date Analyzed.

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.



### QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56692

WorkOrder 1103112

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1103139-021A			
	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	108	111	3.17	92.3	94.3	2.19	70 - 130	20	70 - 130	20
MTBE	ND	10	115	114	1.13	114	120	4.54	70 - 130	20	70 - 130	20
Benzene	ND	10	104	105	1.20	106	109	2.36	70 - 130	20	70 - 130	20
Toluene	ND	10	103	105	2.47	106	106	0	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	104	105	1.46	105	105	0	70 - 130	20	70 - 130	20
Xylenes	ND	30	106	108	1.20	108	108	0	70 - 130	20	70 - 130	20
%SS:	101	10	98	98	0	98	95	2.88	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 56692 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1103112-018A	03/02/11 1:10 PM	03/08/11	03/08/11 5:53 AM	1103112-019A	03/02/11 4:00 PM	03/08/11	03/08/11 8:52 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.



### QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56693

WorkOrder 1103112

EPA Method SW8015B		Extraction SW3510C/3630C							Spiked Sample ID: N/A			
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-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	88.5	89	0.554	N/A	N/A	70 - 130	30
%SS:	N/A	625	N/A	N/A	N/A	92	92	0	N/A	N/A	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 56693 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1103112-015B	03/01/11 12:30 PM	03/03/11	03/04/11 4:48 AM	1103112-016B	03/01/11 1:48 PM	03/03/11	03/04/11 5:57 AM
1103112-017B	03/02/11 3:15 PM	03/03/11	03/05/11 12:12 AM	1103112-018B	03/02/11 1:10 PM	03/03/11	03/04/11 8:37 PM
1103112-019B	03/02/11 4:00 PM	03/03/11	03/04/11 4:29 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.

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: 5175 Broadway; Rockridge Heights	Date Sampled: 12/14/10
		Date Received: 12/14/10
	Client Contact: Morgan Gillies	Date Reported: 12/15/10
	Client P.O.:	Date Completed: 12/15/10

**WorkOrder: 1012482**

December 15, 2010

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **5175 Broadway; Rockridge Heights,**
- 2) A QC report for the above sample,
- 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.

**RUSH**

1012402

**McCAMPBELL ANALYTICAL, INC.**

1534 Willow Pass Rd.  
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 DA

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  
 Tele: (510) 836-3702 Fax: (510) 836-3709  
 Project #: 5175 Broadway Project Name: Rockridge Heights  
 Project Location: 5175 Broadway, Oakland, CA  
 Sampler Signature: *[Signature]*

**Analysis Request**

- BTEX & TPH as Gas (602/8020 + 8015)/MTBE
- TPH as Diesel (8015) with 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)
- 5 Oxygenates (TAME, TBA, DIPE, ETBE, MTBE) by 8260.

**Other**  
**Comme**  
 Filter Sample for Met analysis Yes / No

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED					
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other		
EFF-W	EFF	12/4	1025	3	VOAS	X					X	X				

Relinquished By: <i>[Signature]</i>	Date: 12/14/06	Time: 1600	Received By: <i>[Signature]</i>
Relinquished By: <i>[Signature]</i>	Date: 12/4/06	Time: 1730	Received By: <i>[Signature]</i>
Relinquished By: <i>[Signature]</i>	Date:	Time:	Received By:

COMMENTS:  
 ICE/r 5.60 ✓  
 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: 1012482**

**ClientCode: PEO**

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b>	<b>Bill to:</b>	<b>Requested TAT:</b>
Morgan Gillies	Bob Clark-Riddell	<b>1 day</b>
Pangea Environmental Svcs., Inc.	Pangea Environmental Svcs., Inc.	
1710 Franklin Street, Ste. 200	1710 Franklin Street, Ste. 200	<i>Date Received: 12/14/2010</i>
Oakland, CA 94612	Oakland, CA 94612	<i>Date Printed: 12/14/2010</i>
(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	
1012482-001	EFF-W	Water	12/14/2010 10:25	<input type="checkbox"/>	A	A											

**Test Legend:**

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

**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.**  
Project Name: **5175 Broadway; Rockridge Heights**  
WorkOrder N°: **1012482** Matrix Water

Date and Time Received: **12/14/2010 5:36:43 PM**  
Checklist completed and reviewed by: **Melissa Valles**  
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: 5.6°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:



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 12/14/10
	Client Contact: Morgan Gillies	Date Received: 12/14/10
	Client P.O.:	Date Extracted: 12/15/10
		Date Analyzed: 12/15/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012482

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	EFF-W	W	ND	ND	ND	ND	ND	ND	1	100	

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	0.5	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 ug/L, soil/sludge/solid samples in mg/kg, wipe samples in μg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

%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:



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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 55040

WorkOrder 1012482

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1012482-001A			
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>f</sup>	ND	60	95.1	97	2.04	112	103	8.71	70 - 130	20	70 - 130	20
MTBE	ND	10	116	113	2.47	103	110	6.42	70 - 130	20	70 - 130	20
Benzene	ND	10	106	102	3.69	101	103	1.92	70 - 130	20	70 - 130	20
Toluene	ND	10	106	103	3.40	102	104	1.79	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	105	102	2.81	100	103	2.03	70 - 130	20	70 - 130	20
Xylenes	ND	30	108	105	2.94	104	106	2.00	70 - 130	20	70 - 130	20
%SS:	100	10	96	95	0.825	95	96	1.37	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 55040 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1012482-001A	12/14/10 10:25 AM	12/15/10	12/15/10 2:37 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: #5175 Broadway; Rockridge Height	Date Sampled: 12/08/10
		Date Received: 12/09/10
	Client Contact: Morgan Gillies	Date Reported: 12/15/10
	Client P.O.:	Date Completed: 12/10/10

**WorkOrder: 1012317**

December 15, 2010

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#5175 Broadway; Rockridge Height,**
- 2) A QC report for the above sample,
- 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.

1012317

### McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd.  
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 #: 5175 Broadway

Project Name: Rockridge Heights

Project Location: 5175 Broadway, Oakland, CA

Sampler Signature: *[Signature]*

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
INF-V	INF	12/8/10	1330	1	T			x									

Analysis Request														Other	Comments		
BTEX & TPH as Gas (602/8020 + 8015)/MTBE															5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.		Filter Samples for Metals analysis: Yes / No
TPH as Diesel (8015) with 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)																	

Relinquished By: <i>[Signature]</i>	Date: 12/9/10	Time: 14:30	Received By: <i>[Signature]</i>
Relinquished By: <i>[Signature]</i>	Date: 12/9/10	Time: 15:30	Received By: <i>Mona V</i>
Relinquished By: _____	Date: _____	Time: _____	Received By: _____

ICE# *N/A* COMMENTS:

GOOD CONDITION ✓

HEAD SPACE ABSENT ✓

DECHLORINATED IN LAB ✓

APPROPRIATE CONTAINERS ✓

PRESERVED IN LAB ✓

VOAS O&G METALS OTHER

pH<2

*REPT IN PPMV*

# McC Campbell Analytical, Inc.



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

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 1012317**

**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	Email: mgillies@pangeaenv.com	Bob Clark-Riddell	
Pangea Environmental Svcs., Inc.	cc:	Pangea Environmental Svcs., Inc.	<b>Date Received: 12/09/2010</b>
1710 Franklin Street, Ste. 200	PO:	1710 Franklin Street, Ste. 200	<b>Date Printed: 12/09/2010</b>
Oakland, CA 94612	ProjectNo: #5175 Broadway; Rockridge Height	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	
1012317-001	INF-V	Air	12/8/2010 13:30	<input type="checkbox"/>	A	A											

**Test Legend:**

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

The following SampID: 001A contains testgroup.

**Prepared by: Maria 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.**  
Project Name: **#5175 Broadway; Rockridge Height**  
WorkOrder N°: **1012317** Matrix Air

Date and Time Received: **12/9/2010 3:48:55 PM**  
Checklist completed and reviewed by: **Maria Venegas**  
Carrier: Rob Pringle (MAI Courier)

**Chain of Custody (COC) Information**

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

**Sample Receipt Information**

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

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

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

\* 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: #5175 Broadway; Rockridge Height	Date Sampled: 12/08/10
	Client Contact: Morgan Gillies	Date Received: 12/09/10
	Client P.O.:	Date Extracted: 12/09/10
		Date Analyzed: 12/09/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012317

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	4500	ND<25	21	5.4	2.9	14	10	103	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.

%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





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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #5175 Broadway; Rockridge Height	Date Sampled: 12/08/10
	Client Contact: Morgan Gillies	Date Received: 12/09/10
	Client P.O.:	Date Analyzed: 12/09/10
		Date Extracted: 12/09/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012317

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	1300	ND<6.8	6.4	1.4	0.65	3.2	10	103	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.

%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: 54932

WorkOrder 1012317

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1012292-009A			
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>£</sup>	ND	60	83.9	88.7	5.65	94.9	99.8	5.01	70 - 130	20	70 - 130	20
MTBE	ND	10	97.7	103	5.68	120	124	2.82	70 - 130	20	70 - 130	20
Benzene	ND	10	94.4	98.4	4.13	110	118	7.54	70 - 130	20	70 - 130	20
Toluene	ND	10	93.1	99.5	6.62	98.7	106	7.39	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	94.3	98.4	4.34	101	103	2.43	70 - 130	20	70 - 130	20
Xylenes	ND	30	96.2	100	4.23	115	120	3.48	70 - 130	20	70 - 130	20
%SS:	99	10	99	96	3.19	98	103	4.70	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 54932 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1012317-001A	12/08/10 1:30 PM	12/09/10	12/09/10 6:20 PM	1012317-001A	12/08/10 1:30 PM	12/09/10	12/09/10 6:20 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.



**McC Campbell Analytical, Inc.**

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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: 5175 Broadway; Rockridge Heights	Date Sampled: 12/14/10
		Date Received: 12/14/10
	Client Contact: Morgan Gillies	Date Reported: 12/20/10
	Client P.O.:	Date Completed: 12/20/10

**WorkOrder: 1012489**

December 20, 2010

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **5175 Broadway; Rockridge Heights,**
- 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.

1012489

### McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd.  
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**       
 EDF Required? Coelt (Normal) No Write On (DW) No RUSH 24 HR 48 HR 72 HR 5 DAY

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  
 Tele: (510) 836-3702 Fax: (510) 836-3709  
 Project #: 5175 Broadway Project Name: Rockridge Heights  
 Project Location: 5175 Broadway, Oakland, CA  
 Sampler Signature: [Signature]

Analysis Request										Other	Comments							
BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015) with 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)	5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.		Filter Samples for Metals analysis: Yes / No

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED							
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other				
INF-W	INF	12/14	1030	5	WAFS Amber	X						X	X					
EFF-V	EFF	12/13	1400	1	Tedlar		X											
INF-V	INF	↓	1405	1	↓		X											

Relinquished By: [Signature] Date: 12/14/10 Time: 10:50 Received By: [Signature]  
 Relinquished By: [Signature] Date: 12/14/10 Time: 1730 Received By: [Signature]  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/° 10-5 COMMENTS:  
 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: 1012489

ClientCode: PEO

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

Report to: Morgan Gillies Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612 (510) 836-3700    FAX (510) 836-3709	Email: mgillies@pangeaenv.com cc: PO: ProjectNo: 5147 Broadway; Rockridge Heights	Bill to: Bob Clark-Riddell Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Requested TAT: <b>5 days</b>  Date Received: 12/14/2010 Date Printed: 12/14/2010
---	--	--	---

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
1012489-001	INF-W	Water	12/14/2010 10:30	<input type="checkbox"/>		B	A	A								
1012489-002	EFF-V	Air	12/13/2010 14:00	<input type="checkbox"/>	A											
1012489-003	INF-V	Air	12/13/2010 14:05	<input type="checkbox"/>	A											

**Test Legend:**

1	G-MBTEX_AIR	2	G-MBTEX_W	3	PREFD REPORT	4	TPH(D)WSG_W	5	
6		7		8		9		10	
11		12							

The following SampIDs: 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.**  
Project Name: **5147 Broadway; Rockridge Heights**  
WorkOrder N°: **1012489** Matrix Air/Water

Date and Time Received: **12/14/2010 6:13:00 PM**  
Checklist completed and reviewed by: **Ana Venegas**  
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: 6.8°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:



**McC Campbell Analytical, Inc.**

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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: 5175 Broadway; Rockridge Heights	Date Sampled: 12/14/10
	Client Contact: Morgan Gillies	Date Received: 12/14/10
	Client P.O.:	Date Extracted: 12/17/10
		Date Analyzed: 12/17/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012489

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001B	INF-W	W	300	ND	4.6	1.5	1.6	10	1	100	d1

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	0.5	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 ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

%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



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 12/14/10
	Client Contact: Morgan Gillies	Date Received: 12/14/10
	Client P.O.:	Date Analyzed: 12/15/10
		Date Extracted: 12/14/10

## Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\*

Extraction method SW3510C/3630C

Analytical methods: SW8015B

Work Order: 1012489

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1012489-001A	INF-W	W	260	1		e2,e4

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

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

%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:

e2) diesel range compounds are significant; no recognizable pattern  
 e4) gasoline range compounds are significant.







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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: 5175 Broadway; Rockridge Heights	Date Sampled: 12/13/10
	Client Contact: Morgan Gillies	Date Received: 12/14/10
	Client P.O.:	Date Extracted: 12/15/10-12/17/10
		Date Analyzed: 12/15/10-12/17/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012489

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
002A	EFF-V	A	ND	ND	ND	ND	ND	ND	1	101	
003A	INF-V	A	430	ND<2.7	1.7	0.49	0.54	1.3	4	107	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.

%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



# McC Campbell Analytical, Inc.

"When Quality Counts"

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

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 12/14/10
	Client Contact: Morgan Gillies	Date Received: 12/14/10
	Client P.O.:	Date Analyzed: 12/15/10
		Date Extracted: 12/14/10

### Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\*

Extraction method SW3510C/3630C

Analytical methods: SW8015B

Work Order: 1012489

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1012489-001A	INF-W	W	260	1	100	e2,e4

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

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

%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:

e2) diesel range compounds are significant; no recognizable pattern  
e4) gasoline range compounds are significant.



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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 55010

WorkOrder 1012489

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1012468-002A			
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	99.8	99.4	0.414	97.7	100	2.42	70 - 130	20	70 - 130	20
MTBE	ND	10	118	119	1.09	118	123	4.55	70 - 130	20	70 - 130	20
Benzene	ND	10	113	113	0	110	117	5.77	70 - 130	20	70 - 130	20
Toluene	ND	10	100	99.1	1.13	99	103	4.43	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	98.3	98.2	0.111	98.3	102	3.44	70 - 130	20	70 - 130	20
Xylenes	ND	30	112	111	1.11	111	115	3.15	70 - 130	20	70 - 130	20
%SS:	99	10	104	104	0	103	107	3.28	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 55010 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1012489-001B	12/14/10 10:30 AM	12/17/10	12/17/10 4:56 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.



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

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 55059

WorkOrder 1012489

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1012512-008A			
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	88.6	85.5	3.52	87.6	95	8.06	70 - 130	20	70 - 130	20
MTBE	ND	10	101	93.5	8.19	96.9	102	5.27	70 - 130	20	70 - 130	20
Benzene	ND	10	93.4	86.4	7.86	91.7	95.6	4.23	70 - 130	20	70 - 130	20
Toluene	ND	10	93.3	87.1	6.87	92.4	96.4	4.26	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	91.8	86.6	5.90	91.7	95.3	3.90	70 - 130	20	70 - 130	20
Xylenes	ND	30	95.1	89.2	6.37	94.1	98	4.03	70 - 130	20	70 - 130	20
%SS:	105	10	97	97	0	97	98	0.829	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 55059 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1012489-002A	12/13/10 2:00 PM	12/17/10	12/17/10 2:27 AM	1012489-002A	12/13/10 2:00 PM	12/17/10	12/17/10 2:27 AM
1012489-003A	12/13/10 2:05 PM	12/15/10	12/15/10 1:04 PM	1012489-003A	12/13/10 2:05 PM	12/15/10	12/15/10 1:04 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.



**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 55003

WorkOrder 1012489

EPA Method SW8015B		Extraction SW3510C/3630C							Spiked Sample ID: N/A			
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-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	102	103	0.694	N/A	N/A	70 - 130	30
%SS:	N/A	625	N/A	N/A	N/A	88	88	0	N/A	N/A	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 55003 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1012489-001A	12/14/10 10:30 AM	12/14/10	12/15/10 7:01 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.

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: #5175 Broadway; Rockridge Heights	Date Sampled: 12/22/10
		Date Received: 12/22/10
	Client Contact: Morgan Gillies	Date Reported: 12/28/10
	Client P.O.:	Date Completed: 12/29/10

**WorkOrder: 1012792**

December 29, 2010

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#5175 Broadway; Rockridge Heights,**
- 2) A QC report for the above sample,
- 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: 1012792**

**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.	<i>Date Received: 12/22/2010</i>
1710 Franklin Street, Ste. 200	1710 Franklin Street, Ste. 200	<i>Date Printed: 12/22/2010</i>
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	
1012792-001	INF-V	Air	12/22/2010 13:50	<input type="checkbox"/>	A	A											

**Test Legend:**

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

**Prepared by: Zoraida Cortez**

**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.**  
Project Name: **#5175 Broadway; Rockridge Heights**  
WorkOrder N°: **1012792** Matrix Air

Date and Time Received: **12/22/2010 4:53:30 PM**  
Checklist completed and reviewed by: **Zoraida Cortez**  
Carrier: Benjamin Yslas (MAI Courier)

#### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

#### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

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

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

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

-----

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Contacted by: \_\_\_\_\_

Comments:



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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: #5175 Broadway; Rockridge Heights	Date Sampled: 12/22/10
	Client Contact: Morgan Gillies	Date Received: 12/22/10
	Client P.O.:	Date Extracted: 12/23/10
		Date Analyzed: 12/23/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012792

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	1600	ND<35	17	ND<1.0	1.2	2.6	4	117	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.

%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



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #5175 Broadway; Rockridge Heights	Date Sampled: 12/22/10
	Client Contact: Morgan Gillies	Date Received: 12/22/10
	Client P.O.:	Date Extracted: 12/23/10
		Date Analyzed: 12/23/10

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1012792

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	440	ND<10	5.2	ND<0.26	0.28	0.60	4	117	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.

%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: 55252

WorkOrder 1012792

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1012783-006E			
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	118	117	1.15	122	121	0.226	70 - 130	20	70 - 130	20
MTBE	ND	10	83.7	83.2	0.554	85.6	84	1.90	70 - 130	20	70 - 130	20
Benzene	ND	10	118	120	1.88	119	119	0	70 - 130	20	70 - 130	20
Toluene	ND	10	119	121	1.76	120	120	0	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	122	124	1.69	124	124	0	70 - 130	20	70 - 130	20
Xylenes	ND	30	123	125	1.72	126	125	0.380	70 - 130	20	70 - 130	20
%SS:	105	10	103	103	0	104	103	1.16	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 55252 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1012792-001A	12/22/10 1:50 PM	12/23/10	12/23/10 9:41 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 = 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: #5175 Broadway; Rockridge Heights	Date Sampled: 01/07/11
	Client Contact: Morgan Gillies	Date Received: 01/07/11
	Client P.O.:	Date Reported: 01/12/11
		Date Completed: 01/12/11

**WorkOrder: 1101148**

January 12, 2011

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#5175 Broadway; Rockridge Heights,**
- 2) A QC report for the above sample,
- 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: 1101148**

**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	Email: mgillies@pangeaenv.com	Bob Clark-Riddell	
Pangea Environmental Svcs., Inc.	cc:	Pangea Environmental Svcs., Inc.	<b>Date Received: 01/07/2011</b>
1710 Franklin Street, Ste. 200	PO:	1710 Franklin Street, Ste. 200	<b>Date Printed: 01/07/2011</b>
Oakland, CA 94612	ProjectNo: #5175 Broadway; Rockridge Heights	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	
1101148-001	INF-V	Air	1/7/2011 16:00	<input type="checkbox"/>	A	A											

**Test Legend:**

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

The following SampID: 001A contains testgroup.

**Prepared by: Shino Hamilton**

**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.**  
Project Name: **#5175 Broadway; Rockridge Heights**  
WorkOrder N°: **1101148** Matrix Air

Date and Time Received: **1/7/2011 5:58:17 PM**  
Checklist completed and reviewed by: **Shino Hamilton**  
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: 12.6°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

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

-----

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Contacted by: \_\_\_\_\_

Comments:





# McC Campbell Analytical, Inc.

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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: #5175 Broadway; Rockridge Heights	Date Sampled: 01/07/11
	Client Contact: Morgan Gillies	Date Received: 01/07/11
	Client P.O.:	Date Extracted: 01/08/11
		Date Analyzed: 01/08/11

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1101148

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	640	ND<15	6.1	0.58	0.26	0.75	4	113	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.

%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: 55513

WorkOrder 1101148

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1101145-012A			
	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	107	109	2.30	107	103	3.99	70 - 130	20	70 - 130	20
MTBE	ND	10	102	106	4.14	105	107	1.65	70 - 130	20	70 - 130	20
Benzene	ND	10	99	102	2.73	96.5	94.3	2.26	70 - 130	20	70 - 130	20
Toluene	ND	10	99.8	107	7.25	97.3	95.2	2.18	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	98.3	101	2.25	96.5	94.5	2.10	70 - 130	20	70 - 130	20
Xylenes	ND	30	102	105	2.87	99	97	2.03	70 - 130	20	70 - 130	20
%SS:	100	10	99	99	0	96	95	0.505	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 55513 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1101148-001A	01/07/11 4:00 PM	01/08/11	01/08/11 2:08 AM	1101148-001A	01/07/11 4:00 PM	01/08/11	01/08/11 2:08 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 = 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.



**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: 5175 Broadway, Oakland, CA; Rockridge Heights	Date Sampled: 02/02/11
	Client Contact: Morgan Gillies	Date Received: 02/03/11
	Client P.O.:	Date Reported: 02/09/11
		Date Completed: 02/09/11

**WorkOrder: 1102113**

February 09, 2011

Dear Morgan:

Enclosed within are:

- 1) The results of the **2** analyzed samples from your project: **5175 Broadway, Oakland, CA; Rockridge Heights,**
- 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: 1102113

ClientCode: PEO

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Report to: Morgan Gillies Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612 (510) 836-3700    FAX (510) 836-3709	Email: mgillies@pangeaenv.com cc: PO: ProjectNo: 5175 Broadway, Oakland, CA; Rockridge Heights	Bill to: Bob Clark-Riddell Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Requested TAT: <b>5 days</b>  Date Received: <b>02/03/2011</b> Date Printed: <b>02/03/2011</b>
---	---	--	---

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
1102113-001	INF-W	Water	2/2/2011 14:45	<input type="checkbox"/>		A	B									
1102113-002	INF-V	Air	2/2/2011 14:50	<input type="checkbox"/>	A											

**Test Legend:**

1	G-MBTEX_AIR	2	G-MBTEX_W	3	TPH(D)WSG_W	4		5	
6		7		8		9		10	
11		12							

The following SampID: 002A contains testgroup.

**Prepared by: Zoraida Cortez**

**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: **2/3/2011 7:35:30 PM**  
Project Name: **5175 Broadway, Oakland, CA; Rockridge Heights** Checklist completed and reviewed by: **Zoraida Cortez**  
WorkOrder N°: **1102113** Matrix Air/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: 5.2°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:







# 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: 5175 Broadway, Oakland, CA; Rockridge Heights	Date Sampled: 02/02/11
	Client Contact: Morgan Gillies	Date Received: 02/03/11
	Client P.O.:	Date Extracted: 02/04/11
		Date Analyzed: 02/04/11

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1102113

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
002A	INF-V	A	1200	ND<10	6.1	0.72	0.94	2.9	4	83	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.

%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





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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: 5175 Broadway, Oakland, CA; Rockridge Heights	Date Sampled: 02/02/11
	Client Contact: Morgan Gillies	Date Received: 02/03/11
	Client P.O.:	Date Analyzed 02/05/11
		Date Extracted: 02/03/11

### Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\*

Extraction method SW3510C/3630C

Analytical methods: SW8015B

Work Order: 1102113

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1102113-001B	INF-W	W	600	1	104	e4,e2

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

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

%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:

e2) diesel range compounds are significant; no recognizable pattern  
 e4) gasoline range compounds are significant.



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

W.O. Sample Matrix: Water/Air

QC Matrix: Water

BatchID: 56032

WorkOrder 1102113

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1102097-017A			
	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	92.6	95.1	2.59	95.5	95.7	0.223	70 - 130	20	70 - 130	20
MTBE	ND	10	121	122	1.27	120	114	5.61	70 - 130	20	70 - 130	20
Benzene	ND	10	120	120	0	122	116	5.16	70 - 130	20	70 - 130	20
Toluene	ND	10	105	106	0.614	109	106	2.44	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	103	105	1.69	108	105	2.81	70 - 130	20	70 - 130	20
Xylenes	ND	30	114	116	2.23	122	118	3.71	70 - 130	20	70 - 130	20
%SS:	111	10	104	107	2.30	105	108	2.91	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 56032 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1102113-001A	02/02/11 2:45 PM	02/05/11	02/05/11 3:57 AM	1102113-002A	02/02/11 2:50 PM	02/04/11	02/04/11 1:39 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 = 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.



### QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 55953

WorkOrder 1102113

EPA Method SW8015B		Extraction SW3510C/3630C							Spiked Sample ID: N/A			
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-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	98.7	98.4	0.267	N/A	N/A	70 - 130	30
%SS:	N/A	625	N/A	N/A	N/A	96	96	0	N/A	N/A	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 55953 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1102113-001B	02/02/11 2:45 PM	02/03/11	02/05/11 5:32 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.

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.



**McC Campbell Analytical, Inc.**

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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: 5175 Broadway, Rockridge Heights	Date Sampled: 02/22/11
		Date Received: 02/23/11
	Client Contact: Tina De La Fuente	Date Reported: 03/01/11
	Client P.O.:	Date Completed: 02/28/11

**WorkOrder: 1102709**

March 01, 2011

Dear Tina:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **5175 Broadway, Rockridge Heights,**
- 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.

1102709

### McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd.  
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 *Trig De la Fuente* Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612 *tdelaFuente@pangeaenv.com*  
E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)  
Tele: (510) 836-3702 Fax: (510) 836-3709  
Project #: 5175 Broadway Project Name: Rockridge Heights  
Project Location: 5175 Broadway, Oakland, CA  
Sampler Signature: *[Signature]*

Analysis Request										Other	Comments	
BTEX & TPH as Gas (602/8020 + 8015)/MTBE												Filter Samples for Metals analysis: Yes / No
TPH as Diesel (8015) with 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)												
5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.												

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other
<i>INFAW</i>		2-22-11	1500	3	16oz's	X					X	X		X
<i>EFFAW</i>		2-22-11	1515	3	16oz's	X					X	X		X
<i>INF-W</i>		2-22-11	1400		Jelly		X			X				X

Relinquished By: *[Signature]* Date: *2/23/11* Time: *11:55* Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: *2/23/11* Time: *1400* Received By: *[Signature]*  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/t° *70*  
 GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PRESERVED IN LAB \_\_\_\_\_  
 PRESERVATION pH<2  
 VOAS O&G METALS OTHER  
 COMMENTS: *Sample lab revised per email 2/24/11*

\* All samples are mislabeled IDs on actual sample are "INF-W, EFF-W, INFA", samples confirmed by time 2/27/11



**McC Campbell Analytical, Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 1102709**

**ClientCode: PEO**

WaterTrax    WriteOn    EDF    Excel    Fax    Email    HardCopy    ThirdParty    J-flag

**Report to:**  
Tina De La Fuente  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700   FAX (510) 836-3709

**Email:**   tdelafuente@pangeaenv.com  
**cc:**  
**PO:**  
**ProjectNo:** 5175 Broadway, Rockridge Heights

**Bill to:**  
Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Requested TAT: 5 days**  
**Date Received: 02/23/2011**  
**Date Printed: 02/25/2011**

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	
1102709-001	INF-W	Water	2/22/2011 15:00	<input type="checkbox"/>		A	A										
1102709-002	EFF-W	Water	2/22/2011 15:15	<input type="checkbox"/>		A											
1102709-003	INF-V	Air	2/22/2011 14:00	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTEX_AIR	2	G-MBTEX_W	3	PREFD REPORT	4		5	
6		7		8		9		10	
11		12							

The following SampID: 003A contains 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: **2/23/2011 2:40:36 PM**

Project Name: **5175 Broadway, Rockridge Heights**

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

WorkOrder N°: **1102709** Matrix Air/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: 7°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/Air

QC Matrix: Water

BatchID: 56437

WorkOrder 1102709

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1102687-001E			
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	109	107	1.64	106	108	1.53	70 - 130	20	70 - 130	20
MTBE	ND	10	90	98.5	9.02	105	92.3	12.8	70 - 130	20	70 - 130	20
Benzene	ND	10	116	113	2.57	113	113	0	70 - 130	20	70 - 130	20
Toluene	ND	10	103	101	1.65	101	101	0	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	105	102	2.74	102	101	0.665	70 - 130	20	70 - 130	20
Xylenes	ND	30	118	115	2.64	115	116	0.468	70 - 130	20	70 - 130	20
%SS:	96	10	104	103	0.578	104	102	1.74	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 56437 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1102709-001A	02/22/11 3:00 PM	02/26/11	02/26/11 9:14 PM	1102709-002A	02/22/11 3:15 PM	02/26/11	02/26/11 4:14 AM
1102709-003A	02/22/11 2:00 PM	02/24/11	02/24/11 12:36 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 = 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: #1145.001; Rock Heights	Date Sampled: 03/09/11
		Date Received: 03/10/11
	Client Contact: Morgan Gillies	Date Reported: 03/15/11
	Client P.O.:	Date Completed: 03/11/11

**WorkOrder: 1103338**

March 15, 2011

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1145.001; Rock Heights,**
- 2) A QC report for the above sample,
- 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: 1103338**

**ClientCode: PEO**

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b> Morgan Gillies Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612 (510) 836-3700    FAX (510) 836-3709	Email: mgillies@pangeaenv.com cc: PO: ProjectNo: #1145.001; Rock Heights	<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: 03/10/2011</b> <b>Date Printed: 03/10/2011</b>
--	---	---	---

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	
1103338-001	INF-V	Air	3/9/2011 11:45	<input type="checkbox"/>	A	A											

**Test Legend:**

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

The following SampID: 001A contains testgroup.

**Prepared by: Maria 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: **3/10/2011 3:57:18 PM**

Project Name: **#1145.001; Rock Heights**

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

WorkOrder N°: **1103338** 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:







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

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 56810

WorkOrder 1103338

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1103324-002A			
	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	94.9	95.7	0.901	99.5	94.3	5.27	70 - 130	20	70 - 130	20
MTBE	ND	10	105	114	8.26	110	109	1.48	70 - 130	20	70 - 130	20
Benzene	ND	10	107	109	2.05	105	103	2.05	70 - 130	20	70 - 130	20
Toluene	ND	10	93.3	97.7	4.70	93.3	90.8	2.78	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	95.5	98.8	3.33	95.1	92.9	2.36	70 - 130	20	70 - 130	20
Xylenes	ND	30	108	112	4.26	108	106	2.51	70 - 130	20	70 - 130	20
%SS:	103	10	101	103	1.63	99	100	0.906	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 56810 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1103338-001A	03/09/11 11:45 AM	03/10/11	03/10/11 5:20 PM	1103338-001A	03/09/11 11:45 AM	03/10/11	03/10/11 5:20 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.



**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: #5175 Broadway; Rockridge Heights	Date Sampled: 03/21/11
	Client Contact: Morgan Gillies	Date Received: 03/22/11
	Client P.O.:	Date Reported: 03/28/11
		Date Completed: 03/24/11

**WorkOrder: 1103743**

March 28, 2011

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#5175 Broadway; Rockridge Heights,**
- 2) A QC report for the above sample,
- 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: 1103743**

**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	Email: mgillies@pangeaenv.com	Bob Clark-Riddell	
Pangea Environmental Svcs., Inc.	cc:	Pangea Environmental Svcs., Inc.	<b>Date Received: 03/22/2011</b>
1710 Franklin Street, Ste. 200	PO:	1710 Franklin Street, Ste. 200	<b>Date Printed: 03/22/2011</b>
Oakland, CA 94612	ProjectNo: #5175 Broadway; Rockridge Heights	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	
1103743-001	INF-V	Air	3/21/2011 10:45	<input type="checkbox"/>	A	A											

**Test Legend:**

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

The following SampID: 001A contains testgroup.

**Prepared by: Zoraida Cortez**

**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.**  
Project Name: **#5175 Broadway; Rockridge Heights**  
WorkOrder N°: **1103743** Matrix Air

Date and Time Received: **3/22/2011 7:52:28 PM**  
Checklist completed and reviewed by: **Zoraida Cortez**  
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   
(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: Air

QC Matrix: Water

BatchID: 57113

WorkOrder 1103743

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1103733-005A			
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	99.2	97.3	1.93	100	94.4	5.74	70 - 130	20	70 - 130	20
MTBE	ND	10	108	107	1.22	102	103	1.06	70 - 130	20	70 - 130	20
Benzene	ND	10	102	102	0	102	99.2	2.73	70 - 130	20	70 - 130	20
Toluene	ND	10	103	102	0.448	102	100	2.32	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	102	101	1.55	102	99.6	2.25	70 - 130	20	70 - 130	20
Xylenes	ND	30	105	108	2.43	104	102	1.97	70 - 130	20	70 - 130	20
%SS:	99	10	98	101	2.90	99	96	2.89	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 57113 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1103743-001A	03/21/11 10:45 AM	03/23/11	03/23/11 1:40 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.