

# Atlantic Richfield Company

**Shannon Couch**  
Operations Project Manager

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**RECEIVED**

*9:14 am, May 01, 2012*

Alameda County  
Environmental Health

March 30, 2012

Re: First Quarter 2012 Monitoring Report  
Former BP Service Station #11104  
1716 Webster Street  
Alameda, California  
ACEH Case #RO0000281

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by,



Shannon Couch  
Operations Project Manager

Attachment



**BROADBENT**

875 Cotting Ln., Suite G, Vacaville, CA 95688

[T] 707-455-7290 [F] 707-455-7295

broadbentinc.com

**CREATING SOLUTIONS. BUILDING TRUST.**

March 30, 2012

Project No. 06-88-644

Atlantic Richfield Company  
P.O. Box 1257  
San Ramon, California 94583  
Submitted via ENFOS

Attn.: Ms. Shannon Couch

Re: First Quarter 2012 Monitoring Report, Former BP Service Station #11104, 1716 Webster Street, Alameda, Alameda County, California  
ACEH Case #RO0000281

Dear Ms. Couch:

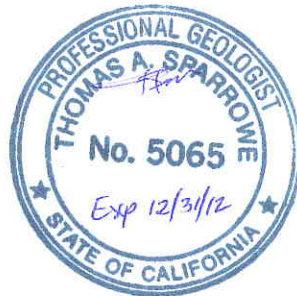
Provided herein is the *First Quarter 2012 Monitoring Report* for Former BP Service Station #11104 located at 1716 Webster Street, Alameda, California (Site). Should you have questions regarding the work performed or results obtained, please do not hesitate to contact me at (707) 455-7290.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Alexander J. Martinez  
Senior Staff Geologist

Thomas A. Sparrowe, P.G. #5065  
Senior Geologist



enclosures

cc: Ms. Dilan Roe, Alameda County Environmental Health (Submitted via ACEH ftp site)  
Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818  
Electronic copy uploaded to GeoTracker

**FIRST QUARTER 2012  
MONITORING REPORT  
FORMER ARCO STATION #11104, ALAMEDA, CALIFORNIA**

Broadbent & Associates, Inc. (Broadbent) is pleased to present this *First Quarter 2012 Monitoring Report* on behalf of Atlantic Richfield Company (a BP affiliated company) for former BP Station # 11104 (presently a Union 76 Station) located at 1716 Webster Street in Alameda, Alameda County, California. Monitoring activities at the site were performed in accordance with an agency directive issued by the Alameda County Environmental Health (ACEH). Details of work performed, discussion of results, and recommendations are provided below.

Facility Name / Address:	<u>Former BP Station #11104 / 1716 Webster Street, Alameda, CA</u>
Client Project Manager / Title:	<u>Ms. Shannon Couch / Operations Project Manager</u>
Broadbent Contact:	<u>Mr. Tom Sparrowe, (707) 455-7290</u>
Broadbent Project No.:	<u>06-88-644</u>
Primary Regulatory Agency / ID No.:	<u>ACEH / Case #RO0000281</u>
Current phase of project:	<u>Monitoring</u>
List of Acronyms / Abbreviations:	<u>See end of report text for list of acronyms/abbreviations used in report.</u>

**WORK PERFORMED THIS QUARTER (First Quarter 2012):**

1. Broadbent submitted a *Fourth Quarter 2011 Status Report*.
2. Broadbent conducted groundwater monitoring/sampling on February 28, 2012 for First Quarter 2012.

**WORK SCHEDULED FOR NEXT QUARTER (Second Quarter 2012):**

1. Submit *First Quarter 2012 Monitoring Report* (contained herein).
2. No environmental work activities are scheduled to be conducted at the Site during the Second Quarter 2012.

**QUARTERLY MONITORING PLAN SUMMARY:**

Groundwater level gauging:	<u>MW-1 through MW-5 and RW-1</u>	(Semi-Annually: 1Q & 3Q)
Groundwater sample collection:	<u>MW-1 and RW-1</u>	(Semi-Annually: 1Q & 3Q)
	<u>MW-2 through MW-5</u>	(Annually: 1Q)
Biodegradation indicator parameter monitoring:	<u>None</u>	

**QUARTERLY RESULTS SUMMARY:**

**LNAPL**

LNAPL observed this quarter:	<u>Yes (RW-1)</u>	(yes/no)
LNAPL recovered this quarter:	<u>None</u>	(gal)
Cumulative LNAPL recovered:	<u>None</u>	(gal)

**Groundwater Elevation and Gradient:**

Depth to groundwater:	<u>5.63 ft (MW-1) to 6.78 ft (MW-3)</u>	(ft below TOC)
Gradient direction:	<u>North-Northeast</u>	(compass direction)
Gradient magnitude:	<u>0.005 ft/ft</u>	(ft/ft)
Average change in elevation:	<u>-0.73</u>	(ft since last measurement)

**Laboratory Analytical Data**

Summary:	GRO, Benzene, Ethylbenzene, Toluene, Total Xylenes, MTBE, TBA and TAME were detected in well MW-1 at concentrations of 9,600 µg/L, 310 µg/L, 560 µg/L, 13 µg/L, 1,700 µg/L, 610 µg/L, 750 µg/L and 64 µg/L respectively. The rest of the petroleum hydrocarbon constituents were below laboratory detection limits. GRO, Benzene, Ethylbenzene, Toluene and MTBE concentrations increased in MW-1 relative to Third Quarter 2011.
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## ACTIVITIES CONDUCTED & RESULTS:

On February 28, 2012 Broadbent conducted the First Quarter 2012 groundwater monitoring and sampling event at Station #11104 in accordance with the quarterly monitoring plan summary detailed above. No irregularities were noted during water level gauging except for MW-5 which was not accessible due to being paved over. Water levels were gauged in the five accessible wells associated with Station #11104. Light non-aqueous phase liquid (LNAPL) was observed in well RW-1 (see discussion below). No other irregularities were noted during water level gauging at Station #11104. Depth to water measurements at the Site ranged from 5.63 ft at well MW-1 to 6.78 ft at MW-3. Resulting groundwater surface elevations at the Site ranged from 6.78 ft above datum at well MW-3 to 5.99 ft at well MW-4. Groundwater elevation for well RW-1 was corrected to account for the presence of LNAPL. Water level elevations yielded a potentiometric groundwater gradient direction and magnitude to the north-northeast at 0.005 ft/ft. Field methods used during groundwater monitoring are provided in Appendix A. Field data sheets are included in Appendix B. Measured depths to groundwater and respective groundwater elevations are summarized in Table 1. Current and historic groundwater gradient directions and magnitudes are provided within Table 3. A Site Location Map is provided as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Generally consistent with the current groundwater sampling schedule, water samples were collected from wells MW-1 through MW-4. Due to the presence of LNAPL, water samples were not collected from wells RW-1. No other irregularities were encountered during sampling at the Site. Collected groundwater samples were submitted to Calscience Environmental Laboratories, Inc. (Calscience) of Garden Grove, California for analysis of gasoline range organics (GRO, C6-12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Methyl Tert-Butyl Ether (MTBE), Ethyl tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), Tert-Butyl Alcohol (TBA), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA) and Ethanol by EPA Method 8260B. No significant irregularities were reported during analysis of the samples.

As stated above, LNAPL was present in well RW-1 during First Quarter 2012. Broadbent personnel measured approximately 0.06 feet of LNAPL in well RW-1, which historically has never contained product until most recently as the Third Quarter 2011 monitoring/sampling event.

Current and historic groundwater elevations and groundwater sample analytical data are provided in Tables 1 and 2. Drawing 2 is provided as a groundwater elevation contour and analytical summary map for February 28, 2012. Laboratory analytical report and chain of custody record for are provided in Appendix C. The resulting analysis and report for the hydrocarbon fingerprint analysis by Torkelson is included in Appendix D. Groundwater monitoring data (GEO\_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix D.

Review of Tables 1 and 2 and Drawing 2 indicate that GRO, Benzene, Ethylbenzene, Toluene, Total Xylenes, MTBE and TBA were detected in well MW-1 at concentrations of 9,600 µg/L, 310 µg/L, 560 µg/L, 13 µg/L, 1,700 µg/L, 610 µg/L and 750 µg/L, respectively. No hydrocarbons were detected in wells MW-2 through MW-4.

## DISCUSSION:

Groundwater levels and gradient data indicate that the gradient measured during First Quarter 2012 monitoring is consistent with predominant measurements observed historic minimum and maximum elevations at the site. During First Quarter 2012, groundwater elevations decreased an average of 0.73 feet across the site relative to measurements collected during Third Quarter 2011.

Detected analytical concentrations in MW-1 showed an increase in GRO (6,900 µg/L to 9,600 µg/L), benzene (110 µg/L to 310 µg/L), toluene (5.5 µg/L to 13 µg/L), ethylbenzene (190 µg/L to 560 µg/L) and MTBE (22 µg/L to 610 µg/L) relative to the Third Quarter 2011.

Detected analytical concentrations were within historic minimum and maximum ranges recorded for each well with the exception of LNAPL in RW-1. From the results obtained by hydrocarbon fingerprint analysis it can be concluded that this product is not BP related since diesel storage and distribution was not part of BP's product service. LNAPL has not historically been observed at the site; however, it has been historically observed to the north across the street in monitor wells that are downgradient of Station 11104.

#### **RECOMMENDATIONS:**

No environmental work activities are scheduled to be conducted at the Site during the Second Quarter 2012. The next quarterly monitoring event is scheduled for the Third Quarter 2012. Unless directed by ACEH, no change to the monitoring program at Station #11104 is presently deemed warranted or recommended.

#### **LIMITATIONS:**

The findings presented in this report are based upon observations of field personnel, points investigated, results of laboratory tests performed by Calscience Environmental Laboratories, Inc. and our understanding of ACEH guidelines. Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of ARC. It is possible that variations in soil or groundwater conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

#### **ATTACHMENTS:**

- Drawing 1: Site Location Map
- Drawing 2: First Quarter 2012 Groundwater Elevation Contour and Analytical Summary Map
  
- Table 1: Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
- Table 2: Summary of Fuel Additive Analytical Data
- Table 3: Historic Groundwater Gradient Information
  
- Appendix A: Field Methods
- Appendix B: Field Data Sheet
- Appendix C: Laboratory Report and Chain-of-Custody Documentation
- Appendix D: GeoTracker Upload Confirmation Receipts

**LIST OF COMMONLY USED ACCRONYMS/ABBREVIATIONS:**

ACEH	Alameda County Environmental Health	gal:	gallons
ARC:	Atlantic Richfield Company	GRO:	gasoline range organics (C6-12)
BAI:	Broadbent & Associates, Inc.	LNAPL:	light non-aqueous phase liquid
BTEX:	benzene, toluene, ethylbenzene, total xylenes	MTBE:	methyl tertiary butyl ether
1,2-DCA:	1,2-dichloroethane	RWQCB:	California Regional Water Quality Control Board-San Francisco Bay Region
DIPE:	di-isopropyl ether	TAME:	tert-amyl methyl ether
DO:	dissolved oxygen	TBA:	tert-butyl alcohol
ESLs:	RWQCB Environmental Screening Levels (revised May 2008)	TOC:	top of casing
EDB:	1,2-dibromomethane	µg/L:	micrograms per liter
ft/ft:	feet per foot		



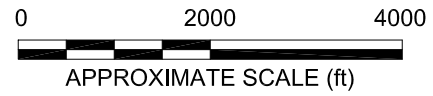
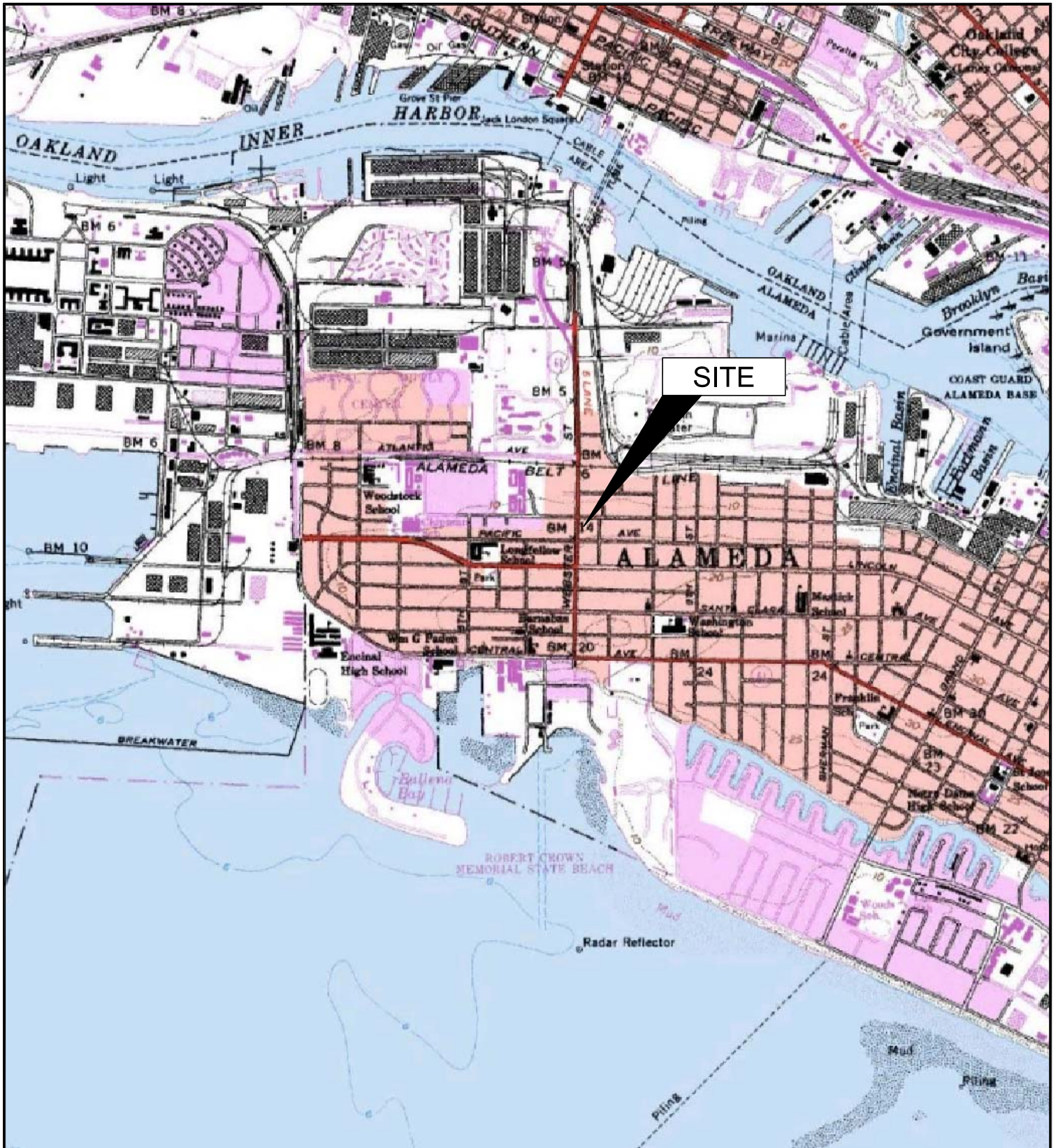


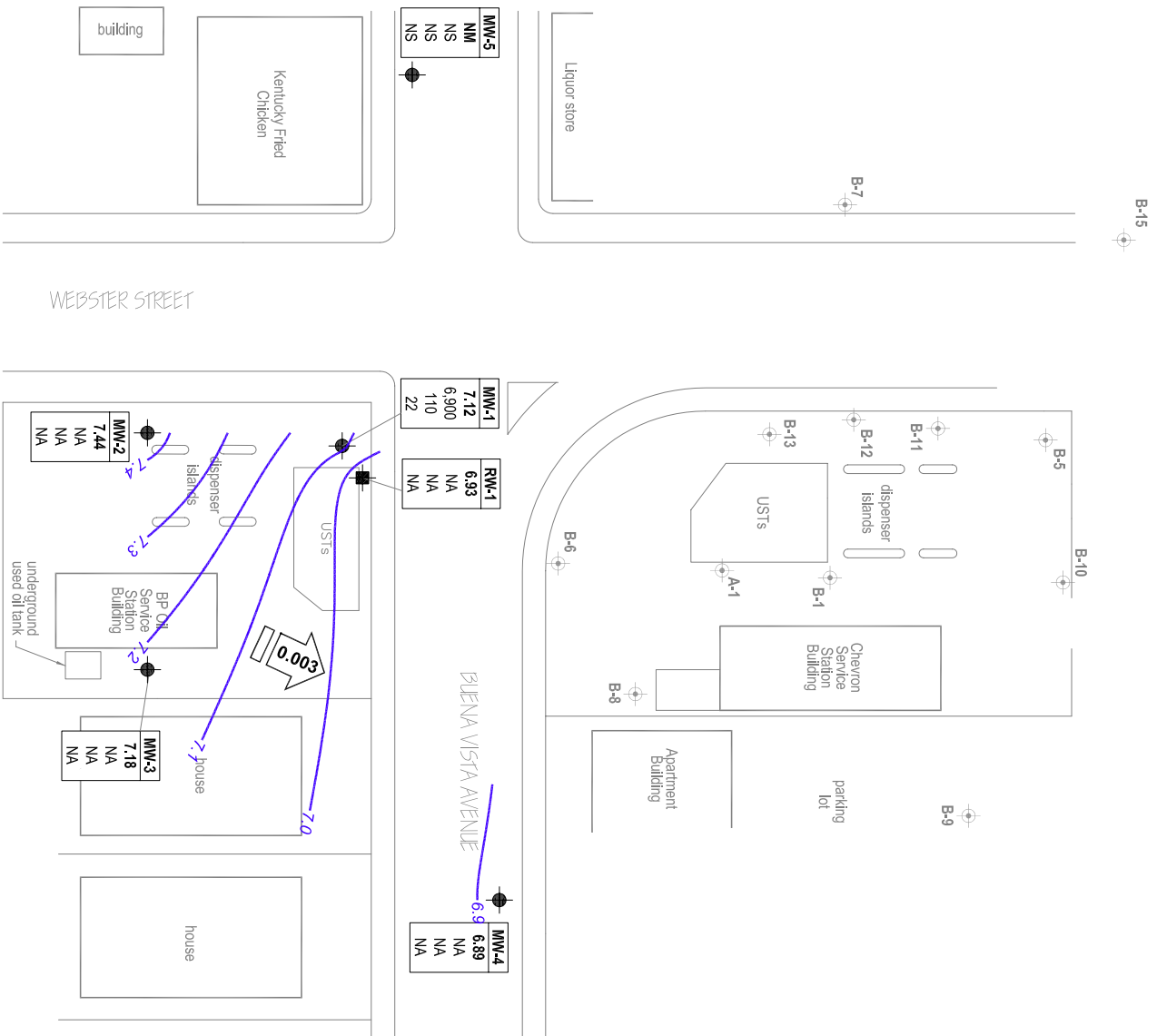
IMAGE SOURCE: USGS

**BROADBENT & ASSOCIATES, INC**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
 1324 Mangrove Ave. Suite 212, Chico, CA 95926  
 Project No.: 06-88-644 Date: 9/1/09

Station #11104  
 1716 Webster Street  
 Alameda, California

Site Location Map

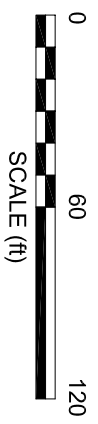
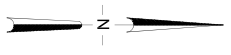
Drawing  
**1**



**LEGEND**

- Monitoring well
- Groundwater recovery well
- Chevron monitoring well
- Groundwater flow direction and gradient (ft/MSL)
- Groundwater elevation contour (Feet above site datum)
- Well designation
- ELEV - Groundwater elevation (ftMSL)
- GRO - GRO, Benzene and MTBE concentrations in ground water (µg/L)
- MTBE - Not detected at or above laboratory reporting limits
- < - Not Measured/Not sampled
- NM/NS - Not Analyzed
- NA - Elevation not used for contouring

NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



**BROADBENT & ASSOCIATES, INC.**  
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
875 Cotting Lane Suite G, Vacaville, California  
Project No.: 06-88-644 Date: 8/10/2011

Former BP Station #11104  
1716 Webster Street  
Alameda, California

Groundwater Elevation Contour and  
Analytical Summary Map  
July 5, 2011



**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-1</b>														
7/21/1992	--	11.98	5.91	0.00	6.07	34,000	7,000	1,700	2,500	6,900	--	--	--	
10/20/1992	--		6.66	0.00	5.32	--	--	--	--	--	--	--	--	
3/5/1993	--		4.56	0.00	7.42	--	--	--	--	--	--	--	--	
4/1/1993	--		4.57	0.00	7.41	--	--	--	--	--	--	--	--	
7/9/1993	--		5.25	0.00	6.73	79,000	16,000	1,500	2,200	7,700	12,952	--	--	c, d, k
7/9/1993	--		5.25	0.00	6.73	77,000	15,000	1,400	2,100	7,400	11,919	--	--	c, k
10/8/1993	--		6.01	0.00	5.97	42,000	7,100	270	2,700	4,700	--	--	--	k
1/6/1994	--		6.24	0.00	5.74	45,000	12,000	4,300	3,000	6,700	--	--	--	k
4/26/1994	--		5.26	0.00	6.72	39,000	6,500	500	1,800	1,200	16,663	6.3	--	c, k
7/25/1994	--		5.60	0.00	6.38	38,000	6,300	240	1,500	1,100	26,428	1.7	--	c, k
10/13/1994	--		6.15	0.00	5.83	25,000	6,300	130	1,300	830	--	2.3	--	k
10/13/1994	--		6.15	0.00	5.83	25,000	7,300	120	1,200	740	--	--	--	d, k
1/17/1995	--		4.19	0.00	7.79	8,400	3,100	1,200	470	1,000	--	--	--	d
1/17/1995	--		4.19	0.00	7.79	7,800	3,100	1,100	460	850	--	7.9	--	
3/31/1995	--		4.48	0.00	7.50	40,000	6,900	7,300	1,300	5,000	--	--	--	d
3/31/1995	--		4.48	0.00	7.50	37,000	6,700	6,900	1,200	4,500	--	6.4	--	
5/1/1995	--		4.39	0.00	7.59	--	--	--	--	--	--	--	--	
7/12/1995	--		5.02	0.00	6.96	29,000	7,000	300	1,500	3,900	--	7.2	--	
7/12/1995	--		5.02	0.00	6.96	29,000	6,600	380	1,500	3,900	--	--	--	d
10/12/1995	--		5.68	0.00	6.30	20,000	3,400	310	1,100	3,000	15,000	6.3	--	
10/12/1995	--		5.68	0.00	6.30	20,000	3,500	310	1,100	3,000	14,000	--	--	d
2/27/1996	--		4.18	0.00	7.80	18,000	4,400	2,900	860	2,380	5,500	7.9	--	
5/8/1996	--		4.89	0.00	7.09	--	--	--	--	--	--	--	--	
5/9/1996	--		--	--	--	14,000	2,300	1,900	540	3,340	2,700	6.1	--	
8/9/1996	--		5.13	0.00	6.85	--	--	--	--	--	--	--	--	
8/12/1996	--		--	--	--	13,000	2,800	190	1,300	3,040	1,800	7.1	--	
11/7/1996	--		5.65	0.00	6.33	12,000	2,100	35	<25	<25	2,100	7.2	--	
2/10/1997	--		4.80	0.00	7.18	180,000	1,900	<500	<500	<500	160,000	6.8	--	
2/10/1997	--		4.80	0.00	7.18	180,000	2,100	<500	<500	<500	160,000	--	--	d
8/4/1997	--		5.69	0.00	6.29	<25000	2,600	<50	1,200	1,100	260,000	--	--	d

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-1 Cont.</b>														
8/4/1997	--	11.98	5.69	0.00	6.29	14,000	2,700	<50	1,200	1,220	250,000	7.2	--	
1/27/1998	--		3.96	0.00	8.02	390,000	4,400	4,300	1,600	2,890	490,000	6.4	--	
9/2/1998	--		5.03	0.00	6.95	230,000	3,900	<50	1,900	1,000	230,000	6.3	--	
2/24/1999	--		4.94	0.00	7.04	82,000	3,000	520	2,600	3,200	90,000/200,000	--	--	h
8/30/1999	--		6.31	0.00	5.67	11,000	2,100	<25	1,800	580	48,000	--	--	
2/21/2000	--		4.47	0.00	7.51	12,000 i	1,200	250	930	1,800	31,000	--	--	i
8/8/2000	--		5.59	0.00	6.39	4,500	160	2.8	76	88	60,000	--	--	
2/12/2001	--		6.04	0.00	5.94	14,000	363	<12.5	108	293	18,000	--	--	
8/13/2001	--		6.44	0.00	5.54	14,000	161	17.1	255	545	5,590	--	--	
2/4/2002	--		4.49	0.00	7.49	17,000	176	57.9	538	1,670	2,470	--	--	
8/29/2002	--		5.22	0.00	6.76	4,800 l	180	43	130	540	3,100	--	--	l
2/5/2003	--		5.43	0.00	6.55	770	29	9.8	4.2	47	590 m,n	--	--	m,n
8/14/2003	--		6.34	0.00	5.64	5,400	210	<50	90	200	4,500	--	--	p
02/12/2004	P		4.55	0.00	7.43	2,600	140	20	87	170	1,200	--	6.8	
08/12/2004	P		5.22	0.00	6.76	5,700	500	12	41	1,400	260	--	6.3	
02/10/2005	P		4.48	0.00	7.50	2,400	120	10	72	110	730	--	6.1	
08/11/2005	P		4.60	0.00	7.38	4,600	500	13	44	870	190	--	6.8	
02/09/2006	P		4.47	0.00	7.51	2,600	180	12	96	230	380	--	7.0	
8/10/2006	--		4.77	0.00	7.21	7,000	720	17	62	870	47	--	6.7	
2/8/2007	P		5.13	0.00	6.85	2,200	100	6.3	53	120	130	5.52	6.82	
8/8/2007	P		5.47	0.00	6.51	1,500	78	4.9	43	120	140	4.32	7.04	t (BZ, EBZ, XYLENES, MTBE)
2/22/2008	P		4.40	0.00	7.58	4,400	130	71	390	1,200	59	5.01	7.06	
8/13/2008	P		5.55	0.00	6.43	7,500	220	16	130	1,600	370	0.48	8.13	
2/11/2009	P		5.51	0.00	6.47	1,900	26	<2.0	15	35	68	0.57	6.62	
8/27/2009	P		5.45	0.00	6.53	3,300	37	2.4	9.5	650	20	0.61	7.51	
2/18/2010	P		4.71	0.00	7.27	2,700	32	7.6	42	95	48	0.81	6.80	
8/12/2010	NP		5.48	0.00	6.50	3,200	50	2.4	52	220	76	1.72	6.9	
2/17/2011	P		4.82	0.00	7.16	2,400	44	<2.0	160	230	40	0.75	7.2	
7/5/2011	--		4.86	0.00	7.12	6,900	110	5.5	190	1,900	22	0.41	7.2	
<b>2/28/2012</b>	<b>P</b>		<b>5.63</b>	<b>0.00</b>	<b>6.35</b>	<b>9,600</b>	<b>310</b>	<b>13</b>	<b>560</b>	<b>1,700</b>	<b>610</b>	<b>0.53</b>	<b>6.57</b>	

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses  
Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-2</b>														
7/21/1992	--	12.98	6.44	0.00	6.54	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
10/20/1992	--		7.39	0.00	5.59	--	--	--	--	--	--	--	--	
3/5/1993	--		4.91	0.00	8.07	--	--	--	--	--	--	--	--	
4/1/1993	--		4.92	0.00	8.06	--	--	--	--	--	--	--	--	
7/9/1993	--		5.60	0.00	7.38	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
10/8/1993	--		6.50	0.00	6.48	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	d, k
10/8/1993	--		6.50	0.00	6.48	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
1/6/1994	--		6.25	0.00	6.73	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
4/26/1994	--		5.73	0.00	7.25	<50	<0.5	<0.5	<0.5	<0.5	<5.0	7.5	--	k
7/25/1994	--		6.07	0.00	6.91	<50	<0.5	<0.5	<0.5	<0.5	11.59	2.4	--	k
10/13/1994	--		6.80	0.00	6.18	<50	<0.5	<0.5	<0.5	<0.5	--	2.4	--	k
1/17/1995	--		5.10	0.00	7.88	--	--	--	--	--	--	--	--	
3/31/1995	--		4.69	0.00	8.29	<50	<0.50	<0.50	<0.50	<1.0	--	7.3	--	
5/1/1995	--		5.23	0.00	7.75	--	--	--	--	--	--	--	--	
7/12/1995	--		5.40	0.00	7.58	--	--	--	--	--	--	--	--	
10/12/1995	--		6.06	0.00	6.92	<50	<0.50	<0.50	<0.50	<1.0	<5.0	6.9	--	
2/27/1996	--		4.66	0.00	8.32	<50	<0.5	<1	<1	<1	<10	8.7	--	
5/8/1996	--		5.28	0.00	7.70	--	--	--	--	--	--	--	--	
8/9/1996	--		5.59	0.00	7.39	<50	<0.5	<1.0	<1.0	<1.0	<10	7.8	--	
11/7/1996	--		6.11	0.00	6.87	--	--	--	--	--	--	--	--	
2/10/1997	--		5.26	0.00	7.72	--	--	--	--	--	--	--	--	
8/4/1997	--		6.14	0.00	6.84	<50	<0.5	<1.0	<1.0	<1.0	<10	6.5	--	
1/27/1998	--		4.42	0.00	8.56	--	--	--	--	--	--	--	--	
9/2/1998	--		5.47	0.00	7.51	100	0.56	3.6	<1.0	3	110	6.9	--	
2/24/1999	--		5.12	0.00	7.86	<50	<1.0	<1.0	<1.0	<1.0	8.2	--	--	
8/30/1999	--		6.60	0.00	6.38	--	--	--	--	--	--	--	--	
2/21/2000	--		4.64	0.00	8.34	<50	<0.5	<0.5	<0.5	<0.5	0.72	--	--	
2/12/2001	--		5.13	0.00	7.85	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
2/4/2002	--		5.63	0.00	7.35	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--	--	
8/29/2002	--		5.79	0.00	7.19	--	--	--	--	--	--	--	--	

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**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-2 Cont.</b>														
2/5/2003	--	12.98	5.61	0.00	7.37	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	--	n
8/14/2003	--		--	--	--	--	--	--	--	--	--	--	--	o
02/12/2004	P		5.19	0.00	7.79	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.4	p
08/12/2004	--		6.17	0.00	6.81	--	--	--	--	--	--	--	--	
02/10/2005	P		5.01	0.00	7.97	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	5.9	
08/11/2005	--		6.39	0.00	6.59	--	--	--	--	--	--	--	--	
02/09/2006	P		4.80	0.00	8.18	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.8	
8/10/2006	--		6.18	0.00	6.80	--	--	--	--	--	--	--	--	
2/8/2007	P		5.67	0.00	7.31	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.94	7.04	
8/8/2007	--		6.00	0.00	6.98	--	--	--	--	--	--	--	--	
2/22/2008	P		5.15	0.00	7.83	52	<0.50	<0.50	<0.50	<0.50	<0.50	5.81	7.12	
8/13/2008	--		6.20	0.00	6.78	--	--	--	--	--	--	--	--	
2/11/2009	P		6.02	0.00	6.96	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	6.73	
8/27/2009	--		6.12	0.00	6.86	--	--	--	--	--	--	--	--	
2/18/2010	P		5.45	0.00	7.53	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.31	6.56	
8/12/2010	--		5.92	0.00	7.06	--	--	--	--	--	--	--	--	
2/17/2011	NP		5.56	0.00	7.42	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.83	7.6	
7/5/2011	--		5.54	0.00	7.44	--	--	--	--	--	--	--	--	
<b>2/28/2012</b>	<b>P</b>		<b>6.25</b>	<b>0.00</b>	<b>6.73</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>2.20</b>	<b>6.24</b>	
<b>MW-3</b>														
7/21/1992	--	13.38	7.07	0.00	6.31	<50	0.95	<0.5	<0.5	<0.5	--	--	--	e
10/20/1992	--		8.06	0.00	5.32	--	--	--	--	--	--	--	--	
3/5/1993	--		5.16	0.00	8.22	--	--	--	--	--	--	--	--	
4/1/1993	--		5.25	0.00	8.13	--	--	--	--	--	--	--	--	
7/9/1993	--		5.80	0.00	7.58	<50	0.6	<0.5	<0.5	<0.5	--	--	--	k
10/8/1993	--		7.17	0.00	6.21	<50	0.6	<0.5	<0.5	<0.5	--	--	--	k
1/6/1994	--		6.94	0.00	6.44	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
4/26/1994	--		6.18	0.00	7.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.1	--	k
7/25/1994	--		6.67	0.00	6.71	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.2	--	k
10/13/1994	--		7.43	0.00	5.95	<50	<0.5	<0.5	<0.5	<0.5	--	2.1	--	k

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Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-3 Cont.</b>														
1/17/1995	--	13.38	5.07	0.00	8.31	--	--	--	--	--	--	--	--	
3/31/1995	--		4.03	0.00	9.35	<50	<0.50	<0.50	<0.50	<1.0	--	6.6	--	
5/1/1995	--		4.94	0.00	8.44	--	--	--	--	--	--	--	--	
7/12/1995	--		5.80	0.00	7.58	--	--	--	--	--	--	--	--	
10/12/1995	--		6.64	0.00	6.74	<50	<0.50	<0.50	<0.50	<1.0	<5.0	6.4	--	
2/27/1996	--		4.75	0.00	8.63	<50	<0.5	<1	<1	<1	<10	8.5	--	
5/8/1996	--		5.86	0.00	7.52	--	--	--	--	--	--	--	--	
8/9/1996	--		5.70	0.00	7.68	<50	<0.5	<1.0	<1.0	<1.0	<10	7.9	--	
11/7/1996	--		6.21	0.00	7.17	--	--	--	--	--	--	--	--	
2/10/1997	--		5.14	0.00	8.24	--	--	--	--	--	--	--	--	
8/4/1997	--		6.01	0.00	7.37	<50	<0.5	<1.0	<1.0	<1.0	<10	6.6	--	
1/27/1998	--		4.30	0.00	9.08	--	--	--	--	--	--	--	--	
9/2/1998	--		5.80	0.00	7.58	<50	<0.5	2.2	<1.0	<1.0	<10	6.6	--	
2/24/1999	--		4.34	0.00	9.04	<50	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	
8/30/1999	--		6.59	0.00	6.79	--	--	--	--	--	--	--	--	
2/21/2000	--		4.56	0.00	8.82	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	
2/12/2001	--		4.98	0.00	8.40	--	--	--	--	--	--	--	--	j
2/4/2002	--		6.11	0.00	7.27	--	--	--	--	--	--	--	--	j
8/29/2002	--		6.22	0.00	7.16	--	--	--	--	--	--	--	--	j
2/5/2003	--		--	--	--	--	--	--	--	--	--	--	--	f
8/14/2003	--		--	--	--	--	--	--	--	--	--	--	--	o
02/12/2004	P		4.94	0.00	8.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.0	p
08/12/2004	--		6.22	0.00	7.16	--	--	--	--	--	--	--	--	
02/10/2005	P		5.45	0.00	7.93	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	5.1	
08/11/2005	--		5.77	0.00	7.61	--	--	--	--	--	--	--	--	r
02/09/2006	P		5.17	0.00	8.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.7	
8/10/2006	--		5.86	0.00	7.52	--	--	--	--	--	--	--	--	
2/8/2007	P		6.00	0.00	7.38	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.34	7.04	
8/8/2007	--		6.68	0.00	6.70	--	--	--	--	--	--	--	--	
2/22/2008	P		5.38	0.00	8.00	54	<0.50	<0.50	<0.50	<0.50	<0.50	3.81	6.87	



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Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-3 Cont.</b>														
8/13/2008	--	13.38	6.37	0.00	7.01	--	--	--	--	--	--	--	--	
2/11/2009	P		6.70	0.00	6.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.79	7.18	
8/27/2009	--		6.78	0.00	6.60	--	--	--	--	--	--	--	--	
2/18/2010	P		5.80	0.00	7.58	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.39	6.12	
8/12/2010	--		6.60	0.00	6.78	--	--	--	--	--	--	--	--	
2/17/2011	NP		5.66	0.00	7.72	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.92	6.5	
7/5/2011	--		6.20	0.00	7.18	--	--	--	--	--	--	--	--	
<b>2/28/2012</b>	<b>P</b>		<b>6.78</b>	<b>0.00</b>	<b>6.60</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>2.56</b>	<b>6.20</b>	
<b>MW-4</b>														
3/5/1993	--	11.80	4.81	0.00	6.99	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
4/1/1993	--		4.80	0.00	7.00	--	--	--	--	--	--	--	--	
7/9/1993	--		5.54	0.00	6.26	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
10/8/1993	--		6.28	0.00	5.52	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
1/6/1994	--		5.82	0.00	5.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	k
4/26/1994	--		5.50	0.00	6.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	7.4	--	k
7/25/1994	--		5.83	0.00	5.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	7.2	--	k
10/13/1994	--		6.26	0.00	5.54	<50	<0.5	<0.5	<0.5	<0.5	--	6.7	--	k
1/17/1995	--		4.19	0.00	7.61	--	--	--	--	--	--	--	--	
3/31/1995	--		3.96	0.00	7.84	<50	<0.50	<0.50	<0.50	<1.0	--	7.1	--	
5/1/1995	--		4.49	0.00	7.31	--	--	--	--	--	--	--	--	
7/12/1995	--		5.16	0.00	6.64	--	--	--	--	--	--	--	--	
10/12/1995	--		5.80	0.00	6.00	<50	<0.50	<0.50	<0.50	<1.0	<5.0	6.9	--	
2/27/1996	--		4.22	0.00	7.58	<50	<0.5	<1	<1	<1	<10	8.9	--	
5/8/1996	--		5.00	0.00	6.80	--	--	--	--	--	--	--	--	
8/9/1996	--		5.13	0.00	6.67	<50	<0.5	<1.0	<1.0	<1.0	<10	8.5	--	
11/7/1996	--		5.65	0.00	6.15	--	--	--	--	--	--	--	--	
2/10/1997	--		4.81	0.00	6.99	--	--	--	--	--	--	--	--	
8/4/1997	--		5.72	0.00	6.08	<50	<0.5	<1.0	<1.0	<1.0	<10	6.4	--	
1/27/1998	--		4.06	0.00	7.74	--	--	--	--	--	--	--	--	
9/2/1998	--		4.89	0.00	6.91	<50	<0.5	<1.0	<1.0	<1.0	<10	5.8	--	

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						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-4 Cont.</b>														
2/24/1999	--	11.80	3.89	0.00	7.91	<50	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	
8/30/1999	--		5.62	0.00	6.18	--	--	--	--	--	--	--	--	
2/21/2000	--		4.00	0.00	7.80	<50	<0.5	<0.5	<0.5	<0.5	0.66	--	--	
2/12/2001	--		4.93	0.00	6.87	<50	<0.5	<0.5	<0.5	<0.5	0.982	--	--	
2/4/2002	--		4.49	0.00	7.31	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--	--	
8/29/2002	--		5.38	0.00	6.42	--	--	--	--	--	--	--	--	
2/5/2003	--		4.50	0.00	7.30	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	--	n
8/14/2003	--		--	--	--	--	--	--	--	--	--	--	--	o
02/12/2004	P		4.41	0.00	7.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.3	p
08/12/2004	--		5.20	0.00	6.60	--	--	--	--	--	--	--	--	
02/10/2005	P		4.43	0.00	7.37	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	5.5	
08/11/2005	--		5.09	0.00	6.71	--	--	--	--	--	--	--	--	
02/09/2006	P		4.32	0.00	7.48	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.8	
7/26/2006	--		--	--	--	--	--	--	--	--	--	--	--	
8/10/2006	--		5.07	0.00	6.73	--	--	--	--	--	--	--	--	
2/8/2007	P		5.10	0.00	6.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.63	7.07	
8/8/2007	--		5.55	0.00	6.25	--	--	--	--	--	--	--	--	
2/22/2008	P		4.35	0.00	7.45	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.61	6.88	
8/13/2008	--		5.70	0.00	6.10	--	--	--	--	--	--	--	--	
2/11/2009	P		6.58	0.00	5.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.66	6.36	
8/27/2009	--		5.64	0.00	6.16	--	--	--	--	--	--	--	--	
2/18/2010	P		4.69	0.00	7.11	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.92	6.37	
8/12/2010	--		5.39	0.00	6.41	--	--	--	--	--	--	--	--	
2/17/2011	P		4.75	0.00	7.05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.84	6.7	
7/5/2011	--		4.91	0.00	6.89	--	--	--	--	--	--	--	--	
<b>2/28/2012</b>	<b>P</b>		<b>5.81</b>	<b>0.00</b>	<b>5.99</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>1.86</b>	<b>5.76</b>	
<b>MW-5</b>														
4/1/1993	--	11.62	4.77	0.00	6.85	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
7/9/1993	--		5.40	0.00	6.22	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k
10/8/1993	--		5.87	0.00	5.75	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	k

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						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-5 Cont.</b>														
1/6/1994	--	11.62	5.75	0.00	5.87	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	k
4/26/1994	--		5.49	0.00	6.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0	7.1	--	k
7/25/1994	--		5.69	0.00	5.93	<50	<0.5	<0.5	<0.5	<0.5	<5.0	6.6	--	k
10/13/1994	--		6.03	0.00	5.59	<50	<0.5	<0.5	<0.5	<0.5	--	3.0	--	k
1/17/1995	--		4.74	0.00	6.88	--	--	--	--	--	--	--	--	
3/31/1995	--		4.58	0.00	7.04	<50	<0.50	<0.50	<0.50	<1.0	--	7.1	--	
5/1/1995	--		4.79	0.00	6.83	--	--	--	--	--	--	--	--	
7/12/1995	--		5.32	0.00	6.30	--	--	--	--	--	--	--	--	
10/12/1995	--		5.70	0.00	5.92	<50	<0.50	<0.50	<0.50	<1.0	<5.0	6.7	--	
2/27/1996	--		--	--	--	--	--	--	--	--	--	--	--	f
5/8/1996	--		4.91	0.00	6.71	--	--	--	--	--	--	--	--	
8/9/1996	--		5.01	0.00	6.61	<50	<0.5	<1.0	<1.0	<1.0	<10	7.7	--	
11/7/1996	--		5.54	0.00	6.08	--	--	--	--	--	--	--	--	
2/10/1997	--		4.66	0.00	6.96	--	--	--	--	--	--	--	--	
8/4/1997	--		5.51	0.00	6.11	<50	<0.5	<1.0	<1.0	<1.0	<10	6.9	--	
1/27/1998	--		4.01	0.00	7.61	--	--	--	--	--	--	--	--	
9/2/1998	--		5.17	0.00	6.45	<50	<0.5	<1.0	<1.0	<1.0	<10	6.4	--	
2/24/1999	--		4.52	0.00	7.10	<50	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	
8/30/1999	--		6.02	0.00	5.60	--	--	--	--	--	--	--	--	
2/21/2000	--		4.62	0.00	7.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
2/12/2001	--		4.80	0.00	6.82	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
2/4/2002	--		4.63	0.00	6.99	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--	--	
8/29/2002	--		5.15	0.00	6.47	--	--	--	--	--	--	--	--	
2/5/2003	--		4.36	0.00	7.26	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	--	
8/14/2003	--		--	--	--	--	--	--	--	--	--	--	--	o
02/12/2004	--		--	--	--	--	--	--	--	--	--	--	--	f
08/12/2004	--		4.91	0.00	6.71	--	--	--	--	--	--	--	--	
02/10/2005	P		4.54	0.00	7.08	<50	<0.50	<0.50	<0.50	<0.50	0.90	--	6.1	
08/11/2005	--		4.92	0.00	6.70	--	--	--	--	--	--	--	--	
02/09/2006	--		--	--	--	--	--	--	--	--	--	--	--	s

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-5 Cont.</b>														
8/10/2006	--	11.62	5.07	0.00	6.55	--	--	--	--	--	--	--	--	
2/8/2007	P		5.10	0.00	6.52	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.01	7.20	
8/8/2007	--		5.42	0.00	6.20	--	--	--	--	--	--	--	--	
2/22/2008	P		4.20	0.00	7.42	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.52	7.25	
8/13/2008	--		5.27	0.00	6.35	--	--	--	--	--	--	--	--	
2/11/2009	P		4.81	0.00	6.81	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.87	6.71	
8/27/2009	--		4.99	0.00	6.63	--	--	--	--	--	--	--	--	
2/18/2010	P		5.60	0.00	6.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.35	6.87	
8/12/2010	--		--	--	--	--	--	--	--	--	--	--	--	f
2/17/2011	--		--	--	--	--	--	--	--	--	--	--	--	f, paved over
<b>QC-2</b>														
7/9/1993	--	NS	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	g,k
10/8/1993	--		--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	g,k
1/6/1994	--		--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	g,k
4/26/1994	--		--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	g,k
7/25/1994	--		--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	g,k
10/13/1994	--		--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	g,k
1/17/1995	--		--	--	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	g
3/31/1995	--		--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	g
7/12/1995	--		--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	g
10/12/1995	--		--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	--	g
2/27/1996	--		--	--	--	<50	<0.5	<1	<1	<1	<10	--	--	g
5/9/1996	--		--	--	--	<50	<0.5	<1	<1	<1	<10	--	--	g
<b>RW-1</b>														
1/6/1994	--	11.84	5.59	0.00	6.25	24,000	3,700	210	830	2,000	4,562	--	--	c,d,k
1/6/1994	--		5.59	0.00	6.25	23,000	3,800	210	840	2,100	4,663	--	--	c,k
4/26/1994	--		5.21	0.00	6.63	22,000	3,300	110	700	1,700	6,909	--	--	c,d,k
4/26/1994	--		5.21	0.00	6.63	24,000	3,500	120	800	1,700	8,145	6.4	--	c,k
7/25/1994	--		5.52	0.00	6.32	28,000	4,400	240	960	1,400	20,608	--	--	c,d,k

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>RW-1 Cont.</b>														
7/25/1994	--	11.84	5.52	0.00	6.32	31,000	4,800	290	1,100	1,700	<5.0	5.5	--	c,k
10/13/1994	--		6.05	0.00	5.79	20,000	4,200	46	990	440	--	6.8	--	k
1/17/1995	--		4.02	0.00	7.82	9,600	1,500	65	300	2,700	--	7.7	--	
3/31/1995	--		3.81	0.00	8.03	16,000	1,500	780	370	2,000	--	7.8	--	
5/1/1995	--		4.21	0.00	7.63	--	--	--	--	--	--	--	--	
7/12/1995	--		4.93	0.00	6.91	22,000	3,700	150	950	2,800	--	7.2	--	
10/12/1995	--		5.46	0.00	6.38	30,000	1,600	1,500	1,700	8,500	4,300	7.0	--	
2/27/1996	--		4.00	0.00	7.84	1,600	30	23	38	420	50	--	--	d
2/27/1996	--		4.00	0.00	7.84	1,800	30	24	41	440	52	7.7	--	
5/8/1996	--		4.65	0.00	7.19	--	--	--	--	--	--	--	--	
5/9/1996	--		--	--	--	3,200	19	19	97	800	<50	7.1	--	
5/9/1996	--		--	--	--	2,900	15	15	78	700	<50	--	--	d
8/9/1996	--		4.96	0.00	6.88	--	--	--	--	--	--	--	--	
8/12/1996	--		--	--	--	6,900	210	270	390	1,920	<100	7.9	--	
8/12/1996	--		--	--	--	8,200	270	330	450	2,330	<100	--	--	d
11/7/1996	--		5.50	0.00	6.34	6,800	360	45	<10	<10	500	--	--	d
11/7/1996	--		5.50	0.00	6.34	6,100	320	45	<10	<10	430	6.9	--	
2/10/1997	--		3.85	0.00	7.99	170,000	<120	<250	<250	<250	150,000	6.7	--	
8/4/1997	--		4.72	0.00	7.12	<25000	580	450	630	3,700	230,000	6.9	--	
1/27/1998	--		3.80	0.00	8.04	51,000	380	300	480	2,980	36,000	--	--	d
1/27/1998	--		3.80	0.00	8.04	52,000	380	330	490	2,970	38,000	6.1	--	
9/2/1998	--		4.91	0.00	6.93	260,000	2,500	56	1,400	3,070	250,000	6.6	--	
9/2/1998	--		4.91	0.00	6.93	280,000	2,400	<50	1,400	3,170	270,000	--	--	d
2/24/1999	--		4.16	0.00	7.68	120	<1.0	<1.0	1.5	13	130/140	--	--	h
8/30/1999	--		5.52	0.00	6.32	3,100	320	<25	120	28	60,000	--	--	
2/21/2000	--		3.68	0.00	8.16	340 i	8.6	1.8	11	66	2,500	--	--	i
8/8/2000	--		4.85	0.00	6.99	1,600	3.2	<0.5	0.82	1.2	19,000	--	--	
2/12/2001	--		4.26	0.00	7.58	1,500	1.33	<0.5	<0.5	5.69	2,420	--	--	
8/13/2001	--		5.34	0.00	6.50	290	<0.5	<0.5	<0.5	<1.5	314	--	--	
2/4/2002	--		4.08	0.00	7.76	570	9.15	0.874	19.2	83.8	97.4	--	--	



**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses  
Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>RW-1 Cont.</b>														
8/29/2002	--	11.84	5.12	0.00	6.72	<50	0.59	<0.50	<0.50	<0.50	19	--	--	
2/5/2003	--		5.21	0.00	6.63	<50	<0.50	<0.50	0.68	1.7	18	--	--	n
8/14/2003	--		5.07	0.00	6.77	<500	<5.0	<5.0	<5.0	5.4	490	--	--	p
02/12/2004	P		4.19	0.00	7.65	120	1.6	<1.0	3.0	4.1	51	--	5.9	
08/12/2004	P		5.11	0.00	6.73	170	6.9	<0.50	4.5	10	57	--	6.0	
02/10/2005	P		4.15	0.00	7.69	64	1.6	<0.50	0.94	<0.50	39	--	5.9	
08/11/2005	P		4.82	0.00	7.02	480	6.5	<0.50	7.0	14	40	--	6.5	
02/09/2006	P		3.95	0.00	7.89	<50	1.3	<0.50	0.83	0.80	7.8	--	6.9	
8/10/2006	--		4.90	0.00	6.94	780	43	<1.0	150	200	9.9	--	6.5	
2/8/2007	P		5.03	0.00	6.81	140	4.0	<1.0	<1.0	1.8	14	4.17	6.99	
8/8/2007	P		5.40	0.00	6.44	150	4.4	<0.50	<0.50	1.9	3.0	3.92	6.91	
2/22/2008	P		4.13	0.00	7.71	120	0.87	<0.50	<0.50	<0.50	13	3.68	6.78	
8/13/2008	P		5.50	0.00	6.34	1,900	60	2.2	4.1	670	9.0	0.45	8.72	
2/11/2009	P		5.35	0.00	6.49	220	14	<0.50	<0.50	<0.50	6.2	0.54	6.92	
8/27/2009	P		5.40	0.00	6.44	630	11	0.87	<0.50	180	9.9	0.58	7.23	
2/18/2010	NP		4.57	0.00	7.27	<50	<0.50	<0.50	<0.50	<0.50	6.1	1.08	6.73	
8/12/2010	NP		5.38	0.00	6.46	100	<0.50	<0.50	<0.50	<0.50	23	0.65	7.5	
2/17/2011	NP		4.88	0.00	6.96	<50	<0.50	<0.50	<0.50	<0.50	3.2	0.68	6.6	
7/5/2011	--		4.92	0.01	6.93	--	--	--	--	--	--	--	--	
<b>2/28/2012</b>	<b>--</b>		<b>5.82</b>	<b>0.06</b>	<b>6.07</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	

Symbols & Abbreviations:

DO = Dissolved oxygen  
ft bgs = Feet below ground surface  
ft MSL = Feet above mean sea level  
GRO = Gasoline range organics, range C4-C12  
mg/L = Milligrams per liter  
MTBE = Methyl tert-butyl ether  
NP = Well not purged prior to sampling  
P = Well purged prior to sampling  
TPH-g = Total petroleum hydrocarbons as gasoline  
µg/L = Micrograms per liter  
--/-- = Not applicable/available/analyzed/measured  
< = Not detected at or above specified laboratory reporting limit  
PACE = Pace Analytical Services, Inc.  
ATI = Analytical Technologies, Inc.  
SPL = Southern Petroleum Laboratories  
SEQ/SEQM = Sequoia Analytical/Sequoia Morgan Hill (Laboratories)  
CEL = CalScience Environmental Laboratories, Inc.  
TOC = Top of casing measured in ft MSL  
DTW = Depth to water measured in ft bgs  
GWE = Groundwater elevation measured in ft MSL

Footnotes:

a = TOC elevations surveyed in reference to USGS benchmark 14.108 ft MSL at northwest corner of Webster Street and Pacific Avenue  
b = Groundwater elevations in ft MSL  
c = A copy of the documentation for this data is included in Appendix C of Alisto report 10-155-07-001  
d = Blind duplicate  
e = Sample also analyzed for cadmium, nickel, chromium, lead, and zinc. None were detected above the reported detection limit  
f = Well inaccessible  
g = Travel blank  
h = MTBE by EPA Methods 8020/8260  
i = Gasoline does not include MTBE  
j = Unable to sample  
k = A copy of the documentation for this data can be found in Baline Tech Services report 010813-N-2. No chromatograms could be located for MTBE data from wells MW-2, MW-3, MW-4, MW-5, and QC-2, sampled on July 9, 1993; all wells sampled on October 8, 1993; wells MW-1, MW-2, and MW-3, sampled on January 6, 1994; and all wells sampled on October 13, 1994  
l = Chromatogram Pattern: Gasoline C6-C10  
m = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument  
n = The closing calibration was outside acceptance limits by 1% high. This should be considered inevaluating the result. The avg. % difference for all analytes met the 15% requirement and the QC suggests that calibration linearity is not a factor  
o = The original scope of work only called for annual gauging of well. This issue has been addressed, and in the future, gauging of this well will be semi-annual 1st and 3rd quarter.  
p = Groundwater samples analyzed by EPA Method 8260B for TPH-g, BTEX, and MTBE  
q = Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential inclusion of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported  
r = Possible obstruction in well  
s = Car parked over well  
t = Sample > 4x spike concentration

Notes:

During the second quarter of 2002, URS Corporation assumed groundwater monitoring activities for BP

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the

accuracy of this information

**Table 2. Summary of Fuel Additives Analytical Data  
Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-1</b>									
7/9/1993	--	--	12,952	--	--	--	--	--	
7/9/1993	--	--	11,919	--	--	--	--	--	
4/26/1994	--	--	16,663	--	--	--	--	--	
7/25/1994	--	--	26,428	--	--	--	--	--	
10/12/1995	--	--	15,000	--	--	--	--	--	
10/12/1995	--	--	14,000	--	--	--	--	--	
2/27/1996	--	--	5,500	--	--	--	--	--	
5/9/1996	--	--	2,700	--	--	--	--	--	
8/12/1996	--	--	1,800	--	--	--	--	--	
11/7/1996	--	--	2,100	--	--	--	--	--	
2/10/1997	--	--	160,000	--	--	--	--	--	
2/10/1997	--	--	160,000	--	--	--	--	--	
8/4/1997	--	--	260,000	--	--	--	--	--	
8/4/1997	--	--	250,000	--	--	--	--	--	
1/27/1998	--	--	490,000	--	--	--	--	--	
9/2/1998	--	--	230,000	--	--	--	--	--	
2/24/1999	--	--	90,000/200,000	--	--	--	--	--	
8/30/1999	--	--	48,000	--	--	--	--	--	
2/21/2000	--	--	31,000	--	--	--	--	--	
8/8/2000	--	--	60,000	--	--	--	--	--	
2/12/2001	--	--	18,000	--	--	--	--	--	
8/13/2001	--	--	5,590	--	--	--	--	--	
2/4/2002	--	--	2,470	--	--	--	--	--	
8/29/2002	--	--	3,100	--	--	--	--	--	
2/5/2003	--	--	590 m,n	--	--	--	--	--	
8/14/2003	<10,000	<2,000	4,500	<50	<50	89	<50	<50	a
02/12/2004	<2,000	960	1,200	<10	<10	33	<10	<10	
08/12/2004	<1,000	730	260	<5.0	<5.0	9.3	<5.0	<5.0	
02/10/2005	<1,000	2,300	730	<5.0	<5.0	26	<5.0	<5.0	b
08/11/2005	<1,000	460	190	<5.0	<5.0	10	<5.0	<5.0	
02/09/2006	<3,000	400	380	<5.0	<5.0	18	<5.0	<5.0	b, c
8/10/2006	<3,000	<200	47	<5.0	<5.0	<5.0	<5.0	<5.0	

**Table 2. Summary of Fuel Additives Analytical Data**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-1 Cont.</b>									
2/8/2007	<3,000	210	130	<5.0	<5.0	7.8	<5.0	<5.0	
8/8/2007	<300	190	140	<0.50	<0.50	8.7	<0.50	<0.50	d (MTBE)
2/22/2008	<300	51	59	<0.50	<0.50	3.1	<0.50	<0.50	
8/13/2008	<3,000	340	370	<5.0	<5.0	22	<5.0	<5.0	
2/11/2009	<1,200	480	68	<2.0	<2.0	3.4	<2.0	<2.0	
8/27/2009	<1,200	180	20	<2.0	<2.0	<2.0	<2.0	<2.0	
2/18/2010	<1,200	160	48	<2.0	<2.0	2.8	<2.0	<2.0	
8/12/2010	<1,200	140	76	<2.0	<2.0	6.4	<2.0	<2.0	
2/17/2011	<1,200	120	40	<2.0	<2.0	3.1	<2.0	<2.0	
7/5/2011	<1,500	59	22	<2.5	<2.5	<2.5	<2.5	<2.5	
<b>2/28/2012</b>	<b>&lt;6,000</b>	<b>750</b>	<b>610</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>64</b>	<b>&lt;10</b>	<b>&lt;10</b>	
<b>MW-2</b>									
4/26/1994	--	--	<5.0	--	--	--	--	--	
7/25/1994	--	--	11.59	--	--	--	--	--	
10/12/1995	--	--	<5.0	--	--	--	--	--	
2/27/1996	--	--	<10	--	--	--	--	--	
8/9/1996	--	--	<10	--	--	--	--	--	
8/4/1997	--	--	<10	--	--	--	--	--	
9/2/1998	--	--	110	--	--	--	--	--	
2/24/1999	--	--	8.2	--	--	--	--	--	
2/21/2000	--	--	0.72	--	--	--	--	--	
2/12/2001	--	--	<0.5	--	--	--	--	--	
2/4/2002	--	--	<0.5	--	--	--	--	--	
2/5/2003	--	--	<2.5	--	--	--	--	--	
02/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
02/09/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b, c
2/8/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/22/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/18/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	



**Table 2. Summary of Fuel Additives Analytical Data  
Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-2 Cont.</b>									
2/17/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>2/28/2012</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-3</b>									
4/26/1994	--	--	<5.0	--	--	--	--	--	
7/25/1994	--	--	<5.0	--	--	--	--	--	
10/12/1995	--	--	<5.0	--	--	--	--	--	
2/27/1996	--	--	<10	--	--	--	--	--	
8/9/1996	--	--	<10	--	--	--	--	--	
8/4/1997	--	--	<10	--	--	--	--	--	
9/2/1998	--	--	<10	--	--	--	--	--	
2/24/1999	--	--	<1.0	--	--	--	--	--	
2/21/2000	--	--	<0.5	--	--	--	--	--	
02/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
02/09/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/8/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/22/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/18/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>2/28/2012</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-4</b>									
1/6/1994	--	--	<5.0	--	--	--	--	--	
4/26/1994	--	--	<5.0	--	--	--	--	--	
7/25/1994	--	--	<5.0	--	--	--	--	--	
10/12/1995	--	--	<5.0	--	--	--	--	--	
2/27/1996	--	--	<10	--	--	--	--	--	
8/9/1996	--	--	<10	--	--	--	--	--	
8/4/1997	--	--	<10	--	--	--	--	--	
9/2/1998	--	--	<10	--	--	--	--	--	

**Table 2. Summary of Fuel Additives Analytical Data  
Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-4 Cont.</b>									
2/24/1999	--	--	<1.0	--	--	--	--	--	
2/21/2000	--	--	0.66	--	--	--	--	--	
2/12/2001	--	--	0.982	--	--	--	--	--	
2/4/2002	--	--	<0.5	--	--	--	--	--	
2/5/2003	--	--	<2.5	--	--	--	--	--	
02/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b, c
02/09/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/8/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/22/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/18/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>2/28/2012</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-5</b>									
1/6/1994	--	--	<5.0	--	--	--	--	--	
4/26/1994	--	--	<5.0	--	--	--	--	--	
7/25/1994	--	--	<5.0	--	--	--	--	--	
10/12/1995	--	--	<5.0	--	--	--	--	--	
8/9/1996	--	--	<10	--	--	--	--	--	
8/4/1997	--	--	<10	--	--	--	--	--	
9/2/1998	--	--	<10	--	--	--	--	--	
2/24/1999	--	--	<1.0	--	--	--	--	--	
2/21/2000	--	--	<0.5	--	--	--	--	--	
2/12/2001	--	--	<0.5	--	--	--	--	--	
2/4/2002	--	--	<0.5	--	--	--	--	--	
2/5/2003	--	--	<2.5	--	--	--	--	--	
02/10/2005	<100	<20	0.90	<0.50	<0.50	<0.50	<0.50	<0.50	b, c
2/8/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/22/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

**Table 2. Summary of Fuel Additives Analytical Data**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-5 Cont.</b>									
2/18/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>QC-2</b>									
1/6/1994	--	--	<5.0	--	--	--	--	--	
4/26/1994	--	--	<5.0	--	--	--	--	--	
7/25/1994	--	--	<5.0	--	--	--	--	--	
10/12/1995	--	--	<5.0	--	--	--	--	--	
2/27/1996	--	--	<10	--	--	--	--	--	
5/9/1996	--	--	<10	--	--	--	--	--	
<b>RW-1</b>									
1/6/1994	--	--	4,562	--	--	--	--	--	
1/6/1994	--	--	4,663	--	--	--	--	--	
4/26/1994	--	--	6,909	--	--	--	--	--	
4/26/1994	--	--	8,145	--	--	--	--	--	
7/25/1994	--	--	20,608	--	--	--	--	--	
7/25/1994	--	--	<5.0	--	--	--	--	--	
10/12/1995	--	--	4,300	--	--	--	--	--	
2/27/1996	--	--	50	--	--	--	--	--	
2/27/1996	--	--	52	--	--	--	--	--	
5/9/1996	--	--	<50	--	--	--	--	--	
5/9/1996	--	--	<50	--	--	--	--	--	
8/12/1996	--	--	<100	--	--	--	--	--	
8/12/1996	--	--	<100	--	--	--	--	--	
11/7/1996	--	--	500	--	--	--	--	--	
11/7/1996	--	--	430	--	--	--	--	--	
2/10/1997	--	--	150,000	--	--	--	--	--	
8/4/1997	--	--	230,000	--	--	--	--	--	
1/27/1998	--	--	36,000	--	--	--	--	--	
1/27/1998	--	--	38,000	--	--	--	--	--	
9/2/1998	--	--	250,000	--	--	--	--	--	
9/2/1998	--	--	270,000	--	--	--	--	--	

**Table 2. Summary of Fuel Additives Analytical Data  
Former BP Station #11104, 1716 Webster St., Alameda, CA**

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>RW-1 Cont.</b>									
2/24/1999	--	--	130/140	--	--	--	--	--	
8/30/1999	--	--	60,000	--	--	--	--	--	
2/21/2000	--	--	2,500	--	--	--	--	--	
8/8/2000	--	--	19,000	--	--	--	--	--	
2/12/2001	--	--	2,420	--	--	--	--	--	
8/13/2001	--	--	314	--	--	--	--	--	
2/4/2002	--	--	97.4	--	--	--	--	--	
8/29/2002	--	--	19	--	--	--	--	--	
2/5/2003	--	--	18	--	--	--	--	--	
8/14/2003	<1,000	<200	490	<5.0	<5.0	11	<5.0	<5.0	a
02/12/2004	<200	83	51	<1.0	<1.0	1.2	<1.0	<1.0	
08/12/2004	<100	500	57	<0.50	<0.50	1.0	<0.50	<0.50	
02/10/2005	<100	69	39	<0.50	<0.50	0.68	<0.50	<0.50	b, c
08/11/2005	<100	390	40	<0.50	<0.50	1.3	<0.50	<0.50	c
02/09/2006	<300	31	7.8	<0.50	<0.50	<0.50	<0.50	<0.50	
8/10/2006	<600	190	9.9	<1.0	<1.0	<1.0	<1.0	<1.0	
2/8/2007	<600	220	14	<1.0	<1.0	<1.0	<1.0	<1.0	
8/8/2007	<300	170	3.0	<0.50	<0.50	<0.50	<0.50	<0.50	
2/22/2008	<300	56	13	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2008	<300	38	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	
2/11/2009	<300	69	6.2	<0.50	<0.50	<0.50	<0.50	<0.50	
8/27/2009	<300	100	9.9	<0.50	<0.50	<0.50	<0.50	<0.50	
2/18/2010	<300	<10	6.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/12/2010	<300	250	23	<0.50	<0.50	0.81	<0.50	<0.50	
2/17/2011	<300	<10	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	

Symbols & Abbreviations:

TBA = tert-Butyl alcohol

MTBE = Methyl tert-butyl ether

DIPE = Diisopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = tert-Amyl Methyl ether

1,2-DCA = 1,2-Dibromoethane

EDB = 1,2-Dichloroethane

µg/L = Micrograms per liter

< = Not detected at or above specified laboratory reporting limit

-- = Not sampled/analyzed

Footnotes:

a = The continuing calibration was outside of client contractual acceptance limits by 3.4% low. However, it was within the method acceptance limit. The data should still be useful for its intended purpose

b = Possible high bias for 1,2-DCA due to CCV falling outside acceptance criteria

c = Callibration verification for ethanol was within method limits but outside contract limits

d = Sample > 4x spike concentration

Notes:

All fuel oxygenate compounds analyzed using EPA Method 8260B

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

**Table 3. Historical Groundwater Gradient - Direction and Magnitude**  
**Former BP Station #11104, 1716 Webster St., Alameda, CA**

<b>Date Measured</b>	<b>Approximate Gradient Direction</b>	<b>Approximate Gradient Magnitude (ft/ft)</b>
2/9/2006	North-Northwest	0.007
8/10/2006	North-Northwest	0.007
2/8/2007	North-Northwest	0.007
8/8/2007	North-Northwest	0.004
2/22/2008	North-Northwest	0.003
8/13/2008	North-Northwest	0.007
2/11/2009	Northeast	0.004
8/27/2009	Northeast	0.004
2/18/2010	North-Northwest	0.008
8/12/2010	North-Northeast	0.005
2/17/2011	North-Northwest	0.008
7/5/2011	North-Northeast	0.003
<b>2/28/2012</b>	<b>North-Northeast</b>	<b>0.005</b>

Notes:

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

**APPENDIX A**  
**FIELD METHODS**

## **QUALITY ASSURANCE/QUALITY CONTROL FIELD METHODS**

Field methods discussed herein were implemented to provide for accuracy and reliability of field activities, data collection, sample collection, and handling. Discussion of these methods is provided below.

### **1.0 Equipment Calibration**

Equipment calibration was performed per equipment manufacturer specifications before use.

### **2.0 Depth to Groundwater and Light Non-Aqueous Phase Liquid Measurement**

Depth to groundwater was measured in wells identified for gauging in the scope of work using a decontaminated water level indicator. The depth to water measurement was taken from a cut notch or permanent mark at the top of the well casing to which the well head elevation was originally surveyed.

Once depth to water was measured, an oil/water interface meter or a new disposable bailer was utilized to evaluate the presence and, if present, to measure the “apparent” thickness of light non-aqueous phase liquid (LNAPL) in the well. If LNAPL was present in the well, groundwater purging and sampling were not performed, unless sampling procedures in the scope of work specified collection of samples in the presence of LNAPL. Otherwise, time allowing, LNAPL was bailed from the well using either a new disposable bailer, or the disposal bailer previously used for initial LNAPL assessment. Bailing of LNAPL continued until the thickness of LNAPL (or volume) stabilized in each bailer pulled from the well, or LNAPL was no longer present. After LNAPL thickness either stabilized or was eliminated, periodic depth to water and depth to LNAPL measurements were collected as product came back into the well to evaluate product recovery rate and to aid in further assessment of LNAPL in the subsurface. LNAPL thickness measurements were recorded as “apparent.” If a bailer was used for LNAPL thickness measurement, the field sampler noted the bailer entry diameter and chamber diameter to enable correction of thickness measurements. Recovered LNAPL was stored on-site in a labeled steel drum(s) or other appropriate container(s) prior to disposal.

### **3.0 Well Purging and Groundwater Sample Collection**

Well purging and groundwater sampling were performed in wells specified in the scope of work after measuring depth to groundwater and evaluating the presence of LNAPL. Purging and sampling were performed using one of the methods detailed below. The method used was noted in the field records. Purge water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal or on-site treatment (in cases where treatment using an on-site system is authorized).

#### **3.1 Purging a Predetermined Well Volume**

Purging a predetermined well volume is performed per ASTM International (ASTM) D4448-01. This purging method has the objective of removing a predetermined volume of stagnant water from the well prior to sampling. The volume of stagnant water



is defined as either the volume of water contained within the well casing, or the volume within the well casing and sand/gravel in the annulus if natural flow through these is deemed insufficient to keep them flushed out.

This purging method involves removal of a minimum of three stagnant water volumes from the well using a decontaminated pump with new disposable plastic discharge or suction tubing, dedicated well tubing, or using a new disposable or decontaminated reusable bailer. If a new disposable bailer was used for assessment of LNAPL, that bailer may be used for purging. The withdrawal rate used is one that minimizes drawdown while satisfying time constraints.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity<sup>1</sup>. Parameters are considered stable when two (2) consecutive readings recorded three (3) minutes apart fall within ranges provided below in Table 1. In the event that the parameters have not stabilized and five (5) well casing volumes have been removed, purging activities will cease and be considered complete. Once the well is purged, a groundwater sample(s) is collected from the well using a new disposable bailer. If a new disposable bailer was used for purging, that bailer may be used to collect the sample(s). A sample is not collected if the well is inadvertently purged dry.

Table 1. Criteria for Defining Stabilization of Water-Quality Indicator Parameters

Parameter	Stabilization Criterion
Temperature	± 0.2°C (± 0.36°F)
pH	± 0.1 standard units
Conductivity	± 3%
Dissolved oxygen	± 10%
Oxidation reduction potential	± 10 mV
Turbidity <sup>1</sup>	± 10% or 1.0 NTU (whichever is greater)

### 3.2 Low-Flow Purging and Sampling

“Low-Flow”, “Minimal Drawdown”, or “Low-Stress” purging is performed per ASTM D6771-02. It is a method of groundwater removal from within a well’s screened interval that is intended to minimize drawdown and mixing of the water column in the well casing. This is accomplished by pumping the well using a decontaminated pump with new disposable plastic discharge or suction tubing or dedicated well tubing at a low flow rate while evaluating the groundwater elevation during pumping.

<sup>1</sup> As stated in ASTM D6771-02, turbidity is not a chemical parameter and not indicative of when formation-quality water is being purged; however, turbidity may be helpful in evaluating stress on the formation during purging. Turbidity measurements are taken at the same time that stabilization parameter measurements are made, or, at a minimum, once when purging is initiated and again just prior to sample collection, after stabilization parameters have stabilized. To avoid artifacts in sample analysis, turbidity should be as low as possible when samples are collected. If turbidity values are persistently high, the withdrawal rate is lowered until turbidity decreases. If high turbidity persists even after lowering the withdrawal rate, the purging is stopped for a period of time until turbidity settles, and the purging process is then restarted. If this fails to solve the problem, the purging/sampling process for the well is ceased, and well maintenance or redevelopment is considered.

The low flow pumping rate is well specific and is generally established at a volume that is less than or equal to the natural recovery rate of the well. A pump with adjustable flow rate control is positioned with the intake at or near the mid-point of the submerged well screen. The pumping rate used during low-flow purging is low enough to minimize mobilization of particulate matter and drawdown (stress) of the water column. Low-flow purging rates will vary based on the individual well characteristics; however, the purge rate should not exceed 1.0 Liter per minute (L/min) or 0.25 gallon per minute (gal/min). Low-flow purging should begin at a rate of approximately 0.1 L/min (0.03 gal/min)<sup>2</sup>, or the lowest rate possible, and be adjusted based on an evaluation of drawdown. Water level measurements should be recorded at approximate one (1) to two (2) minute intervals until the low-flow rate has been established, and drawdown is minimized. As a general rule, drawdown should not exceed 25% of the distance between the top of the water column and the pump in-take.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity<sup>1</sup>. The frequency between measurements will be at an interval of one (1) to three (3) minutes; however, if a flow cell is used, the frequency will be determined based on the time required to evacuate one cell volume. Stabilization is defined as three (3) consecutive readings recorded several minutes apart falling within ranges provided in Table 1. Samples will be collected by filling appropriate containers from the pump discharge tubing at a rate not to exceed the established pumping rate.

### 3.3 Minimal Purge, Discrete Depth, and Passive Sampling

Per ASTM D4448-01, sampling techniques that do not rely on purging, or require only minimal purging, may be used if a particular zone within a screened interval is to be sampled or if a well is not capable of yielding sufficient groundwater for purging. To properly use these sampling techniques, a water sample is collected within the screened interval with little or no mixing of the water column within the casing. These techniques include minimal purge sampling which uses a dedicated sampling pump capable of pumping rates of less than 0.1 L/min (0.03 gal/min)<sup>2</sup>, discrete depth sampling using a bailer that allows groundwater entry at a controlled depth (e.g. differential pressure bailer), or passive (diffusion) sampling. These techniques are based on certain studies referenced in ASTM D4448-01 that indicate that under certain conditions, natural groundwater flow is laminar and horizontal with little or no mixing within the well screen.

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<sup>2</sup> According to ASTM D4448-01, studies have indicated that at flow rates of 0.1 L/min, low-density polyethylene (LDPE) and plasticized polypropylene tubing materials are prone to sorption. Therefore, TFE-fluorocarbon or other appropriate tubing material is used, particularly when tubing lengths of 50 feet or longer are used.

#### 4.0 Decontamination

Reusable groundwater sampling equipment were cleaned using a solution of Alconox or other acceptable detergent, rinsed with tap water, and finally rinsed with distilled water prior to use in each well. Decontamination water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal.

#### 5.0 Sample Containers, Labeling, and Storage

Samples were collected in laboratory prepared containers with appropriate preservative (if preservative was required). Samples were properly labeled (site name, sample I.D., sampler initials, date, and time of collection) and stored chilled (refrigerator or ice chest with ice) until delivery to a certified laboratory, under chain of custody procedures.

#### 6.0 Chain of Custody Record and Procedure

The field sampler was personally responsible for care and custody of the samples collected until they were properly transferred to another party. To document custody and transfer of samples, a Chain of Custody Record was prepared. The Chain of Custody Record provided identification of the samples corresponding to sample labels and specified analyses to be performed by the laboratory. The original Chain of Custody Record accompanied the shipment, and a copy of the record was stored in the project file. When the samples were transferred, the individuals relinquishing and receiving them signed, dated, and noted the time of transfer on the record.

#### 7.0 Field Records

Daily Report and data forms were completed by staff personnel to provide daily record of significant events, observations, and measurements. Field records were signed, dated, and stored in the project file.

**APPENDIX B**  
**FIELD DATA SHEETS**

Project: BP-11104 Project No.: 06-88-644  
 Field Representative(s): J. Ramos/A. Martinez Day: Tuesday Date: \_\_\_\_\_  
 Time Onsite: From: 0845 To: 1245 ; From: \_\_\_\_\_ To: \_\_\_\_\_ ; From: \_\_\_\_\_ To: \_\_\_\_\_

- Signed HASP     Safety Glasses     Hard Hat     Steel Toe Boots     Safety Vest
- UST Emergency System Shut-off Switches Located     Proper Gloves
- Proper Level of Barricading     Other PPE (describe) \_\_\_\_\_

Weather: Foggy/cloudy

Equipment In Use: Peristaltic pump, pH/cond (ultrameter), DO meter

Visitors: None

TIME:	WORK DESCRIPTION:
<u>0845</u>	<u>Arrived onsite and conducted tailgate/safety meeting</u>
<u>0945</u>	<u>Completed tailgate and conducted a site walk to locate wells.</u>
	<u>Initial set up began @ MW-5, but the well appeared to be inaccessible. Paving of the road has covered most of the well lid. Due to inaccessibility, moved on to MW-4.</u>
<u>0955</u>	<u>Set up @ MW-4</u>
<u>1045</u>	<u>Set up @ 2V-1</u>
<u>1056</u>	<u>Set up @ MW-3</u>
<u>1135</u>	<u>Set up @ MW-2</u>
<u>1205</u>	<u>Set up @ MW-1</u>
<u>1245</u>	<u>Completed monitoring/sampling. Offsite</u>

Signature: James Pan



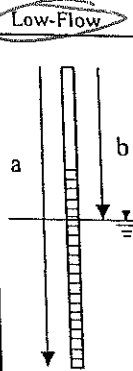






Project: BP-11104 Project No.: 06-88-644 Date: 2/28/12  
 Field Representative: J. Ramos/A. Martinez  
 Well ID: MW-3 Start Time: 1056 End Time: 1126 Total Time (minutes): 30

PURGE EQUIPMENT		<input type="checkbox"/> Disp. Bailer	<input type="checkbox"/> 120V Pump	<input type="checkbox"/> Flow Cell
<input type="checkbox"/> Disp. Tubing	<input type="checkbox"/> 12V Pump	<input checked="" type="checkbox"/> Peristaltic Pump	Other/ID#:	
WELL HEAD INTEGRITY (cap, lock, vault, etc.)		Comments:		
<input type="checkbox"/> Good	<input type="checkbox"/> Improvement Needed	(circle one)		
PURGING/SAMPLING METHOD		<input type="checkbox"/> Predetermined Well Volume	<input checked="" type="checkbox"/> Low-Flow	<input type="checkbox"/> Other: _____ (circle one)
<b>PREDETERMINED WELL VOLUME</b>				
Casing Diameter   Unit Volume (gal/ft) (circle one)				
1"   (0.04)	1.25"   (0.08)	2"   (0.17)	3"   (0.38)	Other: _____
4"   (0.66)	6"   (1.50)	8"   (2.60)	12"   (5.81)	____"   (____)
Total Well Depth (a): _____ (ft)				
Initial Depth to Water (b): _____ (ft)				
Water Column Height (WCH) = (a - b): _____ (ft)				
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)				
Three Casing Volumes = WCV x 3: _____ (gal)				
Five Casing Volumes = WCV x 5: _____ (gal)				
Pump Depth (if pump used): _____ (ft)				



<b>LOW-FLOW</b>	
Previous Low-Flow Purge Rate: _____ (gpm)	
Total Well Depth (a): <u>15.03</u> (ft)	
Initial Depth to Water (b): <u>6.78</u> (ft)	
Pump In-take Depth = b + (a-b)/2: <u>10.91</u> (ft)	
Maximum Allowable Drawdown = (a-b)/8: <u>1.03</u> (ft)	
Low-Flow Purge Rate: _____ (gpm)*	
Comments: <u>8.25</u>	<u>7.81</u>

\*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.

**GROUNDWATER STABILIZATION PARAMETER RECORD**

Time (24:00)	Cumulative Volume (gal)	Temperature (°C)	pH	Conductivity (µS)	Other	NOTES
<u>1111</u>	<u>0.0</u>	<u>15.3</u>	<u>6.05</u>	<u>289</u>	<u>DO 0.22</u>	<u>Odor, color, sheen, turbidity, or other</u>
<u>1114</u>	<u>0.5</u>	<u>15.4</u>	<u>6.08</u>	<u>289</u>	<u>2.80</u>	<u>256</u>
<u>1117</u>	<u>1.0</u>	<u>15.6</u>	<u>6.11</u>	<u>289</u>	<u>2.67</u>	<u>259</u>
<u>1120</u>	<u>1.5</u>	<u>15.7</u>	<u>6.20</u>	<u>290</u>	<u>2.64</u>	<u>263</u>
					<u>2.56</u>	<u>266</u>
Previous Stabilized Parameters						

PURGE COMPLETION RECORD  Low Flow & Parameters Stable  3 Casing Volumes & Parameters Stable  5 Casing Volumes  
 Other: \_\_\_\_\_

**SAMPLE COLLECTION RECORD**

Depth to Water at Sampling: \_\_\_\_\_ (ft)

Sample Collected Via:  Disp. Bailer  Dedicated Pump Tubing  
 Disp. Pump Tubing Other: \_\_\_\_\_

Sample ID: MW-3 Sample Collection Time: 1123 (24:00)

Containers (#): 6 VOA ( preserved or  unpreserved) \_\_\_\_\_ Liter Amber  
 Other: \_\_\_\_\_ Other: \_\_\_\_\_  
 Other: \_\_\_\_\_ Other: \_\_\_\_\_

**GEOCHEMICAL PARAMETERS**

Parameter	Time	Measurement
DO (mg/L)	<u>1120</u>	<u>2.56</u>
Ferrous Iron (mg/L)		
Redox Potential (mV)	<u>1120</u>	<u>266</u>
Alkalinity (mg/L)		
Other:		
Other:		

Signature: J. Ramos

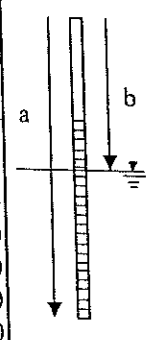
Project: BP-11104 Project No.: 06-88-644 Date: 2/25/12  
 Field Representative: J. Ramos / A. Martinez  
 Well ID: MW-4 Start Time: 0955 End Time: 1033 Total Time (minutes): 38

PURGE EQUIPMENT  Disp. Bailer  120V Pump  Flow Cell  
 Disp. Tubing  12V Pump  Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:  
 Good  Improvement Needed  (circle one)

PURGING/SAMPLING METHOD Predetermined Well Volume  Low-Flow  Other: (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter	Unit Volume (gal/ft)	(circle one)				
1"   (0.04)	1.25"   (0.08)	2"   (0.17)	3"   (0.38)	Other:		
4"   (0.66)	6"   (1.50)	8"   (2.60)	12"   (5.81)	"   ( )		
Total Well Depth (a): _____ (ft)					Previous Low-Flow Purge Rate: _____ (gpm)	
Initial Depth to Water (b): _____ (ft)					Total Well Depth (a): <u>14.62</u> (ft)	
Water Column Height (WCH) = (a - b): _____ (ft)					Initial Depth to Water (b): <u>5.81</u> (ft)	
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Pump In-take Depth = b + (a-b)/2: <u>10.22</u> (ft)	
Three Casing Volumes = WCV x 3: _____ (gal)					Maximum Allowable Drawdown = (a-b)/8: <u>1.10</u> (ft)	
Five Casing Volumes = WCV x 5: _____ (gal)					Low-Flow Purge Rate: _____ (gpm)*	
Pump Depth (if pump used): _____ (ft)					Comments: <u>3.81</u> <u>6.91</u>	



\*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Volume (gal)	Temperature (°C)	pH	Conductivity (µS)	Other DO	ORP	NOTES
1015	0.0	16.4	5.20	332	3.97	288	Odor, color, sheen, turbidity, or other
1018	0.5	16.6	5.50	329	2.62	293	
1021	1.0	16.5	5.69	326	2.34	298	
1024	1.5	16.4	5.72	330	2.12	300	
1027	2.0	16.5	5.76	331	1.86	291	

Previous Stabilized Parameters

PURGE COMPLETION RECORD  Low Flow & Parameters Stable  3 Casing Volumes & Parameters Stable  5 Casing Volumes  
 Other:

SAMPLE COLLECTION RECORD		GEOCHEMICAL PARAMETERS	
Depth to Water at Sampling: _____ (ft)		Parameter	Time Measurement
Sample Collected Via: <input type="checkbox"/> Disp. Bailer <input type="checkbox"/> Dedicated Pump Tubing		DO (mg/L)	<u>1027</u> <u>1.86</u>
<input checked="" type="checkbox"/> Disp. Pump Tubing Other:		Ferrous Iron (mg/L)	
Sample ID: <u>MW-4</u> Sample Collection Time: <u>1030</u> (24:00)		Redox Potential (mV)	<u>1027</u> <u>291</u>
Containers (#): <u>6</u> VOA ( <input checked="" type="checkbox"/> preserved or <input type="checkbox"/> unpreserved) <u>        </u> Liter Amber		Alkalinity (mg/L)	
Other: _____ Other: _____		Other:	
Other: _____ Other: _____		Other:	

Signature: J. Ramos



NON-HAZARDOUS WASTE DATA FORM

BEST #

GENERATOR	Generator's Name and Mailing Address BP WEST COAST PRODUCTS, LLC P.O. BOX 80249 RANCHO SANTA MARGARITA, CA 92688		Generator's Site Address (if different than mailing address) BP 11104 1716 Webster St. Alameda, CA																		
	Generator's Phone: 949-460-5200																				
	Container type removed from site: <input type="checkbox"/> Drums <input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Roll-off Truck <input type="checkbox"/> Dump Truck <input type="checkbox"/> Other _____		Container type transported to receiving facility: <input type="checkbox"/> Drums <input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Roll-off Truck <input type="checkbox"/> Dump Truck <input type="checkbox"/> Other _____																		
	Quantity <u>1.85 gallons</u>		Quantity _____ Volume _____																		
	WASTE DESCRIPTION <u>NON-HAZARDOUS WATER</u>		GENERATING PROCESS <u>WELL PURGING / DECON WATER</u>																		
<table border="0" style="width:100%;"> <tr> <td style="text-align: center;">COMPONENTS OF WASTE</td> <td style="text-align: center;">PPM</td> <td style="text-align: center;">%</td> <td style="text-align: center;">COMPONENTS OF WASTE</td> <td style="text-align: center;">PPM</td> <td style="text-align: center;">%</td> </tr> <tr> <td>1. <u>WATER</u></td> <td></td> <td><u>99-100%</u></td> <td>3. _____</td> <td></td> <td></td> </tr> <tr> <td>2. <u>TPH</u></td> <td></td> <td><u>&lt;1%</u></td> <td>4. _____</td> <td></td> <td></td> </tr> </table>		COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%	1. <u>WATER</u>		<u>99-100%</u>	3. _____			2. <u>TPH</u>		<u>&lt;1%</u>	4. _____				
COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%																
1. <u>WATER</u>		<u>99-100%</u>	3. _____																		
2. <u>TPH</u>		<u>&lt;1%</u>	4. _____																		
Waste Profile _____		PROPERTIES: pH <u>7-10</u> <input type="checkbox"/> SOLID <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> SLUDGE <input type="checkbox"/> SLURRY <input type="checkbox"/> OTHER _____																			
HANDLING INSTRUCTIONS: <u>WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.</u>																					
Generator Printed/Typed Name <u>Alex Martinez</u>		Signature <u>Alex Martinez</u>		Month Day Year <u>3   23   12</u>																	
The Generator certifies that the waste as described is 100% non-hazardous																					
TRANSPORTER	Transporter 1 Company Name BROADBENT & ASSOCIATES, INC>		Phone# 530-586-1400																		
	Transporter 1 Printed/Typed Name <u>Alex Martinez</u>		Signature <u>Alex Martinez</u>		Month Day Year <u>3   23   12</u>																
	Transporter Acknowledgment of Receipt of Materials																				
	Transporter 2 Company Name		Phone#																		
	Transporter 2 Printed/Typed Name		Signature		Month Day Year																
Transporter Acknowledgment of Receipt of Materials																					
RECEIVING FACILITY	Designated Facility Name and Site Address INSTRAT, INC. 1105 AIRPORT RD. RIO VISTA, CA 94571		Phone# 530-753-1829																		
	Printed/Typed Name		Signature		Month Day Year																
	Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.																				

**APPENDIX C**

**LABORATORY REPORT  
AND CHAIN-OF-CUSTODY DOCUMENTATION**



# CALSCIENCE

## WORK ORDER NUMBER: 12-03-0111

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

### Analytical Report For

**Client:** Broadbent & Associates, Inc

**Client Project Name:** BP 11104

**Attention:** Tom Sparrowe  
875 Cotting Lane, Suite G  
Vacaville, CA 95688-9299

Approved for release on 03/15/2012 by:  
Richard Villafania  
Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.



**Analytical Report**



Broadbent & Associates, Inc  
 875 Cotting Lane, Suite G  
 Vacaville, CA 95688-9299

Date Received: 03/02/12  
 Work Order No: 12-03-0111  
 Preparation: EPA 5030C  
 Method: EPA 8015B (M)

Project: BP 11104

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	12-03-0111-1-A	02/28/12 12:26	Aqueous	GC 1	03/06/12	03/07/12 00:44	120306B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	9600	250	5		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	110	38-134			

MW-2	12-03-0111-2-D	02/28/12 11:56	Aqueous	GC 1	03/06/12	03/07/12 02:22	120306B01
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Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	83	38-134			

MW-3	12-03-0111-3-D	02/28/12 11:23	Aqueous	GC 1	03/06/12	03/07/12 02:55	120306B01
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Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	83	38-134			

MW-4	12-03-0111-4-D	02/28/12 10:30	Aqueous	GC 1	03/06/12	03/07/12 03:29	120306B01
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Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	79	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

**Analytical Report**



Broadbent & Associates, Inc  
 875 Cotting Lane, Suite G  
 Vacaville, CA 95688-9299

Date Received: 03/02/12  
 Work Order No: 12-03-0111  
 Preparation: EPA 5030C  
 Method: EPA 8015B (M)

Project: BP 11104

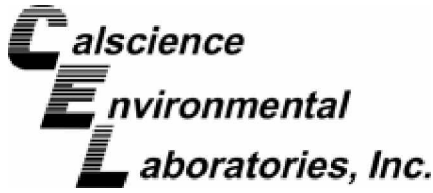
Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-695-1,283	N/A	Aqueous	GC 1	03/06/12	03/06/12 18:10	120306B01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	86	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





Analytical Report



Broadbent & Associates, Inc  
 875 Cotting Lane, Suite G  
 Vacaville, CA 95688-9299

Date Received: 03/02/12  
 Work Order No: 12-03-0111  
 Preparation: EPA 5030C  
 Method: EPA 8260B  
 Units: ug/L

Project: BP 11104

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	12-03-0111-1-C	02/28/12 12:26	Aqueous	GC/MS L	03/09/12	03/09/12 13:05	120309L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	310	10	20		Methyl-t-Butyl Ether (MTBE)	610	10	20	
1,2-Dibromoethane	ND	10	20		Tert-Butyl Alcohol (TBA)	750	200	20	
1,2-Dichloroethane	ND	10	20		Diisopropyl Ether (DIPE)	ND	10	20	
Ethylbenzene	560	10	20		Ethyl-t-Butyl Ether (ETBE)	ND	10	20	
Toluene	13	10	20		Tert-Amyl-Methyl Ether (TAME)	64	10	20	
Xylenes (total)	1700	25	50		Ethanol	ND	6000	20	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,4-Bromofluorobenzene	102	68-120			Dibromofluoromethane	96	80-127		
1,2-Dichloroethane-d4	101	80-128			Toluene-d8	101	80-120		

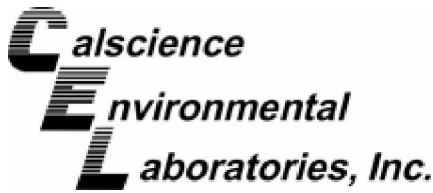
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	12-03-0111-2-C	02/28/12 11:56	Aqueous	GC/MS L	03/09/12	03/09/12 13:32	120309L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,4-Bromofluorobenzene	99	68-120			Dibromofluoromethane	95	80-127		
1,2-Dichloroethane-d4	99	80-128			Toluene-d8	100	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	12-03-0111-3-C	02/28/12 11:23	Aqueous	GC/MS L	03/09/12	03/09/12 14:00	120309L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,4-Bromofluorobenzene	100	68-120			Dibromofluoromethane	98	80-127		
1,2-Dichloroethane-d4	104	80-128			Toluene-d8	101	80-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Broadbent & Associates, Inc  
 875 Cotting Lane, Suite G  
 Vacaville, CA 95688-9299

Date Received: 03/02/12  
 Work Order No: 12-03-0111  
 Preparation: EPA 5030C  
 Method: EPA 8260B  
 Units: ug/L

Project: BP 11104

Page 2 of 2

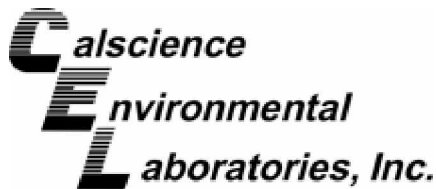
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	12-03-0111-4-C	02/28/12 10:30	Aqueous	GC/MS L	03/09/12	03/09/12 12:37	120309L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,4-Bromofluorobenzene	98	68-120			Dibromofluoromethane	92	80-127		
1,2-Dichloroethane-d4	94	80-128			Toluene-d8	102	80-120		

Method Blank	099-12-703-2,061	N/A	Aqueous	GC/MS L	03/09/12	03/09/12 11:49	120309L01
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,4-Bromofluorobenzene	100	68-120			Dibromofluoromethane	97	80-127		
1,2-Dichloroethane-d4	102	80-128			Toluene-d8	102	80-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Quality Control - Spike/Spike Duplicate



Broadbent & Associates, Inc  
 875 Cotting Lane, Suite G  
 Vacaville, CA 95688-9299

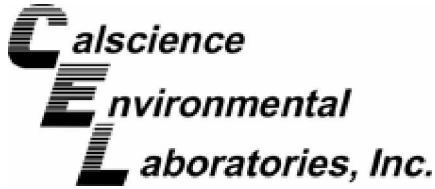
Date Received: 03/02/12  
 Work Order No: 12-03-0111  
 Preparation: EPA 5030C  
 Method: EPA 8015B (M)

Project BP 11104

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-03-0112-1	Aqueous	GC 1	03/06/12	03/06/12	120306S01

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	2000	94	91	38-134	4	0-25	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate



Broadbent & Associates, Inc  
875 Cotting Lane, Suite G  
Vacaville, CA 95688-9299

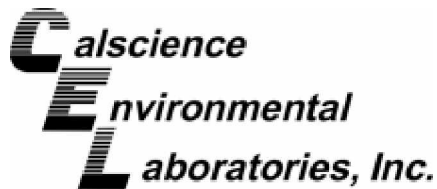
Date Received: 03/02/12  
Work Order No: 12-03-0111  
Preparation: EPA 5030C  
Method: EPA 8260B

Project BP 11104

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4	Aqueous	GC/MS L	03/09/12	03/09/12	120309S01

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	10.00	109	104	76-124	4	0-20	
Carbon Tetrachloride	10.00	109	106	74-134	3	0-20	
Chlorobenzene	10.00	117	112	80-120	5	0-20	
1,2-Dibromoethane	10.00	110	106	80-120	4	0-20	
1,2-Dichlorobenzene	10.00	118	109	80-120	8	0-20	
1,2-Dichloroethane	10.00	109	106	80-120	3	0-20	
Ethylbenzene	10.00	109	103	78-126	5	0-20	
Toluene	10.00	106	104	80-120	2	0-20	
Trichloroethene	10.00	107	103	77-120	4	0-20	
Methyl-t-Butyl Ether (MTBE)	10.00	110	107	67-121	3	0-49	
Tert-Butyl Alcohol (TBA)	50.00	141	150	36-162	6	0-30	
Diisopropyl Ether (DIPE)	10.00	113	108	60-138	4	0-45	
Ethyl-t-Butyl Ether (ETBE)	10.00	111	107	69-123	4	0-30	
Tert-Amyl-Methyl Ether (TAME)	10.00	111	107	65-120	3	0-20	
Ethanol	100.0	92	102	30-180	10	0-72	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



Broadbent & Associates, Inc  
 875 Cotting Lane, Suite G  
 Vacaville, CA 95688-9299

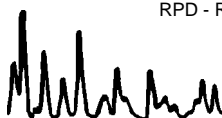
Date Received: N/A  
 Work Order No: 12-03-0111  
 Preparation: EPA 5030C  
 Method: EPA 8015B (M)

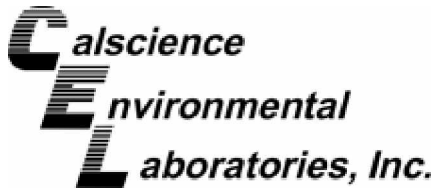
Project: BP 11104

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-1,283	Aqueous	GC 1	03/06/12	03/06/12	120306B01

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	2000	97	95	78-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate



Broadbent & Associates, Inc  
875 Cotting Lane, Suite G  
Vacaville, CA 95688-9299

Date Received: N/A  
Work Order No: 12-03-0111  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: BP 11104

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-703-2,061	Aqueous	GC/MS L	03/09/12	03/09/12	120309L01			
Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	10.00	101	100	80-120	73-127	1	0-20	
Carbon Tetrachloride	10.00	103	103	74-134	64-144	0	0-20	
Chlorobenzene	10.00	102	101	80-120	73-127	1	0-20	
1,2-Dibromoethane	10.00	102	105	79-121	72-128	3	0-20	
1,2-Dichlorobenzene	10.00	101	97	80-120	73-127	3	0-20	
1,2-Dichloroethane	10.00	98	100	80-120	73-127	1	0-20	
Ethylbenzene	10.00	102	101	80-120	73-127	2	0-20	
Toluene	10.00	101	99	80-120	73-127	1	0-20	
Trichloroethene	10.00	100	100	79-127	71-135	1	0-20	
Methyl-t-Butyl Ether (MTBE)	10.00	102	107	69-123	60-132	5	0-20	
Tert-Butyl Alcohol (TBA)	50.00	102	99	63-123	53-133	3	0-20	
Diisopropyl Ether (DIPE)	10.00	102	103	59-137	46-150	2	0-37	
Ethyl-t-Butyl Ether (ETBE)	10.00	102	105	69-123	60-132	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	10.00	104	107	70-120	62-128	2	0-20	
Ethanol	100.0	90	88	28-160	6-182	3	0-57	

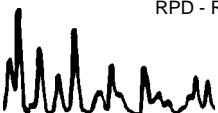
Total number of LCS compounds : 15

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Work Order Number: 12-03-0111

<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
ET	Sample was extracted past end of recommended maximum holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed.



Qualifier

Definition

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.  
MPN - Most Probable Number







# Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: BP-11104  
 BP/ARC Facility No: 11104

Req Due Date (mm/dd/yy):  
 Lab Work Order Number:

STD-TAT Rush TAT: Yes     No   x    
**12-03-0111**

Lab Name: Cal Science	BP/ARC Facility Address: 1716 Webster Street	Consultant/Contractor: Broadbent
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Alameda, CA 94501	Consultant/Contractor Project No: 06-88-644
Lab PM: Richard Villafania	Lead Regulatory Agency: ACEH	Address: 875 Cotting Lane, Suite G, Vacaville, CA 95688
Lab Phone: 714-895-5494 / 714-894-7501 (fax)	California Global ID No.: T0600101651	Consultant/Contractor PM: Tom Sparrowe
Lab Shipping Acct: 9255	Enfos Proposal No: 005G6-0001	Phone: 707-455-7290 / 707-455-7295 (fax)
Lab Bottle Order No:	Accounting Mode: Provision <u>  X  </u> OOC-BU <u>   </u> OOC-RM <u>   </u>	Email EDD To: <u>tsparrowe@broadbentinc.com</u>
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP/ARC <u>  x  </u> Contractor <u>   </u>

BP/ARC EBM: Shannon Couch				Matrix		No. Containers / Preservative						Requested Analyses						Report Type & QC Level			
EBM Phone: 925-275-3804																		Standard <u>  X  </u>			
EBM Email: <u>shannon.couch@bp.com</u>																		Full Data Package <u>   </u>			
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Methanol	GRO (8015)	BTEX (8260)	5-Oxys (8260)	1,2-DCA (8260)	EDB (8260)	Ethanol (8260)	Comments		
1	MW-1	2/28/12	1226	x			6				x		x	x	x	x	x	x			
2	MW-2	↓	1156	x			6				x		x	x	x	x	x	x			
3	MW-3		1123	x			6				x		x	x	x	x	x	x			
4	MW-4		1030	x			6				x		x	x	x	x	x	x			
	<del>MW-5</del>				<del>x</del>			<del>6</del>				<del>x</del>		<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>		No Sample
	<del>RW-1</del>			<del>x</del>			<del>6</del>				<del>x</del>		<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>		No Sample	
5	TB-11104-02282012			x			1				x										ON HOLD

Sampler's Name: Alex Martinez	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: Broadbent	Alex <del>Martinez</del> Broadbent		2/29/12	1100	<i>[Signature]</i>		3/2/12	1010
Shipment Method: GSO	Ship Date: 2/29/12							
Shipment Tracking No: 106840423								

Special Instructions: Please cc results to bpedf@broadbentinc.com

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No    Temp Blank: Yes / No    Cooler Temp on Receipt: \_\_\_\_\_ °F/C    Trip Blank: Yes / No    MS/MSD Sample Submitted: Yes / No

Page 2 of 14

0111

DATE		SHIPPER'S GSO ACCOUNT NO.	
COMPANY <b>Broadbent &amp; Associates, Inc.</b>			
ADDRESS <b>875 Cotting Ln.</b>			
ADDRESS		STE/ ROOM	<b>G</b>
CITY <b>Vacaville, CA</b>		ZIP CODE	<b>95688</b>
SENDER'S NAME <b>Alex Martinez</b>		PHONE NUMBER <b>707-455-7290</b>	
2 COMPANY <b>CAL SCIENCE</b>			
NAME		PHONE NUMBER <b>714) 895-5494</b>	
1 ADDRESS <b>7440 LINCOLN WAY</b>			
ADDRESS		STE/ ROOM	
CITY <b>GARDEN GROVE</b>		ZIP CODE	<b>92841</b>
3 YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE			
SPECIAL INSTRUCTIONS			



SHIPPING AIR BILL

4 PACKAGE INFORMATION

LETTER (MAX 8 OZ)

PACKAGE (WT) **~ 10 lbs**

DECLARED VALUE \$ \_\_\_\_\_

COD AMOUNT \$ \_\_\_\_\_ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE  PRIORITY OVERNIGHT BY 10:30 AM  EARLY PRIORITY BY 8:00 AM  SATURDAY DELIVERY

\*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT

6 RELEASE SIGNATURE \_\_\_\_\_

SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7 CREDIT CARD  M/C  VISA  AM EX

CREDIT CARD NUMBER \_\_\_\_\_ EXP. \_\_\_\_\_

8 PICK UP INFORMATION

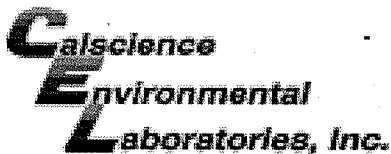
TIME \_\_\_\_\_ DRIVER # \_\_\_\_\_ ROUTE # \_\_\_\_\_

106840423

9 GSO TRACKING NUMBER

ON PLY 3 LIFT TAB AND REMOVE FOR YOUR RECORD

~~XXXX~~ 2727



WORK ORDER #: 12-03-

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Broadbent

DATE: 03/02/12

**TEMPERATURE:** Thermometer ID: SC3 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.2 °C - 0.3 °C (CF) = 2.9 °C  Blank  Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air  Filter Initial: gf

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A Initial: gf

Sample  \_\_\_\_\_  No (Not Intact)  Not Present Initial: gf

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours...	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve (\_\_\_\_)  EnCores®  TerraCores®  \_\_\_\_\_

Water:  VOA  VOAh  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBp  1AGB  1AGBna<sub>2</sub>  1AGBs

500AGB  500AGJ  500AGJs  250AGB  250CGB  250CGBs  1PB  1PBna  500PB

250PB  250PBn  125PB  125PBz<sub>nna</sub>  100PJ  100PJna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

Air:  Tedlar®  Summa® Other:  \_\_\_\_\_ Trip Blank Lot#: 120126A Labeled/Checked by: JF

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: JF

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure z<sub>nna</sub>: ZnAc<sub>2</sub>+NaOH f: Filtered Scanned by: JF

**APPENDIX D**

**GEOTRACKER UPLOAD AND CONFIRMATION RECEIPTS**

STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

## UPLOADING A EDF FILE

**SUCCESS**

**Processing is complete. No errors were found!  
Your file has been successfully submitted!**

<b><u>Submittal Type:</u></b>	<b>EDF - Monitoring Report - Semi-Annually</b>
<b><u>Submittal Title:</u></b>	<b>1Q12 GW Monitoring</b>
<b><u>Facility Global ID:</u></b>	<b>T0600101651</b>
<b><u>Facility Name:</u></b>	<b>BP #11104</b>
<b><u>File Name:</u></b>	<b>12030111.zip</b>
<b><u>Organization Name:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/26/2012 1:24:40 PM</b>
<b><u>Confirmation Number:</u></b>	<b>4257657647</b>

[VIEW QC REPORT](#)

[VIEW DETECTIONS REPORT](#)

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STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_WELL FILE

**SUCCESS**

**Processing is complete. No errors were found!  
Your file has been successfully submitted!**

<b><u>Submittal Type:</u></b>	<b>GEO_WELL</b>
<b><u>Submittal Title:</u></b>	<b>1Q12 GEO_WELL 11104</b>
<b><u>Facility Global ID:</u></b>	<b>T0600101651</b>
<b><u>Facility Name:</u></b>	<b>BP #11104</b>
<b><u>File Name:</u></b>	<b>GEO_WELL.zip</b>
<b><u>Organization Name:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/26/2012 1:29:29 PM</b>
<b><u>Confirmation Number:</u></b>	<b>2967533886</b>

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