Atlantic Richfield Company

Chuck Carmel
Remediation Management Project Manager

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3804
Fax: (925) 275-3815
E-Mail: chuck.carmel@bp.com

October 29, 2013

Re: Third Quarter 2013 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,

Chuck Carmel

Remediation Management Project Manager

Attachment

BROADBENT
875 Cotting Ln., Suite G, Vacaville, CA 95688
[T] 707-455-7290 [F] 707-455-7295
broadbentinc.com

October 29, 2013 Project No. 06-88-644

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

Attn.: Mr. Chuck Carmel

Re: Third Quarter 2013 Monitoring Report, Former BP Service Station No. 11104,
1716 Webster Street, Alameda, Alameda County, California
ACEH Case #RO0000281

Dear Mr. Carmel:

Provided herein is the *Third Quarter 2013 Monitoring Report* for Former BP Service Station No. 11104 located at 1716 Webster Street in Alameda, California (Site). Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (707) 455-7290.

Sincerely,

BROADBENT & ASSOCIATES, INC.

for
Alejandra Hernandez
Project Geologist

Kristene Tidwell, P.G., C.HG.
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

THIRD QUARTER 2013
MONITORING REPORT
FORMER ARCO STATION No. 11104, ALAMEDA, CALIFORNIA

Broadbent & Associates, Inc. (Broadbent) is pleased to present this *Third Quarter 2013 Monitoring Report* on behalf of Atlantic Richfield Company (a BP affiliated company) for former BP Station No. 11104 (presently a Union 76 Station) located at 1716 Webster Street in Alameda, Alameda County, California (the Site). 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:	Former BP Station No. 11104 / 1716 Webster Street, Alameda, CA; Drawing 1
Client Project Manager / Title:	Mr. Chuck Carmel / Remediation Management Project Manager
Broadbent Contact:	Ms. Kristene Tidwell, PG, CHG / 707-455-7290
Broadbent Project No.:	06-88-644
Primary Regulatory Agency / ID No.:	ACEH / Case #RO0000281
Current phase of project:	Monitoring
List of Acronyms / Abbreviations:	See end of report text for list of acronyms/abbreviations used in report.

WORK PERFORMED THIS QUARTER (Third Quarter 2013):

1. Broadbent submitted a *Second Quarter 2013 Status Report* on July 9, 2013.
2. Broadbent conducted groundwater monitoring/sampling on August 8, 2013 for Third Quarter 2013.
3. Broadbent submitted a *Conceptual Site Model and Case Closure Request* on July 31, 2013.

WORK SCHEDULED FOR NEXT QUARTER (Fourth Quarter 2013):

1. Submit *Third Quarter 2013 Monitoring Report* (contained herein).
2. Attend a meeting regarding the *Conceptual Site Model and Case Closure Request*.
3. No environmental work activities are scheduled to be conducted at the Site during the Fourth Quarter 2013.

QUARTERLY MONITORING PLAN SUMMARY:

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

QUARTERLY RESULTS SUMMARY:

LNAPL

LNAPL observed this quarter:	Yes	(yes\no)
LNAPL recovered this quarter:	None	(gal)
Cumulative LNAPL recovered:	None	(gal)

Groundwater Elevation and Gradient:

Depth to groundwater:	6.00 ft (RW-1) to 7.13 ft (MW-3)	(ft below TOC)
Gradient direction:	North	(compass direction)
Gradient magnitude:	0.006 ft/ft	(ft/ft)
Average change in elevation:	0.97	(ft since last measurement)

Laboratory Analytical Data

Summary:

- GRO was detected in two wells at concentrations of 1,500 µg/L in well MW-1 and 190 µg/L in well RW-1.
- Benzene was detected in well MW-1 at a concentration of 30 µg/L.
- Toluene was detected in well MW-1 at a concentration of 2.0 µg/L.
- Ethylbenzene was detected in well MW-1 at a concentration of 63 µg/L.
- Total Xylenes were detected in two well at concentrations of 150 µg/L in well MW-1 and 1.4 µg/L in well RW-1.
- MTBE was detected in two wells at concentrations of 63 µg/L in well MW-1 and 10 µg/L in well RW-1.
- TBA was detected in two wells at concentrations of 330 µg/L in well MW-1 and 65 µg/L in well RW-1.
- TAME was detected in well MW-1 at a concentration of 7.3 µg/L.
- The remaining petroleum hydrocarbon constituents were not detected above laboratory detection limits.

ACTIVITIES CONDUCTED & RESULTS:

On August 8, 2013 Broadbent conducted the Third Quarter 2013 groundwater monitoring and sampling activities at the Site in accordance with the quarterly monitoring plan summary detailed above. No irregularities were noted during water level gauging except for MW-5 which had been previously paved over and is not accessible. Groundwater levels were gauged in the five accessible wells at the Site. Light non-aqueous phase liquid (LNAPL) as sheen (less than 0.01 ft of LNAPL) was observed in well MW-1. Prior to sampling, LNAPL was not observed in well RW-1; however, after samples were collected, LNAPL was observed at 0.003 ft; LNAPL had been observed in well RW-1 dating back to the Third Quarter 2011 monitoring and sampling event. No other irregularities were noted during water level gauging at the Site. Depth to groundwater measurements at the Site ranged from 6.00 ft in well RW-1 to 7.13 ft in well MW-3. Resulting groundwater surface elevations at the Site ranged from 5.59 ft above datum in well MW-4 to 6.46 ft above datum in well MW-2. Water level elevations yielded a potentiometric groundwater gradient direction and magnitude to the north at 0.006 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. Drawing 2 is provided as a groundwater elevation contour and analytical summary map for August 8, 2013.

Groundwater samples were collected from wells MW-1 through MW-4, and RW-1, generally consistent with the current groundwater sampling schedule. Due to the presence of LNAPL in previous sampling events, water samples have not recently been collected from well RW-1. However, measurable LNAPL was not observed in well RW-1 during gauging activities, consequently, this well was sampled. No other irregularities were

encountered during sampling at the Site. Collected groundwater samples were submitted to TestAmerica Environmental Laboratories, Inc. (TestAmerica) of Irvine, California for analysis of GRO by EPA Method 8015B; BTEX, MTBE, ETBE, TAME, DIPE, TBA,EDB, 1,2-DCA, and Ethanol by EPA Method 8260B. No significant irregularities were reported during analysis of the samples.

Laboratory analytical report and chain of custody record are provided in Appendix C. 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.

DISCUSSION:

Groundwater levels and gradient data indicate that the gradient measured during Third Quarter 2013 monitoring is consistent with predominant measurements observed historic minimum and maximum elevations at the Site. During Third Quarter 2013, groundwater elevations decreased an average of 0.97 ft across the Site relative to measurements collected during First Quarter 2013.

Results of historical groundwater data indicate that the highest residual hydrocarbons are present in well MW-1 due to its location to the existing Underground Storage Tank (UST). Petroleum Concentrations in well MW-1 indicate an overall decreasing trend. Recent and historic analytical results are summarized in Tables 1 and 2.

Detected analytical concentrations were within historic minimum and maximum ranges recorded for each well. LNAPL was observed in well RW-1 after samples were collected. Based on results obtained by hydrocarbon fingerprint analysis it can be concluded that the measured product is not BP related since diesel storage and distribution was not part of BP's former operations. Current fueling operations include diesel. It is unclear if the product recorded is from current fueling operations, a neighboring service station, or a surface influence. A Closure Request was submitted on July 31, 2013. A meeting to discuss this request is scheduled during the Fourth Quarter 2013.

RECOMMENDATIONS:

No environmental work activities are scheduled to be conducted at the Site during the Fourth Quarter 2013. The next quarterly monitoring event is scheduled for the First Quarter 2014. Unless directed by ACEH, no change to the monitoring program at the Site is presently deemed warranted or recommended.

LIMITATIONS:

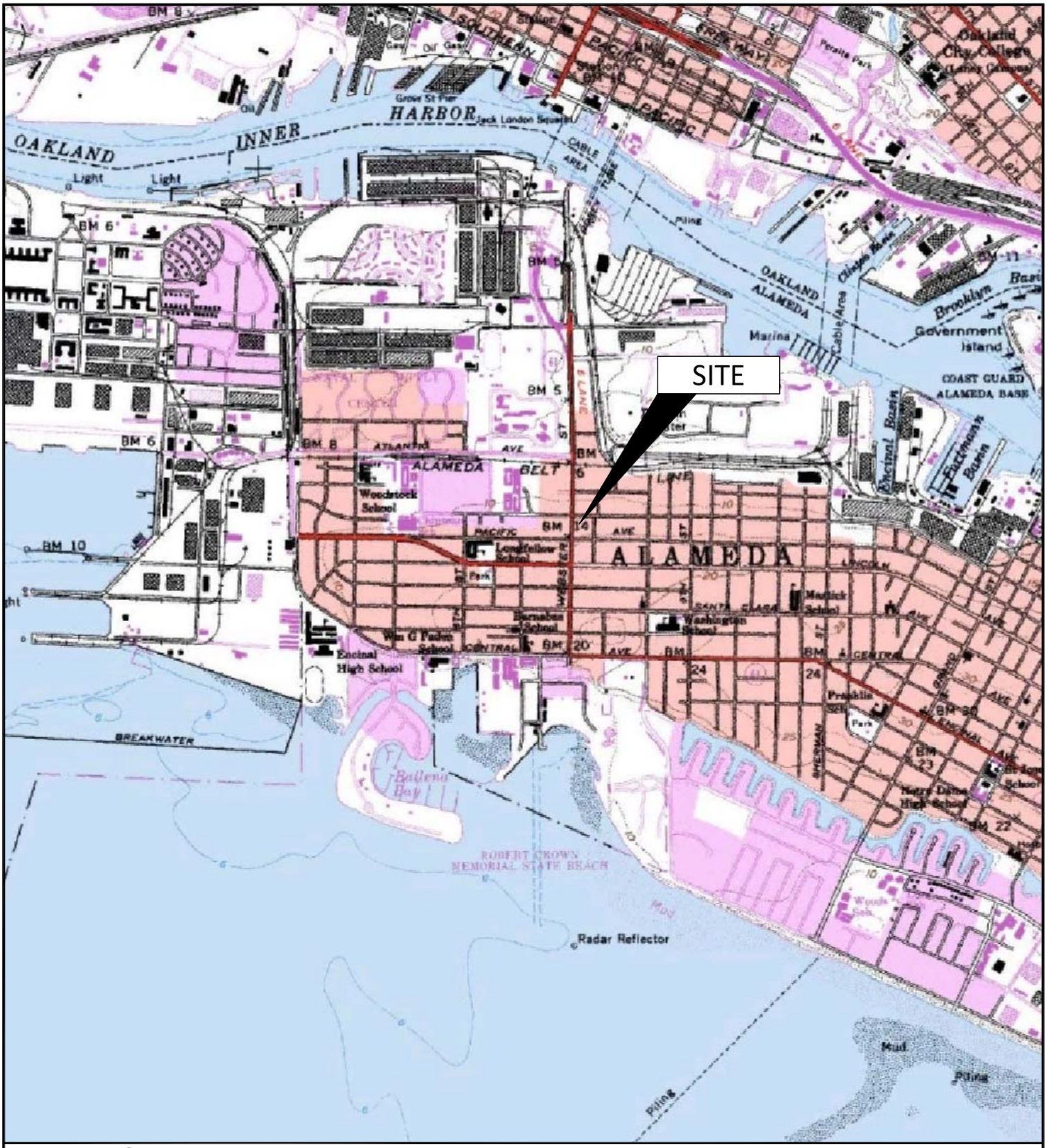
The findings presented in this report are based upon observations of field personnel, points investigated, results of laboratory tests performed by TestAmerica and our understanding of ACEH guidelines. Our services were performed in accordance with the generally accepted standard of practice at the time 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:	Groundwater Elevation Contour and Analytical Summary Map August 8, 203
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 – Direction and Magnitude
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	ft:	foot
ARC:	Atlantic Richfield Company	ft/ft:	foot per foot
BP:	British Petroleum	gal:	gallons
Broadbent:	Broadbent & Associates, Inc.	GRO:	gasoline range organics (C6-12)
BTEX:	benzene, toluene, ethylbenzene, total xylenes	LNAPL:	light non-aqueous phase liquid
1,2-DCA:	1,2-dichloroethane	MTBE:	methyl tertiary butyl ether
DIPE:	di-isopropyl ether	TAME:	tert-amyl methyl ether
EDB:	1,2-dibromomethane	TBA:	tert-butyl alcohol
EPA:	Environmental Protection Agency	TOC:	top of casing
ETBE:	Ethyl tert-butyl ether	μg/L:	micrograms per liter



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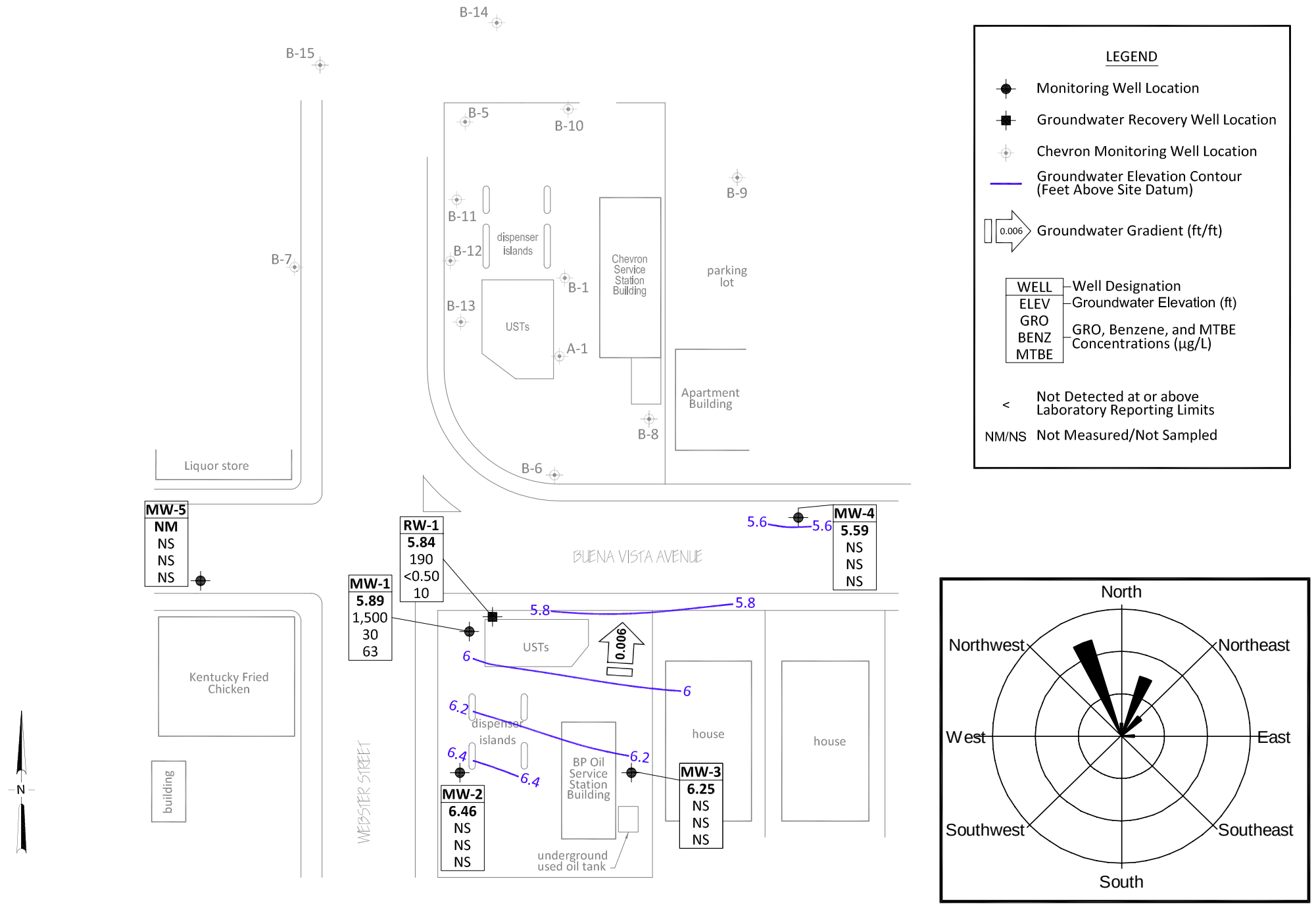
0 2000 4000

APPROXIMATE SCALE (ft)

IMAGE SOURCE: USGS

BROADBENT 875 Cotting Lane, Suite G Vacaville, California 95688 Project No.: 06-88-644 Date: 3/22/2013	Station #11104 1716 Webster Street Alameda, California	Site Location Map	Drawing 1



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SCALE (ft)

BROADBENT

875 Cotting Lane, Suite G
Vacaville, California 95688
Project No.: 06-88-644 Date: 9/6/2013

Station #11104
1716 Webster Street
Alameda, California

Groundwater Elevation Contour and Analytical Summary Map
August 8, 2013

Drawing
2

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			
MW-1														
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	7,300	120	1,200	740	--	--	--	d, k
10/13/1994	--		6.15	0.00	5.83	25,000	6,300	130	1,300	830	--	2.3	--	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	6,600	380	1,500	3,900	--	--	--	d
7/12/1995	--		5.02	0.00	6.96	29,000	7,000	300	1,500	3,900	--	7.2	--	
10/12/1995	--		5.68	0.00	6.30	20,000	3,500	310	1,100	3,000	14,000	--	--	d
10/12/1995	--		5.68	0.00	6.30	20,000	3,400	310	1,100	3,000	15,000	6.3	--	
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	2,100	<500	<500	<500	160,000	--	--	d
2/10/1997	--		4.80	0.00	7.18	180,000	1,900	<500	<500	<500	160,000	6.8	--	
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			
MW-1 Cont.														
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	190,000/200,000	--	--	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	
2/28/2012	P		5.63	0.00	6.35	9,600	310	13	560	1,700	610	0.53	6.57	

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			
MW-1 Cont.														
8/15/2012	P	11.98	5.68	0.00	6.30	1,800	19	1.1	8.2	340	16	1.62	7.37	
2/21/2013	P		5.07	0.00	6.91	940	2.9	1.3	13	30	14	1.28	7.33	
8/8/2013	**P**		**6.09**	**Sheen**	**5.89**	**1,500**	**30**	**2.0**	**63**	**150**	**63**	**1.73**	**7.16**	
MW-2														
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	--	--	--	--	--	--	--	--	

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			
MW-2 Cont.														
2/21/2000	--	12.98	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	--	--	--	--	--	--	--	--	
2/5/2003	--		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	--	--	--	--	--	--	--	--	
2/28/2012	P		6.25	0.00	6.73	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.20	6.24	
8/15/2012	--		6.22	0.00	6.76	--	--	--	--	--	--	--	--	
2/21/2013	P		5.49	0.00	7.49	<50	<0.50	<0.50	<0.50	<1.0	<0.50	2.81	7.14	
8/8/2013	**--**		**6.52**	**0.00**	**6.46**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-3														
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	--	--	--	--	--	--	--	--	

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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			
MW-3 Cont.														
4/1/1993	--	13.38	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
1/17/1995	--		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	--	--	--	--	--	--	--	--	

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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			
MW-3 Cont.														
02/10/2005	P	13.38	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	
8/13/2008	--		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	--	--	--	--	--	--	--	--	
2/28/2012	P		6.78	0.00	6.60	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.56	6.20	
8/15/2012	--		6.90	0.00	6.48	--	--	--	--	--	--	--	--	
2/21/2013	P		6.20	0.00	7.18	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.89	6.58	
8/8/2013	**--**		**7.13**	**0.00**	**6.25**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-4														
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	--	--	--	--	--	--	--	--	

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						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-4 Cont.														
7/12/1995	--	11.80	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	--	
2/24/1999	--		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	

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						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-4 Cont.														
8/27/2009	--	11.80	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	--	--	--	--	--	--	--	--	
2/28/2012	P		5.81	0.00	5.99	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.86	5.76	
8/15/2012	--		5.83	0.00	5.97	--	--	--	--	--	--	--	--	
2/21/2013	P		5.32	0.00	6.48	<50	<0.50	<0.50	<0.50	<1.0	<0.50	2.00	7.19	
8/8/2013	**--**		**6.21**	**0.00**	**5.59**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-5														
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
1/6/1994	--		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	--	

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						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-5 Cont.														
2/24/1999	--	11.62	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
8/10/2006	--		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
QC-2														
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

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			
QC-2 Cont.														
1/17/1995	--	NS	--	--	--	<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
RW-1														
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
7/25/1994	--		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	--		--	--	--	2,900	15	15	78	700	<50	--	--	d
5/9/1996	--		--	--	--	3,200	19	19	97	800	<50	7.1	--	
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	--	

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			
RW-1 Cont.														
8/4/1997	--	11.84	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	52,000	380	330	490	2,970	38,000	6.1	--	
1/27/1998	--		3.80	0.00	8.04	51,000	380	300	480	2,980	36,000	--	--	d
9/2/1998	--		4.91	0.00	6.93	280,000	2,400	<50	1,400	3,170	270,000	--	--	d
9/2/1998	--		4.91	0.00	6.93	260,000	2,500	56	1,400	3,070	250,000	6.6	--	
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	--	--	
8/29/2002	--		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	

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			
RW-1 Cont.														
7/5/2011	--	11.84	4.92	0.01	6.93	--	--	--	--	--	--	--	--	
2/28/2012	--		5.82	0.06	6.07	--	--	--	--	--	--	--	--	
8/15/2012	--		5.62	0.01	6.23	--	--	--	--	--	--	--	--	
2/21/2013	P		5.03	0.00	6.81	110	<0.50	<0.50	<0.50	<1.0	7.9	1.39	7.21	
8/8/2013	**P**		**6.00**	**0.00**	**5.84**	**190**	**<0.50**	**<0.50**	**<0.50**	**1.4**	**10**	**1.93**	**7.11**	**After collecting GW, LNAPL was observed**

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 = Chromatogrom 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	
MW-1									
7/9/1993	--	--	12,952	--	--	--	--	--	
7/9/1993	--	--	11,919	--	--	--	--	--	
4/26/1994	--	--	16,663	--	--	--	--	--	
7/25/1994	--	--	26,428	--	--	--	--	--	
10/12/1995	--	--	14,000	--	--	--	--	--	
10/12/1995	--	--	15,000	--	--	--	--	--	
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	--	--	90,000/200,00	--	--	--	--	--	
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	
MW-1 Cont.									
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	
2/28/2012	<6,000	750	610	<10	<10	64	<10	<10	
8/15/2012	<150	180	16	<0.50	<0.50	1.3	<0.50	<0.50	
2/21/2013	<150	79	14	<0.50	<0.50	1.5	<0.50	<0.50	
8/8/2013	**<150**	**330**	**63**	**<0.50**	**<0.50**	**7.3**	**<0.50**	**<0.50**	
MW-2									
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	

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	
MW-2 Cont.									
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	
2/28/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/21/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
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	
2/28/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/21/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-4									
1/6/1994	--	--	<5.0	--	--	--	--	--	
4/26/1994	--	--	<5.0	--	--	--	--	--	
7/25/1994	--	--	<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	
MW-4 Cont.									
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	--	--	0.66	--	--	--	--	--	
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	
2/28/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/21/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-5									
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	--	--	--	--	--	

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	
MW-5 Cont.									
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	
2/18/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
QC-2									
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	--	--	--	--	--	
RW-1									
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	--	--	--	--	--	

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	
RW-1 Cont.									
2/10/1997	--	--	150,000	--	--	--	--	--	
8/4/1997	--	--	230,000	--	--	--	--	--	
1/27/1998	--	--	38,000	--	--	--	--	--	
1/27/1998	--	--	36,000	--	--	--	--	--	
9/2/1998	--	--	270,000	--	--	--	--	--	
9/2/1998	--	--	250,000	--	--	--	--	--	
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	
2/21/2013	<150	28	7.9	<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	
RW-1 Cont.									
8/8/2013	<150	65	10	<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

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
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
9/11/2007	East	0.006
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
2/28/2012	North-Northeast	0.005
8/15/2012	North-Northeast	0.003
2/21/2013	North-Northeast	0.005
8/8/2013	**North**	**0.006**

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[1]. 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	± 0.2ºC (± 0.36ºF)
pH	± 0.1 standard units
Conductivity	± 3%
Dissolved oxygen	± 10%
Oxidation reduction potential	± 10 mV
Turbidity[1]	± 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

[1] 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.

suction tubing or dedicated well tubing at a low flow rate while evaluating the groundwater elevation during pumping.

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)[2], 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[1]. 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)[2], 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.

---

[2] 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

BROADBENT

DAILY REPORT

Page ____ of ____

Project: BP 11104 Project No.: 06-88-644

Field Representative(s): JR/AH Day: Thursday Date: 8-8-2013

Time Onsite: From: 1345 To: 1630 ; From: _____ To: _____ ; From: _____ To: _____

X Signed HASP X Safety Glasses X Hard Hat X Steel Toe Boots X Safety Vest

X UST Emergency System Shut-off Switches Located X Proper Gloves

X Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Sunny

Equipment In Use: horiba, peristaltic pump, interface probe

Visitors: _____

TIME:	WORK DESCRIPTION:
1345	Arrived on-site; proceeded w/ safety meeting / paperwork
1410	Completed paperwork / safety meeting; setup on RW-1 & MW-1
1555	Setup on MW-2 for gauge
1605	Setup on MW-3 for gauge
1615	Setup on MW-4 for gauge
1630	Signed out & left Site.

Signature: _____

BROADBENT

GROUNDWATER MONITORING SITE SHEET

Page _____ of _____

Project: BP 11104 Project No.: 06-68-644 Date: 8/8/13

Field Representative: JB/AH Elevation: _____

Formation recharge rate is historically: High Low *(circle one)*

W. L. Indicator ID #: _____ Oil/Water Interface ID #: _____ *(List #s of all equip used.)*

WELL ID RECORD					WELL GAUGING RECORD					LAB ANALYSES					
Well ID	Well Sampling Order	As-Built Well Diameter (inches)	As-Built Well Screen Interval (ft)	Previous Depth to Water (ft)	Time (24:00)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)*	Depth to Water (ft)	Well Total Depth (ft)						
MW-1					1523	sheen	sheen	6.09	15.35						
MW-2					1600	—	—	6.52	15.25						
MW-3					1605	—	—	7.13	15.03						
MW-4					1616	—	—	6.21	14.62						
MW-5					—	—	—	—	—	Passed over					
RW-1					14:48	—	—	6.60	22.62	After collecting GW sample LNAPL was measured at 0.03 ft					

* Device used to measure LNAPL thickness: Bailer Oil/Water Interface Meter *(circle one)*

If bailer used, note bailer dimensions (inches): Entry Diameter _____ Chamber Diameter _____

Signature: James Rowe

Revision: 1/24/2012

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP No. 11104 Project No.: 06-88-644 Date: 8/8/13

Field Representative: AH & JR

Well ID: MW-1 Start Time: 1520 End Time: 1550 Total Time (minutes): 30

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

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

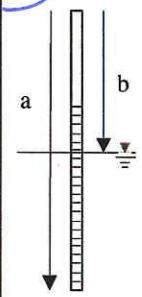
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: *(circle one)*

PREDETERMINED WELL VOLUME

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)



LOW-FLOW

Previous Low-Flow Purge Rate: _____(lpm)
Total Well Depth (a): 15.35 (ft)
Initial Depth to Water (b): 6.09 (ft)
Pump In-take Depth = b + (a-b)/2: 10.72 (ft)
Maximum Allowable Drawdown = (a-b)/8: 1.16 (ft)
Low-Flow Purge Rate: 0.17 (Lpm)*
Comments:

**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 (L)	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
~~1529~~ 1530	0.0	25.18	7.13	0.393	3.14	21	308	NONE
1533	0.5	24.43	7.15	0.398	2.17	-39	306	"
1536	1.0	24.25	7.16	0.397	1.90	-73	307	"
1539	1.5	24.21	7.16	0.398	1.79	-88	308	"
1542	2.0	24.18	7.16	0.399	1.73	-98	308	"
Previous Stabilized Parameters								

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

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 6.24 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: MW-1 Sample Collection Time: 1545 (24:00)
Containers (#): X VOA (X preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: James Ron

Revision: 7/3/12

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP No. 11104 Project No.: 06-88-644 Date: 8/8/13

Field Representative: AH & JR

Well ID: RW-1 Start Time: 1445 End Time: 1520 Total Time (minutes): 35

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

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

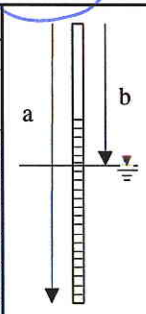
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: *(circle one)*

PREDETERMINED WELL VOLUME

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)



LOW-FLOW

Previous Low-Flow Purge Rate: _____(lpm)
Total Well Depth (a): 22.62 (ft)
Initial Depth to Water (b): 6.0 (ft)
Pump In-take Depth = b + (a-b)/2: 14.31 (ft)
Maximum Allowable Drawdown = (a-b)/8: 2.08 (ft)
Low-Flow Purge Rate: 0.17 (Lpm)*
Comments:

**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 (L)	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1455	0.0	23.91	7.75	0.312	3.83	77	411	NONE
1458	0.5	23.34	7.32	0.314	2.34	-5	358	"
1501	1.0	23.34	7.21	0.313	2.06	-54	350	"
1504	1.5	23.30	7.15	0.313	1.98	-75	322	"
1507	2.0	23.24	7.11	0.313	1.93	-82	313	"
* 1510	—	—	—	—	—	—	—	After collecting GW samples, LNAPL was observed.
Previous Stabilized Parameters								

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

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 6.24 (ft) ~~6.21~~ = LNAPL
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: RW-1 Sample Collection Time: 1510 (24:00)
Containers (#): X VOA (X preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: James Pa

Revision: 7/3/12

Laboratory Management Program LaMP Chain of Custody Record

BP Site Node Path: BP 11104 | Req Due Date (mm/dd/yy): | Rush TAT: Yes ___ No ___

BP Facility No: 11104 | Lab Work Order Number:

Lab Name: Test America	Facility Address: 1716 Webster Avenue	Consultant/Contractor: Broadbent & Associates Inc.
Lab Address: 17461 Derian Avenue, Suite 100, Irvine, CA	City, State, ZIP Code: Alameda, CA	Consultant/Contractor Project No: 09-88-601
Lab PM: Pat Abe	Lead Regulatory Agency: ACEH	Address: 875 Cotting Lane, Suite G, Vacaville, California
Lab Phone: 949-261-1022	California Global ID No.: T0600101651	Consultant/Contractor PM: Kristene Tidwell
Lab Shipping Accnt: Fed ex#: 11103-6633-7	Enfos Proposal No/ WR#:	Phone: 707-455-7290 / 707-455-7295 (f) Email: ktidwell@broadbentinc.com
Lab Bottle Order No:	Accounting Mode: Provision x OOC-BU ___ OOC-RM ___	Email EDD To: ktidwell@broadbentinc.com and to lab.enfosdoc@bp.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP x Contractor ___

BP Project Manager (PM): Shannon Couch

BP PM Phone: 925-275-3804

BP PM Email: shannon.couch@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	No. Containers / Preservative: Total Number of Container	Unpreserved	H2SO4	HNO3	HCl	Methanol	Requested Analyses: GRO by 8015M	BTEX/5 FO +EDB	1,2-DCA and Ethanol by 8260	Naphthalene 8260 HP						Report Type & QC Level
	MW-1	8/8/13	1545		x		y	8	x			x		x	x	x	x						
	RW-1	8/8/13	1510		x		y	8	x			x		x	x	x	x						
	TB -11104- 08082013	8/8/13	1600		x			2				x											ON HOLD

Report Type & QC Level: Standard ___ Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: James Ramey / Alejandra Hernandez						
Sampler's Company: Broadbent & Associates		8/8/13	1700			
Shipment Method: Fed Ex Ship Date: 8/8/13		8/8/13	1700			
Shipment Tracking No:						

Special Instructions: Hold Naphthalene for PM approval.

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

APPENDIX C

LABORATORY REPORT
AND CHAIN-OF-CUSTODY DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

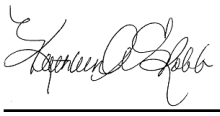
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-54090-1
Client Project/Site: ARCO 11104, Alameda

For:
Broadbent & Associates, Inc.
875 Cotting Lane
Suite G
Vacaville, California 95688

Attn: Kristene Tidwell



Authorized for release by:
8/26/2013 10:00:06 AM

Kathleen Robb, Project Manager II
kathleen.robb@testamericainc.com

Table of Contents

Sample Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 11104, Alameda

TestAmerica Job ID: 440-54090-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-54090-1	MW-1	Water	08/08/13 15:45	08/09/13 09:30
440-54090-2	RW-1	Water	08/08/13 15:10	08/09/13 09:30

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 11104, Alameda

TestAmerica Job ID: 440-54090-1

Job ID: 440-54090-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-54090-1

Comments
No additional comments.

Receipt
The samples were received on 8/9/2013 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4º C.

GC/MS VOA
No analytical or quality issues were noted.

GC VOA
Method(s) 8015B: Surrogate recovery was outside control limits for the following sample: (CCV 440-123928/26), (CCV 440-123928/51), (CCV 440-123928/53), (CCVRT 440-123928/1). The BFB surrogate coeluted with the TPH standard. Data not impacted.

Method(s) 8015B: Surrogate recovery was outside control limits for the following sample: (440-54089-7 MS), (440-54089-7 MSD), (CCV 440-124752/14), (CCVRT 440-124752/1), (LCS 440-124752/2). BFB surrogate coeluted with TPH standard. Data not impacted.

Method(s) 8015B: Surrogate recovery was outside control limits for the following sample: (CCV 440-123928/39). The BFB surrogate coeluted with the TPH standard. Data not impacted.

Method(s) 8015B: Surrogate recovery for the following sample(s) was outside control limits: MW-1 (440-54090-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. Peak at surrogate retention time was unassigned because the contribution of the surrogate was insignificant compared to the sample at that retention time.

Method(s) 8015B: Surrogate recovery was outside control limits for the following sample: (CCV 440-125390/8), (LCS 440-125390/9). BFB surrogate coeluted with TPH standard. Data not impacted.

Method(s) 8015B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 125390 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Client Sample ID: MW-1
Date Collected: 08/08/13 15:45
Date Received: 08/09/13 09:30

Lab Sample ID: 440-54090-1
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			08/17/13 16:26	1
1,2-Dichloroethane	ND		0.50	ug/L			08/17/13 16:26	1
Benzene	**30**		0.50	ug/L			08/17/13 16:26	1
Ethanol	ND		150	ug/L			08/17/13 16:26	1
Ethylbenzene	**63**		0.50	ug/L			08/17/13 16:26	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			08/17/13 16:26	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			08/17/13 16:26	1
m,p-Xylene	**150**		1.0	ug/L			08/17/13 16:26	1
Methyl-t-Butyl Ether (MTBE)	**63**		0.50	ug/L			08/17/13 16:26	1
o-Xylene	**4.7**		0.50	ug/L			08/17/13 16:26	1
Tert-amyl-methyl ether (TAME)	**7.3**		0.50	ug/L			08/17/13 16:26	1
tert-Butyl alcohol (TBA)	**330**		10	ug/L			08/17/13 16:26	1
Toluene	**2.0**		0.50	ug/L			08/17/13 16:26	1
Xylenes, Total	**150**		1.0	ug/L			08/17/13 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*08/17/13 16:26*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*08/17/13 16:26*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*		*08/17/13 16:26*	*1*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**160**		1.0	ug/L			08/19/13 10:33	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/19/13 10:33*	*2*
Dibromofluoromethane (Surr)	*89*		*80 - 120*		*08/19/13 10:33*	*2*
Toluene-d8 (Surr)	*106*		*80 - 120*		*08/19/13 10:33*	*2*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**1500**		50	ug/L			08/13/13 12:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*0*	*LG*	*65 - 140*		*08/13/13 12:37*	*1*

Client Sample ID: RW-1
Date Collected: 08/08/13 15:10
Date Received: 08/09/13 09:30

Lab Sample ID: 440-54090-2
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			08/17/13 16:55	1
1,2-Dichloroethane	ND		0.50		ug/L			08/17/13 16:55	1
Benzene	ND		0.50		ug/L			08/17/13 16:55	1
Ethanol	ND		150		ug/L			08/17/13 16:55	1
Ethylbenzene	ND		0.50		ug/L			08/17/13 16:55	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			08/17/13 16:55	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			08/17/13 16:55	1
m,p-Xylene	**1.4**		1.0		ug/L			08/17/13 16:55	1
Methyl-t-Butyl Ether (MTBE)	**10**		0.50		ug/L			08/17/13 16:55	1
o-Xylene	ND		0.50		ug/L			08/17/13 16:55	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			08/17/13 16:55	1
tert-Butyl alcohol (TBA)	**65**		10		ug/L			08/17/13 16:55	1
Toluene	ND		0.50		ug/L			08/17/13 16:55	1
Xylenes, Total	**1.4**		1.0		ug/L			08/17/13 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/17/13 16:55*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*08/17/13 16:55*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*		*08/17/13 16:55*	*1*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**1.3**		0.50		ug/L			08/20/13 02:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*08/20/13 02:52*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/20/13 02:52*	*1*
Toluene-d8 (Surr)	*113*		*80 - 120*		*08/20/13 02:52*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**190**		50		ug/L			08/15/13 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*65 - 140*		*08/15/13 16:19*	*1*

Method Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 11104, Alameda

TestAmerica Job ID: 440-54090-1

Method	Method Description	Protocol	Laboratory
8260B/5030B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B/5030B	Gasoline Range Organics (GC)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 11104, Alameda

TestAmerica Job ID: 440-54090-1

Client Sample ID: MW-1

Lab Sample ID: 440-54090-1

Date Collected: 08/08/13 15:45

Matrix: Water

Date Received: 08/09/13 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	125239	08/17/13 16:26	AA	TAL IRV
Total/NA	Analysis	8260B/5030B	DL	2	10 mL	10 mL	125363	08/19/13 10:33	SS	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	123928	08/13/13 12:37	PH	TAL IRV

Client Sample ID: RW-1

Lab Sample ID: 440-54090-2

Date Collected: 08/08/13 15:10

Matrix: Water

Date Received: 08/09/13 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	125239	08/17/13 16:55	AA	TAL IRV
Total/NA	Analysis	8260B/5030B	RA	1	10 mL	10 mL	125563	08/20/13 02:52	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	124752	08/15/13 16:19	PH	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 11104, Alameda

TestAmerica Job ID: 440-54090-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-125239/5
Matrix: Water
Analysis Batch: 125239

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			08/17/13 11:35	1
1,2-Dichloroethane	ND		0.50		ug/L			08/17/13 11:35	1
Benzene	ND		0.50		ug/L			08/17/13 11:35	1
Ethanol	ND		150		ug/L			08/17/13 11:35	1
Ethylbenzene	ND		0.50		ug/L			08/17/13 11:35	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			08/17/13 11:35	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			08/17/13 11:35	1
m,p-Xylene	ND		1.0		ug/L			08/17/13 11:35	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			08/17/13 11:35	1
o-Xylene	ND		0.50		ug/L			08/17/13 11:35	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			08/17/13 11:35	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			08/17/13 11:35	1
Toluene	ND		0.50		ug/L			08/17/13 11:35	1
Xylenes, Total	ND		1.0		ug/L			08/17/13 11:35	1
Naphthalene	ND		0.50		ug/L			08/17/13 11:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/17/13 11:35*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*08/17/13 11:35*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*		*08/17/13 11:35*	*1*

Lab Sample ID: LCS 440-125239/6
Matrix: Water
Analysis Batch: 125239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	26.3		ug/L		105	70 - 130		
1,2-Dichloroethane			25.0	25.9		ug/L		104	57 - 138		
Benzene			25.0	26.8		ug/L		107	68 - 130		
Ethanol			250	285		ug/L		114	50 - 149		
Ethylbenzene			25.0	28.3		ug/L		113	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	24.8		ug/L		99	60 - 136		
Isopropyl Ether (DIPE)			25.0	25.4		ug/L		102	58 - 139		
m,p-Xylene			50.0	58.5		ug/L		117	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	24.8		ug/L		99	63 - 131		
o-Xylene			25.0	29.9		ug/L		120	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	24.6		ug/L		99	57 - 139		
tert-Butyl alcohol (TBA)			125	136		ug/L		109	70 - 130		
Toluene			25.0	27.8		ug/L		111	70 - 130		
Naphthalene			25.0	26.0		ug/L		104	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*113*		*80 - 120*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-54088-E-1 MS
Matrix: Water
Analysis Batch: 125239

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	26.0		ug/L		104	70 - 131
1,2-Dichloroethane	ND		25.0	25.7		ug/L		101	56 - 146
Benzene	90		25.0	112		ug/L		89	66 - 130
Ethanol	ND		250	252		ug/L		101	54 - 150
Ethylbenzene	ND		25.0	26.9		ug/L		106	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.4		ug/L		102	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	25.7		ug/L		103	64 - 138
m,p-Xylene	1.1		50.0	57.0		ug/L		112	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	27.4		ug/L		110	70 - 130
o-Xylene	ND		25.0	28.3		ug/L		113	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	25.7		ug/L		103	68 - 133
tert-Butyl alcohol (TBA)	10		125	137		ug/L		101	70 - 130
Toluene	ND		25.0	26.8		ug/L		107	70 - 130
Naphthalene	1.6		25.0	30.8		ug/L		117	60 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*113*		*80 - 120*

Lab Sample ID: 440-54088-E-1 MSD
Matrix: Water
Analysis Batch: 125239

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	26.9		ug/L		107	70 - 131	3	25
1,2-Dichloroethane	ND		25.0	26.5		ug/L		104	56 - 146	3	20
Benzene	90		25.0	109		ug/L		74	66 - 130	3	20
Ethanol	ND		250	250		ug/L		100	54 - 150	1	30
Ethylbenzene	ND		25.0	27.2		ug/L		107	70 - 130	1	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	26.2		ug/L		105	70 - 130	3	25
Isopropyl Ether (DIPE)	ND		25.0	25.5		ug/L		102	64 - 138	1	25
m,p-Xylene	1.1		50.0	56.8		ug/L		112	70 - 133	0	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.4		ug/L		106	70 - 130	3	25
o-Xylene	ND		25.0	27.8		ug/L		111	70 - 133	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	27.3		ug/L		109	68 - 133	6	30
tert-Butyl alcohol (TBA)	10		125	139		ug/L		103	70 - 130	2	25
Toluene	ND		25.0	27.9		ug/L		112	70 - 130	4	20
Naphthalene	1.6		25.0	32.5		ug/L		124	60 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-125363/4
Matrix: Water
Analysis Batch: 125363

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50		ug/L			08/19/13 09:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/19/13 09:03*	*1*
Dibromofluoromethane (Surr)	*88*		*80 - 120*		*08/19/13 09:03*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*08/19/13 09:03*	*1*

Lab Sample ID: LCS 440-125363/5
Matrix: Water
Analysis Batch: 125363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene			25.0	23.9		ug/L		96	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*90*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: 440-53992-F-3 MS
Matrix: Water
Analysis Batch: 125363

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene	0.62		25.0	29.6		ug/L		116	60 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: 440-53992-F-3 MSD
Matrix: Water
Analysis Batch: 125363

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	0.62		25.0	29.5		ug/L		116	60 - 140	0	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*90*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-125563/4
Matrix: Water
Analysis Batch: 125563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50		ug/L			08/19/13 20:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/19/13 20:52*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/19/13 20:52*	*1*
Toluene-d8 (Surr)	*110*		*80 - 120*		*08/19/13 20:52*	*1*

Lab Sample ID: LCS 440-125563/5
Matrix: Water
Analysis Batch: 125563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	25.0	26.1		ug/L		104	70 - 130
1,2-Dichloroethane	25.0	26.9		ug/L		108	57 - 138
Benzene	25.0	27.3		ug/L		109	68 - 130
Ethanol	250	232		ug/L		93	50 - 149
Ethylbenzene	25.0	27.2		ug/L		109	70 - 130
Ethyl-t-butyl ether (ETBE)	25.0	28.8		ug/L		115	60 - 136
Isopropyl Ether (DIPE)	25.0	29.8		ug/L		119	58 - 139
m,p-Xylene	50.0	57.0		ug/L		114	70 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	29.1		ug/L		116	63 - 131
o-Xylene	25.0	29.4		ug/L		117	70 - 130
Tert-amyl-methyl ether (TAME)	25.0	28.9		ug/L		116	57 - 139
tert-Butyl alcohol (TBA)	125	125		ug/L		100	70 - 130
Toluene	25.0	28.3		ug/L		113	70 - 130
Naphthalene	25.0	26.4		ug/L		106	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*
Dibromofluoromethane (Surr)	*113*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: 440-54339-B-7 MS
Matrix: Water
Analysis Batch: 125563

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	ND		25.0	27.4		ug/L		110	60 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*115*		*80 - 120*
Toluene-d8 (Surr)	*110*		*80 - 120*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-54339-B-7 MSD
Matrix: Water
Analysis Batch: 125563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	ND		25.0	26.0		ug/L		104	60 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*111*		*80 - 120*
Toluene-d8 (Surr)	*110*		*80 - 120*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-123928/28
Matrix: Water
Analysis Batch: 123928

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			08/13/13 01:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*65 - 140*		*08/13/13 01:55*	*1*

Lab Sample ID: LCS 440-123928/27
Matrix: Water
Analysis Batch: 123928

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	746		ug/L		93	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*133*		*65 - 140*

Lab Sample ID: 440-53999-A-4 MS
Matrix: Water
Analysis Batch: 123928

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	ND		800	679		ug/L		82	65 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*124*		*65 - 140*

Lab Sample ID: 440-53999-A-4 MSD
Matrix: Water
Analysis Batch: 123928

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		800	676		ug/L		81	65 - 140	0	20

Method: 8015B/5030B - Gasoline Range Organics (GC) (Continued)

Lab Sample ID: 440-53999-A-4 MSD
Matrix: Water
Analysis Batch: 123928

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		65 - 140

Lab Sample ID: MB 440-124752/3
Matrix: Water
Analysis Batch: 124752

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			08/15/13 12:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		65 - 140		08/15/13 12:01	1

Lab Sample ID: LCS 440-124752/2
Matrix: Water
Analysis Batch: 124752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	758		ug/L		95	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	153	LH	65 - 140

Lab Sample ID: 440-54089-B-7 MS
Matrix: Water
Analysis Batch: 124752

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	150		800	771		ug/L		78	65 - 140		

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	146	LH	65 - 140

Lab Sample ID: 440-54089-B-7 MSD
Matrix: Water
Analysis Batch: 124752

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	150		800	781		ug/L		80	65 - 140	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	147	LH	65 - 140

GC/MS VOA

Analysis Batch: 125239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-54088-E-1 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-54088-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
440-54090-1	MW-1	Total/NA	Water	8260B/5030B	
440-54090-2	RW-1	Total/NA	Water	8260B/5030B	
LCS 440-125239/6	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-125239/5	Method Blank	Total/NA	Water	8260B/5030B	

Analysis Batch: 125363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-53992-F-3 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-53992-F-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
440-54090-1 - DL	MW-1	Total/NA	Water	8260B/5030B	
LCS 440-125363/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-125363/4	Method Blank	Total/NA	Water	8260B/5030B	

Analysis Batch: 125563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-54090-2 - RA	RW-1	Total/NA	Water	8260B/5030B	
440-54339-B-7 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-54339-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-125563/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-125563/4	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 123928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-53999-A-4 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-53999-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-54090-1	MW-1	Total/NA	Water	8015B/5030B	
LCS 440-123928/27	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-123928/28	Method Blank	Total/NA	Water	8015B/5030B	

Analysis Batch: 124752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-54089-B-7 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-54089-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-54090-2	RW-1	Total/NA	Water	8015B/5030B	
LCS 440-124752/2	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-124752/3	Method Blank	Total/NA	Water	8015B/5030B	

Qualifiers

GC VOA

Qualifier	Qualifier Description
LH	Surrogate Recoveries were higher than QC limits
LG	LG=Surrogate recovery below the acceptance limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 11104, Alameda

TestAmerica Job ID: 440-54090-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-13
California	LA Cty Sanitation Districts	9	10256	01-31-14
California	NELAP	9	1108CA	01-31-14
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-28-14 *
Hawaii	State Program	9	N/A	01-31-14
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14
Northern Mariana Islands	State Program	9	MP0002	01-31-14
Oregon	NELAP	10	4005	09-12-13
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

bp rm — Laboratory Management Program LaMP Chain of Custody Record

BP Site Node Path: BP 11104 | Req Due Date (mm/dd/yy): | Rush TAT: Yes ___ No ___

BP Facility No: 11104 | Lab Work Order Number: 440-54090

Lab Name: Test America	Facility Address: 1716 Webster Avenue	Consultant/Contractor: Broadbent & Associates Inc.
Lab Address: 17461 Derian Avenue, Suite 100, Irvine, CA	City, State, ZIP Code: Alameda, CA	Consultant/Contractor Project No: 09-88-601
Lab PM: Pat Abe	Lead Regulatory Agency: ACEH	Address: 875 Cotting Lane, Suite G, Vacaville, California
Lab Phone: 949-261-1022	California Global ID No.: T0600101651	Consultant/Contractor PM: Kristene Tidwell
Lab Shipping Accnt: Fed ex#: 11103-6633-7	Enfos Proposal No/ WR#:	Phone: 707-455-7290 / 707-455-7295 (f) Email: ktidwell@broadbentinc.com
Lab Bottle Order No:	Accounting Mode: Provision x OOC-BU ___ OOC-RM ___	Email EDD To: ktidwell@broadbentinc.com and to lab.enfosdoc@bp.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP x Contractor ___

BP Project Manager (PM): Shannon Couch

BP PM Phone: 925-275-3804

BP PM Email: shannon couch@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Is this location a well?	No. Containers / Preservative: Total Number of Container	Unpreserved	H2SO4	HNO3	HCl	Methanol	Requested Analyses: GRO by 8015M	BTEX/5 FO +EDB	1,2-DCA and Ethanol by 8260	Naphthalene 8260 #1,2	Report Type & QC Level
	MW-1	8/8/13	1595		x		y	6	x			x		x	x	x	x	
	RW-1	8/8/13	1510		x		y	6	x			x		x	x	x	x	
	TB-11104-08082013	8/8/13	1600		x			2				x						ON HOLD

Standard ___

Full Data Package ___

Comments

Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

440-54090 Chain of Custody

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: James Ramey / Mariscela Hernandez						
Sampler's Company: Broadbent & Associates		8/8/13	1700			
Shipment Method: Fed Ex Ship Date: 8/8/13		8/8/13	1700			
Shipment Tracking No:				Test America Irvine	8/9/13	930

Special Instructions: Hold Naphthalene for PM approval.

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 2.6/2.4 °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes (No)

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-54090-1

Login Number: 54090

List Source: TestAmerica Irvine

List Number: 1

Creator: Escalante, Maria

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	JAMES RAMIREZ/ALEJANDRA HERNANDEZ
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

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!

Submittal Type:	**GEO_WELL**
Report Title:	**3Q13 GEO_WELL 11104**
Facility Global ID:	**T0600101651**
Facility Name:	**BP #11104**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**216.241.56.58**
Submittal Date/Time:	**9/11/2013 11:33:32 AM**
Confirmation Number:	**1560134828**