Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 1257
San Ramon, CA 94583
Phone: (925) 275-3801
Fax: (925) 275-3815

15 October 2008

Re: Third Quarter 2008 Annual Ground-Water Monitoring Report
Atlantic Richfield Company Station #6148
5131 Shattuck Avenue
Oakland, California
ACEH Case #RO0000077

"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:

Paul Supple
Environmental Business Manger

Third Quarter 2008 Annual Ground-Water Monitoring Report
Atlantic Richfield Company Station #6148
5131 Shattuck Avenue
Oakland, California

Prepared for

Mr. Paul Supple
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

15 October 2008

Project No. 06-08-638

Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
Chico, CA 95926
Voice (530) 566-1400
Fax (530) 566-1401

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

15 October 2007

Project No. 06-08-638

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

Attn.: Mr. Paul Supple

Re: Third Quarter 2008 Annual Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #6148, 5131 Shattuck Avenue, Oakland, Alameda County, California; ACEH Case #RO000077

Dear Mr. Supple:

Provided herein is the *Third Quarter 2008 Annual Ground-Water Monitoring Report* for Atlantic Richfield Company Station #6148 (herein referred to as Station #6148) located at 5131 Shattuck Avenue, Oakland, Alameda County, California (Site). This report presents results of annual ground-water monitoring conducted at the Site during Third Quarter 2008. Case closure was requested by BP from Alameda County Environmental Health (ACEH) on 13 April 2004. BP is currently awaiting a response from ACEH.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.
Senior Engineer

Robert H. Miller, P.G., C.HG.
Principal Hydrogeologist

Enclosures

cc: Mr. Paresh Khatri, ACEH (Submitted via ACEH ftp Site)
Electronic copy uploaded to GeoTracker

STATION #6148 ANNUAL GROUND-WATER MONITORING REPORT

Facility: #6148 Address:	5131 Shattuck Avenue, Oakland
Environmental Business Manager:	Mr. Paul Supple
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus (530) 566-1400
Consultant Project No.:	06-08-638
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0000077
Facility Permits/Permitting Agency.:	NA

WORK PERFORMED THIS QUARTER (Third Quarter 2008):

1. Prepared and submitted Second Quarter 2008 Status Report.
2. Conducted Third Quarter 2008 annual ground-water monitoring/sampling. Work performed by Stratus Environmental, Inc (Stratus) on 20 August 2008.

WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter 2008):

1. Prepared and submitted this Third Quarter 2008 Annual Ground-Water Monitoring Report (contained herein).
2. No environmental work is scheduled to be completed during Fourth Quarter 2008.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Ground-water monitoring/sampling**
Frequency of ground-water monitoring:	**Annually (3Q): Wells MW-1 through MW-7**
Frequency of ground-water sampling:	**Annually (3Q): Wells MW-1 through MW-7**
Is free product (FP) present on-site:	**No**
FP recovered this quarter:	**None**
Cumulative FP recovered:	**None**
Current remediation techniques:	**NA**
Depth to ground water (below TOC):	**14.87 ft (MW-6) to 18.09 ft (MW-1)**
General ground-water flow direction:	**Southwest**
Approximate hydraulic gradient:	**0.012 ft/ft**

DISCUSSION:

Third quarter 2008 ground-water monitoring and sampling was conducted at Station #6148 on 20 August 2008 by Stratus personnel. Water levels were gauged in each of the seven wells at the Site. No irregularities were noted during water level gauging. Depth to water measurements ranged from 14.87 ft at MW-6 to 18.09 ft at MW-1. Resulting ground-water surface elevations ranged from 96.84 ft above mean sea level in up-gradient well MW-7 to 94.97 ft above mean sea level in down-gradient well MW-5. Water level elevations were between historic minimum and maximum ranges for each well, as summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the southwest at approximately 0.012 ft/ft, consistent with historical data (see Table 3). Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground-water and respective ground-water elevations are summarized in Table 1. Potentiometric ground-water elevation contours are presented in Drawing 1.

Ground-water samples were collected from each of the seven wells at the Site. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and tert-Amyl methyl ether (TAME), tert-Butyl alcohol (TBA), Di-isopropyl ether(DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Ethanol, Ethyl tert-butyl ether (ETBE), and Methyl tert-butyl ether (MTBE) by EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain of custody documentation, are provided in Appendix A.

Gasoline range organics (GRO) were detected above the laboratory reporting limits in two of the seven wells sampled at concentrations of 220 micrograms per liter (µg/L) and 560 µg/L in wells MW-2 and MW-3, respectively. Benzene was detected above the laboratory reporting limit in one of the seven wells sampled at a concentration of 3.0 µg/L in well MW-2. MTBE was detected above the laboratory reporting limit in one of the seven wells sampled at a concentration of 0.56 µg/L in well MW-3. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the seven wells sampled this quarter. Historic laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 1. A copy of the Laboratory Analytical Report, including chainof-custody documentation is provided in Appendix A. Ground-water monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix B.

Case closure was requested by BP on 13 April 2004 from ACEH. BP is currently awaiting a response from the ACEH to the case closure request.

CLOSURE:

The findings presented in this report are based upon: observations of Stratus field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, CA). 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 Atlantic Richfield Company. It is possible that variations in soil or ground-water 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. Ground-Water Elevation Contour and Analytical Summary Map, 20 August 2008, Station #6148, 5131 Shattuck Avenue, Oakland, California

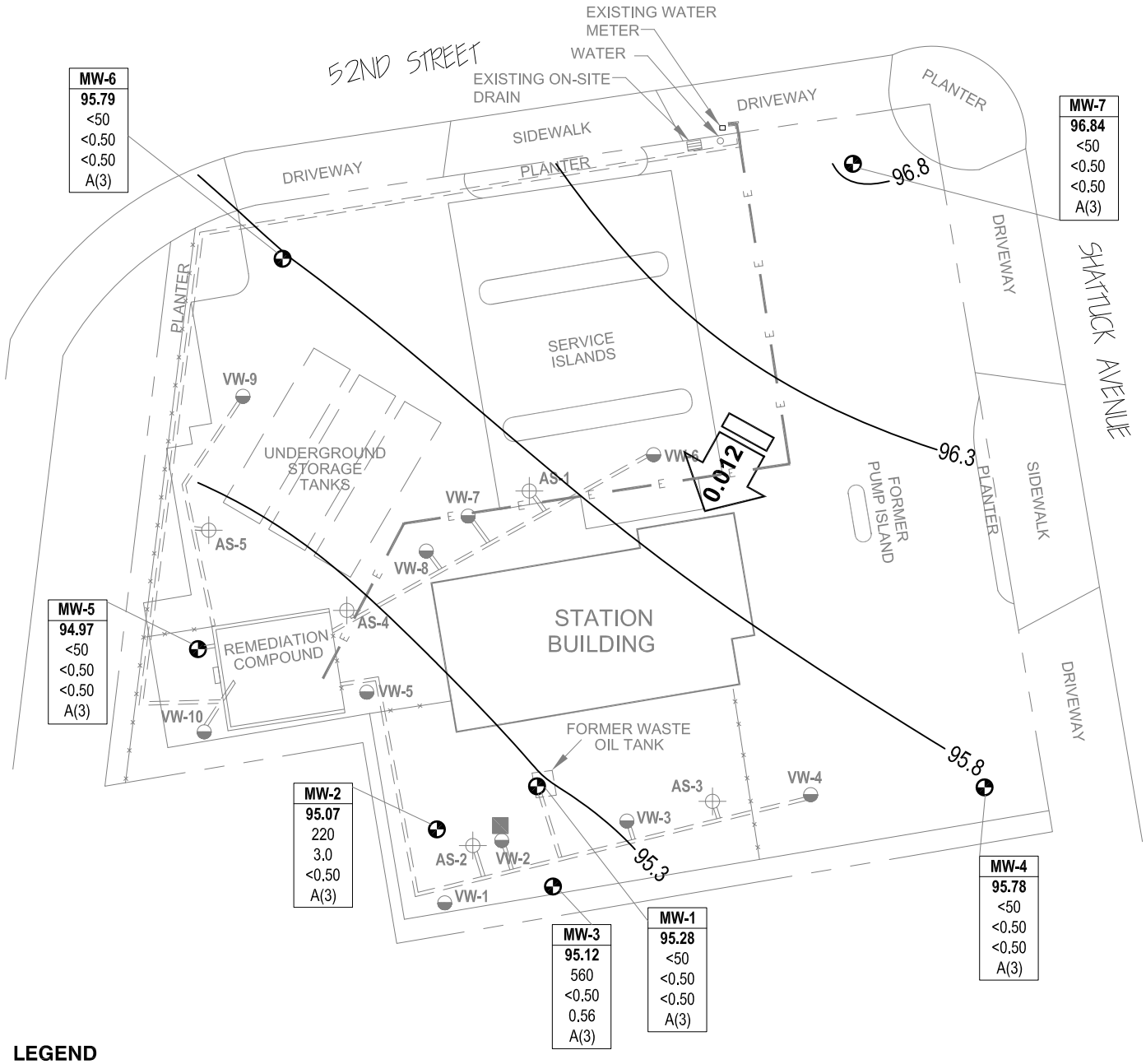
Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #6148, 5131 Shattuck Ave., Oakland, CA

Table 2. Summary of Fuel Additives Analytical Data, Station #6148, 5131 Shattuck Ave., Oakland, CA

Table 3. Historical Ground-Water Flow Direction and Gradient, Station #6148, 5131 Shattuck Ave., Oakland, CA

Appendix A. Stratus Ground-Water Sampling Data Package (Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody Documentation and Field Procedures)

Appendix B. GeoTracker Upload Confirmation



LEGEND

- MONITORING WELL
- AIR SPARGING WELL
- SOIL VAPOR EXTRACTION WELL
- DESTROYED WELL
- E — ELECTRICAL LINE
- FENCING
- REMEDIATION PIPING
- 0.012 — GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)
- 95.3 — GROUND-WATER ELEVATION CONTOUR (FT/MSL)

Well	WELL DESIGNATION
ELEV	GROUND-WATER ELEVATION (FT ABOVE MSL)
GRO Benzene MTBE	CONCENTRATION OF GRO, BENZENE AND MTBE IN GROUND WATER (µg/L)
A	SAMPLING FREQUENCY
A(3)	SAMPLED ANNUALLY, 3RD QUARTER
<	NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
NS	NOT SAMPLED
ORC	OXYGEN RELEASING COMPOUND SOCK

N

0 30 60

SCALE (ft)

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-08-638 Date: 9/10/08

ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California

Ground-Water Elevation Contours and Analytical Summary Map
20 August 2008

Drawing 1

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1															
6/21/2000	--		107.80	13.00	**26.00**	17.49	90.31	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--
9/20/2000	--		107.80	13.00	**26.00**	17.64	90.16	<50	<0.5	0.677	<0.5	0.969	<2.5	--	--
12/22/2000	--		107.80	13.00	**26.00**	16.87	90.93	186	5.38	0.522	9.52	30.2	8.91	--	--
3/26/2001	--		107.80	13.00	**26.00**	16.60	91.20	<50	<0.5	<0.5	<0.5	<0.5	9.1	--	--
5/30/2001	--		107.80	13.00	**26.00**	17.10	90.70	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/23/2001	--		107.80	13.00	**26.00**	17.53	90.27	<50	<0.5	<0.5	<0.5	<0.5	6.7	--	--
12/28/2001	--		107.80	13.00	**26.00**	15.57	92.23	<50	2.7	<0.5	<0.5	<0.5	20	--	--
3/21/2002	--		107.80	13.00	**26.00**	15.57	92.23	--	--	--	--	--	--	--	--
4/17/2002	--		107.80	13.00	**26.00**	16.25	91.55	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
8/19/2002	--		107.80	13.00	**26.00**	17.69	90.11	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2.0	7.1
11/27/2002	--		107.80	13.00	**26.00**	17.45	90.35	<50	<0.50	1.8	0.65	3.5	1.7	1.0	6.3
2/5/2003	--	d	107.80	13.00	**26.00**	16.93	90.87	<50	<0.50	<0.50	<0.50	<0.50	1.1	1.2	7.3
5/13/2003	--		107.80	13.00	**26.00**	16.95	90.85	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.0	6.5
7/31/2003	--		107.80	13.00	**26.00**	17.74	90.06	<50	<0.50	<0.50	<0.50	<0.50	0.55	1.2	6
12/17/2003	NP		107.80	13.00	26.00	17.03	90.77	<50	<0.50	<0.50	<0.50	<0.50	2.5	2.0	6.5
05/05/2004	NP		113.37	13.00	26.00	17.28	96.09	<50	<0.50	<0.50	<0.50	<0.50	0.60	2.6	6.4
08/25/2004	NP		113.37	13.00	26.00	17.72	95.65	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.9
11/29/2004	NP		113.37	13.00	26.00	17.45	95.92	<50	<0.50	<0.50	<0.50	<0.50	0.62	0.92	6.8
01/31/2005	NP		113.37	13.00	26.00	16.67	96.70	<50	<0.50	<0.50	<0.50	<0.50	0.59	1.63	6.1
05/09/2005	NP		113.37	13.00	26.00	16.77	96.60	<50	<0.50	<0.50	<0.50	<0.50	0.55	1.03	6.7
08/10/2005	NP		113.37	13.00	26.00	17.76	95.61	<50	<0.50	<0.50	<0.50	<0.50	0.62	0.9	7.0
8/29/2006	P		113.37	13.00	26.00	17.63	95.74	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	6.6
8/15/2007	NP		113.37	13.00	26.00	17.92	95.45	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.09	7.14
8/20/2008	**NP**		**113.37**	**13.00**	**26.00**	**18.09**	**95.28**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**1.03**	**6.47**
MW-2															
6/21/2000	--		107.28	14.00	**26.00**	17.19	90.09	69	<0.5	<0.5	<0.5	<1.0	12	--	--
9/20/2000	--		107.28	14.00	**26.00**	17.31	89.97	<50	0.964	<0.5	<0.5	<.05	5.05	--	--
12/22/2000	--		107.28	14.00	**26.00**	16.58	90.70	2,140	174	60.2	118	438	123	--	--
3/26/2001	--		107.28	14.00	**26.00**	16.45	90.83	8,490	333	148	495	1,660	<250	--	--
5/30/2001	--		107.28	14.00	**26.00**	16.83	90.45	4,700	200	71	260	780	43	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2 Cont.															
9/23/2001	--		107.28	14.00	**26.00**	17.30	89.98	160	5.9	1.8	0.8	41	14	--	--
12/28/2001	--		107.28	14.00	**26.00**	15.38	91.90	1,800	54	<5.0	<5.0	240	30	--	--
3/21/2002	--		107.28	14.00	**26.00**	15.36	91.92	--	--	--	--	--	--	--	--
4/17/2002	--		107.28	14.00	**26.00**	16.01	91.27	<50	<0.5	<0.5	<0.5	<0.5	10	--	--
8/19/2002	--	a	107.28	14.00	**26.00**	17.53	89.75	170	22	0.92	14	26	<2.5	3.0	6.9
11/27/2002	--		107.28	14.00	**26.00**	17.21	90.07	340	22	0.68	13	26	<0.50	1.6	6.6
2/5/2003	--	d	107.28	14.00	**26.00**	16.72	90.56	83	2.7	<0.50	0.97	15	4.3	0.7	7.0
05/13/2003	NP	f	107.28	14.00	**26.00**	16.72	90.56	<50	0.91	<0.50	<0.50	0.6	2.8	0.7	6.5
7/31/2003	--		107.28	14.00	**26.00**	17.51	89.77	<50	<0.50	<0.50	<0.50	<0.50	2.0	7.1	6.7
12/17/2003	NP		107.28	14.00	26.00	16.78	90.50	51	1.0	<0.50	<0.50	<0.50	2.4	8.1	7.1
02/13/2004	NP	e	112.87	14.00	26.00	16.63	96.24	50	0.70	<0.50	0.54	0.90	1.6	5.6	6.7
05/05/2004	NP		112.87	14.00	26.00	17.04	95.83	<50	<0.50	<0.50	<0.50	<0.50	0.99	4.3	6.9
08/25/2004	NP		112.87	14.00	26.00	17.55	95.32	<50	<0.50	<0.50	<0.50	<0.50	0.63	7.5	6.6
11/29/2004	NP		112.87	14.00	26.00	17.24	95.63	85	10	<0.50	4.6	1.0	0.55	1.41	6.9
01/31/2005	NP		112.87	14.00	26.00	16.48	96.39	<50	<0.50	<0.50	<0.50	<0.50	1.2	0.76	6.1
05/09/2005	NP		112.87	14.00	26.00	16.52	96.35	<50	0.68	<0.50	<0.50	<0.50	1.8	0.7	6.6
08/10/2005	NP		112.87	14.00	26.00	17.48	95.39	<50	1.8	<0.50	<0.50	<0.50	1.5	0.62	6.7
8/29/2006	P		112.87	14.00	26.00	17.33	95.54	660	6.4	<0.50	1.5	2.5	<0.50	0.8	6.4
8/15/2007	NP		112.87	14.00	26.00	17.60	95.27	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.75	6.81
8/20/2008	**NP**		**112.87**	**14.00**	**26.00**	**17.80**	**95.07**	**220**	**3.0**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**0.96**	**6.38**
MW-3															
6/21/2000	--		107.61	14.00	**26.00**	17.52	90.09	200	<0.5	<0.5	<0.5	2.1	24	--	--
9/20/2000	--		107.61	14.00	**26.00**	17.61	90.00	<50	<0.5	<0.5	<0.5	<0.5	20	--	--
12/22/2000	--		107.61	14.00	**26.00**	16.85	90.76	227	4.73	1.06	2.58	5.22	27.3	--	--
3/26/2001	--		107.61	14.00	**26.00**	16.79	90.82	287	6.29	1.58	6.47	12.1	24.2	--	--
5/30/2001	--		107.61	14.00	**26.00**	17.11	90.50	500	10	<0.5	7.00	16	20	--	--
9/23/2001	--		107.61	14.00	**26.00**	17.57	90.04	400	6.4	0.74	<0.5	0.62	22	--	--
12/28/2001	--		107.61	14.00	**26.00**	15.41	92.20	270	2.5	2.4	<0.5	2.3	9.2	--	--
3/21/2002	--		107.61	14.00	**26.00**	15.58	92.03	--	--	--	--	--	--	--	--
4/17/2002	--		107.61	14.00	**26.00**	16.25	91.36	360	2.5	0.72	<0.5	<0.5	12	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-3 Cont.															
8/19/2002	--	b	107.61	14.00	26.00	17.66	89.95	750	11	2.1	<0.5	2.4	14	1.4	6.8
11/27/2002	--		107.61	14.00	26.00	17.69	89.92	470	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.6
2/5/2003	--	d	107.61	14.00	26.00	16.82	90.79	<50	<0.50	<0.50	<0.50	<0.50	2.4	1.3	6.6
5/13/2003	--		107.61	14.00	26.00	17.12	90.49	300	<0.50	<0.50	<0.50	<0.50	2.2	1.4	6.7
7/31/2003	--		107.61	14.00	26.00	17.72	89.89	320	<0.50	<0.50	<0.50	<0.50	2.1	1.4	6.8
12/17/2003	NP		107.61	14.00	26.00	16.95	90.66	340	0.51	<0.50	<0.50	<0.50	4.8	1.3	6.7
02/13/2004	NP	e	113.05	14.00	26.00	16.77	96.28	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.1	7.1
05/05/2004	NP		113.05	14.00	26.00	17.22	95.83	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	6.9
08/25/2004	NP		113.05	14.00	26.00	17.66	95.39	<50	<0.50	<0.50	<0.50	<0.50	3.3	1.2	7.1
11/29/2004	NP		113.05	14.00	26.00	17.47	95.58	110	<0.50	<0.50	<0.50	<0.50	1.4	1.0	6.9
01/31/2005	NP		113.05	14.00	26.00	16.16	96.89	<50	<0.50	<0.50	<0.50	<0.50	2.0	0.87	6.2
05/09/2005	NP		113.05	14.00	26.00	16.64	96.41	50	<0.50	<0.50	<0.50	<0.50	0.80	0.83	6.7
08/10/2005	NP		113.05	14.00	26.00	17.59	95.46	65	<0.50	<0.50	<0.50	<0.50	<0.50	0.82	6.7
8/29/2006	P		113.05	14.00	26.00	17.60	95.45	<50	<0.50	<0.50	<0.50	0.74	0.51	1.0	6.4
8/15/2007	NP		113.05	14.00	26.00	17.88	95.17	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.74	6.67
8/20/2008	**NP**		**113.05**	**14.00**	**26.00**	**17.93**	**95.12**	**560**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**0.56**	**1.05**	**6.40**
MW-4															
6/21/2000	--		106.71	11.50	26.50	16.00	90.71	1,400	5.3	7.3	36	85	4	--	--
9/20/2000	--		106.71	11.50	26.50	16.03	90.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/22/2000	--		106.71	11.50	26.50	--	--	--	--	--	--	--	--	--	--
3/26/2001	--		106.71	11.50	26.50	15.05	91.66	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
5/30/2001	--		106.71	11.50	26.50	15.62	91.09	--	--	--	--	--	--	--	--
9/23/2001	--		106.71	11.50	26.50	16.07	90.64	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		106.71	11.50	26.50	13.68	93.03	--	--	--	--	--	--	--	--
3/21/2002	--		106.71	11.50	26.50	14.04	92.67	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/17/2002	--		106.71	11.50	26.50	14.78	91.93	--	--	--	--	--	--	--	--
8/19/2002	--		106.71	11.50	26.50	16.18	90.53	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.4	6.8
11/27/2002	--		106.71	11.50	26.50	15.89	90.82	--	--	--	--	--	--	--	--
2/5/2003	--	d	106.71	11.50	26.50	15.40	91.31	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.6
5/13/2003	--		106.71	11.50	26.50	15.42	91.29	--	--	--	--	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4 Cont.															
7/31/2003	--		106.71	11.50	26.50	16.23	90.48	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	6.4
12/17/2003	--		106.71	11.50	26.50	15.57	91.14	--	--	--	--	--	--	--	--
02/13/2004	P	e	112.15	11.50	26.50	15.30	96.85	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.3
05/05/2004	--		112.15	11.50	26.50	15.69	96.46	--	--	--	--	--	--	--	--
08/25/2004	P		112.15	11.50	26.50	16.07	96.08	<50	<0.50	<0.50	<0.50	0.51	<0.50	1.6	6.4
11/29/2004	--		112.15	11.50	26.50	15.86	96.29	--	--	--	--	--	--	--	--
01/31/2005	P		112.15	11.50	26.50	15.17	96.98	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.61	6.2
05/09/2005	--		112.15	11.50	26.50	15.25	96.90	--	--	--	--	--	--	--	--
08/10/2005	P		112.15	11.50	26.50	16.23	95.92	<50	<0.50	0.50	<0.50	1.1	<0.50	0.68	6.5
8/29/2006	P		112.15	11.50	26.50	16.04	96.11	<50	<0.50	<0.50	<0.50	0.53	<0.50	1.2	6.5
8/15/2007	NP		112.15	11.50	26.50	16.20	95.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.09	7.92
8/20/2008	**NP**		**112.15**	**11.50**	**26.50**	**16.37**	**95.78**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**0.99**	**6.56**
MW-5															
3/26/2000	--		106.60	10.00	25.00	15.45	91.15	767	12.4	<5.0	<5.0	<5.0	163	--	--
6/21/2000	--		106.60	10.00	25.00	16.52	90.08	67	<0.5	<0.5	<0.5	<1.0	10	--	--
9/20/2000	--		106.60	10.00	25.00	16.34	90.26	<50	<0.5	<0.5	<0.5	<0.5	3.48	--	--
12/22/2000	--		106.60	10.00	25.00	15.58	91.02	341	11.5	2.53	4.02	6.25	146	--	--
5/30/2001	--		106.60	10.00	25.00	15.77	90.83	110	2.3	<0.5	<0.5	0.81	72	--	--
9/23/2001	--		106.60	10.00	25.00	16.16	90.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		106.60	10.00	25.00	14.09	92.51	240	2.8	1.9	<0.5	2.6	48	--	--
3/21/2002	--		106.60	10.00	25.00	14.43	92.17	--	<0.5	<0.5	<0.5	<0.5	--	--	--
4/17/2002	--		106.60	10.00	25.00	14.96	91.64	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
8/19/2002	--	c	106.60	10.00	25.00	16.34	90.26	--	--	--	--	--	--	--	--
11/27/2002	--	c	106.60	10.00	25.00	--	--	--	--	--	--	--	--	--	--
2/5/2003	--	c , d	106.60	10.00	25.00	--	--	--	--	--	--	--	--	--	--
5/13/2003	NP	f	106.60	10.00	25.00	15.43	91.17	<50	<0.50	<0.50	<0.50	<0.50	15	1.4	6.2
7/31/2003	--		106.60	10.00	25.00	16.47	90.13	<50	<0.50	<0.50	<0.50	<0.50	1.2	14.1	8.1
12/17/2003	NP		106.60	10.00	25.00	15.99	90.61	<50	<0.50	<0.50	<0.50	<0.50	1.8	15.4	8.5
02/13/2004	NP	e	112.04	10.00	25.00	15.90	96.14	<50	<0.50	<0.50	<0.50	<0.50	2.6	11.1	7.0
05/05/2004	NP		112.04	10.00	25.00	16.28	95.76	51	<0.50	<0.50	<0.50	<0.50	1.2	0.8	7.2

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-5 Cont.															
08/25/2004	NP		112.04	10.00	25.00	16.67	95.37	<50	<0.50	<0.50	<0.50	<0.50	1.1	10.5	--
11/29/2004	NP		112.04	10.00	25.00	16.37	95.67	<50	<0.50	<0.50	<0.50	<0.50	0.61	1.0	7.0
01/31/2005	NP		112.04	10.00	25.00	15.73	96.31	<50	<0.50	<0.50	<0.50	<0.50	0.86	1.63	6.3
05/09/2005	NP		112.04	10.00	25.00	15.90	96.14	<50	<0.50	<0.50	<0.50	<0.50	0.60	1.12	7.2
08/10/2005	NP		112.04	10.00	25.00	16.65	95.39	740	<0.50	<0.50	<0.50	<0.50	2.5	--	7.3
8/29/2006	P		112.04	10.00	25.00	16.60	95.44	230	<0.50	<0.50	<0.50	<0.50	1.1	--	6.4
8/20/2008	**NP**		**112.04**	**10.00**	**25.00**	**17.07**	**94.97**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**1.60**	**6.74**
MW-6															
6/21/2000	--		105.13	12.00	27.00	13.91	91.22	--	--	--	--	--	--	--	--
9/20/2000	--		105.13	12.00	27.00	14.03	91.10	--	--	--	--	--	--	--	--
12/22/2000	--		105.13	12.00	27.00	--	--	--	--	--	--	--	--	--	--
3/26/2001	--		105.13	12.00	27.00	12.59	92.54	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
5/30/2001	--		105.13	12.00	27.00	13.40	91.73	--	--	--	--	--	--	--	--
9/23/2001	--		105.13	12.00	27.00	13.49	91.64	--	--	--	--	--	--	--	--
12/28/2001	--		105.13	12.00	27.00	12.07	93.06	--	--	--	--	--	--	--	--
3/21/2002	--		105.13	12.00	27.00	11.79	93.34	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/17/2002	--		105.13	12.00	27.00	12.45	92.68	--	--	--	--	--	--	--	--
8/19/2002	--		105.13	12.00	27.00	13.96	91.17	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2.8	6.9
11/27/2002	--		105.13	12.00	27.00	14.07	91.06	--	--	--	--	--	--	--	--
2/5/2003	--	d	105.13	12.00	27.00	13.55	91.58	--	--	--	--	--	--	--	--
5/13/2003	--		105.13	12.00	27.00	13.57	91.56	--	--	--	--	--	--	--	--
7/31/2003	--		105.13	12.00	27.00	14.18	90.95	67	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	6.5
12/17/2003	--		105.13	12.00	27.00	14.12	91.01	--	--	--	--	--	--	--	--
02/13/2004	--	e	110.66	12.00	27.00	13.51	97.15	--	--	--	--	--	--	--	--
05/05/2004	--		110.66	12.00	27.00	13.95	96.71	--	--	--	--	--	--	--	--
08/25/2004	P		110.66	12.00	27.00	14.42	96.24	55	<0.50	0.98	<0.50	1.5	<0.50	3.6	6.7
11/29/2004	--		110.66	12.00	27.00	14.20	96.46	--	--	--	--	--	--	--	--
01/31/2005	--		110.66	12.00	27.00	13.33	97.33	--	--	--	--	--	--	--	--
05/09/2005	--		110.66	12.00	27.00	13.45	97.21	--	--	--	--	--	--	--	--
08/10/2005	P		110.66	12.00	27.00	14.29	96.37	53	<0.50	1.2	<0.50	2.6	<0.50	2.63	6.5

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-6 Cont.															
8/29/2006	P		110.66	12.00	27.00	14.29	96.37	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.5
8/15/2007	NP		110.66	12.00	27.00	14.47	96.19	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.19	6.81
8/20/2008	**NP**		**110.66**	**12.00**	**27.00**	**14.87**	**95.79**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**3.64**	**6.63**
MW-7															
6/21/2000	--		107.05	12.00	27.00	14.57	92.48	--	--	--	--	--	--	--	--
9/20/2000	--		107.05	12.00	27.00	14.58	92.47	--	--	--	--	--	--	--	--
12/22/2000	--		107.05	12.00	27.00	13.21	93.84	--	--	--	--	--	--	--	--
3/26/2001	--		107.05	12.00	27.00	13.18	93.87	71.4	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
5/30/2001	--		107.05	12.00	27.00	13.80	93.25	--	--	--	--	--	--	--	--
9/23/2001	--		107.05	12.00	27.00	14.27	92.78	--	--	--	--	--	--	--	--
12/28/2001	--		107.05	12.00	27.00	12.24	94.81	--	--	--	--	--	--	--	--
3/21/2002	--		107.05	12.00	27.00	12.16	94.89	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/17/2002	--		107.05	12.00	27.00	13.08	93.97	--	--	--	--	--	--	--	--
8/19/2002	--		107.05	12.00	27.00	14.73	92.32	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.4	6.7
11/27/2002	--		107.05	12.00	27.00	14.76	92.29	--	--	--	--	--	--	--	--
2/5/2003	--	d	107.05	12.00	27.00	14.07	92.98	--	--	--	--	--	--	--	--
5/13/2003	--		107.05	12.00	27.00	14.00	93.05	--	--	--	--	--	--	--	--
7/31/2003	--		107.05	12.00	27.00	14.00	93.05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.4
12/17/2003	--		107.05	12.00	27.00	14.10	92.95	--	--	--	--	--	--	--	--
02/13/2004	--	e	112.59	12.00	27.00	13.91	98.68	--	--	--	--	--	--	--	--
05/05/2004	--		112.59	12.00	27.00	14.60	97.99	--	--	--	--	--	--	--	--
08/25/2004	P		112.59	12.00	27.00	15.25	97.34	<50	<0.50	0.53	<0.50	0.91	<0.50	1.2	6.4
11/29/2004	--		112.59	12.00	27.00	15.00	97.59	--	--	--	--	--	--	--	--
01/31/2005	--		112.59	12.00	27.00	13.69	98.90	--	--	--	--	--	--	--	--
05/09/2005	--		112.59	12.00	27.00	13.79	98.80	--	--	--	--	--	--	--	--
08/10/2005	P		112.59	12.00	27.00	15.02	97.57	<50	<0.50	0.51	<0.50	<0.50	<0.50	1.45	6.4
8/29/2006	P		112.59	12.00	27.00	15.00	97.59	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.4
8/15/2007	NP		112.59	12.00	27.00	15.10	97.49	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.00	7.03
8/20/2008	**NP**		**112.59**	**12.00**	**27.00**	**15.75**	**96.84**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**1.17**	**6.56**

SYMBOLS AND ABBREVIATIONS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved Oxygen
DTW = Depth to water in feet below ground surface
ft bgs = feet below ground surface
GWE = Groundwater measured in feet above mean sea level
GRO = Gasoline Range Organics
mg/L = Milligrams per liter or parts per million (ppm)
MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted (Prior to 2/5/03)
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in feet above mean sea level
TPH-g = Total Petroleum Hydrocarbons as Gasoline
ug/L = Micrograms per liter

FOOTNOTES:
a = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel (TPHg/GRO).
b = Chromatogram Pattern: Gasoline C6-C10 (TPHg/GRO).
c = Well MW-5 not sampled due to ORC sock wedged in well.
d = TPH-g, BTEX, and MTBE analyzed by EPA meathod 8260B beginning on 1st quarter sampling event (2/5/03).
e = Wells surveyed to NAVD'88 datum on January 29, 2004.
f = During this monitoring event, the oxygen releasing compounds (ORC) were replaced for this well.

NOTES:
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. Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

The values for pH and DO were obtained from field measurements.

The top and bottom of screen depths for wells MW-1, MW-2 and MW-3 were obtained from EMCON O&M sampling sheets not from well logs.

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

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
2/5/2003	<40	<20	1.1	<0.50	<0.50	<0.50	--	--	
5/13/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
7/31/2003	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
12/17/2003	<100	<20	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	
05/05/2004	<100	<20	0.60	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
11/29/2004	<100	<20	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	
01/31/2005	<100	<20	0.59	<0.50	<0.50	<0.50	<0.50	<0.50	
05/09/2005	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/15/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/20/2008	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-2									
2/5/2003	<40	<20	4.3	<0.50	<0.50	<0.50	--	--	
5/13/2003	<100	<20	2.8	<0.50	<0.50	<0.50	--	--	
7/31/2003	<100	<20	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	
12/17/2003	<100	<20	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	
02/13/2004	<100	<20	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	
05/05/2004	<100	<20	0.99	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	0.63	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2004	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
01/31/2005	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
05/09/2005	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/15/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/20/2008	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-3									
2/5/2003	<40	<20	2.4	<0.50	<0.50	<0.50	--	--	

Table 2. Summary of Fuel Additives Analytical Data

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
5/13/2003	<100	<20	2.2	<0.50	<0.50	<0.50	--	--	
7/31/2003	<100	<20	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
12/17/2003	<100	<20	4.8	<0.50	<0.50	<0.50	<0.50	<0.50	
02/13/2004	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
05/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2004	<100	<20	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
01/31/2005	<100	<20	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	
05/09/2005	<100	<20	0.80	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	0.51	<0.50	<0.50	<0.50	<0.50	<0.50	
8/15/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/20/2008	**<300**	**<10**	**0.56**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-4									
7/31/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/13/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
01/31/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/15/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/20/2008	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-5									
5/13/2003	<100	<20	15	<0.50	<0.50	1.1	--	--	
7/31/2003	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
12/17/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
02/13/2004	<100	<20	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	
05/05/2004	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2004	<100	<20	0.61	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data

Station #6148, 5131 Shattuck Ave., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-5 Cont.									
01/31/2005	<100	<20	0.86	<0.50	<0.50	<0.50	<0.50	<0.50	
05/09/2005	<100	<20	0.60	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2008	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-6									
7/31/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/15/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/20/2008	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-7									
7/31/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/10/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/29/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/15/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/20/2008	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

SYMBOLS AND ABBREVIATIONS:
< = Not detected at or above the specified laboratory reporting limit
-- = Not available/analyzed/applicable
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert butyl ether
MTBE = Methyl tert-butyl ether
1,2-DCA = 1,2-Dichloroethane
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
ug/L = micrograms per liter

FOOTNOTES:
a = This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.
b = Calib. Verif. Is within method limits but outside contract limits for Ethanol.

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 Ground-Water Flow Direction and Gradient

Station #6148, 5131 Shattuck Ave., Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
6/21/2000	South-Southwest	0.016
9/20/2000	South-Southwest	0.017
12/22/2000	South-Southwest	0.022
3/26/2001	South-Southwest	0.02
5/30/2001	South-Southwest	0.02
9/23/2001	South-Southwest	0.019
12/28/2001	Southwest	0.019
3/21/2002	Southwest	0.019
4/17/2002	Southwest	0.017
8/19/2002	Southwest	0.016
11/27/2002	Southwest	0.015
2/5/2003	Southwest	0.017
5/13/2003	Southwest	0.013
7/31/2003	Southwest	0.014
2/13/2004	Southwest	0.016
5/5/2004	Southwest	0.016
8/25/2004	Southwest	0.013
11/29/2004	Southwest	0.013
1/31/2005	Southwest	0.02
5/9/2005	Southwest	0.02
8/10/2005	Southwest	0.02
8/29/2006	Southwest	0.014
8/15/2007	Southwest	0.015
8/20/2008	**Southwest**	**0.012**

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.

APPENDIX A

STRATUS GROUND-WATER SAMPLING DATA PACKAGE
(INCLUDES FIELD DATA SHEETS, LABORATORY ANALYTICAL REPORT
WITH CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD PROCEDURES)

STRATUS
ENVIRONMENTAL, INC.

3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

September 5, 2008

Mr. Rob Miller
Broadbent & Associates, Inc.
2000 Kirman Avenue
Reno, NV 89502

Re: Groundwater Sampling Data Package, BP Service Station No. 6148, located at 5131 Shattuck Avenue, Oakland, California

General Information

Data Submittal Prepared / Reviewed by: Becky Carroll / Jay Johnson
Phone Number: (530) 676-6000
On-Site Supplier Representative: Roberto Heimlich

Sampling Date: August 20, 2008
Arrival: 06:00 *Departure:* 8:35
Weather Conditions: Clear
Unusual Field Conditions: None
Scope of Work Performed: Quarterly monitoring and sampling
Variations from Work Scope: None noted.

This submittal presents the tabulation of data collected in association with routine groundwater monitoring. The attachments include field data sheets, non-hazardous waste data form, chain of custody documentation, certified analytical results, and field procedures for groundwater monitoring and sampling. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations. Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Jay R. Johnson, P.G.
Project Manager

Attachments:

- Field Data Sheets
- Non-Hazardous Waste Data Form
- Chain of Custody Documentation
- Certified Analytical Results
- Field Procedures for Groundwater Sampling

cc: Mr. Paul Supple, BP/ARCO

BP Alameda Portfolio

HYDROLOGIC DATA SHEET

AT: 6:00
DT: 8:35

Gauge Date: 8/20/08 **Project Name:** 5131 Shattuck Avenue, Oakland

Field Technician: ROBERTO **Project Number:** 6148

TOC = Top of Well Casing Elevation
TOS = Depth to Top of Screen
DTW = Depth to Groundwater Below TOC
DTB = Depth to Bottom of Well Casing Below TOC
DIA = Well Casing Diameter
ELEV = Groundwater Elevation
DUP = Duplicate

WELL OR LOCATION	TIME	MEASUREMENT						PURGE & SAMPLE	SHEEN CONFIRMATION (w/bailer)	COMMENTS
		TOC	TOS	DTW	DTB	DIA	ELEV			
MW-1	6:30			18.09	25.42	4"				
MW-2	6:26			17.80	25.40	4"				
MW-3	6:21			17.93	25.45	4"				
MW-4	6:16			16.37	25.90	4"				
MW-5	6:01			17.07	19.80	4"				
MW-6	6:07			14.87	26.45	4"				
MW-7	6:11			15.75	26.85	4"				

FW: Arturo Heimlich

pH/Conductivity/temperature Meter - YSI Model 63

DO Meter - YSI 55 Series (DO is always measured before purge)

Please refer to groundwater sampling field procedures

Calibration Date

pH 8/20/08

Conductivity 8/20/08

DO 8/20/08

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 | PURGED BY: RH | WELL I.D.: MW-1

CLIENT NAME: | SAMPLED BY: RH | SAMPLE I.D.: MW-1

LOCATION: 5131 Shattuck Avenue, Oakland | QA SAMPLES:

DATE PURGED 8/20/08 NP | START (2400hr) 8:15 | END (2400hr) 8:25

DATE SAMPLED 8/20/08 | SAMPLE TIME (2400hr) 8:21

SAMPLE TYPE: Groundwater x | Surface Water | Treatment Effluent | Other

CASING DIAMETER: 2" | 3" | 4" x | 5" | 6" | 8" | Other

Casing Volume: (gallons per foot) (0.17) | (0.38) | (0.67) | (1.02) | (1.50) | (2.60) | ( )

DEPTH TO BOTTOM (feet) = 25.42

DEPTH TO WATER (feet) = 18.09 NP

WATER COLUMN HEIGHT (feet) =

CASING VOLUME (gal) =

CALCULATED PURGE (gal) = NP

ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08	8:18	NP	68.98	392	6.47	clear	

NO PURGE

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 18.09

SAMPLE TURBIDITY: clear

80% RECHARGE: x YES ___ NO

ANALYSES: 5W8

ODOR: NO

SAMPLE VESSEL / PRESERVATIVE: 6 VOAs HCL

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump NP
___ Peristaltic Pump
___ Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated

Other:

Pump Depth: NP

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
x Bailer (___ PVC or x disposable)
___ Bailer (Stainless Steel)
___ Dedicated

Other:

WELL INTEGRITY: GOOD

LOCK#: NA

REMARKS: DO 1.03

SIGNATURE:

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 | PURGED BY: RH | WELL I.D.: MW-2

CLIENT NAME: | SAMPLED BY: RH | SAMPLE I.D.: MW-2

LOCATION: 5131 Shattuck Avenue, Oakland | QA SAMPLES:

DATE PURGED 8/20/08 | START (2400hr) 8:00 | END (2400hr) 8:10

DATE SAMPLED 8/20/08 MP | SAMPLE TIME (2400hr) 8:07

SAMPLE TYPE: Groundwater x | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER: 2" ___ | 3" ___ | 4" x | 5" ___ | 6" ___ | 8" ___ | Other ___

Casing Volume: (gallons per foot) (0.17) | (0.38) | (0.67) | (1.02) | (1.50) | (2.60) | ( )

DEPTH TO BOTTOM (feet) = 25.40 | CASING VOLUME (gal) = N/A

DEPTH TO WATER (feet) = 17.80 | CALCULATED PURGE (gal) = N/A

WATER COLUMN HEIGHT (feet) = | ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08	8:03	NP	69.01	407	6.38	clear	
		N/A	PURGE				

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 17.80 | SAMPLE TURBIDITY: clear

80% RECHARGE: x YES ___ NO | ANALYSES: 8015

ODOR: NO | SAMPLE VESSEL / PRESERVATIVE: 6 VOAs / HCl

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
N/A
___ Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

Pump Depth: N/A

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
x Bailer (___ PVC or x disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: Good | LOCK#: N/A

REMARKS: DO 0.96

SIGNATURE: [signature]

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 PURGED BY: RH WELL I.D.: MW-3

CLIENT NAME: SAMPLED BY: RH SAMPLE I.D.: MW-3

LOCATION: 5131 Shattuck Avenue, Oakland QA SAMPLES:

DATE PURGED 8/20/08 NP START (2400hr) 7:44 END (2400hr) 7:53

DATE SAMPLED 8/20/08 SAMPLE TIME (2400hr) 7:51

SAMPLE TYPE: Groundwater x Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER: 2" ___ 3" ___ 4" X 5" ___ 6" ___ 8" ___ Other ___

Casing Volume: (gallons per foot) (0.17) (0.38) (0.67) (1.02) (1.50) (2.60) ( )

DEPTH TO BOTTOM (feet) = 25.45 CASING VOLUME (gal) =

DEPTH TO WATER (feet) = 17.93 CALCULATED PURGE (gal) = NP

WATER COLUMN HEIGHT (feet) = ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08	7:47	NP	63.9	400	6.40	clear	
		NP	PURGE				

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 17.93 SAMPLE TURBIDITY: clear

80% RECHARGE: X YES ___ NO ANALYSES: 8260

ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAs / HCl

PURGING EQUIPMENT

___ Bladder Pump ___ Bailer (Teflon)

___ Centrifugal Pump NA ___ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Peristaltic Pump ___ Dedicated ___

Other: ___

Pump Depth: NA

SAMPLING EQUIPMENT

___ Bladder Pump ___ Bailer (Teflon)

___ Centrifugal Pump X Bailer (___ PVC or X disposable)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Peristaltic Pump ___ Dedicated ___

Other: ___

WELL INTEGRITY: GOOD LOCK#: NA

REMARKS: DO 1.05

SIGNATURE: [signature]

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 | PURGED BY: RH | WELL I.D.: MW-4
CLIENT NAME: | SAMPLED BY: RH | SAMPLE I.D.: MW-4
LOCATION: 5131 Shattuck Avenue, Oakland | QA SAMPLES:

DATE PURGED 8/20/08 NP | START (2400hr) 7:26 | END (2400hr) 7:37
DATE SAMPLED 8/20/08 | SAMPLE TIME (2400hr) 7:34
SAMPLE TYPE: Groundwater x | Surface Water | Treatment Effluent | Other

CASING DIAMETER: 2" | 3" | 4" x | 5" | 6" | 8" | Other
Casing Volume: (gallons per foot) (0.17) | (0.38) | (0.67) | (1.02) | (1.50) | (2.60) | ( )

DEPTH TO BOTTOM (feet) = 25.90 NP | CASING VOLUME (gal) = NP
DEPTH TO WATER (feet) = 16.37 | CALCULATED PURGE (gal) = NP
WATER COLUMN HEIGHT (feet) = | ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08	7:30	NP	70.57	397	6.56	clear	
		NO PURGE					

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 16.37 | SAMPLE TURBIDITY: clear

80% RECHARGE: x YES ___ NO | ANALYSES: 5W0
ODOR: no | SAMPLE VESSEL / PRESERVATIVE: 6 VOAs / HCL

PURGING EQUIPMENT

___ Bladder Pump | ___ Bailer (Teflon)
___ Centrifugal Pump NP | ___ Bailer (PVC)
___ Submersible Pump | ___ Bailer (Stainless Steel)
___ Peristaltic Pump | ___ Dedicated
Other:
Pump Depth: NP

SAMPLING EQUIPMENT

___ Bladder Pump | x Bailer (Teflon)
___ Centrifugal Pump | ~~x~~ Bailer (___ PVC or x disposable)
___ Submersible Pump | ___ Bailer (Stainless Steel)
___ Peristaltic Pump | ___ Dedicated
Other:

WELL INTEGRITY: GOOD | LOCK#: [redacted]
REMARKS: DO 0.99 NA

SIGNATURE: [signature]

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 PURGED BY: RM WELL I.D.: MW-5

CLIENT NAME: SAMPLED BY: RM SAMPLE I.D.:

LOCATION: 5131 Shattuck Avenue, Oakland QA SAMPLES: MW-5

DATE PURGED 8/20/08 NP START (2400hr) 6:39 END (2400hr) 6:47

DATE SAMPLED 8/20/08 SAMPLE TIME (2400hr) 6:45

SAMPLE TYPE: Groundwater x Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" ____ (0.17) 3" ____ (0.38) 4" x (0.67) 5" ____ (1.02) 6" ____ (1.50) 8" ____ (2.60) Other ____ ( )

Casing Volume: (gallons per foot)

DEPTH TO BOTTOM (feet) = 19.80 NP CASING VOLUME (gal) =

DEPTH TO WATER (feet) = 17.07 NP CALCULATED PURGE (gal) = NP

WATER COLUMN HEIGHT (feet) = ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08 NP	6:42	NP	65.86	451	6.74	RUSTY	
		N/O		PURGE			

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 17.07 SAMPLE TURBIDITY: RUSTY

80% RECHARGE: X YES ___ NO ANALYSES: SVO

ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAS / HCL

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump NP
___ Submersible Pump
___ Peristaltic Pump

___ Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated ____

Other: ____

Pump Depth: NA

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump

___ Bailer (Teflon)
X Bailer (___ PVC or X Disposable)
___ Bailer (Stainless Steel)
___ Dedicated ____

Other: ____

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DO 1.60

SIGNATURE:

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 PURGED BY: RH WELL I.D.: MW-6

CLIENT NAME: SAMPLED BY: RH SAMPLE I.D.: MW-6

LOCATION: 5131 Shattuck Avenue, Oakland QA SAMPLES:

DATE PURGED 8/20/08 START (2400hr) 6:53 END (2400hr) 7:01

DATE SAMPLED 8/20/08 NP SAMPLE TIME (2400hr) 6:59

SAMPLE TYPE: Groundwater x Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" ____ 3" ____ 4" ✓ 5" ____ 6" ____ 8" ____ Other ____

Casing Volume: (gallons per foot) (0.17) (0.38) (0.67) (1.02) (1.50) (2.60) ( )

DEPTH TO BOTTOM (feet) = 26.45 CASING VOLUME (gal) = N/P

DEPTH TO WATER (feet) = 14.87 CALCULATED PURGE (gal) = N/P

WATER COLUMN HEIGHT (feet) = ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08	6:56	NP	69.02	390	6.63	clear	
		NO PURGE					

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 14.87 SAMPLE TURBIDITY: clear

80% RECHARGE: ✓ YES ___ NO ANALYSES: 5260

ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAs / HCl

PURGING EQUIPMENT

___ Bladder Pump ___ Bailer (Teflon)
___ Centrifugal Pump N/A ___ Bailer (PVC)
___ Submersible Pump ___ Bailer (Stainless Steel)
___ Peristalic Pump ___ Dedicated ____

Other: ____

Pump Depth: NP

SAMPLING EQUIPMENT

___ Bladder Pump ___ Bailer (Teflon)
___ Centrifugal Pump ✓ Bailer (___ PVC or ✓ disposable)
___ Submersible Pump ___ Bailer (Stainless Steel)
___ Peristalic Pump ___ Dedicated ____

Other: ____

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DO 3.64

SIGNATURE: [signature] Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 6148 PURGED BY: RH WELL I.D.: MW-7

CLIENT NAME: SAMPLED BY: RH SAMPLE I.D.: MW-7

LOCATION: 5131 Shattuck Avenue, Oakland QA SAMPLES:

DATE PURGED 8/20/08 NP START (2400hr) 7:10 END (2400hr) 7:19

DATE SAMPLED 8/20/08 SAMPLE TIME (2400hr) 7:16

SAMPLE TYPE: Groundwater x Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER: 2" ____ 3" ____ 4" x 5" ____ 6" ____ 8" ____ Other ____

Casing Volume: (gallons per foot) (0.17) (0.38) (0.67) (1.02) (1.50) (2.60) ( )

DEPTH TO BOTTOM (feet) = 26.85 CASING VOLUME (gal) =

DEPTH TO WATER (feet) = 15.75 CALCULATED PURGE (gal) = NP

WATER COLUMN HEIGHT (feet) = ACTUAL PURGE (gal) =

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
8/20/08	7:13	NP	69.90	345	6.56	clear	

NO PURGE

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 15.75 SAMPLE TURBIDITY: clear

80% RECHARGE: x YES ___ NO ANALYSES: 6 VOA's

ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAs/HCl

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ Bladder Pump	___ Bailer (Teflon)	___ Bladder Pump	___ Bailer (Teflon)
___ Centrifugal Pump	___ Bailer (PVC)	___ Centrifugal Pump	x Bailer (___ PVC or x disposable)
___ Submersible Pump NA	___ Bailer (Stainless Steel)	___ Submersible Pump	___ Bailer (Stainless Steel)
___ Peristaltic Pump	___ Dedicated ____	___ Peristaltic Pump	___ Dedicated ____
Other: ____		Other: ____	
Pump Depth: NA			

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DO 1.17

SIGNATURE: Page ___ of ___

WELLHEAD OBSERVATION FORM

Site Name/Number: 6148 *Date:* 5/20/08 *Technican:* ROBERTO

Well I.D.	Box in Good Condition? X = Yes Blank = No	Lock Missing? X = Yes (replaced) Blank = No	Water in Wellbox? X = Yes Blank = No	Water Level Relative to Cap? A = Above cap B = Below cap L = Level w/cap	Well Cap? I = Intact M = Missing or Compromised (replaced)	Bolts Missing? X = Yes Blank = No	Bolts Stripped? X = Yes Blank = No	Bolt Holes Stripped? X = Yes Blank = No	Cracked or Broken Lid? X = Yes Blank = No	Cracked or Broken Box? X = Yes Blank = No	Grout Level more than 1ft below TOC? X = Yes Blank = No	Additional Comments (track as missing lid, concrete needs replacement, or other - explain)
MW-1	X				I							
MW-2	X				I							
MW-3	X				I							
MW-4	X				I							
MW-5	X				I							
MW-6	X				I							
MW-7	X				I							

DRUM INVENTORY

Drums on site? (Yes) No (circle)

Type and # Steel: 1 Plastic:

Note whether drums are full or empty, solids or liquids:

FULL / LIQUID

Drum label info (description, date, contact info):

BUCKET TEST WATER 5/11/07

5.55

(updated 3-28-08: SS)

GENERAL SITE CONDITIONS

Make notes on housekeeping conditions (such as trash around remediation system enclosure/compound, bent or missing bollards, signs missing from compound fences, graffiti on compound, etc.)

Atlantic Richfield Company
A BP affiliated company

Chain of Custody Record

Project Name: BP 6148
BP BU/AR Region/Enfos Segment: BP > Americas > West > Retail > CA > Alameda > 6148
State or Lead Regulatory Agency:
Requested Due Date (mm/dd/yy):

On-site Time:	6:00	Temp:	58
Off-site Time:	8:35	Temp:	60
Sky Conditions:	clear		
Meteorological Events:	N/A		
Wind Speed:	0	Direction:	N/A

Lab Name: Calscience	BP/AR Facility No.: 6148
Address: 7440 Lincoln Way	BP/AR Facility Address: 5131 Shattuck Avenue, Oakland
Garden Grove, CA 92841	Site Lat/Long:
Lab PM: Linda Scharpenberg	California Global ID #: T0600100103
Tele/Fax: 714-895-5494 714-895-7501(fax)	Enfos Project No.: G0C2J-0020
BP/AR PM Contact: Paul Supple	Provision or RCOP (circle one) Provision
Address: 2010 Crow Canyon Place, Suite 150	Phase/WBS: 04-Monitoring
San Ramon, CA	Sub Phase/Task: 03-Analytical
Tele/Fax: 925-275-3506	Cost Element: 01-Contractor labor

Consultant/Contractor:	Stratus Environmental, Inc.
Address:	3330 Cameron Park Drive, Suite 550
	Cameron Park, CA 95682
Consultant/Contractor Project No.:	
Consultant/Contractor PM:	Jay Johnson
Tele/Fax:	(530) 676-6000 / (530) 676-6005
Report Type & QC Level:	Level 1 with EDF
E-mail EDD To:	bcarroll@stratusinc.net
Invoice to:	Atlantic Richfield Co.

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: GRO/BTEX/Oxy*	Requested Analysis: 1,2 DCA	Requested Analysis: EDB	Requested Analysis: Ethanol by 8260	Requested Analysis: TPH-G	Sample Point Lat/Long and Comments *Oxy = MTBD, TAME, ETBE, DIPE, TBA
1	MW-1	8:21	8/6/08		X			6				X		X	X	X	X		
2	MW-2	8:07	"		X			6				X		X	X	X	X		
3	MW-3	7:51	"		X			6				X		X	X	X	X		
4	MW-4	7:34	"		X			6				X		X	X	X	X		
5	MW-5	6:45	"		X			6				X		X	X	X	X		
6	MW-6	6:59	"		X			6				X		X	X	X	X		
7	MW-7	7:16	"		X			6				X		X	X	X	X		
8	TB - 6148 - 8/2/08-6:00	6:00	"		X			2				X		X	X	X	X		HOLD
9																			
10																			

Sampler's Name:	ROBERTO HEIMLICH	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	DAUDS ENV.						
Shipment Date:							
Shipment Method:							
Shipment Tracking No:							

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

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

Calscience
Environmental
Laboratories, Inc.

September 05, 2008

Jay Johnson
Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Subject: **Calscience Work Order No.: 08-08-1987**
Client Reference: BP 6148

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 8/22/2008 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Philip Sanelle for

Calscience Environmental
Laboratories, Inc.
Linda Scharpenberg
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.	Date Received:	08/22/08
3330 Cameron Park Drive, Suite 550	Work Order No:	08-08-1987
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8015B (M)

Project: BP 6148

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**08-08-1987-1-E**	**08/20/08 08:21**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 08:34**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	57	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**08-08-1987-2-E**	**08/20/08 08:07**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 09:07**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	220	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	63	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**08-08-1987-3-E**	**08/20/08 07:51**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 09:40**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	560	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	68	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**08-08-1987-4-E**	**08/20/08 07:34**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 10:13**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	53	38-134			

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	08/22/08
3330 Cameron Park Drive, Suite 550		Work Order No:	08-08-1987
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project: BP 6148

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	**08-08-1987-5-E**	**08/20/08 06:45**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 10:45**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	57	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	**08-08-1987-6-E**	**08/20/08 06:59**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 11:18**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	55	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	**08-08-1987-7-E**	**08/20/08 07:16**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 11:51**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	58	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-247**	**N/A**	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08 04:11**	**080828B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	57	38-134			

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 08/22/08
Work Order No: 08-08-1987
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: BP 6148

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**08-08-1987-1-A**	**08/20/08 08:21**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 14:19**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	94	73-157			Dibromofluoromethane	93	82-142		
Toluene-d8	103	82-112			1,4-Bromofluorobenzene	91	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**08-08-1987-2-D**	**08/20/08 08:07**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 19:59**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	3.0	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	82	73-157			Dibromofluoromethane	94	82-142		
Toluene-d8	101	82-112			1,4-Bromofluorobenzene	93	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**08-08-1987-3-A**	**08/20/08 07:51**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 20:30**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	0.56	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	90	73-157			Dibromofluoromethane	99	82-142		
Toluene-d8	103	82-112			1,4-Bromofluorobenzene	96	75-105		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	08/22/08
3330 Cameron Park Drive, Suite 550		Work Order No:	08-08-1987
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L
Project: BP 6148			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**08-08-1987-4-A**	**08/20/08 07:34**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 21:01**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	88	73-157			Dibromofluoromethane	95	82-142		
Toluene-d8	99	82-112			1,4-Bromofluorobenzene	86	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	**08-08-1987-5-A**	**08/20/08 06:45**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 21:32**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	92	73-157			Dibromofluoromethane	101	82-142		
Toluene-d8	98	82-112			1,4-Bromofluorobenzene	87	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	**08-08-1987-6-A**	**08/20/08 06:59**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 22:03**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	88	73-157			Dibromofluoromethane	98	82-142		
Toluene-d8	100	82-112			1,4-Bromofluorobenzene	83	75-105		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.	Date Received:	08/22/08
3330 Cameron Park Drive, Suite 550	Work Order No:	08-08-1987
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L
Project: BP 6148		Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	**08-08-1987-7-D**	**08/20/08 07:16**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 22:34**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	91	73-157			Dibromofluoromethane	98	82-142		
Toluene-d8	98	82-112			1,4-Bromofluorobenzene	84	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-407**	**N/A**	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08 13:48**	**080822L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	91	73-157			Dibromofluoromethane	94	82-142		
Toluene-d8	103	82-112			1,4-Bromofluorobenzene	90	75-105		

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

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 08/22/08
Work Order No: 08-08-1987
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project BP 6148

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-08-2136-5	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08**	**080828S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	88	85	38-134	3	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 08/22/08
Work Order No: 08-08-1987
Preparation: EPA 5030B
Method: EPA 8260B

Project BP 6148

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-1	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08**	**080822S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	100	100	86-122	0	0-8	
Carbon Tetrachloride	91	90	78-138	1	0-9	
Chlorobenzene	101	101	90-120	1	0-9	
1,2-Dibromoethane	93	91	70-130	2	0-30	
1,2-Dichlorobenzene	97	98	89-119	1	0-10	
1,1-Dichloroethene	97	96	52-142	1	0-23	
Ethylbenzene	99	100	70-130	1	0-30	
Toluene	99	101	85-127	2	0-12	
Trichloroethene	97	96	78-126	1	0-10	
Vinyl Chloride	103	100	56-140	3	0-21	
Methyl-t-Butyl Ether (MTBE)	87	87	64-136	0	0-28	
Tert-Butyl Alcohol (TBA)	97	96	27-183	1	0-60	
Diisopropyl Ether (DIPE)	99	99	78-126	0	0-16	
Ethyl-t-Butyl Ether (ETBE)	92	92	67-133	1	0-21	
Tert-Amyl-Methyl Ether (TAME)	88	88	63-141	0	0-21	
Ethanol	68	77	11-167	13	0-64	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.	Date Received: N/A
3330 Cameron Park Drive, Suite 550	Work Order No: 08-08-1987
Cameron Park, CA 95682-8861	Preparation: EPA 5030B
	Method: EPA 8015B (M)

Project: BP 6148

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-247	**Aqueous**	**GC 4**	**08/28/08**	**08/29/08**	**080828B02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	97	91	78-120	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: N/A
Work Order No: 08-08-1987
Preparation: EPA 5030B
Method: EPA 8260B

Project: BP 6148

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-407	**Aqueous**	**GC/MS U**	**08/22/08**	**08/22/08**	**080822L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	99	99	87-117	82-122	0	0-7	
Carbon Tetrachloride	93	93	78-132	69-141	1	0-8	
Chlorobenzene	98	102	88-118	83-123	4	0-8	
1,2-Dibromoethane	90	88	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	95	96	88-118	83-123	1	0-8	
1,1-Dichloroethene	99	95	71-131	61-141	3	0-14	
Ethylbenzene	97	101	80-120	73-127	4	0-20	
Toluene	98	102	85-127	78-134	4	0-7	
Trichloroethene	95	98	85-121	79-127	3	0-11	
Vinyl Chloride	105	102	64-136	52-148	3	0-10	
Methyl-t-Butyl Ether (MTBE)	88	79	67-133	56-144	11	0-16	
Tert-Butyl Alcohol (TBA)	97	97	34-154	14-174	1	0-19	
Diisopropyl Ether (DIPE)	103	95	80-122	73-129	8	0-8	
Ethyl-t-Butyl Ether (ETBE)	97	87	73-127	64-136	11	0-11	
Tert-Amyl-Methyl Ether (TAME)	89	86	69-135	58-146	3	0-12	
Ethanol	80	89	34-124	19-139	10	0-44	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-08-1987

Qualifier	Definition
AX	Sample too dilute to quantify surrogate.
AY	Matrix interference suspected.
BA	Relative percent difference out of control.
BA,AY	Relative percent difference out of control, matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GN	Surrogate recovery is outside of control limits.
GS	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG	Surrogate recovery below the acceptance limit.
LH	Surrogate recovery above the acceptance limit.
LM,AY	MS and/or MSD above acceptance limits. See Blank Spike (LCS). Matrix interfence suspected.
LN,AY	MS and/or MSD below acceptance limits. See Blank Spike (LCS). Matrix interfence suspected.
LQ	LCS recovery above method control limits.

Work Order Number: 08-08-1987

Qualifier	Definition
LR	LCS recovery below method control limits.
MB	Analyte present in the method blank.
MG	Analyte is a suspected lab contaminate.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.

Atlantic Richfield Company

bp
A BP affiliated company

Chain of Custody Record

(1987)

Project Name: BP 6148
BP BU/AR Region/Enfos Segment: BP > Americas > West > Retail > CA > Alameda>6148
State or Lead Regulatory Agency:
Requested Due Date (mm/dd/yy):

On-site Time:	6:00	Temp:	58
Off-site Time:	8:35	Temp:	60
Sky Conditions:	clear		
Meteorological Events:	NA		
Wind Speed:	0	Direction:	NA

Lab Name: Calscience	BP/AR Facility No.: 6148	Consultant/Contractor: Stratus Environmental, Inc.
Address: 7440 Lincoln Way	BP/AR Facility Address: 5131 Shattuck Avenue, Oakland	Address: 3330 Cameron Park Drive, Suite 550
Garden Grove, CA 92841	Site Lat/Long:	Cameron Park, CA 95682
Lab PM: Linda Scharpenberg	California Global ID #: T0600100103	Consultant/Contractor Project No.:
Tele/Fax: 714-895-5494 714-895-7501(fax)	Enfos Project No.: G0C2J-0020	Consultant/Contractor PM: Jay Johnson
BP/AR PM Contact: Paul Supple	Provision or RCOP (circle one) Provision	Tele/Fax: (530) 676-6000 / (530) 676-6005
Address: 2010 Crow Canyon Place, Suite 150	Phase/WBS: 04-Monitoring	Report Type & QC Level: Level 1 with EDF
San Ramon, CA	Sub Phase/Task: 03-Analytical	E-mail EDD To: bcarroll@stratusinc.net
Tele/Fax: 925-275-3506	Cost Element: 01-Contractor labor	Invoice to: Atlantic Richfield Co.

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: GRO/BTEX/Oxy*	Requested Analysis: 1,2 DCA	Requested Analysis: EDB	Requested Analysis: Ethanol by 8260	Requested Analysis: ~~DRO~~	Sample Point Lat/Long and Comments *Oxy = MTBD, TAME, ETBE, DIPE, TBA
1	MW-1	8:21	8/20/08		X			6				X		X	X	X	X		
2	MW-2	8:07	"		X			6				X		X	X	X	X		
3	MW-3	7:51	"		X			6				X		X	X	X	X		
4	MW-4	7:34	"		X			6				X		X	X	X	X		
5	MW-5	6:45	"		X			6				X		X	X	X	X		
6	MW-6	6:59	"		X			6				X		X	X	X	X		
7	MW-7	7:16	"		X			6				X		X	X	X	X		
8	TB - 6148 - 8/20/08-6:00	6:00	"		X			2				X		X	X	X	X		HOLD
9																			
10																			

Sampler's Name: ROBERTO HEIMICH	**Relinquished By / Affiliation**	**Date**	**Time**	**Accepted By / Affiliation**	**Date**	**Time**
Sampler's Company: DOUGLAS ENV.						
Shipment Date:						
Shipment Method:						
Shipment Tracking No: 105866938						

Special Instructions: Please e-results to: rmiller@broadbentinc.com

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

BP COC Rev. 5 10/11/2006

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08 - 08 - 1987

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Stratus DATE: 8/22/08

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature (For Air & Filter Only).
___ ___ . ___ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

29.__ °C Temperature blank.
___ ___ . ___ °C IR Thermometer.
_____ Ambient temperature (For Air & Filter Only).

Initial: [illegible]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: ✓ No (Not Intact) : _____ Not Present: _____

Initial: [illegible]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.	✓		
Tedlar bag(s) free of condensation			✓

Initial: [illegible]

COMMENTS:

ATTACHMENT

FIELD PROCEDURES FOR GROUNDWATER SAMPLING

The sampling procedures for groundwater monitoring events are contained in this appendix.

Equipment Calibration

Standard groundwater sampling equipment – pH/Conductivity/Temperature meter, and dissolved oxygen (DO) meters are calibrated prior to all field work. All calibration is conducted in accordance with equipment manufacturer's recommended procedure and buffer solutions. MSDS for all buffer solutions are maintained in Stratus vehicles. Calibration is completed everyday prior to field work and also once a week. The pH probe is calibrated for a pH of 7.0 daily and for 4.0, 7.0 and 10.0 weekly. The conductivity probe is calibrated for 1413 µs daily and 1413 µs and 447 µs weekly. The temperature probe is calibrated weekly with a NIST-traceable thermometer. The DO probe is calibrated for 100% oxygen daily and 0% and 100% oxygen weekly. All calibration logs are maintained in the Stratus office.

Groundwater and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

Prior to measuring the depth to liquid in the well, the well caps are removed and the liquid level allowed to stabilize. A water/hydrocarbon interface probe is used to assess the liquid-phase petroleum hydrocarbon (LPH) thickness, if present, and a water level indicator is used to measure the groundwater depth in monitoring wells that do not contain LPH. Depth to groundwater or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typically a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for hydrocarbon sheen.

Subjective Analysis of Groundwater

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

Monitoring Well Sampling

In many cases, determining whether to purge or not to purge wells prior to sample collection is made in the field and is often based on depth to water relative to the screen interval of the well. Site-specific field data sheets present details associated with the purge method and equipment used.

Monitoring wells, when purged, use a pump or bailer until pH, temperature, and conductivity of the purge water has stabilized and a minimum of three well volumes of water has been removed. Field measuring equipment is calibrated and maintained according to the manufacturer's instructions. If three well volumes cannot be removed in one half hour's time the well is allowed to recharge to 80% of original level. After recharging, a groundwater sample is then collected from each of the wells using disposable bailers.

A Teflon bailer, electric submersible or bladder pump will be the only equipment used for well sampling. When samples for volatile organic analysis are being collected, the pump flow will be regulated at approximately 100 milliliters per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These bottles will be filled completely to prevent air accumulation in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it is inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will be filled, filtered as required, and capped. Glass and plastic bottles used by Stratus to collect groundwater samples are supplied by the laboratory.

Groundwater Sample Labeling and Preservation

Samples are collected in appropriate containers supplied by the laboratory. All required chemical preservation is added to the bottles prior to delivery to Stratus. Sample label information includes a unique sample identification number, job identification number, date, and time. After labeling, all groundwater samples are placed in a Ziploc® type bag and placed in an ice chest cooled to approximately 4° Celsius. Upon arriving at Stratus' office the samples are transferred to a locked refrigerator cooled to approximately 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain-of-custody form. Trip and temperature blanks supplied by the laboratory accompany the groundwater sample containers and groundwater samples.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded in the field records. The samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and

contain adequate volumes for analysis. These conditions are noted on a Laboratory Sample Receipt Checklist that becomes part of the laboratory report upon request.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

Equipment Cleaning

All reusable sampling equipments are cleaned using phosphate-free detergents and rinsed with de-ionized water.

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION

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**
Submittal Title:	**3Q08 GEO_WELL 6148**
Facility Global ID:	**T0600100103**
Facility Name:	**ARCO #6148**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/17/2008 10:32:19 AM**
Confirmation Number:	**5515568614**

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	**GWM_R**
Submittal Title:	**3Q08 GW Monitoring**
Facility Global ID:	**T0600100103**
Facility Name:	**ARCO #6148**
File Name:	**08081987.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/17/2008 10:35:14 AM**
Confirmation Number:	**9973690211**

VIEW QC REPORT

VIEW DETECTIONS REPORT