



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 1257
San Ramon, California 94583
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30 April 2009

Re: First Quarter 2009 Ground-Water Monitoring Report
Former BP Service Station # 11102
100 MacArthur Boulevard
Oakland, California
ACEH Case #RO0000456

RECEIVED

9:49 am, May 01, 2009

Alameda County
Environmental Health



"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 Manager

First Quarter 2009 Ground-Water Monitoring Report

Former BP Service Station #11102

100 MacArthur Boulevard

Oakland, California

Prepared for

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

Prepared by



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

30 April 2009

Project No. 06-88-643

30 April 2009

Project No. 06-88-643

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

Attn.: Mr. Paul Supple

Re: First Quarter 2009 Ground-Water Monitoring Report, Former BP Service Station #11102,
100 MacArthur Boulevard, Alameda County, Oakland, California;
ACEH Case #RO0000456

Dear Mr. Supple:

Attached is the *First Quarter 2009 Ground-Water Monitoring Report* for Former BP Service Station #11102 located at 100 MacArthur Boulevard, Oakland, Alameda County, California. This report presents a summary of results from ground-water monitoring conducted at Station #11102 during the First Quarter of 2009.

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, Alameda County Environmental Health (Submitted via ACEH ftp site)
Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818
Mr. Chris Jimmerson, Reimbursement Processor, Delta Environmental Consulting Inc.,
(Submitted via ENFOS)
Electronic copy uploaded to GeoTracker

STATION #11102 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #11102	Address:	100 MacArthur Boulevard, Oakland, California
Environmental Business Manager:		Mr. Paul Supple
Consulting Co./Contact Persons:		Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus, (530) 566-1400
Consultant Project No.:		06-88-643
Primary Agency/Regulatory ID No.:		Alameda County Environmental Health (ACEH) ACEH Case #RO0000456

WORK PERFORMED THIS QUARTER (First Quarter 2009):

1. Prepared and submitted *Fourth Quarter 2008 Ground-Water Monitoring Report* (BAI, 01/23/2009).
2. Conducted ground-water monitoring/sampling for First Quarter 2009. Work performed by Stratus Environmental, Inc (Stratus) on 10 February 2009.

WORK PROPOSED FOR NEXT QUARTER (Second Quarter 2009):

1. Prepared and submitted this First Quarter 2009 Ground-Water Monitoring Report (contained herein).
2. Prepared and submitted *Initial Site Conceptual Model With Soil & Ground-Water Investigation Work Plan* (BAI, 4/9/2009) in response to ACEH directive letter dated 8 January 2009.
3. Conduct quarterly ground-water monitoring/sampling for Second Quarter 2009.
4. Conduct soil and ground-water investigation following work plan approval by ACEH.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	Ground-Water Monitoring/Sampling
Frequency of ground-water monitoring:	Quarterly: Wells MW-1 through MW-3
Frequency of ground-water sampling:	Quarterly: Wells MW-1 through MW-3
Is free product (FP) present on-site:	No
Current remediation techniques:	NA
Depth to ground water (below TOC):	12.71 (MW-1) to 13.64 (MW-2)
General ground-water flow direction:	West
Approximate hydraulic gradient:	0.04 ft/ft

DISCUSSION:

First Quarter 2009 ground-water monitoring and sampling was conducted at Station #11102 on 10 February 2009 by Stratus. Water levels were gauged in the three wells at the Site. No irregularities were noted during water level gauging. Depths to water measurements ranged from 12.71 ft at well MW-1 to 13.64 ft at well MW-2. Resulting ground-water surface elevations ranged from 77.49 ft above mean sea level in well MW-1 to 73.41 ft at well MW-3. 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 of 0.04 ft/ft to the west, generally 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. Current and historic ground-water flow directions and gradients are provided in Table 3. Potentiometric ground-water elevation contours are presented in Drawing 1.

Consistent with the current ground-water sampling schedule, water samples were collected from each of the three wells on the Site. No irregularities were encountered 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-C12) by the 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. Bio-degradation parameters including dissolved oxygen, pH, temperature, conductivity, ferrous iron, nitrate, sulfate, and hydrogen sulfide were also monitored during the sampling event this quarter. The initial analysis of nitrate conducted on the water sample collected from well MW-2 was within the holding time but required dilution. No other 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.

TBA was detected above the laboratory reporting limit in two of the three wells sampled at concentrations up to 2,700 µg/L in well MW-2. MTBE was detected above the laboratory reporting limit in each of the wells sampled at concentrations up to 1,800 µg/L in well MW-3. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the three wells sampled this quarter. A summary of bio-degradation parameters is provided in Table 4.

Detected concentrations of petroleum hydrocarbons were within the historic minimum and maximum ranges recorded for each well sampled this quarter with the exception of TBA (2,700 µg/L) and MTBE (940 µg/L), which each reached a historic minimum concentrations in well MW-2. 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 chain-of-custody documentation and biodegradation parameter results 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.

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, California). 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, 10 February 2009, Former Station #11102, 100 MacArthur Boulevard, Oakland, California

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #11102, 100 MacArthur Blvd., Oakland, CA

- Table 2. Summary of Fuel Additives Analytical Data, Station #11102, 100 MacArthur Blvd., Oakland, CA
- Table 3. Historical Ground-Water Flow Direction and Gradient, Station #11102, 100 MacArthur Blvd., Oakland, CA
- Table 4. Bio-Degradation Parameters, Station #11102, 100 MacArthur Blvd., 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 Confirmations

LEGEND

● Monitoring Well Location

Well	Well designation
ELEV	Ground-water elevation (ft MSL)
GRO	Concentration of GRO, Benzene and MTBE in ground water (µg/L)
Benzene	
MTBE	
Q	Sampling frequency

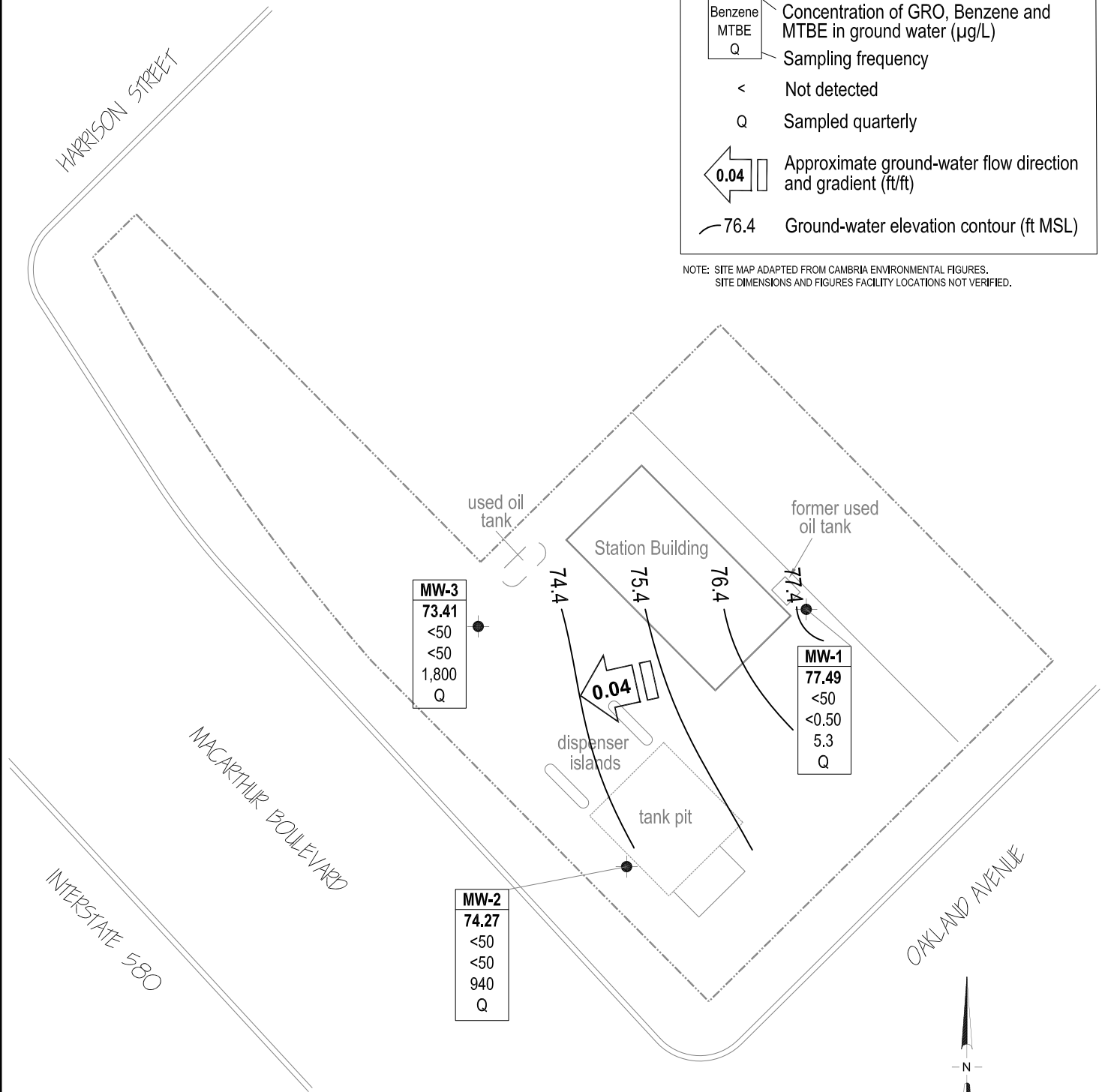
< Not detected

Q Sampled quarterly

← 0.04 Approximate ground-water flow direction and gradient (ft/ft)

— 76.4 Ground-water elevation contour (ft MSL)

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



MW-3
73.41
<50
<50
1,800
Q

MW-1
77.49
<50
<0.50
5.3
Q

MW-2
74.27
<50
<50
940
Q

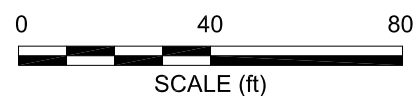


Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-1																		
11/4/1989	--		90.20	13.21	--	76.99	<500	3.4	0.6	<0.3	<0.3	--	--	SAL	--	<50	<5000	--
11/11/1989	--		90.20	13.32	--	76.88	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		90.20	12.46	--	77.74	820	64	1.9	23	34	--	--	ANA	--	--	--	--
7/30/1990	--		90.20	12.92	--	77.28	190	11	<5.0	<5.0	<5.0	--	--	ANA	--	<50	<5000	--
11/20/1990	--		90.20	14.08	--	76.12	50	2.4	<0.3	<0.3	<0.3	--	--	SAL	--	79	<5000	--
3/1/1991	--		90.20	13.61	--	76.59	<100	0.9	<0.3	<0.3	0.3	--	--	SAL	--	<1000	14,000	--
8/19/1991	--		90.20	15.74	--	74.46	370	35	0.73	6.4	5.6	--	--	SEQ	--	<50	<5000	--
11/13/1991	--		90.20	14.08	--	76.12	60	0.68	<0.3	<0.3	<0.3	--	--	SEQ	--	<50	<5000	--
2/24/1992	--		90.20	12.52	--	77.68	140	3.9	0.66	1.2	3.8	--	--	SEQ	--	100	<5000	--
5/19/1992	--		90.20	11.80	--	78.40	4,200	440	21	250	37	--	--	SEQ	--	910	<5000	--
6/17/1992	--		90.20	12.01	--	78.19	4,000	350	14	150	17	--	--	SEQ	--	560	<5000	--
7/22/1992	--		90.20	12.42	--	77.78	4,000	<5.0	19	210	61	--	--	ANA	--	--	--	--
8/14/1992	--		90.20	12.75	--	77.45	2,400	330	20	150	47	--	--	SEQ	--	1,700	<5000	--
11/11/1992	--		90.20	13.69	--	76.51	260	30	3.4	7.6	6.8	--	--	ANA	--	92	<5000	--
6/7/1993	--		90.20	10.93	--	79.27	3,400	98	11	21	7.6	--	--	PACE	--	440	--	--
6/7/1993	--	c	90.20	--	--	--	3,700	120	12	26	9.5	--	--	PACE	--	--	--	--
12/2/1993	--		90.20	12.72	--	77.48	1,100	8.3	3.6	0.6	1.5	--	--	PACE	--	120	<5000	--
6/22/1994	--	c, d	90.20	--	--	--	2,100	30	3.2	2	15	2,000	--	PACE	--	--	--	--
6/22/1994	--	d	90.20	11.81	--	78.39	2,100	32	3.8	2.2	17	4,000	3.2	PACE	--	<50	<5000	--
1/10/1995	--		90.20	10.97	--	79.23	<500	120	<5	<5	<10	--	3.9	ATI	--	420	--	--
1/10/1995	--	c	90.20	--	--	--	<500	120	<5	5	<10	--	--	ATI	--	--	--	--
6/21/1995	--		90.20	9.38	--	80.82	4,700	16	<5.0	<5.0	<10	--	6.7	ATI	--	1,300	2,900	0.6
6/21/1995	--	c, e	90.20	--	--	--	3,600	<13	<5.0	<5.0	<10	--	--	ATI	--	--	--	--
12/27/1995	--		90.20	11.55	--	78.65	430	<2.5	<2.5	<2.5	<5.0	1,200	6.3	ATI	--	2,100	640	--
6/13/1996	--		90.20	9.28	--	80.92	3,200	51	<12	<12	<12	4,000	6.3	SPL	--	920	2,000	--
12/4/1996	--	f	90.20	11.91	--	78.29	1,400	6.2	<5	<5	<5	2,600	6.7	SPL	--	280	2,000	6
6/10/1997	--	c	90.20	--	--	--	7,700	14	<25	<25	<25	13,000	--	SPL	--	--	--	--
6/10/1997	--		90.20	8.97	--	81.23	7,900	12	<10	<10	<10	15,000	6	SPL	--	1,700	<5	--
12/12/1997	--		90.20	11.37	--	78.83	440	8.8	<1.0	2.6	9.4	6,700	5.5	SPL	--	760	1,200	--
6/18/1998	--		90.20	8.02	--	82.18	7,500	<2.5	<5.0	<5.0	<5.0	5,600	4.9	SPL	--	2,900	<5	--
3/9/1999	--		90.20	9.80	--	80.40	32,000	100	16	72	110	49,000	--	SPL	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-1 Cont.																		
9/28/1999	--		90.20	10.78	--	79.42	1,000	<5.0	<5.0	<5.0	<5.0	730	--	SPL	--	--	--	<1.0
10/14/1999	--		90.20	10.84	--	79.36	--	--	--	--	--	--	--	SPL	--	660	--	--
3/27/2000	--		90.20	9.83	--	80.37	4,300	160	19	37	43	28,000	--	PACE	--	--	--	--
9/28/2000	--		90.20	11.33	--	78.87	2,700	10	2.6	1.1	2.7	28,000	--	PACE	--	--	--	--
3/8/2001	--		90.20	10.96	--	79.24	8,200	23.5	6.09	5.23	8.97	11,600	--	PACE	--	--	--	--
9/21/2001	--		90.20	12.07	--	78.13	6,000	37.9	<0.5	<0.5	<1.5	7,370	--	PACE	--	--	--	--
2/28/2002	--		90.20	10.48	--	79.72	6,400	60.8	<5.0	6.43	<10	7,750	--	PACE	--	--	--	--
9/6/2002	--		90.20	11.20	--	79.00	1,400	<5.0	<5.0	<5.0	<5.0	6,000	--	SEQ	--	--	--	--
2/19/2003	--	h	90.20	11.29	--	78.91	<10000	<100	110	<100	<100	4,500	--	SEQ	--	--	--	--
7/14/2003	--		90.20	11.18	--	79.02	710	11	<10	<10	<10	940	--	SEQ	--	--	--	--
01/14/2004	--		90.20	11.74	--	78.46	<500	<5.0	<5.0	<5.0	<5.0	220	--	SEQM	6.6	--	--	--
04/23/2004	P	l	90.20	11.95	--	78.25	470	3.4	<2.5	<2.5	<2.5	150	--	SEQM	6.7	--	--	--
07/01/2004	P		90.20	11.52	--	78.68	360	<2.5	<2.5	<2.5	<2.5	96	--	SEQM	6.0	--	--	--
10/28/2004	P		90.20	12.56	--	77.64	390	0.94	<0.50	<0.50	<0.50	43	--	SEQM	6.2	--	--	--
01/10/2005	P		90.20	11.85	--	78.35	490	17	<2.5	5.8	5.4	85	--	SEQM	7.6	--	--	--
04/13/2005	P		90.20	10.00	--	80.20	1,000	27	<2.5	<2.5	25	48	--	SEQM	6.6	--	--	--
07/11/2005	P		90.20	9.27	--	80.93	180	<0.50	<0.50	<0.50	<0.50	36	--	SEQM	7.7	--	--	--
10/17/2005	P		90.20	10.96	--	79.24	140	<0.50	<0.50	<0.50	<0.50	20	--	SEQM	8.0	--	--	--
01/17/2006	P		90.20	10.81	--	79.39	120	0.64	<0.50	<0.50	0.56	38	--	SEQM	6.5	--	--	--
04/21/2006	P	m	90.20	9.28	--	80.92	410	1.4	1.0	<0.50	<0.50	17	--	SEQM	6.5	--	--	--
7/17/2006	--		90.20	9.25	--	80.95	<50	<0.50	<0.50	<0.50	<0.50	5.5	--	TAMC	7.7	--	--	--
7/26/2006	--		90.20	8.57	--	81.63	<50	<0.50	<0.50	<0.50	<0.50	4.4	--	TAMC	6.6	--	--	--
10/31/2006	P		90.20	9.80	--	80.40	<50	<0.50	<0.50	<0.50	<0.50	2.8	2.81	TAMC	6.99	--	--	--
1/8/2007	P		90.20	10.36	--	79.84	<50	2.2	<0.50	<0.50	<0.50	6.2	2.51	TAMC	6.97	--	--	--
4/10/2007	P		90.20	10.65	--	79.55	160	1.4	<0.50	<0.50	<0.50	9.0	1.75	TAMC	7.00	--	--	--
7/10/2007	P	p	90.20	10.52	--	79.68	120	<0.50	<0.50	<0.50	<0.50	4.9	2.01	TAMC	6.60	160	--	--
10/24/2007	P		90.20	11.23	--	78.97	100	<0.50	<0.50	<0.50	<0.50	4.9	1.89	TAMC	6.57	--	--	--
1/22/2008	P		90.20	11.22	--	78.98	240	<0.50	<0.50	0.83	1.7	7.2	3.18	TAMC	6.49	--	--	--
4/15/2008	P		90.20	10.26	--	79.94	240	<0.50	<0.50	<0.50	0.73	5.5	3.32	CEL	6.45	--	--	--
7/8/2008	P		90.20	11.10	--	79.10	78	<0.50	<0.50	<0.50	<0.50	5.8	1.65	CEL	6.78	--	--	--
11/19/2008	P		90.20	12.51	--	77.69	150	<0.50	<0.50	<0.50	<0.50	3.4	1.59	CEL	6.84	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-1 Cont.																		
2/10/2009	P		90.20	12.71	--	77.49	<50	<0.50	<0.50	<0.50	<0.50	5.3	1.63	CEL	7.00	--	--	--
MW-2																		
11/4/1989	--		87.91	15.84	--	72.07	<500	6.5	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
11/11/1989	--		87.91	14.75	--	73.16	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		87.91	15.25	--	72.66	<500	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
7/30/1990	--		87.91	15.59	--	72.32	61	6.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
11/20/1990	--		87.91	17.81	--	70.10	<50	0.3	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
3/1/1991	--		87.91	17.11	--	70.80	<100	0.4	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
8/19/1991	--		87.91	17.97	--	69.94	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
11/13/1991	--		87.91	16.76	--	71.15	38	0.32	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
2/24/1992	--		87.91	15.07	--	72.84	<50	<0.5	<0.5	<0.5	0.58	--	--	SEQ	--	--	--	--
5/19/1992	--		87.91	14.70	--	73.21	<50	0.55	<0.5	<0.5	<0.5	--	--	SEQ	--	--	--	--
7/22/1992	--		87.91	15.60	--	72.31	90	1.3	0.6	0.9	1.9	--	--	ANA	--	--	--	--
8/14/1992	--		87.91	15.88	--	72.03	--	--	--	--	--	--	--	--	--	--	--	--
11/11/1992	--		87.91	16.19	--	71.72	52	2.8	<0.5	<0.5	0.9	--	--	ANA	--	--	--	--
11/11/1992	--	c	87.91	--	--	--	65	3.2	<0.5	<0.5	1	--	--	ANA	--	--	--	--
6/7/1993	--		87.91	14.42	--	73.49	1,200	14	2.8	1.9	1.71	--	--	PACE	--	--	--	--
12/2/1993	--	d	87.91	14.94	--	72.97	790	3.4	0.5	10	<0.5	3,700	--	PACE	--	--	--	--
12/2/1993	--	c, d	87.91	--	--	--	2,100	32	3.8	2.2	17	3,700	--	PACE	--	--	--	--
6/22/1994	--	d	87.91	14.25	--	73.66	110	<0.5	<0.5	<0.5	<0.5	120	3.9	PACE	--	--	--	--
1/10/1995	--		87.91	13.64	--	74.27	<50	<0.5	<0.5	0.6	1	--	4.3	ATI	--	--	--	--
6/21/1995	--		87.91	11.66	--	76.25	4,700	<10	<10	<10	<20	--	7.8	ATI	--	--	--	--
12/27/1995	--		87.91	13.11	--	74.80	6,100	<25	<25	<25	<50	20,000	6.7	ATI	--	--	--	--
12/27/1995	--	c	87.91	--	--	--	6,300	<25	<25	<25	<50	19,000	--	ATI	--	--	--	--
6/13/1996	--		87.91	10.86	--	77.05	8,300	<2.5	<2.5	<2.5	<2.5	13,000	6.5	SPL	--	--	--	--
6/13/1996	--	c	87.91	--	--	--	8,700	<5	<5	<5	<5	13,000	--	SPL	--	--	--	--
12/4/1996	--		87.91	13.03	--	74.88	5,900	<2.5	<5	<5	<5	11,000	6.3	SPL	--	--	--	--
12/4/1996	--	c	87.91	--	--	--	5,900	<2.5	<5	<5	<5	11,000	--	SPL	--	--	--	--
6/10/1997	--		87.91	10.04	--	77.87	<50	<0.5	<1.0	<1.0	<1.0	<10	5.8	SPL	--	--	--	--
12/12/1997	--		87.91	12.44	--	75.47	<50	<0.5	<1.0	<1.0	<1.0	<10	5.7	SPL	--	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-2 Cont.																		
6/18/1998	--		87.91	8.89	--	79.02	50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	--	--	--
6/18/1998	--	c	87.91	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	--	--	--
3/9/1999	--		87.91	10.20	--	77.71	15,000	<5.0	<5.0	<5.0	<5.0	23,000	--	SPL	--	--	--	--
9/28/1999	--		87.91	11.81	--	76.10	36,000	<5.0	12	7	26	35,000	--	SPL	--	--	--	<5.0
10/14/1999	--		87.91	10.27	--	77.64	--	--	--	--	--	--	--	SPL	--	100	--	--
3/27/2000	--		87.91	9.98	--	77.93	1,300	<0.5	<0.5	0.51	<0.5	5,800	--	PACE	--	--	--	--
9/28/2000	--		87.91	11.40	--	76.51	1,600	1.8	1.7	0.54	2.2	15,000	--	PACE	--	--	--	--
3/8/2001	--		87.91	11.16	--	76.75	20,000	<0.5	<0.5	<0.5	<0.5	29,100	--	PACE	--	--	--	--
9/21/2001	--		87.91	11.65	--	76.26	5,000	<0.5	<0.5	<0.5	<1.5	6,110	--	PACE	--	--	--	--
2/28/2002	--		87.91	9.86	--	78.05	3,200	35.1	<0.5	<0.5	<1.0	4,620	--	PACE	--	--	--	--
9/6/2002	--		87.91	12.32	--	75.59	1,900	<10	<10	<10	<10	15,000	--	SEQ	--	--	--	--
2/19/2003	--	h	87.91	11.63	--	76.28	45,000	<250	<250	<250	<250	32,000	--	SEQ	--	--	--	--
7/14/2003	--		87.91	12.07	--	75.84	9,300	<500	<500	<500	<500	24,000	--	SEQ	--	--	--	--
01/14/2004	P		87.91	11.45	--	76.46	<50,000	<500	<500	<500	<500	21,000	--	SEQM	6.9	--	--	--
04/23/2004	P	l	87.91	11.45	--	76.46	5,100	<250	<250	<250	<250	22,000	--	SEQM	6.8	--	--	--
07/01/2004	P		87.91	12.32	--	75.59	<5,000	<50	<50	<50	<50	5,200	--	SEQM	5.6	--	--	--
10/28/2004	P		87.91	13.02	--	74.89	8,500	<50	<50	<50	<50	6,800	--	SEQM	6.2	--	--	--
01/10/2005	P		87.91	14.38	--	73.53	<25,000	<250	<250	<250	<250	7,100	--	SEQM	7.6	--	--	--
04/13/2005	P		87.91	14.03	--	73.88	<5,000	<50	<50	<50	<50	5,300	--	SEQM	6.6	--	--	--
07/11/2005	P		87.91	11.25	--	76.66	<5,000	<50	<50	<50	<50	5,300	--	SEQM	7.5	--	--	--
10/17/2005	P		87.91	12.48	--	75.43	<5,000	<50	<50	<50	<50	2,500	--	SEQM	8.2	--	--	--
01/17/2006	P		87.91	10.70	--	77.21	<5,000	<50	<50	<50	<50	2,200	--	SEQM	7.0	--	--	--
04/21/2006	--	n	87.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/26/2006	--	k	87.91	10.47	--	77.44	2,700	<50	<50	<50	<50	2,900	--	TAMC	6.69	--	--	--
10/31/2006	P		87.91	12.02	--	75.89	2,300	<25	<25	<25	<25	2,300	2.02	TAMC	6.71	--	--	--
1/8/2007	P		87.91	11.68	--	76.23	1,500	<12	<12	<12	<12	1,700	1.37	TAMC	6.54	--	--	--
4/10/2007	P	k	87.91	11.45	--	76.46	1,300	<50	<50	<50	<50	1,500	1.60	TAMC	6.89	--	--	--
7/10/2007	P	k, p	87.91	11.97	--	75.94	2,300	<25	<25	<25	<25	2,600	1.82	TAMC	6.69	120	--	--
10/24/2007	P	k	87.91	12.91	--	75.00	2,800	<25	<25	<25	<25	2,800	1.55	TAMC	6.77	--	--	--
1/22/2008	P		87.91	12.00	--	75.91	<2,500	<25	<25	<25	<25	1,400	2.08	TAMC	6.55	--	--	--
4/15/2008	P		87.91	11.77	--	76.14	73	<2.5	<2.5	<2.5	<2.5	2,400	3.12	CEL	6.72	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-2 Cont.																		
7/8/2008	P		87.91	12.65	--	75.26	93	<50	<50	<50	<50	2,800	1.78	CEL	7.05	--	--	--
11/19/2008	P		87.91	13.98	--	73.93	130	<50	<50	<50	<50	1,900	1.75	CEL	6.72	--	--	--
2/10/2009	P		87.91	13.64	--	74.27	<50	<50	<50	<50	<50	940	1.71	CEL	7.04	--	--	--
MW-3																		
11/4/1989	--		87.02	15.40	--	71.62	<500	<0.3	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
11/11/1989	--		87.02	14.10	--	72.92	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		87.02	13.90	--	73.12	<100	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
7/30/1990	--		87.02	13.77	--	73.25	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	<5000	--
11/20/1990	--		87.02	14.67	--	72.35	<50	0.3	0.8	0.4	1.5	--	--	SAL	--	--	--	--
3/1/1991	--		87.02	15.22	--	71.80	<100	0.4	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
8/19/1991	--		87.02	13.15	--	73.87	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
11/13/1991	--		87.02	15.66	--	71.36	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
2/24/1992	--		87.02	15.01	--	72.01	<50	0.65	1.4	0.66	4.4	--	--	SEQ	--	--	--	--
5/19/1992	--		87.02	15.52	--	71.50	<50	<0.5	<0.5	<0.5	<0.5	--	--	SEQ	--	--	--	--
7/22/1992	--		87.02	15.63	--	71.39	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	<50	<5000	--
8/14/1992	--		87.02	13.57	--	73.45	--	--	--	--	--	--	--	--	--	--	--	--
11/11/1992	--		87.02	14.13	--	72.89	<50	<0.5	0.7	<0.5	1.3	--	--	ANA	--	--	--	--
6/7/1993	--		87.02	12.13	--	74.89	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
12/2/1993	--		87.02	13.29	--	73.73	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
6/22/1994	--		87.02	12.78	--	74.24	<50	<0.5	<0.5	<0.5	<0.5	--	2.9	PACE	--	--	--	--
1/10/1995	--		87.02	12.01	--	75.01	<50	<0.5	<0.5	<0.5	<1	--	3.8	ATI	--	--	--	--
6/21/1995	--		87.02	11.57	--	75.45	<50	<0.50	<0.50	<0.50	<1.0	--	7.4	ATI	--	--	--	--
12/27/1995	--		87.02	13.47	--	73.55	<50	<0.50	<0.50	<0.50	<1.0	5.7	7.3	ATI	--	--	--	--
6/13/1996	--		87.02	11.22	--	75.80	60	<0.5	<0.5	<0.5	<0.5	<10	6.8	SPL	--	--	--	--
12/4/1996	--		87.02	13.28	--	73.74	<50	<0.5	<1	<1	<1	<10	6.7	SPL	--	--	--	--
6/10/1997	--		87.02	10.22	--	76.80	<50	<0.5	<1.0	<1.0	<1.0	<10	6.1	SPL	--	--	--	--
12/12/1997	--		87.02	12.61	--	74.41	<50	<0.5	<1.0	<1.0	<1.0	<10	5.6	SPL	--	--	--	--
12/12/1997	--	c	87.02	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	--	--	--
6/18/1998	--		87.02	12.80	--	74.22	--	--	--	--	--	--	--	--	--	--	--	--
6/18/1998	--		87.02	9.07	--	77.95	50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-3 Cont.																		
9/28/1999	--		87.02	13.76	--	73.26	--	--	--	--	--	--	--	--	--	--	--	--
3/27/2000	--		87.02	13.77	--	73.25	<50	<0.5	<0.5	<0.5	<0.5	1.6	--	PACE	--	--	--	--
9/28/2000	--		87.02	11.28	--	75.74	<50	<0.5	7.4	<0.5	1.3	2	--	PACE	--	--	--	--
3/8/2001	--		87.02	11.75	--	75.27	<50	<0.5	<0.5	<0.5	<0.5	60.4	--	PACE	--	--	--	--
9/21/2001	--		87.02	11.33	--	75.69	<50	<0.5	<0.5	<0.5	<1.5	8.18	--	PACE	--	--	--	--
2/28/2002	--		87.02	10.86	--	76.16	<50	<0.5	<0.5	<0.5	<1.0	25.5	--	PACE	--	--	--	--
9/6/2002	--		87.02	12.73	--	74.29	<50	1.2	<0.5	<0.5	1	16	--	SEQ	--	--	--	--
2/19/2003	--	h	87.02	11.72	--	75.30	<500	<5.0	<5.0	<5.0	<5.0	110	--	SEQ	--	--	--	--
7/14/2003	--		87.02	13.76	--	73.26	<50	<0.50	<0.50	<0.50	0.67	28	--	SEQ	--	--	--	--
01/14/2004	P		87.02	14.83	--	72.19	550	<5.0	<5.0	<5.0	<5.0	380	--	SEQM	8.1	--	--	--
04/23/2004	P	l	87.02	13.17	--	73.85	<200	<25	<25	<25	<25	560	--	SEQM	6.8	--	--	--
07/01/2004	P		87.02	15.19	--	71.83	<50	<0.50	<0.50	<0.50	0.50	48	--	SEQM	6.4	--	--	--
10/28/2004	P		87.02	15.50	--	71.52	<500	<5.0	<5.0	<5.0	<5.0	290	--	SEQM	6.3	--	--	--
01/10/2005	P		87.02	15.00	--	72.02	<50	<0.50	<0.50	<0.50	<0.50	18	--	SEQM	7.6	--	--	--
04/13/2005	P		87.02	14.34	--	72.68	<50	<0.50	<0.50	<0.50	<0.50	9.0	--	SEQM	7.1	--	--	--
07/11/2005	P	k	87.02	10.82	--	76.20	130	<1.0	<1.0	<1.0	<1.0	120	--	SEQM	7.8	--	--	--
10/17/2005	P		87.02	11.84	--	75.18	<250	<2.5	<2.5	<2.5	<2.5	260	--	SEQM	8.5	--	--	--
01/17/2006	P		87.02	11.59	--	75.43	800	<5.0	<5.0	<5.0	<5.0	980	--	SEQM	7.2	--	--	--
04/21/2006	P		87.02	10.00	--	77.02	<500	<5.0	<5.0	<5.0	<5.0	48	--	SEQM	6.7	--	--	--
7/17/2006	P	k	87.02	10.80	--	76.22	910	<5.0	<5.0	<5.0	<5.0	1,400	--	TAMC	7.7	--	--	--
7/26/2006	P		87.02	9.67	--	77.35	810	<10	<10	<10	<10	1,300	--	TAMC	6.56	--	--	--
10/31/2006	P		87.02	10.85	--	76.17	1,600	<10	<10	<10	<10	2,300	2.50	TAMC	6.84	--	--	--
1/8/2007	P		87.02	12.73	--	74.29	520	<5.0	<5.0	<5.0	<5.0	760	3.61	TAMC	7.12	--	--	--
4/10/2007	P	k	87.02	11.93	--	75.09	630	<5.0	<5.0	<5.0	<5.0	750	2.31	TAMC	7.15	--	--	--
7/10/2007	P	k, p	87.02	11.30	--	75.72	1,800	<5.0	<5.0	<5.0	<5.0	2,400	1.56	TAMC	6.72	66	--	--
10/24/2007	P	k	87.02	13.77	--	73.25	2,000	<25	<25	<25	<25	3,500	1.62	TAMC	6.41	--	--	--
1/22/2008	P	k	87.02	12.92	--	74.10	1,600	<12	<12	<12	<12	2,800	2.17	TAMC	6.32	--	--	--
4/15/2008	P		87.02	15.25	--	71.77	<50	<2.5	<2.5	<2.5	<2.5	960	3.44	CEL	6.71	--	--	--
7/8/2008	P		87.02	12.27	--	74.75	<50	<50	<50	<50	<50	2,200	1.52	CEL	7.01	--	--	--
11/19/2008	P		87.02	15.27	--	71.75	<50	<50	<50	<50	<50	2,700	1.60	CEL	6.83	--	--	--
2/10/2009	P		87.02	13.61	--	73.41	<50	<50	<50	<50	<50	1,800	1.66	CEL	6.98	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-3																		
QC-2																		
11/11/1992	--	nc	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	ANA	--	--	--	--
6/7/1993	--	nc	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	--	--	--
12/2/1993	--	nc	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	--	--	--
6/22/1994	--	nc	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	--	--	--
1/10/1995	--	nc	--	--	--	--	<50	<0.5	<0.5	<0.5	<1	<1	--	ATI	--	--	--	--
6/21/1995	--	nc	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<1.0	--	ATI	--	--	--	--
12/27/1995	--	nc	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	--	--	--
6/13/1996	--	nc	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<10	--	SPL	--	--	--	--

ABBREVIATIONS & SYMBOLS:

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

FOOTNOTES:

c = Blind duplicate.
d = A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.
e = Tetrachloroethene
f = trans-1,2-Dichloroethene
g = Travel blank.
h = TPH-g, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and MTBE analyzed by EPA Method 8260B beginning on 1st quarter sampling event (2/19/03).
k = The hydrocarbon result was partly due to individual peaks in the quantification range (GRO).
l = GRO analyzed by EPA Method 8015B.
m = Confirmatory analysis for total xylenes was past holding time.
n = Well inaccessible.
p = Hydrocarbon in req. fuel range, but doesn't resemble req. fuel (DRO).

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 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.

Values for pH and DO were obtained through field measurements.

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
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
7/14/2003	<2000	2,700	940	<20	<20	<20	--	--	
01/14/2004	<1,000	2,500	220	<5.0	<5.0	<5.0	<5.0	<5.0	
04/23/2004	<500	2,500	150	<2.5	<2.5	<2.5	<2.5	<2.5	
07/01/2004	<500	2,000	96	<2.5	<2.5	<2.5	<2.5	<2.5	
10/28/2004	<5.0	1,500	43	<0.50	<0.50	0.58	<0.50	<0.50	
01/10/2005	<500	1,900	85	<2.5	<2.5	<2.5	<2.5	<2.5	
04/13/2005	<500	1,400	48	<2.5	<2.5	<2.5	<2.5	<2.5	
07/11/2005	<100	550	36	<0.50	<0.50	<0.50	<0.50	<0.50	
10/17/2005	<100	450	20	<0.50	<0.50	<0.50	<0.50	<0.50	a
01/17/2006	<300	260	38	<0.50	<0.50	0.54	<0.50	<0.50	
04/21/2006	<300	320	17	<0.50	<0.50	<0.50	<0.50	<0.50	
7/17/2006	<300	32	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	
7/26/2006	<300	22	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
10/31/2006	<300	<20	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	a
1/8/2007	<300	110	6.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/10/2007	<300	210	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	
7/10/2007	<300	110	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
10/24/2007	<300	94	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
1/22/2008	<300	110	7.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/15/2008	<300	84	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	
7/8/2008	<300	64	5.8	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2008	<300	110	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2009	<300	110	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
7/14/2003	<100000	<20000	24,000	<1000	<1000	<1000	--	--	
01/14/2004	<100,000	<20,000	21,000	<500	<500	<500	<500	<500	
04/23/2004	<50,000	11,000	22,000	<250	<250	420	<250	<250	
07/01/2004	<10,000	2,900	5,200	<50	<50	110	<50	<50	
10/28/2004	<5.0	6,700	6,800	<50	<50	120	<50	<50	
01/10/2005	<50,000	<10,000	7,100	<250	<250	<250	<250	<250	
04/13/2005	<10,000	5,300	5,300	<50	<50	95	<50	<50	

**Table 2. Summary of Fuel Additives Analytical Data
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-2 Cont.									
07/11/2005	<10,000	9,000	5,300	<50	<50	99	<50	<50	
10/17/2005	<10,000	5,200	2,500	<50	<50	<50	<50	<50	a
01/17/2006	<30,000	8,400	2,200	<50	<50	<50	<50	<50	
04/21/2006	--	--	--	--	--	--	--	--	Well inaccessible
7/26/2006	<30,000	4,500	2,900	<50	<50	<50	<50	<50	
10/31/2006	<15,000	9,300	2,300	<25	<25	41	<25	<25	a
1/8/2007	<7,500	7700	1700	<12	<12	38	<12	<12	
4/10/2007	<30,000	6,400	1,500	<50	<50	<50	<50	<50	
7/10/2007	<15,000	8,700	2,600	<25	<25	42	<25	<25	
10/24/2007	<15,000	9,500	2,800	<25	<25	52	<25	<25	
1/22/2008	<15,000	6,000	1,400	<25	<25	<25	<25	<25	
4/15/2008	<1,500	6,800	2,400	<2.5	<2.5	30	2.8	<2.5	
7/8/2008	<30,000	7,600	2,800	<50	<50	<50	<50	<50	
11/19/2008	<30,000	7,100	1,900	<50	<50	<50	<50	<50	
2/10/2009	<30,000	2,700	940	<50	<50	<50	<50	<50	
MW-3									
7/14/2003	<100	<20	28	<1.0	<1.0	<1.0	--	--	
01/14/2004	<1,000	<200	380	<5.0	<5.0	<5.0	<5.0	<5.0	
04/23/2004	<5,000	<1,000	560	<25	<25	<25	<25	<25	
07/01/2004	<100	<20	48	<0.50	<0.50	0.52	<0.50	<0.50	
10/28/2004	<5.0	<200	290	<5.0	<5.0	<5.0	<5.0	<5.0	
01/10/2005	<100	<20	18	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	
07/11/2005	<200	<40	120	<1.0	<1.0	1.4	<1.0	<1.0	a
10/17/2005	<500	<100	260	<2.5	<2.5	4.2	<2.5	<2.5	a
01/17/2006	<3,000	200	980	<5.0	<5.0	13	<5.0	<5.0	
04/21/2006	<3,000	<200	48	<5.0	<5.0	<5.0	<5.0	<5.0	
7/17/2006	<3,000	<200	1,400	<5.0	<5.0	15	<5.0	<5.0	
7/26/2006	<6,000	<400	1,400	<10	<10	18	<10	<10	
10/31/2006	<6,000	<400	2,300	<10	<10	39	<10	<10	a
1/8/2007	<3000	<200	760	<5.0	<5.0	9.7	<5.0	<5.0	

**Table 2. Summary of Fuel Additives Analytical Data
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
4/10/2007	<3,000	<200	750	<5.0	<5.0	<5.0	<5.0	<5.0	
7/10/2007	<3,000	<200	2,400	<5.0	<5.0	39	<5.0	--	
10/24/2007	<15,000	<1,000	3,500	<25	<25	58	<25	<25	
1/22/2008	<7,500	<500	2,800	<12	<12	34	<12	<12	
4/15/2008	<1,500	<50	960	<2.5	<2.5	9.2	<2.5	<2.5	
7/8/2008	<30,000	<1,000	2,200	<50	<50	<50	<50	<50	
11/19/2008	<30,000	<1,000	2,700	<50	<50	<50	<50	<50	
2/10/2009	<30,000	<1,000	1,800	<50	<50	<50	<50	<50	

SYMBOLS & ABBREVIATIONS:

-- = Not analyzed/applicable/measured/available

< = Not detected at or above specified laboratory reporting limit

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

FOOTNOTES:

a = The calibration verification for ethanol was within the method limits but outside the contract limits.

NOTES:

All volatile organic compounds were 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 Ground-Water Flow Direction and Gradient
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
4/21/2006	--	--
7/17/2006	Southwest	0.05
10/31/2006	Southwest	0.04
1/8/2007	West	0.06
4/10/2007	West	0.05
7/10/2007	Southwest	0.04
10/24/2007	West-Southwest	0.06
1/22/2008	West	0.05
4/15/2008	West-Southwest	0.09
7/8/2008	West-Southwest	0.05
11/19/2008	West	0.06
2/10/2009	West	0.04

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 4. Bio-Degradation Parameters
Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)			Ferrous Iron (mg/L)	ORP (mV)	DO (mg/L)	Conductivity (µS/cm)	Hydrogen Sulfide (mg/L)	Methane (µg/L)	pH	Comments
	Total Alkalinity	Nitrate NO3	Sulfate SO4								
MW-1											
7/10/2007	--	1,500	21,000	0.11	71.1	2.01	--	<1.0	--	6.60	
10/24/2007	--	--	--	--	--	1.89	639	--	--	6.57	
1/22/2008	--	760	11,000	0.42	108	3.18	811	<1.0	--	6.49	
4/15/2008	--	240	9,900	0.26	--	3.32	758	<0.100	--	6.45	
7/8/2008	--	860	19,000	0.23	--	1.65	628	--	--	6.78	
11/19/2008	--	540	16,000	0.5	--	1.59	853	--	--	6.84	
2/10/2009	--	830	35,000	0.0	63	1.63	899	<100	--	7.00	
MW-2											
7/10/2007	--	<500	26,000	0.16	9.7	1.82	--	<1.0	--	6.69	
10/24/2007	--	--	--	--	--	1.55	863	--	--	6.77	
1/22/2008	--	8,500	26,000	0.15	167	2.08	672	<1.0	--	6.55	
4/15/2008	--	<100	28,000	<0.100	--	3.12	799	<0.100	--	6.72	
7/8/2008	--	<440	25,000	0.15	--	1.78	753	--	--	7.05	
11/19/2008	--	3,300	20,000	0.0	--	1.75	581	--	--	6.72	
2/10/2009	--	22,000	42,000	0.0	87	1.71	591	100	--	7.04	CL (NO3)
MW-3											
7/10/2007	--	8,500	19,000	<0.100	182.9	1.56	--	<1.0	--	6.72	
10/24/2007	--	--	--	--	--	1.62	639	--	--	6.41	
1/22/2008	--	5,600	17,000	<0.100	144	2.17	636	<1.0	--	6.32	
4/15/2008	--	1,600	21,000	<0.100	--	3.44	638	<0.100	--	6.71	
7/8/2008	--	6,700	18,000	<0.100	--	1.52	651	--	--	7.01	
11/19/2008	--	6,100	15,000	0.5	--	1.60	651	--	--	6.83	
2/10/2009	--	5,400	22,000	0.0	91	1.66	659	<100	--	6.98	

ABBREVIATIONS AND SYMBOLS:

< = Not detected at or above specified laboratory reporting limit

ORP = Oxygen reduction potential

DO = Dissolved oxygen

CO₂ = Carbon dioxide

mV = Millivolts

µg/L = Micrograms per liter

mg/L = Milligrams per liter

CL = Initial analysis within holding time but required dilution

APPENDIX A

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



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

February 26, 2009

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

Re: Groundwater Sampling Data Package, BP Service Station No. 11102, located at
100 MacArthur Boulevard, Oakland, California.

General Information

Data Submittal Prepared / Reviewed by: Carol Huff / Jay Johnson

Phone Number: (530) 676-6000

On-Site Supplier Representative: Roberto Heimlich

Sampling Date: February 10, 2009

Unusual Field Conditions: None noted.

Scope of Work Performed: Quarterly monitoring and sampling.

Variations from Work Scope: None noted.

This submittal presents the data collected in association with routine groundwater monitoring. The attachments included field data sheets, non-hazardous waste data form, chain of custody documentation, certified analytical results, and field procedures for groundwater sampling documentation. 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.

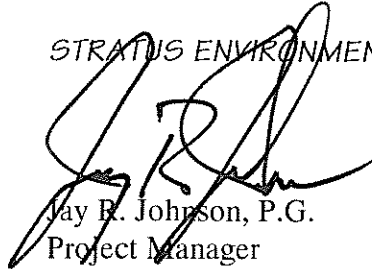
Mr. Rob Miller, Broadbent & Associates, Inc.
Groundwater Sampling Data Package
BP Service Station No. 11102, Oakland, CA
Page 2

February 26, 2009

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

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 11102 PURGED BY: RH WELL I.D.: MW-1
 CLIENT NAME: _____ SAMPLED BY: RH SAMPLE I.D.: MW-1
 LOCATION: Oakland - 100 MacArthur Blvd. QA SAMPLES: _____

DATE PURGED 2/10/09 START (2400hr) 13:17 END (2400hr) 13:30
 DATE SAMPLED 2/10/09 SAMPLE TIME (2400hr) 13:35
 SAMPLE TYPE: Groundwater 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) = 31.90 CASING VOLUME (gal) = 12.8
 DEPTH TO WATER (feet) = 12.71 CALCULATED PURGE (gal) = 38.5
 WATER COLUMN HEIGHT (feet) = 19.1 ACTUAL PURGE (gal) = 39

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>2/10/09</u>	<u>13:21</u>	<u>13</u>	<u>18.9</u>	<u>822</u>	<u>6.82</u>	<u>clear</u>	_____
<u>✓</u>	<u>13:25</u>	<u>26</u>	<u>20.4</u>	<u>891</u>	<u>7.04</u>	<u>✓</u>	_____
	<u>13:29</u>	<u>39</u>	<u>21.6</u>	<u>899</u>	<u>7.00</u>		_____

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 16.02 SAMPLE TURBIDITY: clear

80% RECHARGE: YES NO ANALYSES: SLUD
 ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 600AS / HCL - 1 POLY / NA

PURGING EQUIPMENT

Bladder Pump _____ Bailer (Teflon) _____
 Centrifugal Pump _____ Bailer (PVC) _____
 Submersible Pump _____ Bailer (Stainless Steel) _____
 Peristaltic Pump _____ Dedicated _____
 Other: _____
 Pump Depth: 31

SAMPLING EQUIPMENT

Bladder Pump _____ Bailer (Teflon) _____
 Centrifugal Pump _____ Bailer (_____ PVC or disposable)
 Submersible Pump _____ Bailer (Stainless Steel) _____
 Peristaltic Pump _____ Dedicated _____
 Other: _____

WELL INTEGRITY: GOOD LOCK#: MASTER
 REMARKS: NO 1.63 PM ORP 63 IRON 0 ppb

SIGNATURE: [Signature]

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 11102 PURGED BY: RH WELL I.D.: MW-2
 CLIENT NAME: _____ SAMPLED BY: RH SAMPLE I.D.: MW-2
 LOCATION: Oakland - 100 MacArthur Blvd. QA SAMPLES: _____

DATE PURGED 2/10/09 START (2400hr) 13:40 END (2400hr) 14:00
 DATE SAMPLED 2/10/09 SAMPLE TIME (2400hr) 14:04
 SAMPLE TYPE: Groundwater 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) = 32.20 CASING VOLUME (gal) = 12.4
 DEPTH TO WATER (feet) = 13.64 CALCULATED PURGE (gal) = 37.3
 WATER COLUMN HEIGHT (feet) = 18.5 ACTUAL PURGE (gal) = 37.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>2/10/09</u>	<u>13:45</u>	<u>13</u>	<u>20.4</u>	<u>1475</u>	<u>7.09</u>	<u>clear</u>	_____
<u>✓</u>	<u>13:50</u>	<u>26</u>	<u>22.3</u>	<u>606</u>	<u>7.22</u>	<u>✓</u>	_____
	<u>13:55</u>	<u>37.5</u>	<u>23.2</u>	<u>591</u>	<u>7.04</u>	<u>✓</u>	_____

SAMPLE DEPTH TO WATER: 19.20 SAMPLE INFORMATION SAMPLE TURBIDITY: clear

80% RECHARGE: YES NO ANALYSES: SWD
 ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6VCAS/HCL - 1POLY/NA

PURGING EQUIPMENT

Bladder Pump _____ Bailer (Teflon) _____
 Centrifugal Pump _____ Bailer (PVC) _____
 Submersible Pump _____ Bailer (Stainless Steel) _____
 Peristaltic Pump _____ Dedicated _____
 Other: _____
 Pump Depth: 32

SAMPLING EQUIPMENT

Bladder Pump _____ Bailer (Teflon) _____
 Centrifugal Pump _____ Bailer (PVC or disposable) _____
 Submersible Pump _____ Bailer (Stainless Steel) _____
 Peristaltic Pump _____ Dedicated _____
 Other: _____

WELL INTEGRITY: GOOD LOCK#: MASTER
 REMARKS: NO 1.71ppm ORP 87 IRON 0ppm

SIGNATURE: [Signature]

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 11102 PURGED BY: RH WELL I.D.: MW-3
 CLIENT NAME: _____ SAMPLED BY: RH SAMPLE I.D.: MW-3
 LOCATION: Oakland - 100 MacArthur Blvd. QA SAMPLES: _____

DATE PURGED 2/10/09 START (2400hr) 14:10 END (2400hr) 14:28
 DATE SAMPLED 2/10/09 SAMPLE TIME (2400hr) 14:31
 SAMPLE TYPE: Groundwater 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) = 32.30 CASING VOLUME (gal) = 12.5
 DEPTH TO WATER (feet) = 13.61 CALCULATED PURGE (gal) = 37.5
 WATER COLUMN HEIGHT (feet) = 18.6 ACTUAL PURGE (gal) = 38

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>2/10/09</u>	<u>14:14</u>	<u>13</u>	<u>20.8</u>	<u>667</u>	<u>7.21</u>	<u>clear</u>	_____
<u>↓</u>	<u>14:18</u>	<u>26</u>	<u>23.9</u>	<u>638</u>	<u>6.93</u>	_____	_____
<u>↓</u>	<u>14:22</u>	<u>38</u>	<u>24.6</u>	<u>659</u>	<u>6.98</u>	<u>↓</u>	_____

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 27.52 SAMPLE TURBIDITY: clear

80% RECHARGE: YES NO ANALYSES: GW0
 ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAS / HCL - 1 POLY / MA

PURGING EQUIPMENT

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

Other: _____
 Pump Depth: 32

SAMPLING EQUIPMENT

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

Other: _____

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: NO 1.66ppm ORP 91 IRON 0ppm

SIGNATURE: [Signature]

NO. 669834

NON-HAZARDOUS WASTE DATA FORM

SITE:

EPA I.D. NO.

NOT REQUIRED

NAME BP WEST COAST PRODUCTS LLC ARCO # 11102

ADDRESS P.O. BOX 80249 RANCHO SANTA MARGARITA

CITY, STATE, ZIP CA 92688

PROFILE NO.

PHONE NO. ()

CONTAINERS: No. _____ VOLUME 114.5 GAL WEIGHT _____

TYPE: TANK TRUCK DUMP TRUCK DRUMS CARTONS OTHER _____

WASTE DESCRIPTION NON-HAZARDOUS WATER GENERATING PROCESS WELL PURGING/DECON WATER

1. WATER 99-100% 5. _____

2. TPH <1% 6. _____

3. _____ 7. BESI#

4. _____ 8. _____

PROPERTIES: 7-10 SOLID LIQUID SLUDGE SLURRY OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PROTECTIVE CLOTHING

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

Larry Moothart BESI for BP
TYPED OR PRINTED FULL NAME & SIGNATURE

2/10/04
DATE

NAME Transporter #1 STRATUS ENVIRONMENTAL Transporter #2

ADDRESS 3330 CAMERON PARK DR

CITY, STATE, ZIP CAMERON PARK, CA 95682

PHONE NO. 530-676-2031

TRUCK, UNIT, I.D. NO. _____

ROBERTO M... RICH
TYPED OR PRINTED FULL NAME & SIGNATURE

SERVICE ORDER NO. _____

PICK UP DATE _____

2/10/04
DATE

NAME INSTRAT, INC

ADDRESS 1105 AIRPORT RD #C

CITY, STATE, ZIP RIO VISTA, CA 94571

PHONE NO. 530-753-1829

EPA I.D. NO.

DISPOSAL METHOD

LANDFILL OTHER _____

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

GEN	OLD/NEW	L	A	TONS
TRANS		S	B	
C/Q		RT/CD	HWDF	NONE

DISCREPANCY

TO BE COMPLETED BY GENERATOR

TRANSPORTER

1SD FACILITY



Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: BP 11102

Req Due Date (mm/dd/yy): 14 Day TAT Rush TAT: Yes No

BP/ARC Facility No: 11102

Lab Work Order Number: _____

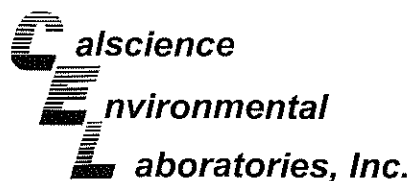
Lab Name: CalScience	BP/ARC Facility Address: 100 MacArthur Blvd	Consultant/Contractor: Stratus Environmental Inc.
Lab Address: 7440 Lincoln Way, Garden Grove, CA 92841	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No:
Lab PM: Richard Villafania	Lead Regulatory Agency: Alameda	Address: 3330 Cameron Park Drive, #550, Cameron Park, CA 95682
Lab Phone: 714-895-5494 Fax: 714-895-7501	California Global ID No.: T0600100908	Consultant/Contractor PM: Jay Johnson
Lab Shipping Acct:	Enfos Proposal No:	Phone: 530-676-6000 Fax: 530-676-6005
Lab Bottle Order No:	Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: chuff @stratusinc.net
Other Info:	Stage: BP/ARC WBS Stage Activity: BP/ARC WBS Activity	Invoice To: BP/ARC <input checked="" type="checkbox"/> Contractor <input type="checkbox"/>

BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative							Requested Analyses							Report Type & QC Level		
EBM Phone: (925) 275-3801				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO by 8015M	BTEX/s FO* by 8260B	Ethanol by 8260B	EDB by 8260B	1,2-DCA by 8260B	H ₂ S	NO ₃	SO ₄	Standard <input checked="" type="checkbox"/>	
EBM Email: paul.supple@bp.com																					Full Data Package <input type="checkbox"/>	
Lab No.	Sample Description	Date	Time																		Comments	
MW-1		2/10/09	13:35	X			7	1			X	X	X	X	X	X	X	X	X	X		
MW-2			14:04	X			7	1		X		X	X	X	X	X	X	X	X	X		
MW-3			14:31	X			7	1		X		X	X	X	X	X	X	X	X	X		
TB-11102	2/15/09-5:00	√	5:00	X			2			X												ON HOLD

Sampler's Name: <u>ROBERTO HEIMLICH</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: Stratus Environmental Inc.								
Shipment Method:	Ship Date:							
Shipment Tracking No:								

Special Instructions: TB Sample ON HOLD! Cc results to Bpdata@secor.com; bpbayarea@secor.com

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



09-02-1059

February 24, 2009

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

Subject: **Calscience Work Order No.: 09-02-1059**
Client Reference: BP 11102

Dear Client:

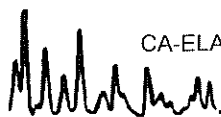
Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/11/2009 and analyzed in accordance with the attached chain-of-custody.

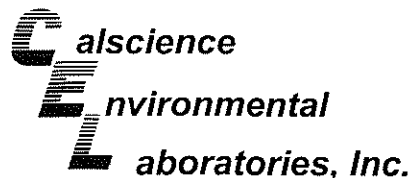
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows 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,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager





Analytical Report

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

Date Received: 02/11/09
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: BP 11102

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-02-1059-1-D	02/10/09 13:35	Aqueous	GC 30	02/13/09	02/14/09 01:04	090213B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	94	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-02-1059-2-D	02/10/09 14:04	Aqueous	GC 30	02/13/09	02/14/09 01:37	090213B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	97	38-134			

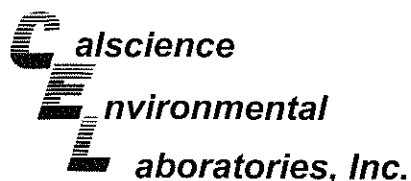
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-02-1059-3-D	02/10/09 14:31	Aqueous	GC 30	02/13/09	02/14/09 02:11	090213B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	93	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-695-435	N/A	Aqueous	GC 30	02/13/09	02/13/09 13:53	090213B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	97	38-134			

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



Analytical Report

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

Date Received: 02/11/09
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: BP 11102

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-02-1059-1-A	02/10/09 13:35	Aqueous	GC/MS BB	02/22/09	02/23/09 09:41	090222L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	5.3	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	110	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	113	73-157			Dibromofluoromethane	110	82-142		
Toluene-d8	99	82-112			1,4-Bromofluorobenzene	99	75-105		

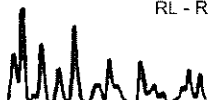
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-02-1059-2-A	02/10/09 14:04	Aqueous	GC/MS Z	02/23/09	02/23/09 19:58	090223L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	50	100		Methyl-t-Butyl Ether (MTBE)	940	50	100	
1,2-Dibromoethane	ND	50	100		Tert-Butyl Alcohol (TBA)	2700	1000	100	
1,2-Dichloroethane	ND	50	100		Diisopropyl Ether (DIPE)	ND	50	100	
Ethylbenzene	ND	50	100		Ethyl-t-Butyl Ether (ETBE)	ND	50	100	
Toluene	ND	50	100		Tert-Amyl-Methyl Ether (TAME)	ND	50	100	
Xylenes (total)	ND	50	100		Ethanol	ND	30000	100	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	125	73-157			Dibromofluoromethane	121	82-142		
Toluene-d8	103	82-112			1,4-Bromofluorobenzene	88	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-02-1059-3-A	02/10/09 14:31	Aqueous	GC/MS Z	02/23/09	02/23/09 20:28	090223L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	50	100		Methyl-t-Butyl Ether (MTBE)	1800	50	100	
1,2-Dibromoethane	ND	50	100		Tert-Butyl Alcohol (TBA)	ND	1000	100	
1,2-Dichloroethane	ND	50	100		Diisopropyl Ether (DIPE)	ND	50	100	
Ethylbenzene	ND	50	100		Ethyl-t-Butyl Ether (ETBE)	ND	50	100	
Toluene	ND	50	100		Tert-Amyl-Methyl Ether (TAME)	ND	50	100	
Xylenes (total)	ND	50	100		Ethanol	ND	30000	100	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	135	73-157			Dibromofluoromethane	125	82-142		
Toluene-d8	103	82-112			1,4-Bromofluorobenzene	94	75-105		

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



Analytical Report

11/11/09

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

Date Received: 02/11/09
 Work Order No: 09-02-1059
 Preparation: EPA 5030B
 Method: EPA 8260B
 Units: ug/L

Project: BP 11102

Page 2 of 2

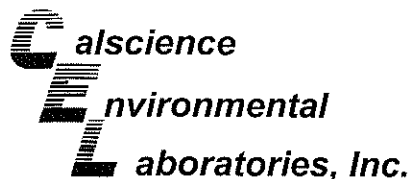
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-731	N/A	Aqueous	GC/MS BB	02/22/09	02/23/09 01:09	090222L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	117	73-157			Dibromofluoromethane	109	82-142		
Toluene-d8	100	82-112			1,4-Bromofluorobenzene	85	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-732	N/A	Aqueous	GC/MS Z	02/23/09	02/23/09 15:54	090223L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	121	73-157			Dibromofluoromethane	111	82-142		
Toluene-d8	104	82-112			1,4-Bromofluorobenzene	94	75-105		

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Analytical Report

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

Date Received: 02/11/09
Work Order No: 09-02-1059

Project: BP 11102

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-1	09-02-1059-1	02/10/09	Aqueous

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as NO3)	830	440	1		ug/L	N/A	02/11/09	EPA 300.0
Sulfate	35000	5000	5		ug/L	N/A	02/11/09	EPA 300.0
Hydrogen Sulfide	ND	100	1		ug/L	N/A	02/11/09	HACH Model HS-C

MW-2	09-02-1059-2	02/10/09	Aqueous
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Comment(s): *CL = Initial analysis within holding time but required dilution.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as NO3) *	22000	890	2		ug/L	N/A	02/11/09	EPA 300.0
Sulfate	42000	10000	10		ug/L	N/A	02/11/09	EPA 300.0
Hydrogen Sulfide	100	100	1		ug/L	N/A	02/11/09	HACH Model HS-C

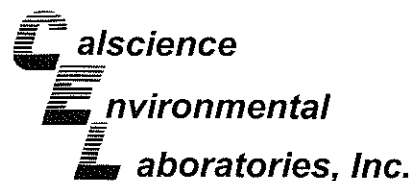
MW-3	09-02-1059-3	02/10/09	Aqueous
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Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as NO3)	5400	440	1		ug/L	N/A	02/11/09	EPA 300.0
Sulfate	22000	5000	5		ug/L	N/A	02/11/09	EPA 300.0
Hydrogen Sulfide	ND	100	1		ug/L	N/A	02/11/09	HACH Model HS-C

Method Blank					N/A			Aqueous
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Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	100	1		ug/L	N/A	02/11/09	EPA 300.0
Sulfate	ND	1000	1		ug/L	N/A	02/11/09	EPA 300.0
Hydrogen Sulfide	ND	100	1		ug/L	N/A	02/11/09	HACH Model HS-C

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



Quality Control - Spike/Spike Duplicate

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

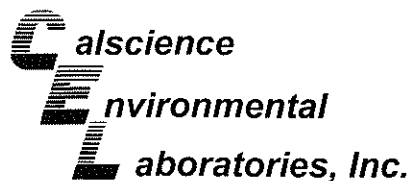
Date Received: 02/11/09
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project BP 11102

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-02-0581-3	Aqueous	GC 30	02/13/09	02/13/09	090213S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	85	96	38-134	12	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate

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

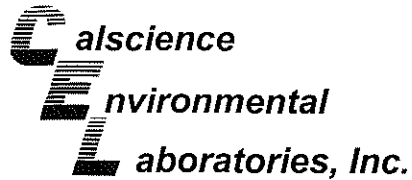
Date Received: 02/11/09
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8260B

Project BP 11102

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-02-1195-2	Aqueous	GC/MS BB	02/22/09	02/23/09	090222S02

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	95	97	86-122	2	0-8	
Carbon Tetrachloride	112	115	78-138	2	0-9	
Chlorobenzene	103	97	90-120	5	0-9	
1,2-Dibromoethane	102	101	70-130	0	0-30	
1,2-Dichlorobenzene	99	101	89-119	2	0-10	
1,1-Dichloroethene	94	100	52-142	6	0-23	
Ethylbenzene	99	94	70-130	6	0-30	
Toluene	90	99	85-127	9	0-12	
Trichloroethene	93	95	78-126	2	0-10	
Vinyl Chloride	67	97	56-140	37	0-21	
Methyl-t-Butyl Ether (MTBE)	101	106	64-136	5	0-28	
Tert-Butyl Alcohol (TBA)	92	106	27-183	14	0-60	
Diisopropyl Ether (DIPE)	102	106	78-126	4	0-16	
Ethyl-t-Butyl Ether (ETBE)	101	105	67-133	4	0-21	
Tert-Amyl-Methyl Ether (TAME)	99	101	63-141	1	0-21	
Ethanol	86	98	11-167	14	0-64	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - Spike/Spike Duplicate

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

Date Received: 02/11/09
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8260B

Project BP 11102

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-02-1193-4	Aqueous	GC/MS Z	02/23/09	02/23/09	090223S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	96	108	86-122	11	0-8	BA,AY
Carbon Tetrachloride	108	110	78-138	2	0-9	
Chlorobenzene	105	104	90-120	1	0-9	
1,2-Dibromoethane	104	101	70-130	3	0-30	
1,2-Dichlorobenzene	104	104	89-119	1	0-10	
1,1-Dichloroethene	110	110	52-142	0	0-23	
Ethylbenzene	137	135	70-130	2	0-30	LM,AY
Toluene	102	107	85-127	5	0-12	
Trichloroethene	96	101	78-126	5	0-10	
Vinyl Chloride	110	112	56-140	2	0-21	
Methyl-t-Butyl Ether (MTBE)	111	112	64-136	1	0-28	
Tert-Butyl Alcohol (TBA)	97	93	27-183	4	0-60	
Diisopropyl Ether (DIPE)	112	113	78-126	0	0-16	
Ethyl-t-Butyl Ether (ETBE)	102	106	67-133	5	0-21	
Tert-Amyl-Methyl Ether (TAME)	103	111	63-141	7	0-21	
Ethanol	94	88	11-167	6	0-64	

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:
 Work Order No:

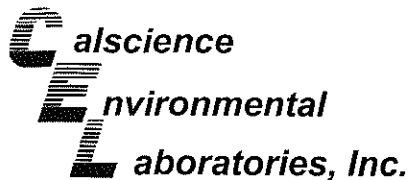
N/A
 09-02-1059

Project: BP 11102

Matrix: Aqueous

<u>Parameter</u>	<u>Method</u>	<u>Quality Control</u> <u>Sample ID</u>	<u>Date</u> <u>Analyzed</u>	<u>Date</u> <u>Extracted</u>	<u>MS%</u> <u>REC</u>	<u>MSD %</u> <u>REC</u>	<u>%REC</u> <u>CL</u>	<u>RPD</u>	<u>RPD</u> <u>CL</u>	<u>Qualifiers</u>
Nitrate (as N)	EPA 300.0	09-02-0999-2	02/11/09	N/A	97	97	58-142	0	0-6	
Sulfate	EPA 300.0	09-02-0999-2	02/11/09	N/A	103	104	49-133	1	0-3	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Duplicate

11/11/09

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

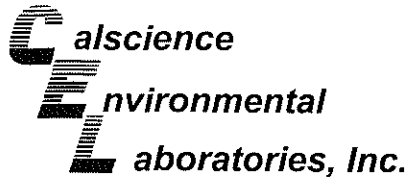
Date Received: N/A
 Work Order No: 09-02-1059

Project: BP 11102

Matrix: Aqueous

<u>Parameter</u>	<u>Method</u>	<u>QC Sample ID</u>	<u>Date Analyzed</u>	<u>Sample Conc</u>	<u>DUP Conc</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Hydrogen Sulfide	HACH Model HS-C	MW-2	02/11/09	100	100	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate

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

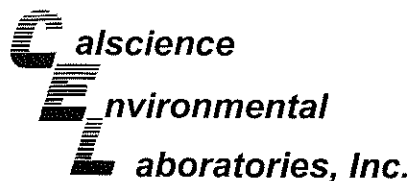
Date Received: N/A
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: BP 11102

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-435	Aqueous	GC 30	02/13/09	02/13/09	090213B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	103	6	78-120	177	0-20	LR,BA

RPD - Relative Percent Difference, CL - Control Limit



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: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8260B

Project: BP 11102

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-731	Aqueous	GC/MS BB	02/22/09	02/22/09	090222L02		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	99	98	87-117	82-122	1	0-7	
Carbon Tetrachloride	116	115	78-132	69-141	1	0-8	
Chlorobenzene	96	96	88-118	83-123	1	0-8	
1,2-Dibromoethane	95	95	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	101	101	88-118	83-123	1	0-8	
1,1-Dichloroethene	103	102	71-131	61-141	1	0-14	
Ethylbenzene	98	98	80-120	73-127	0	0-20	
Toluene	101	98	85-127	78-134	2	0-7	
Trichloroethene	110	109	85-121	79-127	2	0-11	
Vinyl Chloride	104	100	64-136	52-148	4	0-10	
Methyl-t-Butyl Ether (MTBE)	104	102	67-133	56-144	2	0-16	
Tert-Butyl Alcohol (TBA)	97	93	34-154	14-174	4	0-19	
Diisopropyl Ether (DIPE)	105	102	80-122	73-129	3	0-8	
Ethyl-t-Butyl Ether (ETBE)	105	103	73-127	64-136	2	0-11	
Tert-Amyl-Methyl Ether (TAME)	101	99	69-135	58-146	2	0-12	
Ethanol	105	103	34-124	19-139	2	0-44	

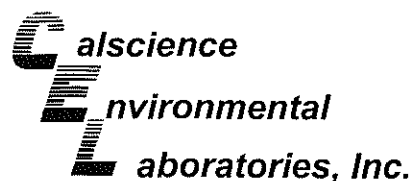
Total number of LCS compounds : 16

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



Quality Control - LCS/LCS Duplicate

09-02-1059

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

Date Received: N/A
Work Order No: 09-02-1059
Preparation: EPA 5030B
Method: EPA 8260B

Project: BP 11102

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-732	Aqueous	GC/MS Z	02/23/09	02/23/09	090223L01		
<u>Parameter</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>%REC CL</u>	<u>ME CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Benzene	98	102	87-117	82-122	4	0-7	
Carbon Tetrachloride	101	101	78-132	69-141	1	0-8	
Chlorobenzene	102	104	88-118	83-123	2	0-8	
1,2-Dibromoethane	101	105	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	102	102	88-118	83-123	0	0-8	
1,1-Dichloroethene	101	105	71-131	61-141	4	0-14	
Ethylbenzene	107	109	80-120	73-127	2	0-20	
Toluene	99	100	85-127	78-134	1	0-7	
Trichloroethene	96	105	85-121	79-127	8	0-11	
Vinyl Chloride	99	101	64-136	52-148	2	0-10	
Methyl-t-Butyl Ether (MTBE)	96	98	67-133	56-144	3	0-16	
Tert-Butyl Alcohol (TBA)	97	87	34-154	14-174	11	0-19	
Diisopropyl Ether (DIPE)	96	99	80-122	73-129	3	0-8	
Ethyl-t-Butyl Ether (ETBE)	93	101	73-127	64-136	8	0-11	
Tert-Amyl-Methyl Ether (TAME)	100	104	69-135	58-146	4	0-12	
Ethanol	86	102	34-124	19-139	17	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

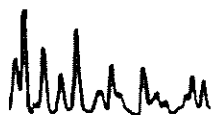
RPD - Relative Percent Difference , CL - Control Limit

Glossary of Terms and Qualifiers



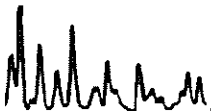
Work Order Number: 09-02-1059

<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	There was no MS/MSD analyzed with this batch due to insufficient sample volume (NR = not reported). See Blank Spike/Blank Spike Duplicate.
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.
GS	Internal standard recovery is outside method recovery limit.
IB	CCV recovery above limit; 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 interference suspected.
LN,AY	MS and/or MSD below acceptance limits. See Blank Spike (LCS). Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.



Work Order Number: 09-02-1059

<u>Qualifier</u>	<u>Definition</u>
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.



Laboratory Management Program LaMP Chain of Custody Record

1059

BP/ARC Project Name: BP 11102

Req Due Date (mm/dd/yy): 14 Day TAT Rush TAT: Yes No

BP/ARC Facility No: 11102

Lab Work Order Number: _____

Lab Name: CalScience	BP/ARC Facility Address: 100 MacArthur Blvd	Consultant/Contractor: Stratus Environmental Inc.
Lab Address: 7440 Lincoln Way, Garden Grove, CA 92841	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No:
Lab PM: Richard Villafania	Lead Regulatory Agency: Alameda	Address: 3330 Cameron Park Drive, #550, Cameron Park, CA 95682
Lab Phone: 714-895-5494 Fax: 714-895-7501	California Global ID No.: T0600100908	Consultant/Contractor PM: Jay Johnson
Lab Shipping Acct:	Enfos Proposal No:	Phone: 530-676-6000 Fax: 530-676-6005
Lab Bottle Order No:	Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: chuff @stratusinc.net
Other Info:	Stage: BP/ARC WBS Stage Activity: BP/ARC WBS Activity	Invoice To: BP/ARC <input checked="" type="checkbox"/> Contractor <input type="checkbox"/>

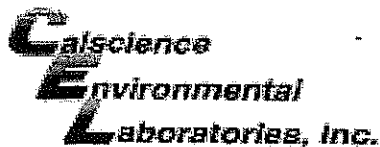
BP/ARC EBM: Paul Supple				Matrix			No. Containers / Preservative						Requested Analyses							Report Type & QC Level		
EBM Phone: (925) 275-3801				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO by 8015M	BTEX/5 FO* by 8260B	Ethanol by 8260B	EDB by 8260B	1,2-DCA by 8260B	H2S	NO3	SO4	Standard <u>X</u>	
EBM Email: paul.supple@bp.com																					Full Data Package <input type="checkbox"/>	
Lab No.	Sample Description	Date	Time	<small>Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.</small> Comments *Oxy = MTBE, TAME, ETBE, DIPE, TBA																		
1	MW-1	2/10/09	13:35	X			7	1			X		X	X	X	X	X	X	X	X		
2	MW-2	↓	14:04	X			7	1		X		X	X	X	X	X	X	X	X	X		
3	MW-3	↓	14:31	X			7	1		X		X	X	X	X	X	X	X	X	X		
4	TB-11102 2/15/09-5:00	↓	5:00	X			2			X												ON HOLD

Sampler's Name: <u>ROBERTO HEIRLICH</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date:	Time:	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>2/11/09</u>	Time: <u>0930</u>
Sampler's Company: Stratus Environmental Inc.						
Shipment Method:	Ship Date:					
Shipment Tracking No: <u>106279926</u>						

Special Instructions: TB Sample ON HOLD! Cc results to Bpdata@secor.com; bpbayarea@secor.com

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No	Temp Blank: Yes / No	Cooler Temp on Receipt: _____ °F/C	Trip Blank: Yes / No	MS/MSD Sample Submitted: Yes / No
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Page 1 of 18



WORK ORDER #: 09-02-1059

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Stratus

DATE: 02/11/09

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen)

Temperature 2.3 °C - 0.2°C (CF) = 2.1 °C Blank Sample

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

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

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

Ambient Temperature: Air Filter Metals Only PCBs Only Initial: JP

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: JP

Sample _____ No (Not Intact) Not Present Initial: YL

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve EnCores® TerraCores® _____

Water: VOA VOA⁶h VOAna₂ 125AGB 125AGBh 125AGBpo₄ 1AGB 1AGBna₂

1AGBs 500AGB 500AGBs 250CGB 250CGBs 1PB 500PB 500PBna 250PB

250PBn 125PB 125PBz_{nn}a 100PBsterile 100PBna₂ _____ _____ _____

Air: Tedlar® Summa® _____

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Preservative: h:HCL n:HNO₃ na₂:Na₂S₂O₃ na:NaOH po₄:H₃PO₄ s:H₂SO₄ z_{nn}a:ZnAc₂+NaOH

Checked/Labeled by: YL

Reviewed by: PS

Scanned by: YL

ATTACHMENT

FIELD PROCEDURES FOR GROUNDWATER SAMPLING

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

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 CONFIRMATIONS

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!

<u>Submittal Type:</u>	GEO_WELL
<u>Submittal Title:</u>	1Q09 GEO_WELL 11102
<u>Facility Global ID:</u>	T0600100908
<u>Facility Name:</u>	BP #11102
<u>File Name:</u>	GEO_WELL.zip
<u>Organization Name:</u>	Broadbent & Associates, Inc.
<u>Username:</u>	BROADBENT-C
<u>IP Address:</u>	67.118.40.90
<u>Submittal Date/Time:</u>	4/15/2009 4:03:44 PM
<u>Confirmation Number:</u>	9570578336

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!

<u>Submittal Type:</u>	EDF - Monitoring Report - Quarterly
<u>Submittal Title:</u>	1Q09 GW Monitoring
<u>Facility Global ID:</u>	T0600100908
<u>Facility Name:</u>	BP #11102
<u>File Name:</u>	09021059.zip
<u>Organization Name:</u>	Broadbent & Associates, Inc.
<u>Username:</u>	BROADBENT-C
<u>IP Address:</u>	67.118.40.90
<u>Submittal Date/Time:</u>	4/15/2009 4:12:34 PM
<u>Confirmation Number:</u>	7277932286

[VIEW QC REPORT](#)

[VIEW DETECTIONS REPORT](#)