

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



2:12 pm, Oct 23, 2008

Alameda County Environmental Health



Re: Third Quarter 2008 Ground-Water Monitoring Report

Former BP Station # 11124

3315 High Street Oakland, California ACEH Case # RO0000239

"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 Ground-Water Monitoring Report

Former BP Station #11124 3315 High Street 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

15 October 2008

Project No. 06-08-652



15 October 2008

Project No. 06-08-652

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

Attn.: Mr. Paul Supple

Re: Third Quarter 2008 Ground-Water Monitoring Report, Former BP Station #11124,

3315 High Street, Oakland, California; ACEH Case # RO0000239

Dear Mr. Supple:

Attached is the *Third Quarter 2008 Ground-Water Monitoring Report* for Former BP Station #11124 located at 3315 High Street, Oakland California (Site). This report presents a summary of results from ground-water monitoring and sampling conducted at the Site during the Third Quarter of 2008.

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)

ROBERT H. MILLER No. 561

Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818

Electronic copy uploaded to GeoTracker

ARIZONA CALIFORNIA NEVADA TEXAS

STATION #11124 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #11124 Address: 3315 High Street, Oakland, California

Environmental Business Manager: Mr. Paul Supple

Consulting Co./Contact Persons:

Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus

(530) 566-1400

Primary Agency/Regulatory ID No.: Alameda County Environmental Health (ACEH)

ACEH Case # RO0000239

Consultant Project No.: 06-08-652

Facility Permits/Permitting Agency: None

WORK PERFORMED THIS QUARTER (Third Quarter 2008):

1. Submitted Second Quarter 2008 Ground-Water Monitoring Report.

2. Conducted ground-water monitoring/sampling for Third Quarter 2008. Work performed by Stratus Environmental, Inc. (Stratus) on 20 August 2008.

WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter 2008):

1. Prepared and submitted Third Quarter 2008 Ground-Water Monitoring Report (contained herein).

2. Conduct quarterly ground-water monitoring/sampling for Fourth Quarter 2008.

QUARTERLY RESULTS SUMMARY:

Current phase of project: Ground-Water Monitoring/Sampling
Frequency of ground-water monitoring: Quarterly: Wells MW-1, MW-2, MW-4, MW-5 and MW-6

Frequency of ground-water sampling:
Is free product (FP) present on-site:
Current remediation techniques:

Output

Out

Depth to ground water (below TOC): 10.74 ft (MW-2) to 11.35 ft (MW-1)

General ground-water flow direction: Southwest

Approximate hydraulic gradient: 0.02 ft/ft

DISCUSSION:

Third quarter 2008 ground-water monitoring/sampling was conducted at Former BP Station #11124 on 20 August 2008 by Stratus personnel. Water levels were gauged in the five wells at the Site. No irregularities were noted during water level gauging. Depth-to-water level measurements ranged from 10.74 ft at MW-2 to 11.35 ft at MW-1. Resulting ground-water surface elevations ranged from 145.99 ft above mean sea level (msl) at well MW-1 to 143.61 ft above msl at wells MW-2 and MW-6. Water level elevations were between historic minimum and maximum ranges for each well, as summarized in Table 1, with the following exception: the water level elevations reached historic minimum values of 144.57 ft above msl in well MW-5 and 143.61 ft above msl in well MW-6. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the southwest at approximately 0.02 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.

Consistent with the current ground-water sampling schedule, water samples were collected from wells MW-1, MW-2, MW-4, MW-5, and MW-6. No irregularities were reported during sampling. Samples were submitted to Calscience Environmental Laboratories, Inc. (Garden Grove, California) under chain-of-custody protocol for laboratory analysis of Gasoline Range Organics (GRO, C6-C12) by EPA Method 8015B; Diesel Range Organics (DRO, C10-C28) by EPA Method 8015B; Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Methyl tert-butyl ether (MTBE), Ethyl tert-butyl ether (ETBE), Ethanol, 1,2-Dichloroethane (1,2-DCA), 1,2-Dibromomethane (EDB), Di-isopropyl ether (DIPE), tert-Butyl alcohol (TBA), and tert-Amyl methyl ether (TAME) 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.

MTBE was detected above the laboratory reporting limit in two of the five wells sampled at concentrations up to 1,200 micrograms per liter (μ g/L) in well MW-5. GRO, DRO and the remaining fuel additives and oxygenates were not detected above their respective laboratory reporting limits in the five wells sampled this quarter. Detected analyte concentrations were within the historic minimum and maximum ranges recorded for each well. 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, 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.

Within the First Quarter 2008 Ground-Water Monitoring Report, BAI proposed for ACEH consideration and approval a modification to the future monitoring and sampling schedule. This request was approved by ACEH in a letter from Paresh Khatri dated 26 September 2008. The new monitoring and sampling schedule will commence during the Fourth Quarter 2008.

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 Contours and Analytical Summary Map, 20 August 2008, Former BP Service Station #11124, 3315 High Street, Oakland, California
- Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #11124, 3315 High St., Oakland, California
- Table 2. Summary of Fuel Additives Analytical Data, Station #11124, 3315 High St., Oakland, California

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- Table 3. Historical Ground-Water Flow Direction and Gradient, Station #11124, 3315 High St., Oakland, California
- 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

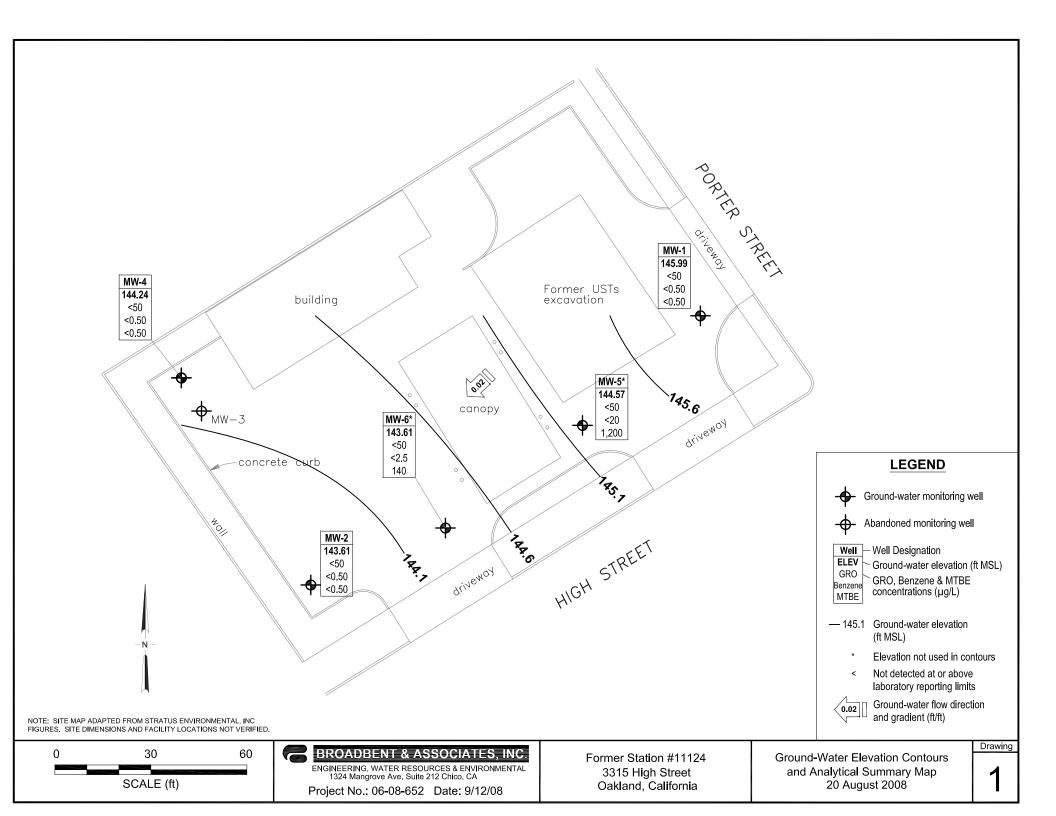


Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #11124, 3315 High St., Oakland, CA

			TOC		Product	Water Level		C	oncentratio	ons in (µg/	L)					DRO/	
Well and			Elevation	DTW	Thickness	Elevation	GRO/			Ethyl-	Total		DO			TPHd	TOG
Sample Date	P/NP	Footnote	(feet msl)	(feet bgs)	(feet)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MtBE	(mg/L)	Lab	pН	(µg/L)	(µg/L)
MW-1																	
10/19/2004	P		154.99	10.50		144.49	< 50	< 0.50	< 0.50	< 0.50	< 0.50	14	0.96	SEQM	6.9		
01/13/2005	P		154.99	9.00		145.99	< 50	< 0.50	< 0.50	< 0.50	< 0.50	33	2.5	SEQM	6.4		
02/24/2006	P	c	154.99	10.42		144.57	55	< 0.50	< 0.50	< 0.50	< 0.50	51		SEQM	6.8		
5/30/2006	P		154.99	10.94		144.05	50	< 0.50	< 0.50	< 0.50	< 0.50	58		SEQM	6.6		
8/28/2006	P		154.99	10.61		144.38	50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		TAMC	7.0		
11/2/2006	P		154.99	10.83		144.16	< 50	< 0.50	< 0.50	< 0.50	< 0.50	9.8	1.40	TAMC	6.99		
2/6/2007	P	d	157.34	9.88		147.46	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	2.76	TAMC	7.10		
3/13/2007	P		157.34	9.62		147.72							2.63	TAMC	7.30	<48	
5/8/2007	P		157.34	9.62		147.72	< 50	< 0.50	< 0.50	< 0.50	< 0.50	19	2.65	TAMC	7.01	<49	
8/7/2007	P		157.34	10.82		146.52	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.0	3.15	TAMC	7.33	<49	
11/13/2007			157.34	10.52		146.82							4.79	TAMC	6.58	<48	
12/20/2007	NP	e	157.34	10.47		146.87	< 50	< 0.50	< 0.50	< 0.50	< 0.50	10	1.14	TAMC	6.97		
2/29/2008	P		157.34	9.32		148.02	< 50	< 0.50	< 0.50	< 0.50	< 0.50	7.4	3.14	CEL	7.64	< 50	
5/23/2008	P		157.34	10.73		146.61	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.9	1.76	CEL	6.83	< 50	
8/20/2008	P		157.34	11.35		145.99	< 50	<0.50	< 0.50	<0.50	<0.50	<0.50	4.01	CEL	6.73	< 50	
MW-2																	
10/19/2004		b	152.02	9.45		142.57											
01/13/2005	P		152.02	6.43		145.59	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.47	SEQM	6.4		
02/24/2006	P		152.02	7.88		144.14	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		SEQM	6.7		
5/30/2006	P		152.02	7.98		144.04	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		SEQM	6.7		
8/28/2006	P		152.02	9.38		142.64	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		TAMC	6.7		
11/2/2006			152.02	9.85		142.17											
2/6/2007	P	d	154.35	8.40		145.95	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.10	TAMC	7.02		
3/13/2007	P		154.35	7.55		146.80							4.83	TAMC	7.17	52	
5/8/2007	P		154.35	7.70		146.65	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.40	TAMC	7.12	<48	
8/7/2007	P		154.35	9.77		144.58	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.47	TAMC	7.19	<47	
11/13/2007			154.35	9.30		145.05							4.90	TAMC	7.02	<48	
12/20/2007	NP	e	154.35	9.34		145.01	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.62	TAMC	7.44		
2/29/2008	P	f	154.35	7.35		147.00	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.39	CEL	7.76	64	
5/23/2008	P		154.35	9.28		145.07	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.93	CEL	7.07	< 50	

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #11124, 3315 High St., Oakland, CA

			TOC		Product	Water Level		C	oncentratio	ons in (µg/	I.)					DRO/	
Well and			Elevation	DTW	Thickness	Elevation	GRO/		one contract	Ethyl-	Total		DO			TPHd	TOG
Sample Date	P/NP	Footnote	(feet msl)	(feet bgs)	(feet)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MtBE	(mg/L)	Lab	pН	$(\mu g/L)$	(µg/L)
MW-2 Cont.																	
8/20/2008	P		154.35	10.74		143.61	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.0	CEL	6.91	<50	
MW-4																	
10/19/2004	P		152.77	9.55		143.22	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.82	SEQM	7.0		
01/13/2005		a	152.77														
02/24/2006	P		152.77	7.86		144.91	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		SEQM	7.1		
5/30/2006	P		152.77	8.04		144.73	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		SEQM	6.9		
8/28/2006	P		152.77	9.36		143.41	<50	< 0.50	< 0.50	< 0.50	< 0.50	16		TAMC	6.5		
11/2/2006	P		152.77	9.92		142.85	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.23	TAMC	6.79		
2/6/2007	P	d	155.10	8.40		146.70	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.43	TAMC	7.10		
3/13/2007	P		155.10	7.56		147.54							2.53	TAMC	7.18	<49	
5/8/2007	P		155.10	7.68		147.42	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.78	TAMC	7.28	<48	
8/7/2007	P		155.10	9.83		145.27	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.70	TAMC	7.13	<48	
11/13/2007			155.10	9.28		145.82							5.71	TAMC	7.11	<48	
12/20/2007	NP	e	155.10	9.23		145.87	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.13	TAMC	7.16		
2/29/2008	P		155.10	7.27		147.83	<50	< 0.50	< 0.50	< 0.50	< 0.50	1.5	4.26	CEL	8.03	< 50	
5/23/2008	P		155.10	9.32		145.78	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.43	CEL	7.11	< 50	
8/20/2008	P		155.10	10.86		144.24	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.01	CEL	7.10	<50	
MW-5																	
3/13/2007	P	d	155.45	8.72		146.73	880	< 0.50	< 0.50	< 0.50	< 0.50	1,400	1.84	TAMC	7.36	<48	
5/8/2007	P	С	155.45	8.42		147.03	920	<5.0	< 5.0	<5.0	< 5.0	1,300	3.26	TAMC	7.50	<48	
8/7/2007	P	c	155.45	9.88		145.57	1,300	<10	<10	<10	<10	1,600	3.54	TAMC	7.34	<48	
11/13/2007	P	С	155.45	9.68		145.77	950	<10	<10	<10	<10	1,400	4.68	TAMC	6.99	<48	
2/29/2008	P		155.45	8.15		147.30	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1,100	4.84	CEL	7.93	< 50	
5/23/2008	P		155.45	9.80		145.65	<50	<20	<20	<20	<20	1,200	0.49	CEL	6.89	< 50	
8/20/2008	P		155.45	10.88		144.57	<50	<20	<20	<20	<20	1,200	3.11	CEL	6.80	<50	
MW-6																	
3/13/2007	P	d	154.59	7.82		146.77	86	< 0.50	< 0.50	< 0.50	<0.50	88	1.92	TAMC	7.21	<48	
5/8/2007	P	С	154.59	7.92		146.67	88	< 0.50	< 0.50	< 0.50	< 0.50	120	1.87	TAMC	7.50	<48	
8/7/2007	P	c	154.59	9.85		144.74	67	< 0.50	< 0.50	< 0.50	< 0.50	85	3.60	TAMC	7.25	<47	

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #11124, 3315 High St., Oakland, CA

Well and			TOC Elevation	DTW	Product Thickness	Water Level Elevation	GRO/	Concentrations in (μg/L) GRO/ Ethyl- Total DO					DO			DRO/ TPHd	TOG
Sample Date	P/NP	Footnote				(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MtBE	(mg/L)	Lab	pН	(μg/L)	(μg/L)
MW-6 Cont.																	
11/13/2007	P	c	154.59	9.71		144.88	67	<1.0	<1.0	<1.0	<1.0	98	4.44	TAMC	7.16	<48	
2/29/2008	P		154.59	8.86		145.73	< 50	< 0.50	< 0.50	< 0.50	< 0.50	130	4.35	CEL	7.82	< 50	
5/23/2008	P		154.59	9.98		144.61	<50	<2.5	<2.5	<2.5	<2.5	150	0.62	CEL	7.12	< 50	
8/20/2008	P		154.59	10.98		143.61	<50	<2.5	<2.5	<2.5	<2.5	140	2.20	CEL	6.96	< 50	

ABBREVIATIONS AND SYMBOLS:

- --- = Not analyzed/measured/applicable
- < = Not detected at or above laboratory reporting limit

DO = Dissolved oxygen

ft bgs = Feet below ground surface

ft MSL = Feet above mean sea level

DTW = Depth to water in ft bgs

GRO = Gasoline range organics

GWE = Groundwater elevation in ft MSL

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 in ft MSL

TPH-g = Total petroleum hydrocarbons as gasoline

 $\mu g/L = Micrograms per liter$

SEQM = Sequoia Analytical Morgan Hill (Laboratory)

FOOTNOTES:

- a = Well inaccessible.
- b = Well is dry.
- c = Hydrocarbon result for GRO partly due to individual peak(s) in quantitative range.
- d = Well survey by Morrow Surveying on 12/27/2006.
- e = Well re-sampled due to insufficient laboratory analysis of previous sampling event on 11/13/2007. The depth to water and resulting water level elevation from 11/13/2007 will be used for reporting purposes for Fourth Quarter 2007.
- f = The hydrocarbon pattern for DRO in the sample does not match that of the diesel standard used to calculate results.

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 DO and pH were obtained through field measurements.

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 #11124, 3315 High St., Oakland, CA

Well and	Concentrations in (µg/L)										
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments		
MW-1											
10/19/2004	<100	<20	14	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
01/13/2005	<100	<20	33	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
02/24/2006	<300	<20	51	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/30/2006	<300	<20	58	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
8/28/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
11/2/2006	<300	<20	9.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
2/6/2007	<300	<20	1.1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/8/2007	<300	<20	19	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
8/7/2007	<300	<20	5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
12/20/2007	<300	<20	10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
2/29/2008	<300	<10	7.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/23/2008	<300	<10	1.9	< 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-2											
01/13/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
02/24/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/30/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
8/28/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
2/6/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/8/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
8/7/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
12/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
2/29/2008	<300	<10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/23/2008	<300	<10	< 0.50	< 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-4											
10/19/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
02/24/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
5/30/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
8/28/2006	<300	<20	16	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			

Table 2. Summary of Fuel Additives Analytical Data Station #11124, 3315 High St., Oakland, CA

Well and	Concentrations in (µg/L)								
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
MW-4 Cont.									
11/2/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2/6/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
5/8/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
8/7/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
12/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2/29/2008	<300	<10	1.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
5/23/2008	<300	<10	< 0.50	< 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-5									
3/13/2007	<3,000	<200	1,400	< 5.0	<5.0	6.5	< 5.0	< 5.0	
5/8/2007	<3,000	<200	1,300	< 0.50	< 0.50	7.0	< 0.50	< 0.50	
8/7/2007	<6,000	<400	1,600	<10	<10	<10	<10	<10	
11/13/2007	<6,000	<400	1,400	<10	<10	<10	<10	<10	
2/29/2008	<300	42	1,100	< 0.50	< 0.50	4.9	< 0.50	< 0.50	
5/23/2008	<12,000	<400	1,200	<20	<20	<20	<20	<20	
8/20/2008	<12,000	<400	1,200	<20	<20	<20	<20	<20	
MW-6									
3/13/2007	<300	<20	88	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
5/8/2007	<300	<20	120	< 0.50	< 0.50	0.61	< 0.50	< 0.50	
8/7/2007	<300	<20	85	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
11/13/2007	<600	<40	98	<1.0	<1.0	<1.0	<1.0	<1.0	
2/29/2008	<300	<10	130	< 0.50	< 0.50	0.71	< 0.50	< 0.50	
5/23/2008	<1,500	< 50	150	<2.5	<2.5	<2.5	<2.5	<2.5	
8/20/2008	<1,500	<50	140	<2.5	<2.5	<2.5	<2.5	<2.5	

ABBREVIATIONS AND SYMBOLS:

TBA = tert-Butyl alcohol

MTBE = Methyl tert-butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = tert-Amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromomethane

 $\mu g/L = micrograms per liter$

< = Not detected at or above laboratory reporting limit

NOTES:

All fuel oxygenate compounds are 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 #11124, 3315 High St., Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
11/12/1990		
7/15/1991	Southwest	0.0174
10/15/1991	Southwest	0.0182
1/15/1992	South-Southwest	0.014
4/17/1992	South	0.014
9/30/1992	South-Southwest	0.018
12/17/1992	North	0.01
3/15/1993	South	0.007
10/19/2004	South-Southwest	0.022
1/13/2005		
2/24/2006	Southeast	0.01
5/30/2006	East-Southeast	0.007
8/28/2006	South	0.012
11/2/2006	South	0.013
3/13/2007	Southwest	0.006
5/8/2007	South-Southwest	0.009
8/7/2007	Southwest	0.01
11/13/2007	Southwest	0.01
12/17/2007	Southwest	0.01
2/29/2008	Southwest	0.009
5/23/2008	Southwest	0.01
8/20/2008	Southwest	0.02

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)



September 5, 2008

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

Re:

Groundwater Sampling Data Package, ARCO Service Station No. 11124, located at

3315 High Street, 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: 9:00 Departure: 11:30

Weather Conditions: Clear

Unusual Field Conditions: None noted.

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 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. 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

Jay R. Johnson No. 5867

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

Gauge Date: _	9/20/02	Project Name: 3315 High Street, Oakland
Field Technician:	La De François	Project Number: 11124

TOC = Top of Well Casing Elevation TOS = Death to Top of Screen DTW = Depth to Groundwater Below TOC DTB = Depth to Softom of Well Casing Below TOC

pH/Conductivity/temperature Meter - YSI Model 63

Please refer to groundwater sampling field procedures

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

DiA = Well Casing Diameter ELEV = Groundwater Elevation DUP = Duplicate

Conductivity

DO

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Atlantic Richfield

A BP affiliated company

Chain of Custody Record

Project Name: BP 11124

BP BU/AR Region/Enfos Segment:

BP > Americas > West > Rutari > CA > Alameda > 11124

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy):

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Address: 7440 Lincoln Way	······································	·	7:11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	70400		- CONTRACTOR	BP/AR Facility Ad			Later de la company	5 11	igh Si	reef	()al	10.00				-	ısult:	************	SHIP SHIPS OF STREET				tratus Environmental	Inc.	
Garden Grove, CA 92841			***************************************		Library St.	- Artestan	Site Lat/Long:	Maronine moaree	***************************************	***************************************				, UAF	. 141 [4]	1.E	·		ARCEC	Iress		35.	5U C	ame	eror	n Park Drive, Suite	550	
ah PM: Linda Scharpenberg			yp				California Global I	D) #-	TO	GOD T	anie	110		- Mark Market		etrauscrope _{sco}	******************	~				1.4	nieri	on P	ark	CA 95682		
[clc/Faxt 714-895-5494 714-895-750	Ol(fax)	4				Enfos Project No Cosen acra					and the second																	
3P/AR PM Contact: Paul Supple			H.C			Provising of PCOP (sind, w) Jay Johnson																						
Address: 2010 Crow Carryon Place, Suite	e 150					_	Pluse/WBS:	1442		Mon			7 15(1)	η					-	/Fax	***********				600	00 / (530) 676-6005		
San Ramon, CA						-	Sub Phase/Fask:			Ana	distribution of the last	well-removed	·							eri 1						Level I wi	h EDF	
ele/Fax: 925-275-3506							Cost Element:					u er labe		**********		····			E-n	nail E	DD	To:	<u>bc</u>	arro) <u> (</u>	<u>Distratusing net</u>	and the second s	
Lab Bottle Order No:		A STATE OF THE STA	T	M	itrix			l	11	Maria Committee	Marian St.	************		Marie Const	ii -	400000	de la constitución de la constit			olce :			tic R	ichfi	eld	Co.	AND THE PERSON NAMED IN COLUMN	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
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Rem No. Sample Description	The	Date	Soil/Salld	Water/Liquid	A.Y		Laboratory No.	No. of Containers	Unpreserved	14.30,	TOO O	10	Methanoi	POR COLD TO CONTRACT OF THE COLD TO CO	3.TEX/Oxy*by 8260	12 D.A	EDB	Silitated by \$260	DRO by 8015M	GRO by \$015m	CHARLEST CONTRACTOR CO	A CONTRACTOR OF THE PROPERTY O	When the Control of t		***	Sample Point L Comm Oxy = MTBD, TAN TB/	ents Œ, ETB:	
1 MW-1	9:50	8/200		X				8		1	Ť		-	1	1	1	1	1	TOWNS TO SERVICE	10	+-	-	<u> </u>	1_	4			Name of the last
2 MW-2		3-1.	1	wageneesser.	++			· •	-	-	+	X	-	╀	X.	X	X	X	X	X								
	10:53		╢	X				8		1_		X			X	X	X	X	X	X		Andrew Control				20000000 100000000000000000000000000000		
3 MW-4	11:45			X			and the second	8				X	440900		X	Х	Х	Х	X	Х	-	1		+	╁		width a f this little force a 2 this manner.	
4 MW-5	/v://			X				8	mmon		1	1-	T	-	#	_		- Chicago recom	***********	***********		+	-	-		The second secon		
5 MW-6	10:33			x	1 1			2	-	-	+	<u> X</u>	it ne re renessas	-	X	X	X	Х	X	X	<u> </u>	en andrese estate e						
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Sampler's Name: LOBERTO	<u> HET B</u>	14/6	and the same				Reline	wish	d B	r/Ai	Tiliat	ion			T	late	Ìт	nie		W-000-00-00-00-00-00-00-00-00-00-00-00-0	ar ii	<u></u>			1	ACCOMPANIES AND ACCOMPANIES AN		
sampler's Company: DOULOG	EM	11/2	··						**************************************	10.75V217789			Windowski tree	***************************************		******		Company of the				MOU	chier	1 154	/ /1	Illintion	Date	Thu
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pecial Instructions:	Please	cc resu	lts to): m	niller	at	moadbentine.com	***************************************			******	Note the second			<u> </u>		1	Western street	<u> </u>		- vac va	March September	Barriera I	design (Constant	******			
No. and Control of the Control of th								************	0004000000000	OCCUPANTICS CONTROL	tournesses.	***************************************				***************************************	Material	WWCIII 1900/WWW	OR SECURIOR PAR						wiolian no			era Karoma di Persona
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September 05, 2008

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

Subject:

Calscience Work Order No.:

08-08-2067

Client Reference:

BP 11124

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.

Caiscience Environmental

Laboratories, Inc. Linda Scharpenberg Project Manager



Stratus Environmental, inc.

3330 Cameron Park Drive, Suite 550

Cameron Park, CA 95682-8861

Date Received:

Work Order No:

Preparation:

Method:

08/22/08

08-08-2067 **EPA 5030B**

EPA 8015B (M)

Project:	ΒP	1	1	1	24
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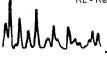
Page 1 of 2

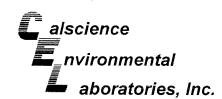
Project: BP 11124							Pa	age 1 of 2
Client Sample Number	-	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1		08-08-2067-1-E	08/20/08 09:50	Aqueous	GC 4	08/28/08	08/28/08 16:09	080828B01
<u>Parameter</u>	Result	<u>RL</u>	DF	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	60	38-134						
MW-2		08-08-2067-2-E	08/20/08 10:53	Aqueous	GC 4	08/28/08	08/28/08 14:30	080828B01
<u>Parameter</u>	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	57	38-134						
MW-4		08-08-2067-3-E	08/20/08 11:15	Aqueous	GC 4	08/28/08	08/28/08 16:41	080828B01
Parameter	<u>Result</u>	RL	<u>DF</u>	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	54	38-134						
MW-5		08-08-2067-4-E	08/20/08 10:11	Aqueous	GC 4	08/28/08	08/28/08 17:14	080828B01
<u>Parameter</u>	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	59	38-134						

RL - Reporting Limit ,

DF - Dilution Factor ,

Qual - Qualifiers





Stratus Environmental, inc.

3330 Cameron Park Drive, Suite 550

Cameron Park, CA 95682-8861

Date Received:

Work Order No:

Preparation:

Method:

08/22/08 08-08-2067

EPA 5030B

EPA 8015B (M)

Project: BP 11124

Page 2 of 2

Client Sample Number		Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6		08-08-2067-5-E	08/20/08 10:33	Aqueous	GC 4	08/28/08	08/28/08 17:47	080828B01
Parameter	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	61	38-134						
Method Blank		099-12-695-246	N/A	Aqueous	GC 4	08/28/08	08/28/08 12:52	080828B01
<u>Parameter</u>	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		<u>Qual</u>				
1,4-Bromofluorobenzene	57	38-134						



Stratus Environmental, inc. 3330 Cameron Park Drive, Suite 550 Cameron Park, CA 95682-8861 Date Received: Work Order No: Preparation:

Method:

08/22/08 08-08-2067 EPA 3510C EPA 8015B (M)

Project: BP 11124	n den en en en de en		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Pa	age 1 of 2
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	08-08-2067-1-G	08/20/08 09:50	Aqueous	GC 27	08/27/08	08/29/08 10:41	080827B09
<u>Parameter</u> <u>Result</u>	<u>RL</u>	DF	Qual	<u>Units</u>			
Diesel Range Organics (C10-C28) ND	50	1		ug/L			
Surrogates: REC (9	6) Control Limits		Qual				
Decachlorobiphenyl 117	68-140			,			
MW-2	08-08-2067-2-G	08/20/08 10:53	Aqueous	GC 27	08/27/08	08/29/08 10:59	080827B09
Parameter Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			
Diesel Range Organics (C10-C28) ND	50	1		ug/L			
Surrogates: REC (%	(a) Control Limits		Qual				
Decachlorobiphenyl 124	68-140						
MW-4	08-08-2067-3-G	08/20/08 11:15	Aqueous	GC 27	08/27/08	08/29/08 11:19	080827B09
Parameter Result	<u>RL</u>	DF	Qual	<u>Units</u>			
Diesel Range Organics (C10-C28) ND	50	1		ug/L			
Surrogates: REC (%) Control Limits		Qual				
Decachlorobiphenyl 137	68-140						
MW-5	08-08-2067-4-G	08/20/08 10:11	Aqueous	GC 27	08/27/08	08/29/08 11:38	080827B09
Parameter Result	<u>RL</u>	DF	Qual	<u>Units</u>			
Diesel Range Organics (C10-C28) ND	50	1		ug/L			
Surrogates: REC (%) <u>Control Limits</u>		Qual				
Decachlorobiphenyl 73	68-140						

RL - Reporting Limit ,

DF - Dilution Factor ,

Qual - Qualifiers





Stratus Environmental, inc.

3330 Cameron Park Drive, Suite 550 Cameron Park, CA 95682-8861

Date Received:

Work Order No:

Preparation: Method:

08/22/08

08-08-2067

EPA 3510C

EPA 8015B (M)

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710	ect.	БP	- 1	- 1	- 1	24

Page 2 of 2

Project: BP 11124							Pa	age 2 of 2
Client Sample Number		Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6		08-08-2067-5-G	08/20/08 10:33	Aqueous	GC 27	08/27/08	08/29/08 11:57	080827B09
Parameter	Result	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>			
Diesel Range Organics (C10-C28)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
Decachlorobiphenyl	119	68-140						
Method Blank		099-12-699-73	N/A	Aqueous	GC 27	08/27/08	08/29/08 09:05	080827B09
Parameter	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>	,		
Diesel Range Organics (C10-C28)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
Decachlorobiphenyl	115	68-140			-			



Units:

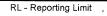
Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861
Cameron Park, CA 95682-8861

Date Received: Work Order No: Preparation: Method:

08-08-2067 EPA 5030B EPA 8260B ug/L

08/22/08

Project: BP 11124										Pa	ge 1 of 2
Client Sample Number			L	ab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/ d Analy		QC Batch ID
MW-1			08-08	-2067-1-A	08/20/08 09:50	Aqueous	GC/MS BB	08/28/08	08/28 21:		080828L01
Parameter	Result	RL	DF	Qual	Parameter			Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Buty	Ether (MTB	E)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alc	ohol (TBA)	ŕ	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl E	ther (DIPE)		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl E	Ether (ETBE))	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Me	thyl Ether (T	AME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	•		ND	300	1	
Surrogates:	REC (%)	Control		Qual	Surrogates:]	REC (%)	Control		Qual
		Limits							Limits		
1,2-Dichloroethane-d4	105	73-157			Dibromofluoro	methane		109	82-142		
Toluene-d8	102	82-112			1,4-Bromofiuo	orobenzene		100	75-105		
MW-2		-	08-08-	2067-2-A	08/20/08 10:53	Aqueous	GC/MS BB	08/28/08	08/28 22:1		080828L01
<u>Parameter</u>	Result	<u>RL</u>	<u>DF</u>	Qual	Parameter			Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl	Ether (MTBI	≣)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alc	ohol (TBA)		ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Et	her (DIPE)		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl E	ther (ETBE)		ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Met	thyl Ether (T/	AME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	-		ND	300	1	
Surrogates:	REC (%)	Control Limits		<u>Qual</u>	Surrogates:		<u> </u>	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	100	73-157			Dibromofluoro	methane		106	82-142		
Toluene-d8	102	82-112			1,4-Bromofluo	robenzene		99	75-105		
MW-4			08-08-	2067-3-A	08/20/08 11:15	Aqueous	GC/MS BB	08/28/08	08/28/ 22:4		080828L01
Parameter	Result	<u>RL</u>	<u>DF</u>	Qual	Parameter			Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl	Ether (MTBE	Ξ)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alco	hol (TBA)		ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Eth	ner (DIPE)		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl E	ther (ETBE)		ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Met	hyl Ether (TA	ME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	•	•	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:		R	EC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	103	73-157			Dibromofluoror	nethane		110	82-142		
Toluene-d8	103	82-112			1,4-Bromofluor	obenzene		99	75-105		





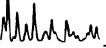
Stratus Environmental, inc.	Date Received:	08/22/08
3330 Cameron Park Drive, Suite 550	Work Order No:	08-08-2067
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L

Project: BP 11124										Pa	ge 2 of 2
Client Sample Number			L	ab Sample Number	Date/Time	Matrix	Instrument	Date Prepare	Date/ d Analy		QC Batch ID
MW-5			08-08	-2067-4-A	08/20/08 10:11	Aqueous	GC/MS BE	08/28/0	3 08/28 23:		080828L01
Parameter	Result	RL	DF	Qual	<u>Parameter</u>			Result	RL	DF	Qual
Benzene	ND	20	40		Methyl-t-Buty	l Ether (MTB	BE)	1200	20	40	ס
1,2-Dibromoethane	ND	20	40		Tert-Butyl Ald			ND	400	4()
1,2-Dichloroethane	ND	20	40		Diisopropyl E			ND	20	4()
Ethylbenzene	ND	20	40		Ethyl-t-Butyl !	Ether (ETBE)	ND	20	4()
Toluene	ND	20	40		Tert-Amyl-Me	ethyl Ether (T	AME)	ND	20	40)
Xylenes (total)	ND	20	40		Ethanol			ND	12000	4(
Surrogates:	REC (%)	Control		Qual	Surrogates:			REC (%)	Control		Qual
1.2 Dichlaraethana d4	100	<u>Limits</u>			Dibromofluoro	amathan a		107	<u>Limits</u>		
1,2-Dichloroethane-d4 Toluene-d8	102 102	73-157 82-112			1.4-Bromofluo			107 102	82-142 75-105		
	102	02-112			,						
MW-6			08-08-	·2067-5-A	08/20/08 10:33	Aqueous	GC/MS BB	08/28/08	08/28 23:5		080828L01
Parameter	Result	RL	DF	Qual	Parameter			Result	RL	DF	Qual
Benzene	ND	2.5	5		Methyl-t-Butyl	Ether (MTB	E)	140	2.5	5	
1,2-Dibromoethane	ND	2.5	5		Tert-Butyl Alc		,	ND	50	5	
1,2-Dichloroethane	ND	2.5	5		Diisopropyl Et	ther (DIPE)	-	ND	2.5	5	
Ethylbenzene	ND	2.5	5		Ethyl-t-Butyl E	ther (ETBE)	•	ND	2.5	5	
Toluene	ND	2.5	5		Tert-Amyl-Me	thyl Ether (T	AME)	ND	2.5	5	
Xylenes (total)	ND	2.5	5		Ethanol			ND	1500	5	
Surrogates:	REC (%)	Control Limits		<u>Qual</u>	Surrogates:		<u> </u>	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	100	73-157			Dibromofluoro	methane		110	82-142		
Toluene-d8	103	82-112			1,4-Bromofluo	robenzene		101	75-105		
Method Blank			099-12	-703-415	N/A	Aqueous	GC/MS BB	08/28/08	08/28/ 16:0		080828L01
Parameter	Result	RL	DF	Qual	Parameter			Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl	Ether (MTRF	Ξ)	ND	0.50	1	-111-1111
1.2-Dibromoethane	ND	0.50	1		Tert-Butyl Alco		/	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Etl	. ,		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl E	, ,		ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Met	,	AME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	- '	,	ND	300	1	
Surrogates:	REC (%)	Control		Qual	Surrogates:		<u>F</u>	EC (%)	Control		Qual
		<u>Limits</u>							<u>Limits</u>		
1,2-Dichloroethane-d4	97	73-157			Dibromofluoro			105	82-142		
Toluene-d8	102	82-112			1,4-Bromofluo	robenzene		95	75-105		

RL - Reporting Limit ,

DF - Dilution Factor ,

Qual - Qualifiers





Quality Control - Spike/Spike Duplicate

aboratories, Inc.

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

Date Received: Work Order No: Preparation: Method:

08/22/08 08-08-2067 EPA 5030B EPA 8015B (M)

Project BP 11124

Quality Control Sample ID	Matrix	Matrix Instrument			Date Analyzed	MS/MSD Batch Number 080828S01	
MW-2	Aqueous	GC 4	08/28/08		08/28/08		
<u>Parameter</u>	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers	
Gasoline Range Organics (C6-C12)	83	85	38-134	3	0-25		

RPD - Relative Percent Difference, CL - Control Limit

alscience nvironmental aboratories, 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: Preparation: Method: 08/22/08 08-08-2067 EPA 5030B EPA 8260B

Project BP 11124

Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-08-1988-2		Aqueous	GC/MS BB	08/28/08	08/28/08	080828S01

Parameter	MS %REC	MSD %REC	%REC CL	<u>RPD</u>	RPD CL	Qualifiers
Benzene	103	102	86-122	2	0-8	
Carbon Tetrachloride	101	97	78-138	5	0-9	
Chlorobenzene	103	97	90-120	5	0-9	
1,2-Dibromoethane	96	97	70-130	1	0-30	
1,2-Dichlorobenzene	101	98	89-119	2	0-10	
1,1-Dichloroethene	97	99	52-142	2	0-23	
Ethylbenzene	99	95	70-130	4	0-30	
Toluene	105	103	85-127	2	0-12	
Trichloroethene	100	98	78-126	2	0-10	
Vinyl Chloride	119	122	56-140	3	0-21	
Methyl-t-Butyl Ether (MTBE)	102	99	64-136	3	0-28	
Tert-Butyl Alcohol (TBA)	104	104	27-183	1	0-60	
Diisopropyl Ether (DIPE)	113	110	78-126	3	0-16	
Ethyl-t-Butyl Ether (ETBE)	105	102	67-133	3	0-21	
Tert-Amyl-Methyl Ether (TAME)	98	97	63-141	1	0-21	
Ethanol	101	90	11-167	11	0-64	

Muhan



Quality Control - LCS/LCS Duplicate

aboratories, Inc.

Stratus Environmental, inc. 3330 Cameron Park Drive, Suite 550

Cameron Park, CA 95682-8861

Date Received: Work Order No: Preparation: Method:

N/A 08-08-2067 EPA 5030B EPA 8015B (M)

Project: BP 11124

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Bat Number	ch
099-12-695-246	Aqueous	GC 4	08/28/08	08/28/08	080828B01	
<u>Parameter</u>	LCS %	SREC LCSD	%REC %F	REC CL RP	D RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	91	86	7	78-120 5	0-20	



Quality Control - LCS/LCS Duplicate

aboratories, Inc.

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

Date Received: Work Order No: Preparation:

Method:

08-08-2067 EPA 3510C EPA 8015B (M)

N/A

Project: BP 11124

Quality Control Sample ID	Matrix	Instru	ıment	Dat Prepa	-	Da Anal		LCS/LCSD Bate Number	ch
099-12-699-73	Aqueous	GC	27	08/27	/08	08/29	0/08	080827B09	
Parameter	LCS %	REC LCSD		REC	%RE	C CL	RPD	RPD CL	Qualifiers
Diesel Range Organics (C10-C28)	86		79		75	-117	9	0-20	



Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc. 3330 Cameron Park Drive, Suite 550 Cameron Park, CA 95682-8861 Date Received: Work Order No: Preparation: Method:

08-08-2067 EPA 5030B EPA 8260B

N/A

Project: BP 11124

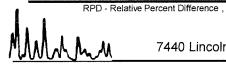
Quality Control Sample ID	Matrix	Instrument	Date Prepared		ate yzed	LCS/LCSD Numbe	
099-12-703-415	Aqueous	GC/MS BB	08/28/08	08/28	/08	080828L	01
<u>Parameter</u>	LCS %REC	LCSD %REC	%REC CL	ME_CL	<u>RPD</u>	RPD CL	Qualifiers
Benzene	104	103	87-117	82-122	0	0-7	
Carbon Tetrachloride	104	101	78-132	69-141	2	0-8	
Chlorobenzene	101	100	88-118	83-123	1	0-8	
1,2-Dibromoethane	98	95	80-120	73-127	3	0-20	
1,2-Dichlorobenzene	100	106	88-118	83-123	6	0-8	
1,1-Dichloroethene	111	105	71-131	61-141	5	0-14	
Ethylbenzene	101	102	80-120	73-127	2	0-20	
Toluene	105	105	85-127	78-134	0	0-7	
Trichloroethene	102	104	85-121	79-127	2	0-11	
Vinyl Chloride	126	122	64-136	52-148	3	0-10	
Methyl-t-Butyl Ether (MTBE)	100	97	67-133	56-144	3	0-16	
Tert-Butyl Alcohol (TBA)	101	102	34-154	14-174	1	0-19	
Diisopropyl Ether (DIPE)	108	107	80-122	73-129	1	0-8	
Ethyl-t-Butyl Ether (ETBE)	102	99	73-127	64-136	3	0-11	
Tert-Amyl-Methyl Ether (TAME)	98	94	69-135	58-146	4	0-12	
Ethanol	101	98	34-124	19-139	3	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





Glossary of Terms and Qualifiers

Work Order Number: 08-08-2067

· · · · · · · · · · · · · · · · · · ·	
Qualifier	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
Α	Result is the average of all dilutions, as defined by the method.
В	Analyte was present in the associated method blank.
С	Analyte presence was not confirmed on primary column.
=	Concentration exceeds the calibration range.
Н	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
Ν	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
Χ	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Atlantic Richfield

A BP affiliated company

Chain of Custody Record

Project Name: BP 11124 BP BU/AR Region/Enfos Segment:

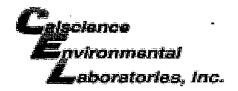
BP > Americas > West > Retail > CA > Alameda>11124

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy):

			Page_1_of	
On-site	Time:	9:00	Temp:	62
Off-site	Time:	11:30	Temp:	55
Sky Con		clio	7	
	ogical Ev	ents: /	14	
Wind Sp	eed:	0	Direction:	NA

	Name: Calscience						BP/AR Facility No		11	124									Con	sulta	ıt/Con	ract	tor:	Stratus Environmental, Inc.								
\ddr	ess: 7440 Lincoln Way						BP/AR Facility Address: 3315 High Street, Oakland								Address: 3330 Cameron Park Drive, Suite 550																	
	Garden Grove, CA 92841						Site Lat/Long:												Cameron Park, CA 95682													
	PM: Linda Scharpenberg						California Global II	D#:	T06	0010	0191	19							Consultant/Contractor Project No.: E11124-04													
'ele/	Fax: 714-895-5494 714-895-750	01(fax)					Enfos Project No.:			9D-(nt/Cont					Johnson						
3P/A	AR PM Contact: Paul Supple						Provision or RCOP	(cir	cle or	ne)		Prov	ision					\neg	Tele/Fax: (530) 676-6000 / (530) 676-6005													
\ddr	ress: 2010 Crow Canyon Place, Suite	e 150					Phase/WBS:		04-1	Moni	torin								Report Type & QC Level: Level 1 with EDF													
	San Ramon, CA						Sub Phase/Task:		03-4	Analy	ytical								E-mail EDD To: bearroll@stratusinc.net													
	Fax: 925-275-3506						Cost Element:		01-0	Contr	actor	labo	r				****		Invoice to: Atlantic Richfield Co.													
_ab	Bottle Order No:				Mat	rix				P	rese	rvati	ve				I				alysis				<u> </u>							
ftem No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCI	Methanol		BTEX/Oxy*by 8260	1,2 DCA	ЕДВ	Ethanol by 8260	DRO by 8015M	GRO by 8015m					Sample P (*Oxy = MTBD	Commen	its					
1	MW-1	9:50	8/2006		Х			8			Ť	X								X		\dashv	_									
2	MW-2	10:53	1		x			8			†	x				1				X		\dashv										
3	MW-4	11:15		1	X			8	_			X	<u> </u>		П	L	A X		A X		_	\dashv										
4	MW-5	10:11		11	X			8		\vdash		X		 						X		\dashv	_									
5	MW-6	10:33	1		X			8	\vdash		T	X	 	<u> </u>	1	1	A X		X		-	\dashv										
6	TB 11124 8/20/08-6:00	6:00	8/29/28	-	X			2	-	-	1-	X			1	T		^ X	Α		-	\dashv										
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Sampler's Name: Roberto HEIMLICH Relinquished By / Affiliation Date Sampler's Company: DOULOG ENV.							Ti	ne	<u> </u>		A	ссер	ted l	Ву / А	Affiliation		Date	Time														
	oment Date:			···········											╂—				<u> </u>						***************************************			<u> </u>				
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Spec	cial Instructions:	Please	cc resu	ts to	: rm	iller@	broadbentine.com				_				<u> </u>	·			<u> </u>			$\not\hookrightarrow$	W	<u> </u>			1268	1030				
	Custody Seals In Place: Yes / N					Yes /			n on	Rec	eint		. 01	7/C		T	rip B	lant	. V.	na / N	<i>' </i>		N 46	7/1/2	SD C							
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WORK ORDER #: 08 - 0 8 - 2 0 6 7

Cooler _____ of ____

SAMPLE RECEIPT FORM

CLIENT: Stratus	DATE: \$122/08
TEMPERATURE - SAMPLES RECEIVED BY:	
CALSCIENCE COURIER:	LABORATORY (Other than Calscience Courier):
Chilled, cooler with temperature blank provided.	°C Temperature blank.
Chilled, cooler without temperature blank.	°C IR Thermometer.
Chilled and placed in cooler with wet ice.	Ambient temperature (For Air & Filter Only)
Ambient and placed in cooler with wet ice.	
Ambient temperature (For Air & Filter Only).	_
°C Temperature blank.	Initial:
CUSTODY SEAL INTACT:	
Sample(s): Cooler: No (Not Ir	ntact) : Not Present:
•	Initial:
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:
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 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!

Submittal Type: GEO_WELL

Submittal Title: 3Q08 GEO_WELL 11124

Facility Global ID:T0600100919Facility Name:BP #11124File Name:GEO_WELL.zip

Organization Name: Broadbent & Associates, Inc.

Username: BROADBENT-C IP Address: 67.118.40.90

Submittal Date/Time: 9/17/2008 3:35:30 PM

Confirmation Number: 6980458140

Copyright © 2008 State of California

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: T0600100919
Facility Name: BP #11124
File Name: 08082067.zip

Organization Name: Broadbent & Associates, Inc.

Username: BROADBENT-C IP Address: 67.118.40.90

Submittal Date/Time: 9/17/2008 3:36:43 PM

Confirmation Number: 8943220376

VIEW QC REPORT

VIEW DETECTIONS REPORT

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