



Atlantic Richfield Company  
(a BP affiliated company)

P.O. Box 1257  
San Ramon, California 94583  
Phone: (925) 275-3801  
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23 January 2009

Re: Fourth Quarter 2008 Status Report  
Former BP Service Station # 11109  
4280 Foothill Boulevard  
Oakland, California  
ACEH Case #RO0000426

**RECEIVED**

10:59 am, Jan 29, 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

23 January 2009

Project No. 06-08-656

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

Attn.: Mr. Paul Supple

Re: Fourth Quarter 2008 Status Report, Former BP Service Station #11109, 4280 Foothill Boulevard, Oakland, Alameda County, California; ACEH Case No.RO0000426

Dear Mr. Supple:

Provided herein is the *Fourth Quarter 2008 Status Report* for Former BP Service Station #11109 (herein referred to as Station #11109) located at 4280 Foothill Boulevard, Oakland, California (Site). This report presents a summary of current developments at the Site through the Fourth 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)  
Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818  
Mr. Chris Jimmerson, Delta Environmental Consultants (Submitted via ENFOS)  
Electronic copy uploaded to GeoTracker

## STATION #11109 QUARTERLY STATUS REPORT

Facility: #11109	Address: 4280 Foothill Boulevard, Oakland
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 #RO0000426
Consultant Project No.:	06-08-656
Facility Permits/Permitting Agency:	NA

### WORK PERFORMED THIS QUARTER (Fourth Quarter 2008):

1. Prepared and submitted Third Quarter 2008 Semi-Annual Groundwater Monitoring Report.
2. Monthly free product gauging and bailing was conducted at the Site during the Fourth Quarter of 2008 by Stratus Environmental, Inc. (Stratus).

### WORK PROPOSED FOR NEXT QUARTER (First Quarter 2009):

1. Prepared and submitted this Fourth Quarter 2008 Status Report (contained herein).
2. Conduct semi-annual ground-water monitoring/sampling for First Quarter 2009.
3. Conduct monthly Site visits to monitor/remove free product.
4. Prepare and submit Interim Remedial Action Plan as requested in ACEH letter dated 5 December 2008.

### QUARTERLY RESULTS SUMMARY:

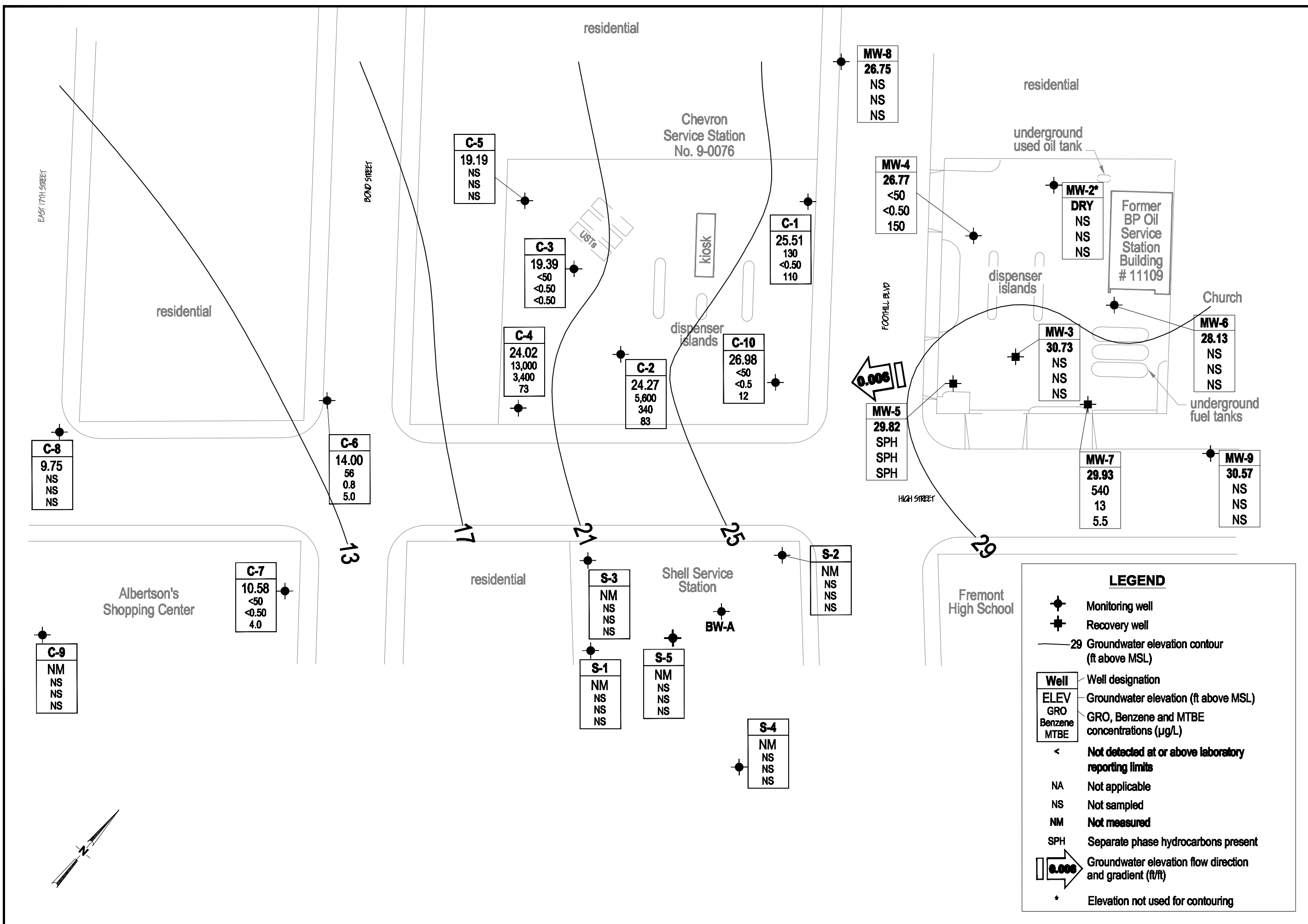
Current phase of project:	<b>Ground-water Monitoring/Sampling/Free Product Bailing</b>
Frequency of ground-water monitoring:	<b>Monthly: MW-5</b> <b>Semi-Annually (1Q &amp; 3Q): MW-2, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9</b>
Frequency of ground-water sampling:	<b>Semi-Annually (1Q &amp; 3Q): MW-2, MW-4, MW-5, MW-7</b> <b>Annually (1Q): MW-3, MW-6, MW-8, MW-9</b>
Current remediation techniques:	<b>Passive Oil Skimmer/Monthly Free Product Bailing</b>
Is free product (FP) present on-site:	<b>Yes (MW-5)</b>
FP recovered this quarter:	<b>11.25 gallons (FP/water mixture)</b>
Depth to ground water (below TOC):	<b>NA</b>
General ground-water flow direction:	<b>NA</b>
Approximate hydraulic gradient:	<b>NA</b>

### DISCUSSION:

Monthly gauging and bailing of separate phase hydrocarbons (SPH, i.e. free product - FP) from well MW-5 was performed this quarter by Stratus Environmental Inc. (Stratus). On 15 October 2008, FP was measured at 0.50 feet in well MW-5. Approximately five gallons of FP/water mixture was removed from well MW-5 during this visit. On 20 November 2008, Stratus measured 0.63 feet of FP in well MW-5. Approximately 2.625 gallons of FP/water mixture was removed from well MW-5 during this visit. On 18 December 2008, FP was measured at 0.37 feet in well MW-5. Approximately 3.625 gallons of FP/water mixture was removed from well MW-5 during this visit. An approximate total of 11.25 gallons of FP/water mixture were removed from well MW-5 during the Fourth Quarter 2008. Table 1 provides historical free product removal data from the Site. Field data sheets from Stratus' monthly free product bailing events are provided in Appendix A. The most recent analytical data can be referenced in the Third Quarter 2008 Semi-Annual Ground-Water Monitoring Report. A Ground-Water Elevation Contour and Analytical Summary Map from Third Quarter 2008 is provided as Drawing 1.

**ATTACHMENTS:**

- Drawing 1. Ground-Water Elevation Contours and Analytical Summary Map, 3 September 2008,  
Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California
- Table 1. Summary of Free Product Removal, Former BP Service Station #11109,  
4280 Foothill Boulevard, Oakland, CA
- Appendix A. Stratus Monthly Gauging and SPH Removal Data Package



**Table 1**  
**Summary of Free Product Removal**  
Former BP Service Station #11109  
4280 Foothill Boulevard, Oakland, California

Well ID	Date of Removal Event	DTW (feet)	Product Thickness (feet)	Product Removed (gallons)	Cumulative Product Removed (gallons)
MW-5	11/5/1992	--	--	0.200	0.200
MW-5	2/25/1993	--	--	0.100	0.300
MW-5	3/18/1993	--	--	0.100	0.400
MW-5	4/13/1993	--	--	0.100	0.500
MW-5	4/23/1993	--	--	13.0*	13.500
MW-5	5/24/1993	--	--	0.100	13.600
MW-5	10/14/1993	--	--	0.300	13.900
MW-5	11/10/1993	--	--	0.400	14.300
MW-5	12/23/1993	--	--	0.400	14.700
MW-5	8/12/1997	12.18	0.22	--	14.700
MW-5	12/10/1997	10.78	0.06	--	14.700
MW-5	3/12/1998	10.11	0.22	0.200	14.900
MW-5	6/23/1998	10.20	0.02	<0.050	14.900
MW-5	9/11/1998	11.61	0.04	0.100	15.000
MW-5	8/25/1999	14.69	0.38	0.070	15.070
MW-5	3/9/2000	14.83	0.60	0.400	15.470
MW-5	7/14/2003	12.72	0.03	0.019	15.489
MW-5	8/25/2003	14.04	0.00	0.000	15.489
MW-5	9/25/2003	14.38	0.08	0.052	15.542
MW-5	10/3/2003	12.15	0.06	0.040	15.582
MW-5	11/12/2003	12.74	0.19	0.120	15.702
MW-5	12/9/2003	11.44	0.03	0.040	15.742
MW-5	2/2/2004	6.47	0.04	0.030	15.772
MW-5	2/9/2004	10.61	0.04	0.030	15.802
MW-5	3/9/2004	7.91	--	--	15.802
MW-5	4/13/2004	9.68	0.28	0.200	16.002
MW-5	5/5/2004	11.93	Sheen	--	16.002
MW-5	6/3/2004	12.60	Sheen	--	16.002
MW-5	7/2/2004	11.11	0.10	0.060	16.062
MW-5	8/31/2004	12.80	0.05	0.132	16.194
MW-5	9/17/2004	12.13	0.15	--	16.194
MW-5	10/25/2004	10.66	0.26	0.170	16.364
MW-5	11/8/2004	9.98	0.02	0.020	16.384
MW-5	12/15/2004	8.76	0.01	0.010	16.394
MW-5	1/13/2005	7.12	--	--	16.394
MW-5	2/1/2005	8.10	0.01	0.007	16.400
MW-5	3/7/2005	8.62	0.02	0.013	16.413
MW-5	4/29/2005	9.39	--	--	16.413
MW-5	5/12/2005	7.51	0.01	0.007	16.420
MW-5	6/23/2005	7.70	--	--	16.420
MW-5	7/2/2005	10.81	--	--	16.420
MW-5	8/24/2005	10.53	--	--	16.420
MW-5	9/6/2005	11.16	0.18	0.119	16.539
MW-5	1/27/2006	9.02	0.02	0.013	16.433
MW-5	2/15/2006	8.38	0.02	0.013	16.446
MW-5	3/6/2006	8.60	Sheen	--	16.446

**Table 1**  
**Summary of Free Product Removal**  
Former BP Service Station #11109  
4280 Foothill Boulevard, Oakland, California

Well ID	Date of Removal Event	DTW (feet)	Product Thickness (feet)	Product Removed (gallons)	Cumulative Product Removed (gallons)
MW-5	4/21/2006	8.02	0.27	0.251	16.697
MW-5	5/30/2006	9.13	0.07	0.045	16.742
MW-5	6/27/2006	9.49	0.09	0.058	16.801
MW-5	7/31/2006	10.08	0.08	0.052	16.853
MW-5	8/28/2006	10.75	0.09	0.059	16.911
MW-5	9/5/2006	6.16	0.03	0.020	16.931
MW-5	10/1/2006	--	--	--	16.931
MW-5	11/1/2006	--	--	--	16.931
MW-5	12/1/2006	--	--	--	16.931
MW-5	1/1/2007	--	--	--	16.931
MW-5	2/1/2007	--	--	--	16.931
MW-5	3/5/2007	8.34	Sheen	--	16.931
MW-5	4/1/2007	--	--	--	16.931
MW-5	5/1/2007	--	--	--	16.931
MW-5	6/1/2007	--	--	--	16.931
MW-5	7/1/2007	--	--	--	16.931
MW-5	8/1/2007	--	--	--	16.931
MW-5	9/7/2007	15.15	0.15	--	16.931
MW-5	9/18/2007	15.42	0.02	4.00*	20.931
MW-5	10/17/2007	12.50	0.35	5.5*	26.431
MW-5	11/8/2007	13.20	0.40	5.0*	31.431
MW-5	12/12/2007	12.25	0.52	3.5*	34.931
MW-5	1/14/2008	10.30	0.49	5.0*	39.931
MW-5	2/27/2008	13.22	0.12	4.0*	43.931
MW-5	3/6/2008	12.90	0.14	3.0*	46.931
MW-5	4/1/2008	9.52	0.07	4.0*	50.931
MW-5	5/20/2008	8.68	0.07	7.0*	57.931
MW-5	6/18/2008	10.46	0.18	0.00	57.931
MW-5	7/16/2008	11.25	0.00	0.0375	57.968
MW-5	8/13/2008	--	--	2.125*	60.093
MW-5	9/3/2008	12.90	0.99	3.0*	63.093
MW-5	9/15/2008	12.75	0.15	4.0*	67.093
MW-5	10/15/2008	13.43	0.50	5.0*	72.093
MW-5	11/20/2008	13.55	0.63	2.625*	74.718
MW-5	12/18/2008	12.62	0.37	3.625*	78.343
<b>FP Removed this Quarter:</b>					<b>11.25</b>

**ABBREVIATIONS & SYMBOLS:**

-- = Not available/applicable/measured/calculated

\* = FP/water mixture

**NOTES:**

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

**APPENDIX A**

STRATUS MONTHLY GAUGING AND SPH REMOVAL DATA PACKAGE





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

January 9, 2008

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

Re: Monthly Gauging Data Package, BP Service Station No. 11109, located at  
4280 Foothill, Oakland, California.

**General Information**

*Data Submittal Prepared / Reviewed by:* Becky Carroll / Jay Johnson  
*Phone Number:* (530) 676-6000

*On-Site Supplier Representative:* Vince Zalutka  
*Gauging Date:* October 15, 2008  
*Arrival:* Not noted      *Departure:* Not noted  
*Weather Conditions:* Not noted  
*Unusual Field Conditions:* None noted.  
*Scope of Work Performed:* Monthly visit to bail SPH from well MW-5.  
*Variations from Work Scope:* None noted.

*On-Site Supplier Representative:* Vince Zalutka  
*Gauging Date:* November 20, 2008  
*Arrival:* Not noted      *Departure:* Not noted  
*Weather Conditions:* Not noted  
*Unusual Field Conditions:* None noted.  
*Scope of Work Performed:* Monthly visit to bail SPH from well MW-5.  
*Variations from Work Scope:* None noted.

*On-Site Supplier Representative:* Vince Zalutka

*Gauging Date:* December 18, 2008

*Arrival:* Not noted    *Departure:* Not noted

*Weather Conditions:* Not noted

*Unusual Field Conditions:* None noted.

*Scope of Work Performed:* Monthly visit to bail SPH from well MW-5.

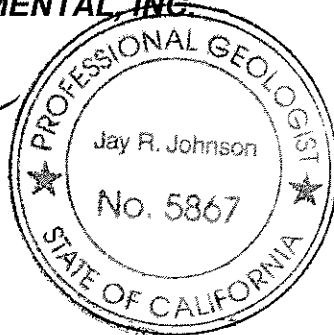
*Variations from Work Scope:* None noted.

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. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations. Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,

**STRATUS ENVIRONMENTAL, INC.**

Jay R. Johnson, P.G.  
Project Manager



**Attachments:**

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

cc: Mr. Paul Supple, BP/ARCO







## ATTACHMENT

### FIELD PROCEDURES FOR GROUNDWATER SAMPLING

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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  $\mu\text{s}$  daily and 1413  $\mu\text{s}$  and 447  $\mu\text{s}$  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<sup>®</sup> 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.