



Atlantic Richfield Company
(a BP affiliated company)

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

Re: Second Quarter 2009 Ground-Water Monitoring Report
Atlantic Richfield Company Station #2162
15135 Hesperian Boulevard
San Leandro, California
ACEH Case #RO0000190

RECEIVED

1:57 pm, Jul 31, 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

Second Quarter 2009 Ground-Water Monitoring Report
Atlantic Richfield Company Station #2162
15135 Hesperian Boulevard
San Leandro, 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 July 2009

Project No. 06-88-620

30 July 2009

Project No. 06-88-620

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

Attn.: Mr. Paul Supple

Re: Second Quarter 2009 Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #2162, 15135 Hesperian Boulevard, San Leandro, Alameda County, California
ACEH Case #RO0000190

Dear Mr. Supple:

Provided herein is the *Second Quarter 2009 Ground-Water Monitoring Report* for Atlantic Richfield Company Station #2162 located at 15135 Hesperian Boulevard, San Leandro, Alameda County, California (Site). This report presents results of ground-water monitoring conducted at the Site during the Second 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)
Mr. Karl Busche, City of San Leandro Environmental Services Division
Electronic copy uploaded to GeoTracker



STATION #2162 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #2162	Address:	15135 Hesperian Boulevard, San Leandro, 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.:		06-88-620
Primary Agency/Regulatory ID No.:		Alameda County Environmental Health (ACEH) ACEH Case #RO0000190
Facility Permits/Permitting Agency:		NA

WORK PERFORMED THIS QUARTER (Second Quarter 2009):

1. Prepared and submitted *First Quarter 2009 Status Report* (BAI, 4/30/2009).
2. Installed new on-site ground-water monitoring wells MW-5 and MW-6. Field work performed on 24 April 2009 by Stratus Environmental, Inc. (Stratus).
3. Prepared and submitted *On-Site Soil and Ground-Water Investigation Report* (BAI, 6/2/2009).

WORK PROPOSED FOR NEXT QUARTER (Third Quarter 2009):

1. Prepared and submitted Second Quarter 2009 Ground-Water Monitoring Report (contained herein).
2. No environmental field work is scheduled to occur at the Site during Third Quarter 2009.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	Ground-water monitoring/sampling
Frequency of ground-water monitoring:	Semi-Annually (2Q and 4Q) = MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6
Frequency of ground-water sampling:	Semi-Annually (2Q and 4Q) = MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6
Is free product (FP) present on-site:	No
Current remediation techniques:	NA
Depth to ground water (below TOC):	8.18 ft (MW-2) to 9.51 ft (MW-4)
General ground-water flow direction:	South
Approximate hydraulic gradient:	0.003 ft/ft

DISCUSSION:

Second Quarter 2009 ground-water monitoring and sampling was conducted at Station #2162 on 12 June 2009 by Stratus. Water levels were gauged in each of the six wells at the Site. No irregularities were noted during water level gauging. Depth-to-water measurements ranged from 8.18 ft at MW-2 to 9.51 ft at MW-4. Resulting ground-water surface elevations ranged from 24.77 ft above datum in wells MW-1 and MW-2 to 24.46 ft in wells MW-4 and MW-6. Water level elevations were between historic minimum and maximum ranges for wells MW-1 through MW-4, as summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the south at approximately 0.003 ft/ft, 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. A Site Location Map is provided as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

Consistent with the current ground-water sampling schedule, water samples were collected from wells MW-1 through MW-6 on 12 June 2009. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-C12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Tert-Amyl Methyl Ether (TAME), Tert-Butyl Alcohol (TBA), Di-Isopropyl Ether (DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Ethanol, Ethyl Tert-Butyl Ether (ETBE), and Methyl Tert-Butyl Ether (MTBE) by EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Gasoline Range Organics (GRO) were detected above the laboratory reporting limit in three of the six wells sampled at concentrations up to 1,800 micrograms per liter ($\mu\text{g/L}$) in well MW-6. Benzene was detected above the laboratory reporting limit in three of the six wells sampled at concentrations up to 4.9 $\mu\text{g/L}$ in well MW-6. Ethylbenzene was detected above the laboratory reporting limit in one of the six wells sampled at a concentration of 2.8 $\mu\text{g/L}$ in well MW-6. TAME was detected above the laboratory reporting limit in one of the six wells sampled at a concentration of 5.2 $\mu\text{g/L}$ in well MW-6. MTBE was detected above the laboratory reporting limit in two of the six wells sampled at concentrations of 0.53 $\mu\text{g/L}$ in well MW-3 and 59 $\mu\text{g/L}$ in well MW-6. The remaining analytes were not detected above their laboratory reporting limits in the six wells sampled this quarter.

Detected analyte concentrations were within the historic minimum and maximum ranges recorded for each well with the exception of MTBE, which reached a historic minimum concentration in well MW-3 (0.53 $\mu\text{g/L}$). 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 2. 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.

CONCLUSIONS AND RECOMMENDATIONS:

New wells MW-5 and MW-6, installed in April 2009, were sampled for the first time on 12 June 2009. First time sampling of new well MW-5, located between the main gasoline UST pit and the waste oil tank, contained a very low concentration of GRO (85 $\mu\text{g/L}$), and no individual fuel constituents/additives above the low laboratory reporting limits. First time sampling of new well MW-6 along the center portion of the southern property boundary did contain slightly elevated concentrations of petroleum hydrocarbon contaminants (GRO at 1800 $\mu\text{g/L}$; Benzene at 4.9 $\mu\text{g/L}$; Ethylbenzene at 2.8 $\mu\text{g/L}$, MTBE at 59 $\mu\text{g/L}$; and TAME at 5.2 $\mu\text{g/L}$). It is presently unknown whether the concentrations reported in new wells MW-5 and MW-6 are representative of the low or high range of petroleum contamination in their respective areas, since Second Quarter 2009 was the first time these wells were sampled. It is recommended that continued monitoring/sampling of the Site wells be continued to determine the range of contaminants present, especially at well location MW-6 along the southern Site boundary.

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. Site Location Map, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, 12 June 2009, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Table 2. Summary of Fuel Additives Analytical Data, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Table 3. Historical Ground-Water Flow Direction and Gradient, Station #2162, 15135 Hesperian Boulevard, San Leandro, 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 Confirmation Receipts

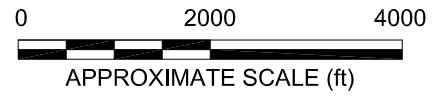
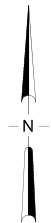
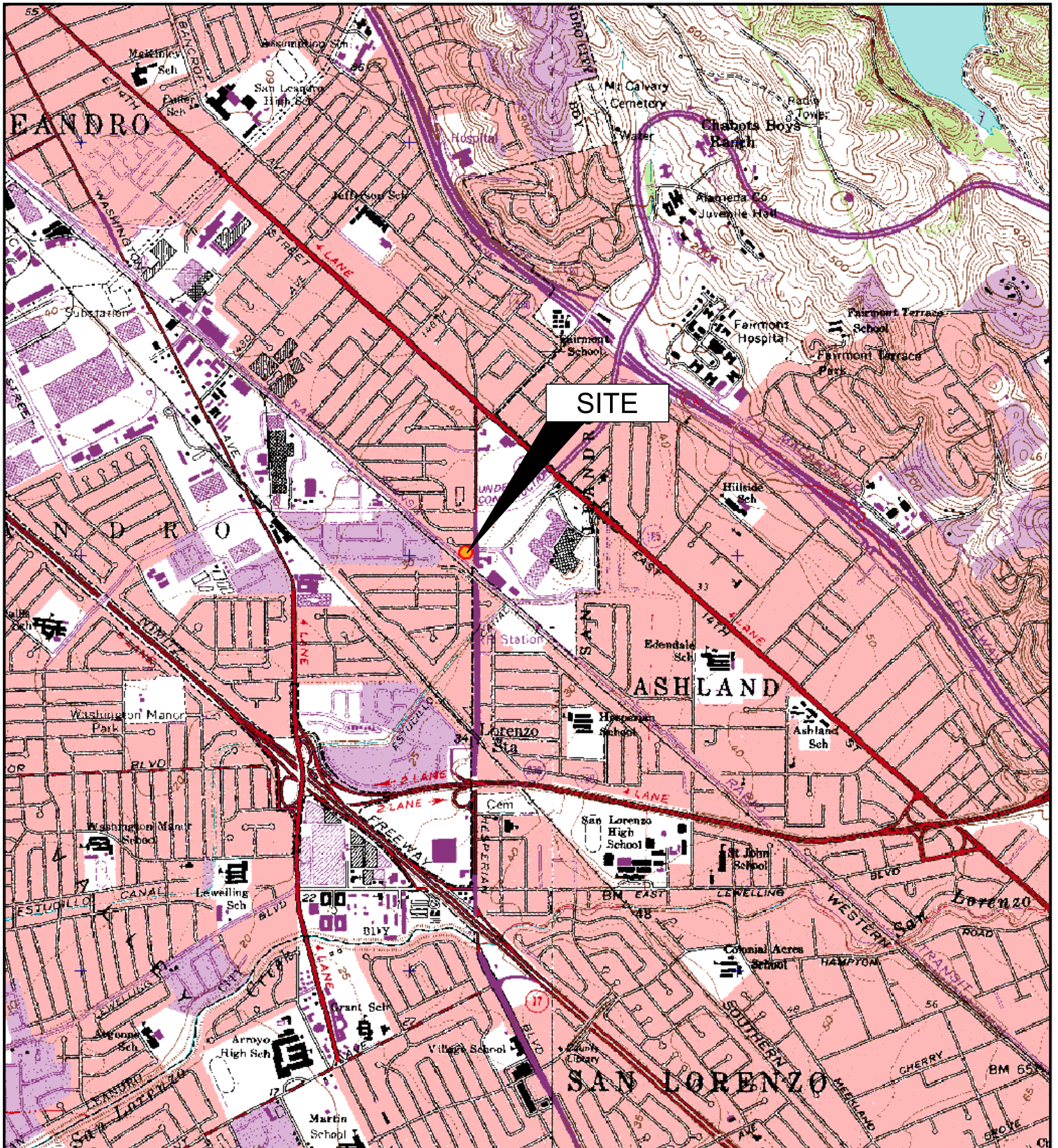


IMAGE SOURCE: USGS

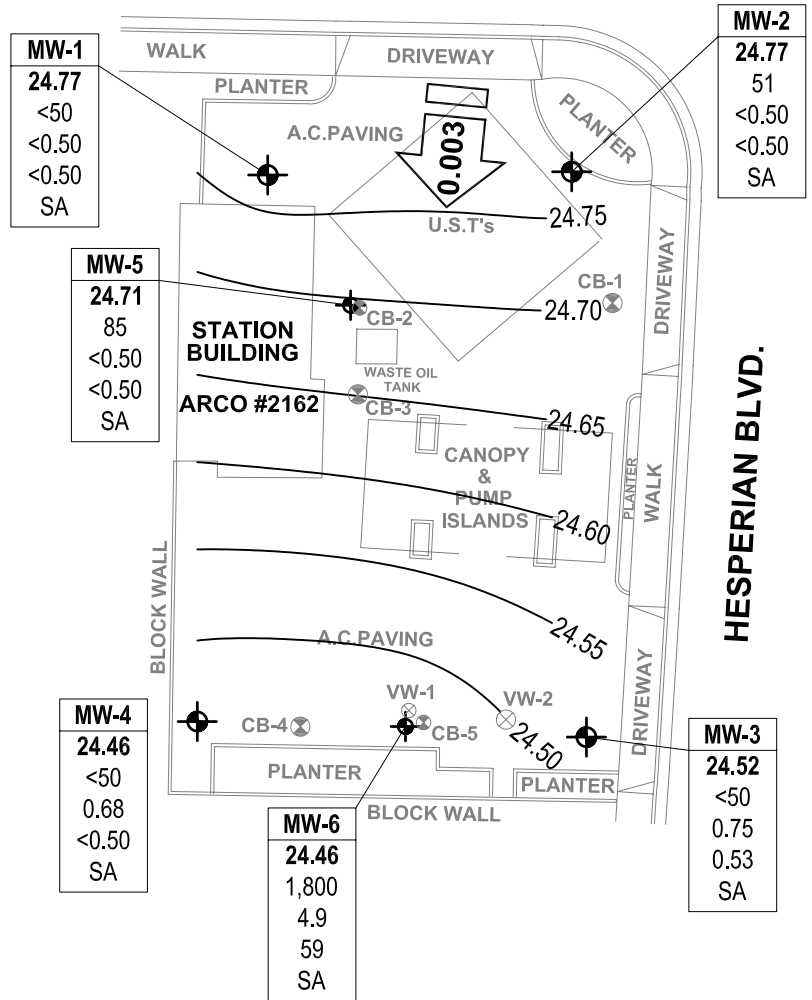
BROADBENT & ASSOCIATES, INC
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-620 Date: 07/27/09

Station #2162
15135 Hesperian Boulevard
San Leandro, California

Site Location Map

Drawing
1

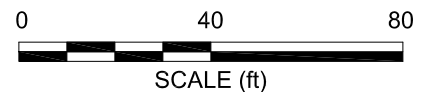
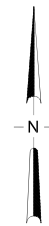
RUTH COURT



LEGEND

- GROUND-WATER MONITORING WELL
- VAPOR EXTRACTION WELL
- SOIL BORING
- 24.50 GROUND-WATER ELEVATION CONTOUR (FEET ABOVE MSL)
- APPROXIMATE GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)

- | Well | WELL DESIGNATION |
|---------|---|
| ELEV | GROUND-WATER ELEVATION (FEET ABOVE MSL) |
| GRO | GRO. BENZENE & MTBE CONCENTRATIONS (µg/L) |
| Benzene | |
| MTBE | |
| A/Q/SA | SAMPLING FREQUENCY |
- < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
 - * DATA NOT USED FOR CONTOURING
 - SA SAMPLED SEMI-ANNUALLY



NOTE: SITE MAP ADAPTED FROM WOOD RODGERS SURVYING.

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1															
6/20/2000	--		31.19	8.0	16.0	8.33	22.86	<50	<0.5	0.8	<0.5	<1.0	<10	--	--
9/29/2000	--		31.19	8.0	16.0	9.07	22.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		31.19	8.0	16.0	8.69	22.50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/23/2001	--		31.19	8.0	16.0	8.19	23.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
6/20/2001	--		31.19	8.0	16.0	8.97	22.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		31.19	8.0	16.0	9.56	21.63	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		31.19	8.0	16.0	8.40	22.79	<50	<0.5	<0.5	<0.5	0.63	<2.5	--	--
3/14/2002	--		31.19	8.0	16.0	8.05	23.14	<50	<0.5	<0.5	<0.5	<0.5	170	--	--
4/18/2002	--		31.19	8.0	16.0	8.27	22.92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		31.19	8.0	16.0	8.88	22.31	<50	<0.5	<0.5	<0.5	<0.5	11	1.0	8.2
10/09/02	NP	a	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
03/28/03	NP	a, c	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
4/7/2003	NP		31.19	8.0	16.0	8.28	22.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.9
7/9/2003	NP		31.19	8.0	16.0	8.62	22.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	7.2
10/08/2003	--	d, e	31.13	8.0	16.0	9.19	21.94	--	--	--	--	--	--	--	--
01/13/2004	--		31.13	8.0	16.0	8.35	22.78	--	--	--	--	--	--	--	--
04/05/2004	--		33.70	8.0	16.0	7.29	26.41	--	--	--	--	--	--	--	--
07/12/2004	NP		33.70	8.0	16.0	9.00	24.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	7.0
10/19/2004	--		33.70	8.0	16.0	9.47	24.23	--	--	--	--	--	--	--	--
01/11/2005	--		33.70	8.0	16.0	7.64	26.06	--	--	--	--	--	--	--	--
04/14/2005	--		33.70	8.0	16.0	7.35	26.35	--	--	--	--	--	--	--	--
08/01/2005	--		33.70	8.0	16.0	8.21	25.49	--	--	--	--	--	--	--	--
7/31/2006	--		33.70	8.0	16.0	8.10	25.60	--	--	--	--	--	--	--	--
6/12/2009	P		33.70	8.0	16.0	8.93	24.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	7.40
MW-2															
6/20/2000	--		30.38	8.0	16.0	7.38	23.00	--	--	--	--	--	--	--	--
9/29/2000	--		30.38	8.0	16.0	8.08	22.30	266	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		30.38	8.0	16.0	7.80	22.58	175	<0.5	<0.5	0.659	<0.5	<2.5	--	--
3/23/2001	--		30.38	8.0	16.0	7.23	23.15	351	<0.5	<0.5	0.912	<0.5	<2.5	--	--
6/20/2001	--		30.38	8.0	16.0	7.98	22.40	360	<0.5	<0.5	0.74	<0.5	<2.5	--	--

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

Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2 Cont.															
9/22/2001	--		30.38	8.0	16.0	8.55	21.83	190	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		30.38	8.0	16.0	7.53	22.85	130	<0.5	0.93	<0.5	0.51	<2.5	--	--
3/14/2002	--		30.38	8.0	16.0	7.17	23.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/18/2002	--		30.38	8.0	16.0	7.31	23.07	74	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P		30.38	8.0	16.0	7.93	22.45	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	7.6
10/9/2002	P		30.38	8.0	16.0	8.55	21.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	0.7	7.3
03/28/03	P	c	30.38	8.0	16.0	7.30	23.08	<50	<0.50	0.83	<0.50	<0.50	<0.50	1.48	7.7
4/7/2003	P		30.38	8.0	16.0	7.36	23.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.0
7/9/2003	P		30.38	8.0	16.0	7.71	22.67	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	7.6
10/08/2003	--		30.38	8.0	16.0	8.25	22.13	--	--	--	--	--	--	--	--
01/13/2004	--		30.38	8.0	16.0	7.55	22.83	--	--	--	--	--	--	--	--
04/05/2004	--		32.97	8.0	16.0	7.29	25.68	--	--	--	--	--	--	--	--
07/12/2004	NP		32.97	8.0	16.0	8.09	24.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.2
10/19/2004	--		32.97	8.0	16.0	8.29	24.68	--	--	--	--	--	--	--	--
01/11/2005	--		32.97	8.0	16.0	6.81	26.16	--	--	--	--	--	--	--	--
04/14/2005	--		32.97	8.0	16.0	6.69	26.28	--	--	--	--	--	--	--	--
08/01/2005	--		32.97	8.0	16.0	7.40	25.57	--	--	--	--	--	--	--	--
7/31/2006	--		32.97	8.0	16.0	7.22	25.75	--	--	--	--	--	--	--	--
6/12/2009	P		32.95	8.0	16.0	8.18	24.77	51	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	7.55
MW-3															
6/20/2000	--		30.30	8.0	15.0	7.75	22.55	--	--	--	--	--	--	--	--
9/29/2000	--		30.30	8.0	15.0	8.46	21.84	<50	<0.5	<0.5	<0.5	<0.5	128	--	--
12/17/2000	--		30.30	8.0	15.0	8.01	22.29	<50	<0.5	<0.5	<0.5	<0.5	46.7	--	--
3/23/2001	--		30.30	8.0	15.0	7.70	22.60	<50	<0.5	<0.5	<0.5	<0.5	26.8	--	--
6/20/2001	--		30.30	8.0	15.0	8.23	22.07	<50	<0.5	<0.5	<0.5	<0.5	30	--	--
9/22/2001	--		30.30	8.0	15.0	8.89	21.41	<50	<0.5	<0.5	<0.5	<0.5	12	--	--
12/28/2001	--		30.30	8.0	15.0	7.83	22.47	<50	<0.5	<0.5	<0.5	<0.5	6.2	--	--
3/14/2002	--		30.30	8.0	15.0	7.48	22.82	<50	<0.5	<0.5	<0.5	<0.5	47	--	--
4/18/2002	--		30.30	8.0	15.0	7.62	22.68	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P	b (TPH-g)	30.30	8.0	15.0	8.23	22.07	100	<1.0	<1.0	<1.0	<1.0	330	0.9	7.6

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

Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-3 Cont.															
10/9/2002	P		30.30	8.0	15.0	8.83	21.47	<50	<0.5	<0.5	<0.5	<0.5	61	0.5	7.4
03/28/03	P	c	30.30	8.0	15.0	7.85	22.45	52	<0.50	1.2	<0.50	<0.50	45	1.42	7.6
4/7/2003	P		30.30	8.0	15.0	7.71	22.59	56	<0.50	<0.50	<0.50	<0.50	56	1.1	6.8
7/9/2003	P		30.30	8.0	15.0	8.00	22.30	<500	<5.0	<5.0	<5.0	<5.0	87	1.6	7.4
10/08/2003	P		30.30	8.0	15.0	8.59	21.71	<50	<0.50	<0.50	<0.50	<0.50	25	0.9	--
01/15/2004	P		30.30	8.0	15.0	7.90	22.40	<50	<0.50	<0.50	<0.50	<0.50	9.8	2.9	7.3
04/05/2004	P		32.89	8.0	15.0	7.61	25.28	<50	<0.50	<0.50	<0.50	<0.50	15	1.5	7.0
07/12/2004	P		32.89	8.0	15.0	8.45	24.44	<50	<0.50	<0.50	<0.50	<0.50	7.3	1.6	6.9
10/19/2004	P		32.89	8.0	15.0	8.95	23.94	<50	<0.50	<0.50	<0.50	<0.50	5.0	0.96	7.1
01/11/2005	P		32.89	8.0	15.0	7.27	25.62	<50	<0.50	<0.50	<0.50	<0.50	2.3	--	7.2
04/14/2005	P		32.89	8.0	15.0	7.10	25.79	<50	<0.50	<0.50	<0.50	1.5	5.6	2.0	7.2
08/01/2005	P		32.89	8.0	15.0	7.71	25.18	<50	<0.50	<0.50	<0.50	<0.50	5.2	1.18	7.0
7/31/2006	P		32.89	8.0	15.0	7.64	25.25	<50	<0.50	<0.50	<0.50	<0.50	4.3	--	6.8
6/12/2009	P		32.88	8.0	15.0	8.36	24.52	<50	0.75	<0.50	<0.50	<0.50	0.53	0.61	7.45
MW-4															
6/20/2000	--		30.39	10.0	18.0	8.87	21.52	--	--	--	--	--	--	--	--
9/29/2000	--		30.39	10.0	18.0	9.61	20.78	<50	1.02	<0.5	<0.5	<0.5	12.2	--	--
12/17/2000	--		30.39	10.0	18.0	9.17	21.22	<50	<0.5	<0.5	<0.5	<0.5	5.81	--	--
3/23/2001	--		30.39	10.0	18.0	8.70	21.69	<50	<0.5	<0.5	<0.5	<0.5	3.04	--	--
6/20/2001	--		30.39	10.0	18.0	9.51	20.88	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		30.39	10.0	18.0	10.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	5.2	--	--
12/28/2001	--		30.39	10.0	18.0	8.86	21.53	<50	<0.5	<0.5	<0.5	<0.5	4.3	--	--
3/14/2002	--		30.39	10.0	18.0	8.52	21.87	<50	<0.5	<0.5	<0.5	<0.5	5.1	--	--
4/18/2002	--		30.39	10.0	18.0	8.76	21.63	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		30.39	10.0	18.0	9.39	21.00	<50	<0.5	<0.5	<0.5	<0.5	30	1.8	7.8
10/9/2002	NP		30.39	10.0	18.0	10.08	20.31	<50	<0.5	<0.5	<0.5	<0.5	28	1.0	8.0
03/28/03	NP	c	30.39	10.0	18.0	8.88	21.51	<50	<0.50	1.3	<0.50	<0.50	4.4	0.98	7.2
4/7/2003	NP		30.39	10.0	18.0	8.78	21.61	<50	<0.50	<0.50	<0.50	<0.50	14	1.1	7.0
7/9/2003	NP		30.39	10.0	18.0	9.14	21.25	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.6	7.4
10/08/2003	NP		30.39	10.0	18.0	9.77	20.62	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.6	6.4

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4 Cont.															
01/15/2004	P		30.39	10.0	18.0	8.68	21.71	<50	1.4	0.84	<0.50	1.5	6.6	2.9	7.1
04/05/2004	NP		33.97	10.0	18.0	8.77	25.20	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	7.0
07/12/2004	NP		33.97	10.0	18.0	9.46	24.51	<50	<0.50	<0.50	<0.50	<0.50	1.0	2.5	6.6
10/19/2004	NP		33.97	10.0	18.0	9.91	24.06	<50	<0.50	<0.50	<0.50	<0.50	4.4	1.21	7.9
01/11/2005	P		33.97	10.0	18.0	7.80	26.17	59	2.0	<0.50	<0.50	<0.50	11	0.9	7.1
04/14/2005	NP		33.97	10.0	18.0	8.07	25.90	<50	<0.50	<0.50	<0.50	<0.50	0.64	2.8	7.4
08/01/2005	NP		33.97	10.0	18.0	8.58	25.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.48	5.7
7/31/2006	P		33.97	10.0	18.0	8.75	25.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.7
6/12/2009	P		33.97	10.0	18.0	9.51	24.46	<50	0.68	<0.50	<0.50	<0.50	<0.50	0.70	7.51
MW-5															
6/12/2009	NP		33.96	8.0	16.0	9.25	24.71	85	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	7.50
MW-6															
6/12/2009	NP		33.48	8.0	16.0	9.02	24.46	1,800	4.9	<0.50	2.8	<0.50	59	0.68	7.39

SYMBOLS AND ABBREVIATIONS:

--- = Not analyzed/applicable/measured/available

< = Not detected at or above laboratory reporting limit

DO = Dissolved oxygen

DTW = Depth to water in feet below ground surface

ft bgs = feet below ground surface

GRO = Gasoline Range Organics, range C4-C12

GWE = Groundwater elevation measured in feet

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 feet above mean sea level

TPH-g = Total petroleum hydrocarbons as gasoline

ug/L = Micrograms per liter

FOOTNOTES:

a = Well not accessible - car parked over.

b = Hydrocarbon pattern is present in the requested fuel quantitation range but does not represent the pattern of the requested fuel

c =TPH-g, BTEX and MTBE analyzed by EPA method 8260 beginning on 1st Quarter 2003 sampling event (3/28/03)

d = Gauged with stinger in well

e = Well casing lowered 0.06 feet during well repairs on 9/17/2003

NOTES:

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPHg was changed to GRO. The resulting data may be impacted by the potential of non-TPHg 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.

Wells were originally surveyed to NAVD'88 datum by URS Corporation on February 23, 2004.

Wells were resurveyed to NAVD'88 datum by Wood Rodgers Surveying on May 11, 2009.

Values for DO and pH 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 #2162, 15135 Hesperian Blvd., San Leandro, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
3/28/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
3/28/2003	<100	<20	45	<0.50	<0.50	0.73	<0.50	<0.50	
4/7/2003	<100	<20	56	<0.50	<0.50	0.72	<0.50	<0.50	
7/9/2003	<1,000	<200	87	<5.0	<5.0	<5.0	<5.0	<5.0	
10/08/2003	<100	<20	25	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	9.8	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	15	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	7.3	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	c
6/12/2009	<300	<10	0.53	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-4									
3/28/2003	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/08/2003	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)

**Table 2. Summary of Fuel Additives Analytical Data
Station #2162, 15135 Hesperian Blvd., San Leandro, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
04/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	c
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-5									
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-6									
6/12/2009	<300	<10	59	<0.50	<0.50	5.2	<0.50	<0.50	

SYMBOLS AND ABBREVIATIONS:

< = Not detected at or above specified laboratory reporting limit

--- = Not analyzed/applicable/measured/available

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

ug/L = Micrograms per liter

FOOTNOTES:

a = The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.

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

c = LCS rec. above meth. control limits. Analyte ND. Data not impacted.

NOTES:

All fuel oxygenate compounds analyzed using EPA Method 8260B

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

**Table 3. Historical Ground-Water Flow Direction and Gradient
Station #2162, 15135 Hesperian Blvd., San Leandro, CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
3/23/2001	Southwest	0.011
6/20/2001	Southwest	0.013
9/22/2001	Southwest	0.012
12/28/2001	Southwest	0.010
3/14/2002	Southwest	0.011
4/18/2002	Southwest	0.012
7/19/2002	Southwest	0.012
10/9/2002	Southwest	0.013
3/28/2003	Southwest	0.013
4/7/2003	Southwest	0.011
7/9/2003	Southwest	0.010
10/8/2003	Southwest	0.010
1/15/2004	Southwest	0.008
4/5/2004	South-Southwest	0.004
7/12/2004	South and Southwest	0.003 and 0.005
10/19/2004	Southwest	0.004
1/11/2005	Southwest (a) to Southeast (b)	0.005 to 0.004
4/14/2005	Southeast	0.004
8/1/2005	Southwest	0.002
7/31/2006	South-Southwest	0.003
6/12/2009	South	0.003

FOOTNOTES:

a = Direction at underground storage tanks

b = Direction at dispensers

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)**



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

June 29, 2009

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

Re: Groundwater Sampling Data Package, ARCO Service Station No. 2162, located at
15135 Hesperian Blvd., San Leandro, California.

General Information

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

Phone Number: (530) 676-6008

On-Site Supplier Representative: Tony Hill

Sampling Date: June 12, 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 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.

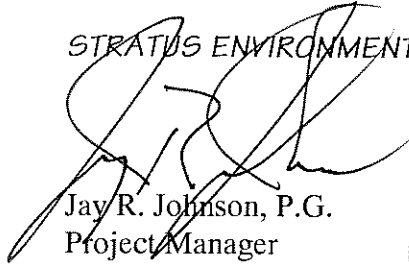
Mr. Rob Miller, Broadbent & Associates, Inc.
Groundwater Sampling Data Package
ARCO Service Station No. 2162, San Leandro, CA
Page 2

June 29, 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



Site Address 15135 Hesperian Blvd
 City San Leandro, CA
 Sampled by: TH
 Signature [Signature]

Site Number Arco 2162
 Project Number E 2162
 Project PM Jay Johnson
 DATE 6/12/09

Water Level Data					Purge Volume Calculations					Purge Method				Sample Record			Field Data
Well ID	Time	Depth to Product (feet)	Depth to Water (feet)	Total Depth (feet)	Water column (feet)	Diameter (inches)	Multiplier	3 casing volumes (gallons)	Actual water purged (gallons)	No Purge	Bailer	Pump	other	DTW at sample time (feet)	Sample I.D	Sample Time	DO (mg/L)
MW-1	0035		8.93	15.75	6.82	4	2	13.64	13.5			X		8.96	MW-1	0205	.59
	0031		8.18	15.87	7.69	4	2	15.38	15.5			X		8.23	2	0200	.60
	0038		8.36	14.87	6.51	4	2	13.62	13			X		8.50	3	0145	.61
	0045		9.51	17.60	8.09	4	2	16.18	16			X		9.54	4	0110	.70
	0027		9.25	15.98	-	4	2	-	-	X				9.25	5	0025	.59
6 MW-6	0041		9.02	16.00	-	4	2	-	-	X				9.02	MW-6	0125	.68

Multiplier
 2" = 0.5 3" = 1.0 4" = 2.0 6" = 4.4

Please refer to groundwater sampling field procedures
 pH/Conductivity/temperature Meter - Oakton Model PC-10
 DO Meter - Oakton 300 Series (DO is always measured before purge)

CALIBRATION DATE
 pH TH 6/12/09
 Conductivity /
 DO /



Well ID <u>MW-1</u> <u>0205</u>					Well ID <u>MW-2</u> <u>0220</u>				
purge start time <u>0146</u> <u>No odor</u>					purge start time <u>0206</u> <u>No odor</u>				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>20.9</u>	<u>7.51</u>	<u>291</u>	<u>0</u>	time	<u>20.2</u>	<u>7.44</u>	<u>305</u>	<u>0</u>
time	<u>20.5</u>	<u>7.47</u>	<u>320</u>	<u>7</u>	time	<u>20.5</u>	<u>7.47</u>	<u>300</u>	<u>7.5</u>
time	<u>20.1</u>	<u>7.40</u>	<u>318</u>	<u>13.5</u>	time	<u>19.8</u>	<u>7.55</u>	<u>300</u>	<u>15.5</u>
time					time				
purge stop time <u>0155</u>					purge stop time <u>0215</u>				
Well ID <u>MW-3</u> <u>0145</u>					Well ID <u>MW-4</u> <u>0110</u>				
purge start time <u>0126</u> <u>odor</u>					purge start time <u>0050</u> <u>odor</u>				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>21.4</u>	<u>7.23</u>	<u>297</u>	<u>0</u>	time	<u>21.0</u>	<u>7.87</u>	<u>327</u>	<u>0</u>
time	<u>21.9</u>	<u>7.33</u>	<u>296</u>	<u>6</u>	time	<u>21.1</u>	<u>7.61</u>	<u>332</u>	<u>8</u>
time	<u>21.2</u>	<u>7.45</u>	<u>293</u>	<u>13</u>	time	<u>20.6</u>	<u>7.51</u>	<u>331</u>	<u>16</u>
time					time				
purge stop time <u>0135</u>					purge stop time <u>0100</u>				
Well ID <u>MW-5</u> <u>0225</u>					Well ID <u>MW-6</u> <u>0125</u>				
purge start time <u>No odor</u>					purge start time <u>odor</u>				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>19.7</u>	<u>7.50</u>	<u>306</u>	<u>0</u>	time	<u>21.3</u>	<u>7.39</u>	<u>301</u>	<u>0</u>
time					time				
time					time				
time					time				
purge stop time					purge stop time				
Well ID					Well ID				
purge start time					purge start time				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time					time				
time					time				
time					time				
time					time				
purge stop time					purge stop time				

WELLHEAD OBSERVATION FORM



Site Name/Number: Acio 2162

Date: 6/12/09 Technician: A. Hill

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

DRUM INVENTORY

Drums on site? Yes No (circle)
 Type and # Steel: _____ Plastic: _____

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

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

GENERAL SITE CONDITIONS

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

NO. 672140

NON-HAZARDOUS WASTE DATA FORM

SITE:

EPA I.D. NO.

NOT REQUIRED

NAME BP WEST COAST PRODUCTS LLC ARCO # 21602

PROFILE NO.

ADDRESS P.O. BOX 80249 RANCHO SANTA MARGARITA 151315 Huntington Blvd

CITY, STATE, ZIP CA 92688

PHONE NO. ()

CONTAINERS: No. _____ VOLUME 58 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. TDH <1% 6. _____

3. _____ 7. BESI#

4. _____ 8. _____

PROPERTIES: 7-10 pH 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 Monthart BESI for BP
TYPED OR PRINTED FULL NAME & SIGNATURE

6/13/09
DATE

TO BE COMPLETED BY GENERATOR

TRANSPORTER

NAME Transporter #1 STRATUS ENVIRONMENTAL Transporter #2

EPA I.D. NO.

ADDRESS 3330 CAMERON PARK DR

SERVICE ORDER NO. _____

CITY, STATE, ZIP CAMERON PARK, CA 95682

PICK UP DATE _____

PHONE NO. 530-676-2031

TRUCK, UNIT, I.D. NO. _____
TYPED OR PRINTED FULL NAME & SIGNATURE

6/13/09
DATE

TSD FACILITY

NAME INSTRAT, INC

EPA I.D. NO.

ADDRESS 1105 AIRPORT RD #C

DISPOSAL METHOD

LANDFILL OTHER _____

CITY, STATE, ZIP RIO VISTA, CA 94571

PHONE NO. 530-753-1829

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

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

DISCREPANCY



Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 2162

Req Due Date (mm/dd/yy): STD-TAT

Rush TAT: Yes No

BP/ARC Facility No: 2162

Lab Work Order Number: _____

Lab Name: Cal Science	BP/ARC Facility Address: 15135 Hesperian Blvd.	Consultant/Contractor: Stratus Environmental
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: San Leandro, CA	Consultant/Contractor Project No:
Lab PM: Richard Villafania	Lead Regulatory Agency:	Address: 3330 Cameron Park Dr., Cameron Park, CA 95682
Lab Phone: 714-895-5494 / 714-895-7501 (fax)	California Global ID No.: T0600100084	Consultant/Contractor PM: Jay Johnson
Lab Shipping Acctn:	Enfos Proposal No: 000WD-0012	Phone: 530-676-6000 / 530-676-6005 (fax)
Lab Bottle Order No:	Accounting Mode: Provision <input type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: chuff@stratusinc.net
Other Info:	Stage: Operate Activity: Field Characterization	Invoice To: BP/ARC <input type="checkbox"/> Contractor <input type="checkbox"/>

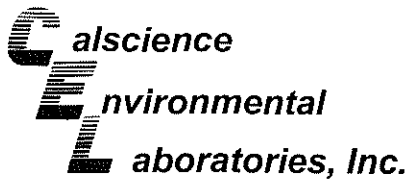
BP/ARC EBM: Paul Supple	Matrix	No. Containers / Preservative	Requested Analyses	Report Type & QC Level
EBM Phone: 925-275-3506				Standard <input type="checkbox"/>
EBM Email: paul.supple@bp.com				Full Data Package <input type="checkbox"/>

Lab No.	Sample Description	Date	Time	Matrix					No. Containers / Preservative					Requested Analyses				Comments
				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	670 by 8015 M	15TEX 15 OXY *	EDB / DCA *	Ethanol *		
	MW-1	2009 6/12	0205		X		6							X	X	X	X	* by 8060
	2		0220															
	3		0145															
	4		0110															
	5		0225															
	MW-6		0125															
	TB: 2162-06122009						2											ON Hold

Sampler's Name: <u>A. Hill</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: <u>Stratus</u>	<u>[Signature]</u>		<u>6/12/09</u>	<u>1400</u>	<u>[Signature]</u>			
Shipment Method: <u>650</u>	Ship Date: <u>6/12/09</u>							
Shipment Tracking No: _____								

Special Instructions: Please cc results to rmiller@broadbentinc.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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Stratus Environmental
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

June 26, 2009

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

Subject: **Calscience Work Order No.: 09-06-1448**
Client Reference: **ARCO 2162**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 6/16/2009 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.

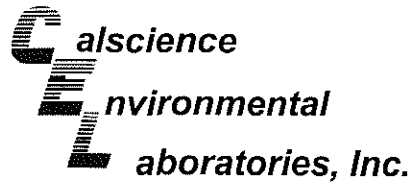
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Villafania".

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

A handwritten signature in black ink, appearing to read "Richard Villafania".



Analytical Report

09-06-1448
MW-1

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

Date Received: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 2162

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	09-06-1448-1-E	06/12/09 02:05	Aqueous	GC 4	06/24/09	06/24/09 19:56	090624B01

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	104	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-06-1448-2-E	06/12/09 02:20	Aqueous	GC 4	06/24/09	06/24/09 20:29	090624B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	51	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	105	38-134			

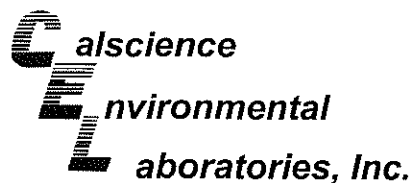
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-06-1448-3-E	06/12/09 01:45	Aqueous	GC 4	06/24/09	06/24/09 21:02	090624B01

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	108	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	09-06-1448-4-E	06/12/09 01:10	Aqueous	GC 4	06/24/09	06/24/09 21:35	090624B01

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	105	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: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 2162

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	09-06-1448-5-E	06/12/09 02:25	Aqueous	GC 4	06/24/09	06/24/09 22:08	090624B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	85	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	104	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	09-06-1448-6-E	06/12/09 01:25	Aqueous	GC 4	06/24/09	06/24/09 22:41	090624B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	1800	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	105	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-695-583	N/A	Aqueous	GC 4	06/24/09	06/24/09 16:04	090624B01

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	89	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: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: ARCO 2162

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-06-1448-1-A	06/12/09 02:05	Aqueous	GC/MS Z	06/23/09	06/23/09 15:00	090623L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	111	80-128			Dibromofluoromethane	100	80-127		
Toluene-d8	96	80-120			1,4-Bromofluorobenzene	91	68-120		

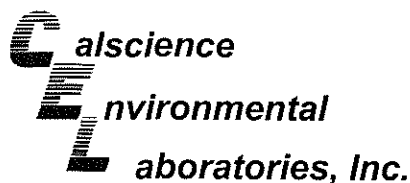
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-06-1448-2-A	06/12/09 02:20	Aqueous	GC/MS Z	06/23/09	06/23/09 16:55	090623L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	111	80-128			Dibromofluoromethane	101	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	91	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-06-1448-3-A	06/12/09 01:45	Aqueous	GC/MS Z	06/23/09	06/23/09 17:24	090623L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.75	0.50	1		Methyl-t-Butyl Ether (MTBE)	0.53	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	111	80-128			Dibromofluoromethane	101	80-127		
Toluene-d8	98	80-120			1,4-Bromofluorobenzene	91	68-120		

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



Analytical Report

06/16/09
09-06-1448

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

Date Received: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: ARCO 2162

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	09-06-1448-4-A	06/12/09 01:10	Aqueous	GC/MS Z	06/23/09	06/23/09 17:53	090623L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.68	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	113	80-128			Dibromofluoromethane	101	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	94	68-120		

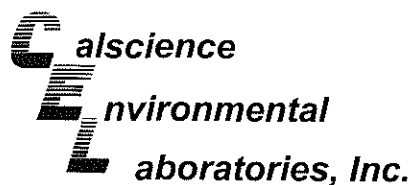
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	09-06-1448-5-A	06/12/09 02:25	Aqueous	GC/MS Z	06/23/09	06/23/09 18:22	090623L01

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	112	80-128			Dibromofluoromethane	102	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	94	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	09-06-1448-6-A	06/12/09 01:25	Aqueous	GC/MS Z	06/23/09	06/23/09 18:51	090623L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	4.9	0.50	1		Methyl-t-Butyl Ether (MTBE)	59	2.0	4	
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	2.8	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	5.2	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	102	80-128			Dibromofluoromethane	92	80-127		
Toluene-d8	105	80-120			1,4-Bromofluorobenzene	94	68-120		

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



Analytical Report

10/16/09
10/16/09

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

Date Received: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: ARCO 2162

Page 3 of 3

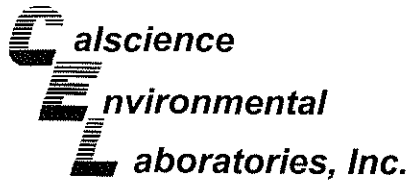
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-950	N/A	Aqueous	GC/MS Z	06/23/09	06/23/09 14:31	090623L01

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	104	80-128			Dibromofluoromethane	102	80-127		
Toluene-d8	98	80-120			1,4-Bromofluorobenzene	90	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-953	N/A	Aqueous	GC/MS Z	06/24/09	06/24/09 11:24	090624L01

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	103	80-128			Dibromofluoromethane	103	80-127		
Toluene-d8	98	80-120			1,4-Bromofluorobenzene	91	68-120		

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



Quality Control - Spike/Spike Duplicate

09-06-1648-7
 09-06-1448
 EPA 5030B
 EPA 8015B (M)

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

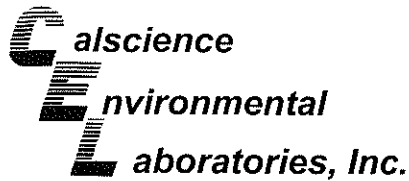
Date Received: 06/16/09
 Work Order No: 09-06-1448
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project ARCO 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-06-1648-7	Aqueous	GC 4	06/24/09	06/24/09	090624S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	102	101	38-134	1	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

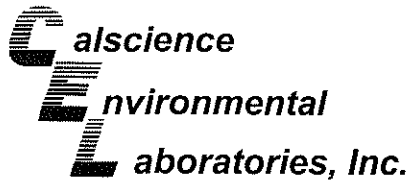
Date Received: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-1	Aqueous	GC/MS Z	06/23/09	06/23/09	090623S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	102	102	76-124	0	0-20	
Carbon Tetrachloride	99	98	74-134	1	0-20	
Chlorobenzene	99	100	80-120	1	0-20	
1,2-Dibromoethane	101	107	80-120	5	0-20	
1,2-Dichlorobenzene	100	101	80-120	1	0-20	
1,1-Dichloroethene	96	94	73-127	2	0-20	
Ethylbenzene	103	104	78-126	1	0-20	
Toluene	100	100	80-120	0	0-20	
Trichloroethene	102	104	77-120	2	0-20	
Vinyl Chloride	97	98	72-126	1	0-20	
Methyl-t-Butyl Ether (MTBE)	97	99	67-121	2	0-49	
Tert-Butyl Alcohol (TBA)	98	103	36-162	6	0-30	
Diisopropyl Ether (DIPE)	92	90	60-138	2	0-45	
Ethyl-t-Butyl Ether (ETBE)	103	103	69-123	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	99	101	65-120	2	0-20	
Ethanol	107	107	30-180	0	0-72	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate

09-06-1647-1

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

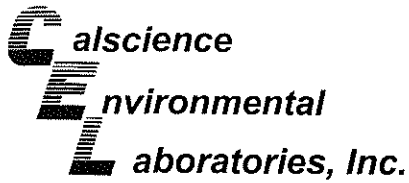
Date Received: 06/16/09
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-06-1647-1	Aqueous	GC/MS Z	06/24/09	06/24/09	090624S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	86	89	76-124	2	0-20	
Carbon Tetrachloride	96	98	74-134	2	0-20	
Chlorobenzene	98	100	80-120	1	0-20	
1,2-Dibromoethane	102	101	80-120	1	0-20	
1,2-Dichlorobenzene	99	99	80-120	1	0-20	
1,1-Dichloroethene	99	99	73-127	0	0-20	
Ethylbenzene	105	106	78-126	1	0-20	
Toluene	99	102	80-120	2	0-20	
Trichloroethene	96	99	77-120	3	0-20	
Vinyl Chloride	100	100	72-126	0	0-20	
Methyl-t-Butyl Ether (MTBE)	92	94	67-121	2	0-49	
Tert-Butyl Alcohol (TBA)	97	102	36-162	4	0-30	
Diisopropyl Ether (DIPE)	92	92	60-138	0	0-45	
Ethyl-t-Butyl Ether (ETBE)	88	90	69-123	2	0-30	
Tert-Amyl-Methyl Ether (TAME)	93	97	65-120	4	0-20	
Ethanol	104	113	30-180	8	0-72	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate

net c

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

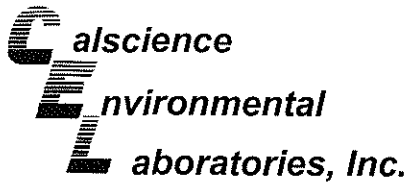
Date Received: N/A
 Work Order No: 09-06-1448
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project: ARCO 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-583	Aqueous	GC 4	06/24/09	06/24/09	090624B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	106	107	78-120	1	0-20	

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: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-950	Aqueous	GC/MS Z	06/23/09	06/23/09	090623L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	101	100	80-120	73-127	1	0-20	
Carbon Tetrachloride	98	97	74-134	64-144	1	0-20	
Chlorobenzene	98	99	80-120	73-127	0	0-20	
1,2-Dibromoethane	102	99	79-121	72-128	3	0-20	
1,2-Dichlorobenzene	99	98	80-120	73-127	1	0-20	
1,1-Dichloroethene	97	98	78-126	70-134	1	0-28	
Ethylbenzene	105	105	80-120	73-127	0	0-20	
Toluene	100	99	80-120	73-127	1	0-20	
Trichloroethene	99	100	79-127	71-135	0	0-20	
Vinyl Chloride	95	98	72-132	62-142	3	0-20	
Methyl-t-Butyl Ether (MTBE)	97	96	69-123	60-132	0	0-20	
Tert-Butyl Alcohol (TBA)	92	95	63-123	53-133	3	0-20	
Diisopropyl Ether (DIPE)	107	90	59-137	46-150	17	0-37	
Ethyl-t-Butyl Ether (ETBE)	100	91	69-123	60-132	10	0-20	
Tert-Amyl-Methyl Ether (TAME)	98	98	70-120	62-128	0	0-20	
Ethanol	100	98	28-160	6-182	2	0-57	

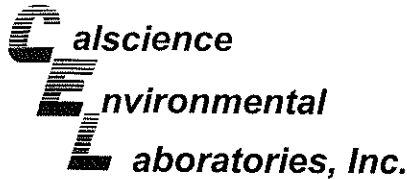
Total number of LCS compounds : 16

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

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

Date Received: N/A
Work Order No: 09-06-1448
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-953	Aqueous	GC/MS Z	06/24/09	06/24/09	090624L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	102	102	80-120	73-127	0	0-20	
Carbon Tetrachloride	99	107	74-134	64-144	8	0-20	
Chlorobenzene	100	100	80-120	73-127	0	0-20	
1,2-Dibromoethane	104	99	79-121	72-128	5	0-20	
1,2-Dichlorobenzene	100	98	80-120	73-127	3	0-20	
1,1-Dichloroethene	100	109	78-126	70-134	9	0-28	
Ethylbenzene	107	108	80-120	73-127	1	0-20	
Toluene	101	101	80-120	73-127	0	0-20	
Trichloroethene	102	103	79-127	71-135	1	0-20	
Vinyl Chloride	99	110	72-132	62-142	11	0-20	
Methyl-t-Butyl Ether (MTBE)	95	104	69-123	60-132	8	0-20	
Tert-Butyl Alcohol (TBA)	97	100	63-123	53-133	4	0-20	
Diisopropyl Ether (DIPE)	93	103	59-137	46-150	10	0-37	
Ethyl-t-Butyl Ether (ETBE)	102	99	69-123	60-132	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	99	95	70-120	62-128	5	0-20	
Ethanol	111	105	28-160	6-182	6	0-57	

Total number of LCS compounds : 16

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

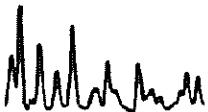
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Glossary of Terms and Qualifiers

Work Order Number: 09-06-1448

<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = 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.
BZ	Sample preserved improperly.
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.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	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,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.



<u>Qualifier</u>	<u>Definition</u>
LR	LCS recovery below method control limits.
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
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.
SG	A silica gel cleanup procedure was performed. Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.





Laboratory Management Program LaMP Chain of Custody Record

1448

BP/ARC Project Name: ARCO 2162
 BP/ARC Facility No: 2162

Req Due Date (mm/dd/yy): STD-TAT Rush TAT: Yes No
 Lab Work Order Number: _____

Lab Name: Cal Science	BP/ARC Facility Address: 15135 Hesperian Blvd.	Consultant/Contractor: Stratus Environmental
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: San Leandro, CA	Consultant/Contractor Project No:
Lab PM: Richard Villafania	Lead Regulatory Agency:	Address: 3330 Cameron Park Dr., Cameron Park, CA 95682
Lab Phone: 714-895-5494 / 714-895-7501 (fax)	California Global ID No.: T0600100084	Consultant/Contractor PM: Jay Johnson
Lab Shipping Acct:	Enfos Proposal No: 000WD-0012	Phone: 530-676-6000 / 530-676-6005 (fax)
Lab Bottle Order No:	Accounting Mode: Provision <input type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: <u>chuff@stratusinc.net</u>
Other Info:	Stage: Operate Activity: Field Characterization	Invoice To: BP/ARC <input type="checkbox"/> Contractor <input type="checkbox"/>

BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative							Requested Analyses				Report Type & QC Level		
EBM Phone: 925-275-3506				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRD by 8015 M	BTEX 5 OXY'S*	EDS / 1,2 DCA *	Ethanol *	Standard <input type="checkbox"/>	Full Data Package <input type="checkbox"/>	
EBM Email: paul.supple@bd.com																	Comments		
Lab No.	Sample Description	Date	Time															Note: If sample not collected, indicate 'No Sample' in comments and single-strike out and initial any preprinted sample description.	
1	MW-1	2009 6/12	0205	X			6						X	X	X	X		* by 8260	
2	2		0220																
3	3		0145																
4	4		0110																
5	5		0225																
6	MW-6	✓	0125	✓			1						✓	✓	✓	✓			
7	TB-2162-06122009						2											ON Hold	

Sampler's Name: <u>A Hill</u>	Relinquished By / Affiliation: <u>[Signature]</u>		Date: <u>6/12/09</u>	Time: <u>1400</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>6/16/09</u>	Time: <u>1000</u>
Sampler's Company: <u>Stratus</u>	Shipment Method: <u>BSO</u>		Ship Date: <u>6/12/09</u>		Special Instructions: Please cc results to <u>rmiller@broadbentinc.com</u>		

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

Page 1 of 10

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Stratus

DATE: 6/16/09

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

Temperature 2.6 °C - 0.2°C (CF) = 2.4 °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: DL

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"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> COC not relinquished. <input type="checkbox"/> No date relinquished. <input type="checkbox"/> No time relinquished.			
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"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
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 VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 500PB 500PBna

250PB 250PBn 125PB 125PBz₂na 100PB 100PBna₂ _____ _____ _____

Air: Tedlar® Summa® _____ Other: _____ Checked/Labeled by: DL

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar (Wide-mouth) B: Bottle (Narrow-mouth) Reviewed by: RN

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ Na: NaOH p: H₃PO₄ s: H₂SO₄ z₂na: ZnAc₂+NaOH f: Field-filtered Scanned by: DL

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 CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

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

<u>Submittal Type:</u>	GEO_WELL
<u>Submittal Title:</u>	2Q09 GEO_WELL 2162
<u>Facility Global ID:</u>	T0600100084
<u>Facility Name:</u>	ARCO #2162
<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>	7/27/2009 11:15:11 AM
<u>Confirmation Number:</u>	9518319249

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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 - Annually
<u>Submittal Title:</u>	2Q09 GW Monitoring
<u>Facility Global ID:</u>	T0600100084
<u>Facility Name:</u>	ARCO #2162
<u>File Name:</u>	09061448.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>	7/15/2009 1:09:26 PM
<u>Confirmation Number:</u>	4489739537

[VIEW QC REPORT](#)

[VIEW DETECTIONS REPORT](#)

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