



# Atlantic Richfield Company (a BP affiliated company)

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

28 July 2008

# **RECEIVED**

3:17 pm, Jul 30, 2008

Alameda County Environmental Health

Re: Second Quarter 2008 Ground-Water Monitoring Report

Atlantic Richfield Company (a BP affiliated company) Station #608

17601 Hesperian Boulevard San Lorenzo, California ACEH Case #RO0000255

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Submitted by:

Paul Supple

Environmental Business Manger

Paul Supple

# 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

28 July 2008

Project No. 06-08-606

# Second Quarter 2008 Ground-Water Monitoring Report

Atlantic Richfield Company Station #608 17601 Hesperian Boulevard San Lorenzo, California



28 July 2008

Project No. 06-08-606

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

Attn.: Mr. Paul Supple

Re: Second Quarter 2008 Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #608, 17601 Hesperian Blvd., San Lorenzo, Alameda County, California; ACEH Case #RO0000255

Dear Mr. Supple:

Provided herein is the *Second Quarter 2008 Ground-Water Monitoring Report* for Atlantic Richfield Company Station #608 located at 17601 Hesperian Boulevard, San Lorenzo, California (Site). This report presents results of ground-water monitoring conducted at the Site during the Second 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)

Electronic copy uploaded to GeoTracker

ARIZONA

CALIFORNIA

NEVADA

TEXAS

ROBERT H MILLER

No. 4893

# STATION #608 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #608 Address: 17601 Hesperian Boulevard, San Lorenzo

Environmental Business Manager: Mr. Paul Supple

Consulting Co./Contact Persons: Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus (530) 566-1400

Consultant Project No.: 06-08-606

Primary Agency/Regulatory ID No.: Alameda County Environmental Health (ACEH) ACEH Case #RO0000255

Facility Permits/Permitting Agency: Oro Loma Sanitary District Permit #SDP-037

# **WORK PERFORMED THIS QUARTER (Second Quarter 2008):**

- 1. Prepared and submitted First Quarter 2008 Ground-Water Monitoring Report.
- 2. Conducted ground-water monitoring/sampling for Second Quarter 2008. Work performed on 13 June 2008 by Stratus Environmental, Inc (Stratus).
- 3. Prepared and submitted Proposed Modifications to Ground-Water Monitoring and Sampling Schedule letter on 22 May 2008.

## **WORK PROPOSED FOR NEXT QUARTER (Third Quarter 2008):**

- 1. Prepare and submit Second Quarter 2008 Ground-Water Monitoring Report (provided herein).
- 2. Conduct ground-water monitoring/sampling for Third Quarter 2008.
- 3. Prepare and submit a Soil and Water Investigation Work Plan by 26 August 2008.

## **QUARTERLY RESULTS SUMMARY:**

Current phase of project:	Ground-water monitoring/sampling
Frequency of ground-water	Quarterly: E-1A, MW-5, MW-8, MW-9, MW-10, MW-11,
monitoring:	MW-14, MW-15, MW-16, MW-18, MW-21, MW-22,
	MW-23, MW-25, MW-26
Frequency of ground-water sampling:	See Tables 4a and 4b
Is free product (FP) present on-site:	No
Current remediation techniques:	NA
Depth to ground water (below TOC):	10.05 ft (MW-10) to 11.50 ft (MW-25)
General ground-water flow direction:	NA
Approximate hydraulic gradient:	NA

## **DISCUSSION:**

Second Quarter 2008 ground-water monitoring and sampling was conducted at Station #608 on 13 June 2008 by Stratus personnel. Water levels were gauged in two of the fifteen wells scheduled for monitoring and associated with the Site. Well E-1A was inaccessible due to a standing safety order from BP that wells with vault lids greater than 24-inches across required that a well planned Job Safety Analysis (JSA) be prepared prior to accessing them, principally to prevent ergonomic injuries. Stratus has since prepared and presented an approved JSA, allowing safe future access. Water levels were not gauged by Stratus in wells MW-5, MW-8, MW-9, MW-11, MW-14, MW-15, MW-16, MW-18, MW-21, MW-22, MW-23, and MW-26 due to the fact that a new field technician was assigned to the site and was unaware of the current monitoring schedule. Stratus will endeavor to appropriately gauge water level elevations in each scheduled well during Third Quarter 2008. No other irregularites were noted during

water level gauging. Depth-to-water measurements during this event were 10.05 ft at MW-10 and 11.50 ft at MW-25. Resulting ground-water surface elevations were 24.83 ft above mean sea level (msl) in well MW-25 and 23.45 ft above msl in well MW-10. Water level elevations were between historic minimum and maximum ranges for each monitoring well gauged, as summarized in Table 1. Due to the limited number of wells gauged for water level elevations this quarter, a potentiometric ground-water flow direction and gradient could not be determined. Historical ground-water flow directions and gradients are presented in 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.

Water samples were collected from wells MW-10 and MW-25, generally consistent with the current sampling schedule presented in Table 4a with the following exceptions: Domestic irrigation well 642H was not sampled because property access could not be obtained and domestic irrigation well 17372VM was not sampled because the pump within in the well was reported non-operational. Well E-1A was not sampled as scheduled due to the ergonomics reason, as previously described. No other irregularities were reported during sampling during this quarter. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and tert-Amyl methyl ether (TAME), tert-Butyl alcohol (TBA), Di-isopropyl ether(DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Ethanol, Ethyl tert-butyl ether (ETBE), and Methyl tert-butyl ether (MTBE) by EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Gasoline range organics (GRO) were detected above the laboratory reporting limits in one of the two wells sampled at a concentration of 410 micrograms per liter ( $\mu$ g/L) in well MW-10. TAME was detected above the laboratory reporting limit in one of the two wells sampled at a concentration of 0.58  $\mu$ g/L in well MW-25. MTBE was detected above the laboratory reporting limit in each of the two wells sampled at concentrations of 2.2  $\mu$ g/L in well MW-25 and 5.8  $\mu$ g/L in well MW-10. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the wells sampled this quarter. Detected analyte concentrations were within the historic minimum and maximum ranges recorded for each well with the following exception: MTBE and TAME reached historic minimum concentrations of 2.2  $\mu$ g/L and 0.58  $\mu$ g/L, respectively, in well MW-25. Historic laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 1. A copy of the Laboratory Analytical Report, including chain-of-custody documentation is provided in Appendix A. Ground-water monitoring data (GEO\_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix B.

A modified sampling schedule was approved by Alameda County Environmental Health (ACEH) in their letter dated 27 June 2008. The current sampling schedule is provided in Table 4a and the new, modified schedule to be implemented beginning Third Quarter 2008 is provided in Table 4b.

# **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

lusive use of Atlantic

Page 3

warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

#### **ATTACHMENTS:**

- Drawing 1. Ground-Water Elevations and Analytical Summary Map, 13 June 2008, ARCO Service Station #608, 17601 Hesperian Boulevard, San Lorenzo, California
- Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #608, 17601 Hesperian Blvd., San Lorenzo, California
- Table 2. Summary of Fuel Additives Analytical Data, Station #608, 17601 Hesperian Boulevard, San Lorenzo, California
- Table 3. Historical Ground-Water Flow Direction and Gradient, Station #608, 17601 Hesperian Boulevard, San Lorenzo, California
- Table 4a. Current Ground-Water Sampling Schedule, Atlantic Richfield Company Station #608, 17601 Hesperian Boulevard, San Lorenzo, California
- Table 4b. Modified Ground-Water Sampling Schedule, Atlantic Richfield Company Station #608, 17601 Hesperian Boulevard, San Lorenzo, California
- Appendix A. Stratus Ground-Water Sampling Data Package (Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody Documentation, and Field Procedures)
- Appendix B. GeoTracker Upload Confirmations

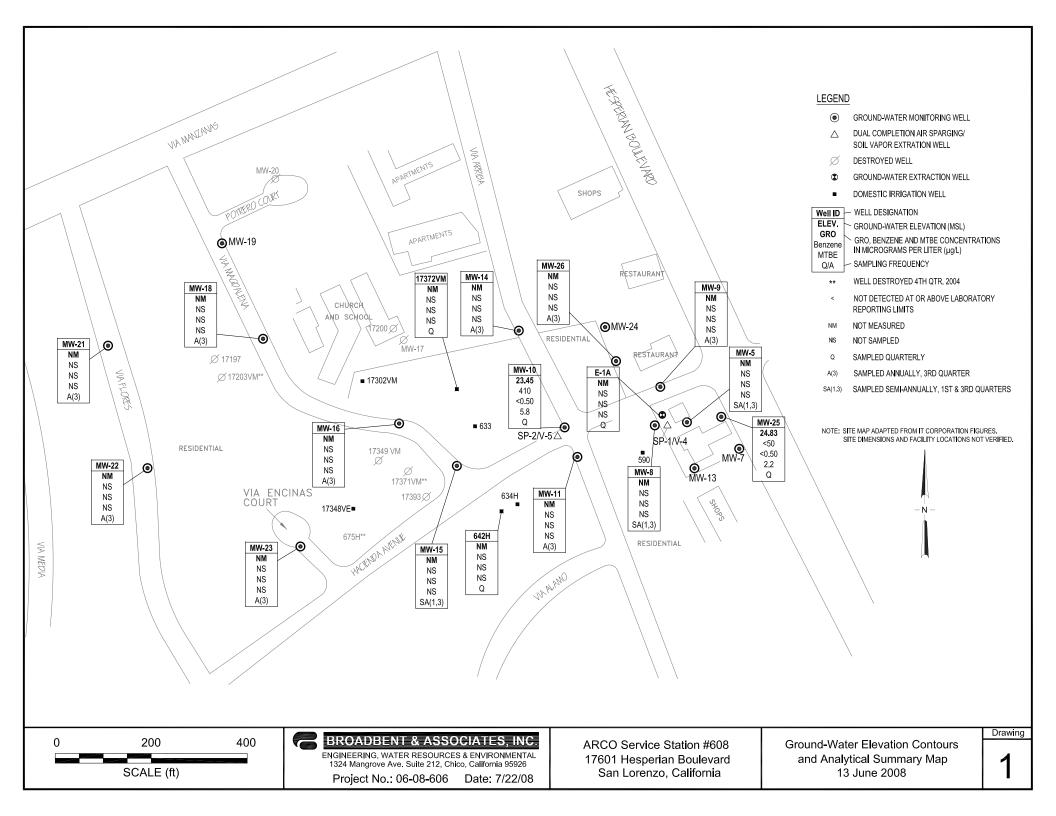


Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
17349 VM															
3/13/2002								<50	1	< 0.50	< 0.50	< 0.50	49		
6/28/2002		1						66	0.50	< 0.50	< 0.50	< 0.50	47/45		
9/20/2002		k													
17372 VM															
3/13/2002								<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002								< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
9/20/2002								< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
12/30/2002								< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
3/27/2003								< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
9/15/2003								< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
12/04/2003	NP							<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.7	7.2
03/10/2004		m						< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
06/10/2004	NP	m						<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.1	6.9
09/22/2004	NP	m						< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.6	7.2
12/13/2004	NP	m						<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.76	7.6
03/10/2005	NP	m						<100	< 0.50	< 0.50	< 0.50	<4.0	< 0.50	7.5	8.0
06/29/2005		0													
09/14/2005		0													
12/13/2005		0													
03/20/2006		0													
6/22/2006		0													
9/22/2006		0													
12/7/2006		j													
642 H															
3/13/2002		j													
6/28/2002								<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
9/20/2002								<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
12/30/2002								<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
3/27/2003								<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
642 H Cont.															
6/30/2003		j													
9/15/2003								< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
12/04/2003	NP					14.75		<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.2	7.1
06/10/2004		n												7.9	
09/22/2004		О													
12/13/2004		0													
03/10/2005		n													
06/29/2005		n													
09/14/2005		n													
12/13/2005		0													
03/20/2006		0													
6/22/2006		j													
9/22/2006		j													
12/7/2006		j													
E-1A															
3/13/2002		a	33.06			21.75	11.31	200	< 0.50	< 0.50	< 0.50	< 0.50	310		
6/28/2002		b	33.06			11.22	21.84	260	< 0.50	11	1.2	1.2	150		
9/20/2002			33.06			11.80	21.26	250	1.18	0.52	<0.5	<1.5	218		
12/30/2002		c, e	33.06			16.33	16.73	190	<1.2	<1.2	<1.2	<1.2	190		
3/27/2003		g	33.06			13.63	19.43	96	< 0.50	< 0.50	< 0.50	< 0.50	60		
6/30/2003	P	h	33.06			9.60	23.46	140	< 0.50	< 0.50	< 0.50	< 0.50	37		
9/15/2003	P	g	33.06			17.80	15.26	83	< 0.50	< 0.50	< 0.50	< 0.50	49		
12/04/2003	NP	g	33.06			18.73	14.33	< 50	< 0.50	< 0.50	< 0.50	< 0.50	19	4.3	7.0
03/10/2004	NP	g	34.30			16.78	17.52	<100	<1.0	<1.0	<1.0	<1.0	38	4.9	7.2
06/10/2004	NP	g, p	34.30			16.67	17.63	74	< 0.50	< 0.50	< 0.50	< 0.50	46	2.0	6.7
09/22/2004	NP		34.30			18.46	15.84	< 50	< 0.50	< 0.50	< 0.50	< 0.50	17		7.0
12/13/2004	NP		34.30			17.56	16.74	<50	< 0.50	< 0.50	< 0.50	< 0.50	15	7.13	6.9
03/10/2005	NP		34.30			14.60	19.70	<100	< 0.50	< 0.50	< 0.50	<4.0	22	6.6	8.0
06/29/2005	NP		34.30			15.13	19.17	<50	< 0.50	0.91	< 0.50	< 0.50	14	6.73	7.3
09/14/2005	NP		34.30			16.90	17.40	<50	<0.50	< 0.50	<0.50	< 0.50	13	5.4	6.7

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ;	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
E-1A Cont.															
12/13/2005	NP		34.30			18.84	15.46	<50	< 0.50	< 0.50	< 0.50	< 0.50	12	8.3	7.1
03/20/2006		h	34.30			13.55	20.75								
6/22/2006	NP		34.30			13.82	20.48	<50	< 0.50	< 0.50	< 0.50	< 0.50	13	5.2	7.5
9/22/2006	P		34.30			14.22	20.08	< 50	< 0.50	< 0.50	< 0.50	< 0.50	12	2.65	7.7
12/7/2006		j	34.30												
3/12/2007	P		34.30			11.72	22.58	61	< 0.50	< 0.50	< 0.50	< 0.50	5.6		
6/20/2007	NP		34.30			18.71	15.59	< 50	< 0.50	< 0.50	< 0.50	< 0.50	6.8	3.40	7.35
9/20/2007	NP		34.30			10.20	24.10	< 50	< 0.50	< 0.50	< 0.50	< 0.50	0.80	1.21	7.47
12/14/2007	P		34.30			9.77	24.53	< 50	< 0.50	< 0.50	< 0.50	< 0.50	2.0	2.87	7.27
3/10/2008	NP		34.30			9.00	25.30	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.43	7.11
3/26/2008	P	S	34.30			9.21	25.09	< 50	< 0.50	< 0.50	< 0.50	< 0.50	0.89	4.20	7.26
6/13/2008		j													
MW-1															
3/15/1996			175.04			14.24	160.80								
MW-5															
3/13/2002			33.99			11.46	22.53	530	<2.5	<2.5	<2.5	<2.5	230		
6/28/2002		b	33.99			11.75	22.24	180	<1.0	2.6	<1.0	1.2	230		
9/20/2002			33.99			12.15	21.84	<50	< 0.50	< 0.50	< 0.50	<1.50	333		
12/30/2002			33.99			9.73	24.26	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
3/27/2003			33.99			11.24	22.75	100	< 0.50	< 0.50	< 0.50	< 0.50	59		
6/30/2003			33.99			11.62	22.37	91	< 0.50	< 0.50	< 0.50	< 0.50	58		
9/15/2003			33.99			12.13	21.86	<250	<2.5	<2.5	<2.5	<2.5	61		
12/04/2003	P		33.99			11.85	22.14	81	< 0.50	< 0.50	< 0.50	< 0.50	42	1.7	7.0
03/10/2004	P		35.97			10.34	25.63	<50	< 0.50	< 0.50	< 0.50	< 0.50	9.5	1.2	6.6
06/10/2004	P		35.97			11.65	24.32	55	< 0.50	< 0.50	< 0.50	< 0.50	31	1.3	7.0
09/22/2004	P		35.97			12.23	23.74	<50	< 0.50	< 0.50	< 0.50	< 0.50	15	0.8	6.8
12/13/2004	P		35.97			11.16	24.81	<50	< 0.50	< 0.50	< 0.50	< 0.50	5.4	3.76	6.8
03/10/2005	P		35.97			9.90	26.07	<100	< 0.50	< 0.50	< 0.50	<4.0	3.3	2.6	7.7
06/29/2005	P		35.97			11.35	24.62	<50	< 0.50	< 0.50	< 0.50	< 0.50	6.7	0.93	6.6

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				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-5 Cont.															
09/14/2005	P		35.97			11.80	24.17	<50	< 0.50	0.91	< 0.50	0.68	13	0.8	6.9
12/13/2005			35.97			11.60	24.37								
03/20/2006	P		35.97			10.04	25.93	< 50	< 0.50	< 0.50	< 0.50	< 0.50	3.8	0.8	7.1
6/22/2006			35.97			11.33	24.64								
9/22/2006	P		35.97			11.57	24.40	<50	< 0.50	< 0.50	< 0.50	< 0.50	12	1.12	7.1
12/7/2006			35.97			11.71	24.26								
3/12/2007	P		35.97			10.86	25.11	<50	< 0.50	0.60	< 0.50	< 0.50	5.8	2.55	7.17
6/20/2007			35.97			11.82	24.15								
9/20/2007	NP		35.97			12.20	23.77	<50	< 0.50	0.77	< 0.50	< 0.50	4.3	1.18	7.30
12/14/2007			35.97			12.27	23.70								
3/10/2008	P		35.97			11.00	24.97	110	< 0.50	< 0.50	< 0.50	< 0.50	2.8	0.95	6.95
MW-8															
3/13/2002			32.79			10.30	22.49	500	<2.5	<2.5	<2.5	<2.5	1,100		
6/28/2002		b	32.79			10.30	22.49	150	< 0.50	2.9	0.54	1.5	130		
9/20/2002			32.79			10.84	21.95	<50	< 0.50	< 0.50	< 0.50	<1.50	273		
12/30/2002			32.79			8.31	24.48	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.5		
3/27/2003			32.79			9.85	22.94	63	< 0.50	< 0.50	< 0.50	< 0.50	33		
6/30/2003			32.79			10.20	22.59	< 50	< 0.50	< 0.50	< 0.50	< 0.50	15		
9/15/2003			32.79			10.69	22.10	59	< 0.50	< 0.50	< 0.50	< 0.50	41		
12/04/2003	P		32.79			10.43	22.36	< 50	< 0.50	< 0.50	< 0.50	< 0.50	24	1.0	7.0
03/10/2004	P		34.47			9.04	25.43	<50	< 0.50	< 0.50	< 0.50	< 0.50	2.4	0.9	6.8
06/10/2004	P		34.47			10.40	24.07	< 50	< 0.50	< 0.50	< 0.50	< 0.50	2.1	0.6	7.0
09/22/2004	P		34.47			10.74	23.73	84	< 0.50	< 0.50	< 0.50	< 0.50	18	0.9	6.9
12/13/2004	P		34.47			9.73	24.74	< 50	< 0.50	< 0.50	< 0.50	< 0.50	7.1	0.95	6.8
03/10/2005	P		34.47			8.17	26.30	<100	< 0.50	< 0.50	< 0.50	<4.0	1.4	2.0	7.4
06/29/2005	P		34.47			9.93	24.54	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.7	1.72	7.0
09/14/2005	P		34.47			10.35	24.12	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.9	7.0
12/13/2005			34.47			10.18	24.29								
03/20/2006	P		34.47			8.65	25.82	<50	< 0.50	< 0.50	< 0.50	< 0.50	0.60	1.8	7.1
6/22/2006			34.47			9.91	24.56								

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				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-8 Cont.															
9/22/2006	P		34.47			10.25	24.22	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.10	7.0
12/7/2006			34.47			10.21	24.26								
3/12/2007	P		34.47			9.46	25.01	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.96	7.54
6/20/2007			34.47			10.39	24.08								
9/20/2007	P		34.47			10.75	23.72	<50	< 0.50	< 0.50	< 0.50	< 0.50	13	2.19	7.49
12/14/2007			34.47			10.71	23.76								
3/10/2008	P		34.47			9.62	24.85	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.67	7.08
MW-9															
3/13/2002			32.11			9.49	22.62	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002			32.11			9.78	22.33	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
9/20/2002			32.11			10.29	21.82	<50	< 0.50	< 0.50	< 0.50	<1.50	< 0.500		
12/30/2002			32.11			7.60	24.51	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
3/27/2003			32.11			9.14	22.97	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		u	32.11			9.64	22.47								
9/15/2003			32.11			10.12	21.99	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
12/04/2003		u	32.11												
03/10/2004	P		34.00			8.46	25.54	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.6	7.3
06/10/2004		u	34.00			9.88	24.12								
09/22/2004	P		34.00			10.05	23.95	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.0	7.0
12/13/2004		u	34.00			9.17	24.83								
03/10/2005	P		34.00			8.17	25.83	<100	< 0.50	< 0.50	< 0.50	<4.0	< 0.50	2.2	7.7
06/29/2005			34.00			9.28	24.72								
09/14/2005	P		34.00			9.70	24.30	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	6.8
12/13/2005			34.00			9.64	24.36								
03/20/2006			34.00			8.23	25.77								
6/22/2006			34.00			9.37	24.63								
9/22/2006	P		34.00			9.74	24.26	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.38	7.2
12/7/2006			34.00			9.67	24.33								
3/12/2007			34.00			8.93	25.07								
6/20/2007			34.00			9.88	24.12								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	ТРНд	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-9 Cont.															
9/20/2007	P		34.00			10.21	23.79	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	10.67	7.25
12/14/2007			34.00			10.28	23.72								
3/10/2008			34.00			9.10	24.90								
MW-10															
3/13/2002			31.67			9.68	21.99	680	<5.0	< 5.0	<5.0	<5.0	570		
6/28/2002		b	31.67			9.84	21.83	820	<2.0	<2.0	<2.0	<2.0	1,200		
9/20/2002			31.67			10.37	21.30	194	< 0.50	< 0.50	< 0.50	<1.50	575		
12/30/2002			31.67			7.70	23.97	< 50	< 0.50	< 0.50	< 0.50	< 0.50	490		
3/27/2003			31.67			9.33	22.34	530	<5.0	< 5.0	<5.0	<5.0	330		
6/30/2003			31.67			9.75	21.92	<1,000	<10	<10	<10	<10	750		
9/15/2003	P		31.67			10.17	21.50	< 500	<5.0	< 5.0	<5.0	<5.0	430		
12/04/2003	P		31.67			9.95	21.72	<250	<2.5	<2.5	<2.5	<2.5	110		6.9
03/10/2004	P		33.50			8.57	24.93	420	<2.5	<2.5	<2.5	<2.5	140	1.2	6.5
06/10/2004			33.50			9.95	23.55	600	< 5.0	< 5.0	<5.0	< 5.0	410		6.9
09/22/2004	P		33.50			10.23	23.27	560	< 0.50	< 0.50	< 0.50	< 0.50	87	0.8	6.9
12/13/2004	P		33.50			9.28	24.22	290	<1.0	<1.0	<1.0	<1.0	110	1.6	6.5
03/10/2005	P		33.50			7.97	25.53	280	< 0.50	< 0.50	< 0.50	<4.0	86	3.2	7.3
06/29/2005	P		33.50			9.45	24.05	<250	<2.5	<2.5	<2.5	<2.5	160	1.13	6.8
09/14/2005	P		33.50			9.92	23.58	340	<2.5	<2.5	<2.5	<2.5	140	0.7	6.9
12/13/2005	P		33.50			9.73	23.77	270	< 0.50	< 0.50	< 0.50	< 0.50	47	1.8	6.5
03/20/2006	P		33.50			8.17	25.33	270	< 0.50	< 0.50	< 0.50	< 0.50	34	1.1	6.9
6/22/2006	P		33.50			9.42	24.08	250	< 0.50	< 0.50	< 0.50	< 0.50	21	1.74	7.0
9/22/2006	P		33.50			9.88	23.62	270	< 0.50	< 0.50	< 0.50	< 0.50	11	1.39	7.0
12/7/2006	P		33.50			9.78	23.72	360	< 0.50	< 0.50	< 0.50	< 0.50	10	0.89	7.10
3/12/2007	P		33.50			9.00	24.50	300	< 0.50	< 0.50	< 0.50	< 0.50	18	0.98	7.25
6/20/2007	P		33.50			9.94	23.56	300	< 0.50	< 0.50	< 0.50	< 0.50	5.9	6.47	7.18
9/20/2007	P		33.50			10.24	23.26	250	< 0.50	< 0.50	< 0.50	< 0.50	4.6	2.46	7.29
12/14/2007	P		33.50			9.90	23.60	280	< 0.50	< 0.50	< 0.50	< 0.50	6.9	1.80	6.98
3/10/2008	P		33.50			9.18	24.32	330	< 0.50	< 0.50	< 0.50	< 0.50	13	0.27	6.88
6/13/2008	P		33.50			10.05	23.45	410	<0.50	< 0.50	<0.50	<0.50	5.8	0.79	7.15

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of	_	Water Level			Concentra	tions in (µ	п/І )			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/		Concentra	Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-11															
3/13/2002			32.54			10.38	22.16	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002			32.54			10.74	21.80	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
9/20/2002			32.54			11.27	21.27	<50	< 0.50	< 0.50	< 0.50	<1.50	< 0.500		
12/30/2002			32.54			8.73	23.81	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
3/27/2003			32.54			10.25	22.29	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003			32.54			10.65	21.89	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
9/15/2003			32.54			11.03	21.51	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
12/04/2003	P		32.54			10.84	21.70	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.5	7.0
03/10/2004	P		34.55			9.41	25.14	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.3	6.9
06/10/2004			34.55			10.82	23.73	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		6.9
09/22/2004	P		34.55			11.10	23.45	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	6.9
12/13/2004	P		34.55			10.19	24.36	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.83	6.6
03/10/2005	P		34.55			8.87	25.68	<100	< 0.50	< 0.50	< 0.50	<4.0	< 0.50	2.3	7.7
06/29/2005	P		34.55			10.37	24.18	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.83	6.3
09/14/2005	P		34.55			10.78	23.77	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.8	6.9
12/13/2005			34.55			10.62	23.93								
03/20/2006			34.55			9.04	25.51								
6/22/2006			34.55			10.33	24.22								
9/22/2006	P		34.55			10.75	23.80	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.53	7.2
12/7/2006			34.55			10.68	23.87								
3/12/2007			34.55			9.89	24.66								
6/20/2007			34.55			10.84	23.71								
9/20/2007	P		34.55			11.15	23.40	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.32	7.26
12/14/2007			34.55			11.10	23.45								
3/10/2008			34.55			10.05	24.50								
MW-14															-
3/13/2002			30.46			8.56	21.90	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002		q	30.46			9.12	21.34								
9/20/2002		q	30.46			9.79	20.67								
12/30/2002		q	30.46			7.13	23.33								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				_	_										
			mod	Top of	Bottom of		Water Level	ano.		Concentra	tions in (µ			<b>D</b> O	
Well and Sample Date	P/NP	Comments	TOC (feet msl)	Screen (ft bgs)	Screen (ft bgs)	DTW (feet bgs)	Elevation (feet msl)	GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE	DO (mg/L)	nН
•	1/1(1	Comments	(Teet Hist)	(It bgs)	(It bgs)	(Icct bgs)	(reet msi)	11116	Belizelle	Totache	Denzene	Ayrenes	MIDE	(IIIg/L)	PII
MW-14 Cont.															
3/27/2003			30.46			8.53	21.93	<50	< 0.50	0.86	< 0.50	< 0.50	< 0.50		
6/30/2003		q	30.46			9.05	21.41								
9/15/2003		q	30.46			9.47	20.99								
12/04/2003		q	30.46			9.20	21.26								
03/10/2004		q	32.61			7.90	24.71								
06/10/2004		q	32.61			9.25	23.36								
09/22/2004	P		32.61			9.55	23.06	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	
12/13/2004			32.61			8.46	24.15								
03/10/2005			32.61			7.32	25.29								
06/29/2005			32.61			8.77	23.84								
09/14/2005	P		32.61			9.20	23.41	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.9	6.9
12/13/2005			32.61			8.96	23.65								
03/20/2006			32.61			7.51	25.10								
6/22/2006			32.61			8.75	23.86								
9/22/2006	P		32.61			9.19	23.42	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.70	7.2
12/7/2006			32.61			9.05	23.56								
3/12/2007			32.61			8.35	24.26								
6/20/2007			32.61			9.33	23.28								
9/20/2007	P		32.61			9.60	23.01	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.24	7.42
12/14/2007			32.61			9.53	23.08								
3/10/2008			32.61			8.50	24.11								
MW-15															
3/13/2002			31.41			10.03	21.38	<50	<0.50	<0.50	<0.50	<0.50	21		
6/28/2002			31.41			10.41	21.00	<50	<0.50	<0.50	<0.50	<0.50	8.7		
9/20/2002			31.41			11.00	20.41	<50	<0.50	<0.50	<0.50	<1.50	21.6		
12/30/2002			31.41			8.33	23.08	<50	<0.50	<0.50	<0.50	<0.50	67		
3/27/2003			31.41			9.83	21.58	<50	<0.50	<0.50	<0.50	<0.50	17		
6/30/2003			31.41			10.00	21.41	<50	<0.50	<0.50	<0.50	<0.50	12		
9/15/2003			31.41			10.67	20.74	<50	<0.50	<0.50	<0.50	<0.50	10		
12/04/2003	P		31.41			10.47	20.74	<50	<0.50	< 0.50	<0.50	<0.50	6.4	2.6	7.0

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ;	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-15 Cont.															
03/10/2004	P		33.49			9.09	24.40	< 50	< 0.50	< 0.50	< 0.50	< 0.50	11	1.5	6.9
06/10/2004	P		33.49			10.50	22.99	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.7	0.5	6.9
09/22/2004		r	33.49												
12/13/2004		r	33.49												
03/10/2005	P		33.49			8.50	24.99	<100	< 0.50	< 0.50	< 0.50	<4.0	5.4	2.7	7.7
06/29/2005		r	33.49												
09/14/2005		r	33.49												
12/13/2005			33.49			10.16	23.33								
03/20/2006	P		33.49			8.72	24.77	< 50	< 0.50	< 0.50	< 0.50	< 0.50	15	3.1	7.3
6/22/2006			33.49			10.00	23.49								
9/22/2006		j													
12/7/2006			33.49			10.32	23.17								
3/12/2007		j	33.49			9.60	23.89								
6/20/2007			33.49			10.52	22.97								
9/20/2007	P		33.49			10.83	22.66	< 50	< 0.50	< 0.50	< 0.50	< 0.50	11	0.64	7.19
12/14/2007			33.49			10.78	22.71								
3/10/2008	P		33.49			9.75	23.74	< 50	< 0.50	< 0.50	< 0.50	< 0.50	19	0.72	6.88
MW-16															
3/13/2002			31.39			10.51	20.88	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002			31.39			10.96	20.43	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
9/20/2002			31.39			10.47	20.92	< 50	< 0.50	< 0.50	< 0.50	<1.50	1.67		
12/30/2002			31.39												
3/27/2003			31.39			10.28	21.11	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		i, q	31.39			10.87	20.52								
9/15/2003			31.39			11.25	20.14	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
12/04/2003		u	31.39			10.99	20.40								
03/10/2004	P		33.41			9.66	23.75	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.1	6.5
06/10/2004			33.41			11.06	22.35								
09/22/2004	P		33.41			11.40	22.01	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	7.0
12/13/2004			33.41			10.27	23.14								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	ТРНд	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-16 Cont.															
03/10/2005	P		33.41			9.03	24.38	<100	< 0.50	< 0.50	< 0.50	<4.0	< 0.50	3.9	7.0
06/29/2005			33.41			10.60	22.81								
09/14/2005	P		33.41			11.02	22.39	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.9	7.0
12/13/2005			33.41			10.79	22.62								
03/20/2006			33.41			9.25	24.16								
6/22/2006		r	33.41												
9/22/2006	P		33.41			10.95	22.46	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.69	7.3
12/7/2006		r	33.41												
3/12/2007			33.41			10.18	23.23								
6/20/2007			33.41			11.10	22.31								
9/20/2007	P		33.41			11.44	21.97	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.55	7.30
12/14/2007			33.41			11.41	22.00								
3/10/2008			33.41			10.35	23.06								
MW-18															
3/13/2002			29.70			9.46	20.24	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002		q	29.70			10.05	19.65								
9/20/2002		q	29.70			10.67	19.03								
12/30/2002		q	29.70			7.98	21.72								
3/27/2003			29.70			9.18	20.52	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		q	29.70			9.68	20.02								
9/15/2003		q	29.70			10.30	19.40								
12/04/2003		q	29.70			9.99	19.71								
03/10/2004		q	31.87			8.78	23.09								
06/10/2004		q	31.87			10.12	21.75								
09/22/2004	P		31.87			10.45	21.42	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	6.9
12/13/2004			31.87			9.25	22.62								
03/10/2005			31.87			8.35	23.52								
06/29/2005			31.87			9.65	22.22								
09/14/2005	P		31.87			10.10	21.77	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	6.9
12/13/2005			31.87			9.90	21.97								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			тос	Screen	Screen	DTW	Elevation	GRO/		0011001101	Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-18 Cont.															
03/20/2006			31.87			8.54	23.33								
6/22/2006			31.87			9.68	22.19								
9/22/2006	P		31.87			9.96	21.91	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.23	7.2
12/7/2006			31.87												
3/12/2007			31.87			9.28	22.59								
6/20/2007			31.87			10.15	21.72								
9/20/2007	P		31.87			10.45	21.42	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.14	7.22
12/14/2007			31.87			10.47	21.40								
3/10/2008			31.87			9.42	22.45								
MW-21															
3/13/2002			28.72			9.40	19.32	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0		
6/28/2002		q	28.72			9.80	18.92								
9/20/2002		q	28.72			10.27	18.45								
12/30/2002		q	28.72			7.70	21.02								
3/27/2003			28.72			9.05	19.67	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		q	28.72			9.48	19.24								
9/15/2003		q	28.72			10.06	18.66								
12/04/2003		q	28.72			9.69	19.03								
03/10/2004		q	30.67			8.60	22.07								
06/10/2004		q	30.67			9.85	20.82								
09/22/2004	P		30.67			10.17	20.50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.2	6.9
12/13/2004			30.67			8.92	21.75								
03/10/2005			30.67			8.10	22.57								
06/29/2005			30.67			9.48	21.19								
09/14/2005	P		30.67			9.88	20.79	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.8	6.9
12/13/2005			30.67			9.57	21.10								
03/20/2006			30.67			8.26	22.41								
6/22/2006			30.67			9.47	21.20								
9/22/2006	P		30.67			9.83	20.84	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.88	5.9
12/7/2006			30.67			9.76	20.91								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-21 Cont.															
3/12/2007			30.67			9.08	21.59								
6/20/2007			30.67			9.89	20.78								
9/20/2007	P		30.67			10.20	20.47	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.28	7.56
12/14/2007			30.67			10.18	20.49								
3/10/2008			30.67			9.23	21.44								
MW-22															
3/13/2002			29.29			9.86	19.43	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002			29.29			10.65	18.64	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
9/20/2002			29.29			11.05	18.24	< 50	< 0.50	< 0.50	< 0.50	<1.50	< 0.500		
12/30/2002			29.29			8.28	21.01	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
3/27/2003			29.29			9.85	19.44	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		i, q	29.29			10.20	19.09								
9/15/2003			29.29			10.81	18.48	< 500	<5.0	< 5.0	<5.0	<5.0	< 5.0		
12/04/2003			29.29			10.49	18.80								
03/10/2004	P		31.43			9.24	22.19	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.3	6.6
06/10/2004			31.43			10.60	20.83								
09/22/2004	P		31.43			10.94	20.49	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.9	7.0
12/13/2004			31.43			9.73	21.70								
03/10/2005	P		31.43			8.65	22.78	<100	< 0.50	< 0.50	< 0.50	<4.0	< 0.50	3.3	7.4
06/29/2005			31.43			10.25	21.18								
09/14/2005	P		31.43			10.65	20.78	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.0	7.0
12/13/2005			31.43			10.39	21.04								
03/20/2006			31.43			8.89	22.54								
6/22/2006			31.43			10.21	21.22								
9/22/2006	P		31.43			10.62	20.81	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.13	7.2
12/7/2006			31.43			10.44	20.99								
3/12/2007			31.43			9.75	21.68								
6/20/2007			31.43			10.64	20.79								
9/20/2007	P		31.43			10.95	20.48	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	10.88	7.40
12/14/2007			31.43			11.03	20.40								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ;	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-22 Cont.															
3/10/2008			31.43			9.90	21.53								
MW-23															
3/13/2002			30.99			11.01	19.98	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002		q	30.99			11.59	19.40								
9/20/2002		q	30.99			12.00	18.99								
12/30/2002		q	30.99			9.42	21.57								
3/27/2003			30.99			11.00	19.99	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		q	30.99			11.47	19.52								
9/15/2003		q	30.99			11.84	19.15								
12/04/2003		q	30.99			11.61	19.38								
03/10/2004		q	33.16			10.24	22.92								
06/10/2004		q	33.16			11.60	21.56								
09/22/2004	P		33.16			11.95	21.21	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	6.9
12/13/2004			33.16			10.88	22.28								
03/10/2005			33.16			9.63	23.53								
06/29/2005			33.16			11.28	21.88								
09/14/2005	P		33.16			11.70	21.46	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.3	6.9
12/13/2005			33.16			11.44	21.72								
03/20/2006			33.16			9.81	23.35								
6/22/2006			33.16			11.25	21.91								
9/22/2006	P		33.16			11.52	21.64	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.71	7.3
12/7/2006			33.16			11.50	21.66								
3/12/2007			33.16			10.76	22.40								
6/20/2007			33.16			11.68	21.48								
9/20/2007	P		33.16			11.95	21.21	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.96	7.19
12/14/2007			33.16			12.05	21.11								
3/10/2008			33.16			10.92	22.24								
MW-25															
3/13/2002			33.81			10.99	22.82	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ	g/L)			
Well and			TOC	Screen	Screen	DTW	Elevation	GRO/			Ethyl-	Total		DO	
Sample Date	P/NP	Comments	(feet msl)	(ft bgs)	(ft bgs)	(feet bgs)	(feet msl)	TPHg	Benzene	Toluene	Benzene	Xylenes	MTBE	(mg/L)	pН
MW-25 Cont.															
6/28/2002			33.81			11.26	22.55	<50	< 0.50	< 0.50	< 0.50	< 0.50	36		
9/20/2002			33.81			11.65	22.16	117	< 0.50	< 0.50	< 0.50	<1.50	259		
12/30/2002		d, f	33.81			9.33	24.48	95	13	< 0.50	< 0.50	< 0.50	98		
3/27/2003			33.81			10.82	22.99	150	< 0.50	< 0.50	< 0.50	< 0.50	90		
6/30/2003			33.81			11.20	22.61	< 500	<5.0	< 5.0	<5.0	<5.0	130		
9/15/2003			33.81			11.62	22.19	220	<1.0	<1.0	<1.0	<1.0	140		
12/04/2003	P		33.81			11.41	22.40	81	< 0.50	< 0.50	< 0.50	< 0.50	36	1.2	7.0
03/10/2004	P		36.33			10.04	26.29	< 50	< 0.50	< 0.50	< 0.50	< 0.50	14	1.2	6.7
06/10/2004	P		36.33			11.40	24.93	<50	< 0.50	< 0.50	< 0.50	< 0.50	17	0.8	7.1
09/22/2004	P		36.33			11.74	24.59	< 50	< 0.50	< 0.50	< 0.50	< 0.50	29	1.1	7.0
12/13/2004	P		36.33			10.72	25.61	<50	< 0.50	< 0.50	< 0.50	< 0.50	44	1.22	6.9
03/10/2005	P		36.33			9.45	26.88	<100	< 0.50	< 0.50	< 0.50	<4.0	7.4	2.0	7.7
06/29/2005	P		36.33			10.91	25.42	<50	< 0.50	< 0.50	< 0.50	< 0.50	20	0.97	6.9
09/14/2005	P		36.33			11.35	24.98	< 50	< 0.50	< 0.50	< 0.50	< 0.50	8.0	1.2	6.9
12/13/2005	P		36.33			11.14	25.19	<50	< 0.50	< 0.50	< 0.50	< 0.50	13	0.8	6.8
03/20/2006	P		36.33			9.71	26.62	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.4	1.0	6.9
6/22/2006	P		36.33			10.89	25.44	<50	< 0.50	< 0.50	< 0.50	< 0.50	3.5	1.62	7.0
9/22/2006	P		36.33			11.33	25.00	< 50	< 0.50	< 0.50	< 0.50	< 0.50	18	1.22	7.1
12/7/2006	P		36.33			11.22	25.11	<50	< 0.50	< 0.50	< 0.50	< 0.50	14	0.71	7.20
3/12/2007	P		36.33			10.47	25.86	< 50	< 0.50	< 0.50	< 0.50	< 0.50	7.3	2.77	7.28
6/20/2007	P		36.33			11.40	24.93	<50	< 0.50	< 0.50	< 0.50	< 0.50	2.8	0.66	7.24
9/20/2007	P		36.33			11.74	24.59	< 50	< 0.50	< 0.50	< 0.50	< 0.50	4.7	1.94	7.29
12/14/2007	P		36.33			11.36	24.97	<50	< 0.50	< 0.50	< 0.50	< 0.50	5.2	1.61	6.98
3/10/2008	P		36.33			10.65	25.68	< 50	< 0.50	< 0.50	< 0.50	< 0.50	6.0	1.03	6.94
6/13/2008	P		36.33			11.50	24.83	<50	<0.50	<0.50	<0.50	<0.50	2.2	0.77	7.15
MW-26															
3/13/2002			33.71			11.27	22.44	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<2.5		
6/28/2002		q	33.71			11.70	22.01								
9/20/2002		q	33.71			12.10	21.61								
12/30/2002		q	33.71			9.60	24.11								

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

				Top of	Bottom of		Water Level			Concentra	tions in (µ;	g/L)			
Well and Sample Date	P/NP	Comments	TOC (feet msl)	Screen (ft bgs)	Screen (ft bgs)	DTW (feet bgs)	Elevation (feet msl)	GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	МТВЕ	DO (mg/L)	pН
MW-26 Cont.															
3/27/2003			33.71			11.15	22.56	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
6/30/2003		q	33.71			11.61	22.10								
9/15/2003		q	33.71			12.01	21.70								
12/04/2003		q	33.71			11.78	21.93								
03/10/2004		q	35.70			10.45	25.25								
06/10/2004		q	35.70			11.82	23.88								
09/22/2004	P		35.70			12.05	23.65	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	7.0
12/13/2004			35.70			11.08	24.62								
03/10/2005			35.70			9.80	25.90								
06/29/2005			35.70			11.30	24.40								
09/14/2005	P		35.70			11.55	24.15	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.0	6.8
12/13/2005			35.70			11.54	24.16								
03/20/2006			35.70			10.06	25.64								
6/22/2006			35.70			11.29	24.41								
9/22/2006	P		35.70			11.63	24.07	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.10	7.2
12/7/2006			35.70			11.11	24.59								
3/12/2007			35.70			10.87	24.83								
6/20/2007			35.70			11.80	23.90								
9/20/2007	P		35.70			12.13	23.57	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.59	7.21
12/14/2007			35.70			12.14	23.56								
3/10/2008			35.70			11.05	24.65								

#### SYMBOLS & ABBREVIATIONS:

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

DO = Dissolved oxygen

DTW = Depth to water in ft bgs

ft bgs = feet below ground surface

ft MSL = feet above mean sea level

GRO = Gasoline range organics, range C4-C12

GWE = Groundwater elevation measured in ft MSL

mg/L = Milligrams per liter

MTBE = Methyl tert butyl ether

NP = Well not purged prior to sampling

P = Well purged prior to sampling

TOC = Top of casing measured in ft MSL

TPH-g = Total petroleum hydrocarbons as gasoline

 $\mu g/L = Micrograms per liter$ 

#### NOTES:

- a = Well elevation data obtained from Quarterly Groundwater Monitoring and Site Status Report, Fourth Quarter 1994.
- b = GRO/TPH-g Chromatogram Pattern: Unidentified Hydrocarbons C6-C10
- c = Hydrocarbon pattern for GRO/TPH-g is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
- d = GRO/TPH-g Chromatogram Pattern: C6-C10
- e = This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.
- f = The continuing calibration was outside the acceptance criteria. This should be considered in evaluating the result for its intended purpose.
- g = Groundwater extraction system pumping; inaccurate DTW.
- h = Groundwater extraction system not pumping.
- i = Sampling frequency changed from quarterly to annually per recommendations in first quarter 2003 groundwater monitoring report.
- j = Well not accessible this quarter.
- k = Well destroyed.
- 1 = MTBE confirmed by EPA Method 8260B (Method 8260B result is the second value.)
- m = No gauging port. Sample taken from spigot.
- n = Well inaccessible as homeowner not available.
- o = Pump not working or well dry.
- p = Gauged with pump in well. Opened cam lock fitting at wellhead.
- q = Well sampled annually.
- r = Well inaccessible--car parked over well.
- s = Well resampled on 3/26/2008; the initial sample on 3/10/2008 was meant to be purged.
- u = Well sampled semi-annually.

#### NOTES:

Site surveyed to NAVD'88 datum on March 2, 2004.

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported. Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12 Values for DO and pH were obtained through field measurements.

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

Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Concentrati	ons in (µg/L)				
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
17372 VM									
3/27/2003	<100	<20	<0.50	<0.50	<0.50	<0.50			
9/15/2003		<20	<0.50						
	<100	<20		<0.50	<0.50	<0.50	<0.50	<0.50	
12/04/2003 03/10/2004	<100	<20	<0.50 <0.50	<0.50 <0.50	<0.50	<0.50 <0.50	<0.50		
06/10/2004	<100 <100	<20	<0.50	<0.50	<0.50 <0.50	<0.50	<0.50	<0.50	
09/22/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/13/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
03/10/2005	<100	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	<100	<10	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
642 H									
3/13/2002	<100	<20		< 0.50	< 0.50	< 0.50			
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
6/30/2003									a
9/15/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
12/04/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
E-1A									
3/27/2003	<100	<20	60	< 0.50	< 0.50	2.3			
6/30/2003	<100	<20	37	< 0.50	< 0.50	1.6	< 0.50	< 0.50	
9/15/2003	<100	<20	49	< 0.50	< 0.50	2.4	< 0.50	< 0.50	
12/04/2003	<100	<20	19	< 0.50	< 0.50	0.89			
03/10/2004	<200	<40	38	<1.0	<1.0	2.3	<1.0	<1.0	
06/10/2004	<100	<20	46	< 0.50	< 0.50	2.2	< 0.50	< 0.50	
09/22/2004	<100	<20	17	< 0.50	< 0.50	0.98	< 0.50	< 0.50	
12/13/2004	<100	<20	15	< 0.50	< 0.50	0.75	< 0.50	< 0.50	
03/10/2005	<100	<10	22	< 0.50	< 0.50	0.95	< 0.50	< 0.50	
06/29/2005	<100	<20	14	< 0.50	< 0.50	0.74	< 0.50	< 0.50	
09/14/2005	<100	<20	13	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	c
12/13/2005	<100	<20	12	< 0.50	< 0.50	0.61	< 0.50	< 0.50	
6/22/2006	<300	<20	13	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
3/12/2007	<300	<20	5.6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	

Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Concentrati	ons in (µg/L)				
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
E-1A Cont.									
6/20/2007	<300	<20	6.8	<0.50	<0.50	<0.50	<0.50	< 0.50	
		<20							
9/20/2007	<300	<20	0.80	<0.50	<0.50	<0.50	<0.50 <0.50	<0.50	
12/14/2007	<300		2.0		<0.50	<0.50			c
3/10/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
3/26/2008	<300	<10	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	d
MW-5									
3/27/2003	<100	24	59	< 0.50	< 0.50	2.2			
6/30/2003	<100	22	58	< 0.50	< 0.50	2.1	< 0.50	< 0.50	
9/15/2003	< 500	<100	61	<2.5	<2.5	2.5			
12/04/2003	<100	<20	42	< 0.50	< 0.50	1.9			
03/10/2004	<100	<20	9.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
06/10/2004	<100	<20	31	< 0.50	< 0.50	1.0	< 0.50	< 0.50	
09/22/2004	<100	<20	15	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
12/13/2004	<100	<20	5.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
03/10/2005	<100	<10	3.3	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	b
06/29/2005	<100	<20	6.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	13	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	c
03/20/2006	<300	<20	3.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
3/12/2007	<300	<20	5.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	4.3	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
3/10/2008	<300	<10	2.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-8									
3/27/2003	<100	<20	33	<0.50	<0.50	0.53			
6/30/2003	<100	<20	15	< 0.50	< 0.50	0.85	< 0.50	< 0.50	
9/15/2003	<100	<20	41	< 0.50	< 0.50	5.3			
12/04/2003	<100	<20	24	< 0.50	< 0.50	3.7			
03/10/2004	<100	<20	2.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
06/10/2004	<100	<20	2.1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/22/2004	<100	<20	18	< 0.50	< 0.50	1.5	< 0.50	< 0.50	

Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Concentrati	ons in (µg/L)				
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
MW-8 Cont.									
12/13/2004	<100	<20	7.1	<0.50	<0.50	0.78	<0.50	< 0.50	
03/10/2005	<100	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	b
06/29/2005	<100	<20	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	
09/14/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	c
03/20/2006	<300	<20	0.60	<0.50	<0.50	< 0.50	<0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	<0.50	< 0.50	
3/12/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	13	< 0.50	< 0.50	1.2	< 0.50	< 0.50	
3/10/2008	<300	<10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-9									
3/27/2003	<100	<20	<0.50	<0.50	<0.50	<0.50			
9/15/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
03/10/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
09/22/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
03/10/2005	<100	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
09/14/2005	<100	<20	< 0.50	<0.50	< 0.50	< 0.50	<0.50	<0.50	c
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-10									
3/27/2003	<1,000	<200	330	<5.0	<5.0	15			
6/30/2003	<2,000	<400	750	<10	<10	28	<10	<10	
9/15/2003	<1,000	<200	430	<5.0	<5.0	15	<5.0	<5.0	
12/04/2003	<500	<100	110	<2.5	<2.5	4.8			
03/10/2004	<500	120	140	<2.5	<2.5	<2.5	<2.5	<2.5	
06/10/2004	<1,000	<200	410	<5.0	<5.0	11	<5.0	<5.0	
09/22/2004	<100	54	87	< 0.50	< 0.50	3.8	< 0.50	< 0.50	
12/13/2004	<200	220	110	<1.0	<1.0	4.5	<1.0	<1.0	
03/10/2005	<100	50	86	< 0.50	< 0.50	2.2	< 0.50	< 0.50	
06/29/2005	< 500	110	160	<2.5	<2.5	4.6	<2.5	<2.5	
09/14/2005	< 500	300	140	<2.5	<2.5	3.5	<2.5	<2.5	с

Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Concentrati	ons in (µg/L)				
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
MW-10 Cont.									
12/13/2005	<100	190	47	<0.50	<0.50	1.9	<0.50	< 0.50	
					12.75				
03/20/2006	<300	72	34	<0.50	<0.50	0.85	<0.50	<0.50	
6/22/2006 9/22/2006	<300 <300	130 51	21	<0.50 <0.50	<0.50 <0.50	0.56 <0.50	<0.50 <0.50	<0.50 <0.50	c
		24	10	<0.50	<0.50		<0.50		
12/7/2006 3/12/2007	<300 <300	46		<0.50	<0.50	<0.50 <0.50	<0.50	<0.50	
			18						
6/20/2007	<300	<20	5.9	<0.50	<0.50	<0.50	<0.50	<0.50	
9/20/2007	<300	<20 <20	4.6 6.9	<0.50 <0.50	<0.50 <0.50	<0.50	<0.50	<0.50	
	<300					<0.50	<0.50		c
3/10/2008	<300	22	13	<0.50	<0.50	<0.50	<0.50	<0.50	
6/13/2008	<300	<10	5.8	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-11									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
6/30/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/15/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
12/04/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
03/10/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
06/10/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
12/13/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
03/10/2005	<100	<10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	b
06/29/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	с
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-14									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
03/10/2004									Not Sampled
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	

Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Concentration	ons in (µg/L)				
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
MW-14 Cont.									
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2000	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	<300	\20	₹0.50	<0.50	₹0.50	<0.50	₹0.50	<0.50	
MW-15									
3/27/2003	<100	<20	17	< 0.50	< 0.50	< 0.50			
6/30/2003	<100	<20	12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/15/2003	<100	<20	10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
12/04/2003	<100	<20	6.4	< 0.50	< 0.50	< 0.50			
03/10/2004	<100	<20	11	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
06/10/2004	<100	<20	5.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
03/10/2005	<100	<10	5.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	b
03/20/2006	<300	<20	15	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	11	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
3/10/2008	<300	<10	19	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-16									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
9/15/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
03/10/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
03/10/2005	<100	<10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	b
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-18									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
03/10/2004									Not Sampled
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	

# Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Canaantuati	ong in (ug/I )				
Sample Date	Ethanol	TBA	MTBE	DIPE	ens in (µg/L) ETBE	TAME	1,2-DCA	EDB	Comments
MW 21							,		
MW-21									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
03/10/2004									Not Sampled
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-22									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
9/15/2003	<1,000	<200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
03/10/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
03/10/2005	<100	<10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	b
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-23									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
03/10/2004									Not Sampled
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
MW-25									
3/27/2003	<100	<20	90	< 0.50	< 0.50	40			
6/30/2003	<1,000	<200	130	<5.0	<5.0	81	<5.0	<5.0	
9/15/2003	<200	<40	140	<1.0	<1.0	71	<1.0	<1.0	
12/04/2003	<100	<20	36	< 0.50	< 0.50	17			
03/10/2004	<100	<20	14	< 0.50	< 0.50	6.5	< 0.50	< 0.50	
06/10/2004	<100	<20	17	< 0.50	< 0.50	7.2	< 0.50	< 0.50	
09/22/2004	<100	<20	29	< 0.50	< 0.50	18	< 0.50	< 0.50	

Table 2. Summary of Fuel Additives Analytical Data Station #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Well and				Concentration			ouic vai a, s		
Sample Date	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Comments
MW-25 Cont.									
12/13/2004	<100	45	44	< 0.50	< 0.50	18	< 0.50	< 0.50	
03/10/2005	<100	<10	7.4	< 0.50	< 0.50	2.3	< 0.50	< 0.50	b
06/29/2005	<100	<20	20	< 0.50	< 0.50	12	< 0.50	< 0.50	
09/14/2005	<100	<20	8.0	< 0.50	< 0.50	4.1	< 0.50	< 0.50	
12/13/2005	<100	<20	13	< 0.50	< 0.50	5.5	< 0.50	< 0.50	
03/20/2006	<300	<20	5.4	< 0.50	< 0.50	2.4	< 0.50	< 0.50	
6/22/2006	<300	<20	3.5	< 0.50	< 0.50	1.7	< 0.50	< 0.50	c
9/22/2006	<300	<20	18	< 0.50	< 0.50	7.3	< 0.50	< 0.50	
12/7/2006	<300	<20	14	< 0.50	< 0.50	6.1	< 0.50	< 0.50	
3/12/2007	<300	<20	7.3	< 0.50	< 0.50	2.9	< 0.50	< 0.50	
6/20/2007	<300	<20	2.8	< 0.50	< 0.50	1.3	< 0.50	< 0.50	
9/20/2007	<300	<20	4.7	< 0.50	< 0.50	1.9	< 0.50	< 0.50	
12/14/2007	<300	<20	5.2	< 0.50	< 0.50	1.8	< 0.50	< 0.50	c
3/10/2008	<300	<10	6.0	< 0.50	< 0.50	1.7	< 0.50	< 0.50	
6/13/2008	<300	<10	2.2	<0.50	<0.50	0.58	<0.50	<0.50	
MW-26									
3/27/2003	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50			
03/10/2004									Not Sampled
09/22/2004	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
09/14/2005	<100	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/22/2006	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
9/20/2007	<300	<20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	

#### SYMBOLS & ABBREVIATIONS:

- -- = Not analyzed/applicable/measured/available
- < = Not detected at or above the laboratory reporting limit.
- 1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

 $\mu g/L = Micrograms per Liter$ 

#### FOOTNOTES:

- a = Well was not accessible this quarter.
- b = Possible high bias due to CCV falling outside acceptance criteria for TBA.
- c = Calibration verification was within method limits but outside the contract limits for ethanol.
- d = Well resampled on 3/26/2008; the initial sample on 3/10/2008 was meant to be purged.

#### NOTES:

Well E-1A was previously named MW-12.

All volatile organic 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 #608, 17601 Hesperian Boulevard, San Lorenzo, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
6/28/2002	West	0.003
9/20/2002	West	0.00196
12/30/2002	West	0.003
3/27/2003	West	0.002
6/30/2003	West-Southwest	0.001
9/15/2003	West	0.003
12/4/2003	West-Southwest	0.003
3/10/2004	West	0.003
6/10/2004	West	0.006
9/22/2004	West	0.006
12/13/2004	West-Southwest	0.003
3/10/2005	West-Southwest	0.003
6/29/2005	West-Southwest	0.003
9/14/2005	West-Southwest	0.003
12/13/2005	West	0.003
3/20/2006	West-Southwest	0.003
6/22/2006	West-Southwest	0.003
9/22/2006	West-Southwest	0.003
12/7/2006	West	0.004
3/12/2007	West	0.003
6/20/2007	West	0.004
9/20/2007	West	0.003
12/14/2007	West	0.004
3/10/2008	West	0.004
6/13/2008		

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 4a.

Current Ground-Water Sampling Schedule
Atlantic Richfield Company Station #608

17601 Hesperian Boulevard, San Lorenzo, California

Well	First	Second	Third	Fourth	Sampling			
Number	Quarter	Quarter	Quarter	Quarter	Frequency			
Groundwater Mon	itoring Wells							
MW-5	X		X		Semiannually (1st and 3rd Quarter)			
MW-7	Removed from Progam							
MW-8	X		X		Semiannually (1st and 3rd Quarter)			
MW-9			X		Annually (3rd Quarter)			
MW-10	X	Х	X	Χ	Quarterly			
MW-11			Х		Annually (3rd Quarter)			
E-1A	Х	Х	Х	Х	Quarterly			
MW-13	Removed from Program							
MW-14			Х		Annually (3rd Quarter)			
MW-15	Х		Х		Semiannually (1st and 3rd Quarter)			
MW-16			Х		Annually (3rd Quarter)			
MW-17	Destroyed							
MW-18			Х		Annually (3rd Quarter)			
MW-19	Removed from Program							
MW-20	Destroyed							
MW-21			Х		Annually (3rd Quarter)			
MW-22			Х		Annually (3rd Quarter)			
MW-23			Х		Annually (3rd Quarter)			
MW-24	Removed from Program							
MW-25	X	Χ	Х	Χ	Quarterly			
MW-26			Х		Annually (3rd Quarter)			
Domestic Irrigation Wells								
590H	Destroyed							
633H	Destroyed							
634H	Pump Not Functional, Well Not in Use							
642H	X	Χ	X	Χ	Quarterly			
675H	Destroyed							
17197 VM	Destroyed							
17200 VM	Destroyed							
17203 VM	Destroyed							
17302 VM	Pump Not Functional, Well Not in Use							
17348 VE	Pump Not Functional, Well Not in Use							
17349 VM	Destroyed							
17371 VM	Destroyed							
17372 VM	X	Х	X	X	Quarterly			
17393 VM	Destroyed							

Notes: Beginning third quarter 2005, the sampling schedule was changed.

# Table 4b. Modified Ground-Water Sampling Schedule Atlantic Richfield Company Station #608 17601 Hesperian Boulevard, San Lorenzo, California

	F: .	0 1	T	- u				
Well	First	Second	Third	Fourth	Sampling			
Number	Quarter	Quarter	Quarter	Quarter	Frequency			
Groundwater Mon								
MW-5	X		X		Semiannually (1st and 3rd Quarter)			
MW-7	Removed from Progam							
MW-8	X Semiannually (1st and 3rd Quarter)							
MW-9	Removed from Progam							
MW-10	Х	X	Χ	Χ	Quarterly			
MW-11	Removed from Progam							
E-1A	Х	Χ	X	Χ	Quarterly			
MW-13	Removed from Program							
MW-14	Removed from Progam							
MW-15	X		X		Semiannually (1st and 3rd Quarter)			
MW-16			X		Annually (3rd Quarter)			
MW-17	Destroyed							
MW-18	Removed from Program							
MW-19	Removed from Program							
MW-20	Destroyed							
MW-21	Removed from Program							
MW-22	Removed from Program							
MW-23	Removed from Program							
MW-24	Removed from Program							
MW-25	Х		X		Semiannually (1st and 3rd Quarter)			
MW-26			Remove	d from Prog	ram			
Domestic Irrigation	า Wells							
590H	Destroyed							
633H	Destroyed							
634H	Pump Not Functional, Well Not in Use							
642H	Removed from Program							
675H	Destroyed							
17197 VM	Destroyed							
17200 VM	Destroyed							
17203 VM	Destroyed							
17302 VM	Pump Not Functional, Well Not in Use							
17348 VE	Pump Not Functional, Well Not in Use							
17349 VM	Destroyed							
17371 VM	Destroyed							
17372 VM	Removed from Program							
17393 VM	Destroyed							
	2000,04							

# APPENDIX A

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





July 1, 2008

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

Re: Groundwater Sampling Data Package, BP Service Station No. 608, located at 17601 Hesperian Boulevard, San Lorenzo, California.

# **General Information**

Data Submittal Prepared / Reviewed by: Becky Carroll / Steve Carter

Phone Number: (530) 676-6004

On-Site Supplier Representatives: Levi Ford

Sampling Date: June 13, 2008 Arrival: 5:30 Departure: 08:00

Weather Conditions: Clear

Unusual Field Conditions: None noted.

Scope of Work Performed: Quarterly monitoring and sampling.

Variations from Work Scope: Well 642H is located in a residential area. The property owner has not responded to written requests to enter property. The pump is down in well 17372VM, therefore it was not sampled. Well E-1A is located within a large well box (>24" diameter cover) and for safety reasons was not accessed for sampling and gauging during this event.

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

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Stephen J. Card

Jay R. Johnson, P.G. Project Manager

No. 5511

#### **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

Signature Site August Signature Site August Signature Site August Signature Signature

Site Number Arco 608

Project Number E-608

Project PM Jay Johnson

DATE 4/13/08

	Wat	ter Level D	ala			Purge \	olume Cald	ulations		1		Metho	13/0				
	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			a other	DTW at sample lime	aimple Reco	0 1	Field D - DO - (mg/L
MW-10 07 MW-25 06	,25	N/A N/A	10-05	18-23	12.20	3" 2"	1.0	12.20	12-0 3-50		X			(feet) 10-07 11-40	SEX II	0736	0.7
E-1A 642H 7372VM	1	SAMPL	Veult B AS	PER PER	not S CHRIS			N 6/	12/08					11-40	MW-25	<u> </u>	0.7
B 00	000							į.							TB	0600	
				-											,		
																	·

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

Conductivity

DO

1



Site Address 17601 Hesperin Blud.
City San Lorenzo
Site Sampled by Levi Ford

Site Number 1 608

Project No. E - 608

Project PM Jan Januar

Date Sampled 6/13/08

Well ID M	N-25		0	644	Well ID					
purge start tim		٤٢		ador		MW-10			07	36
	Temp C		cond	gallons	purge start		ciler		No	00
time	19-0	7.20	781		time	1	mp C	1	cond	ga.
time time	18.8	7.15	743				-0	7.18	629	1
time			713	1	time			7.13	635	(
time					time		.0	7.15	645	12
purge stop time		OR	P= 5							
Well ID					pugre stop ti	me		ORP	= 76	
purge start time					Well ID		-			
	Temp C	рН	cond	gallons	ourge start tir	ne				
time			CONG			Tem	p C	рН	cond	gallo
time					me					
time					me .					
time					те		_			
purge stop time	<u> </u>				me					
Well ID					irge stop time	e				
purge start time					ell ID ·					
	Temp C	рН с	and I	- 11	rge start time	<del>)</del>				
time		P11   C	ond ga	allons		Temp	c	pH c	ond ga	llons
time				tim						
time		-		time					1	
time				time						
purge stop time		·		time						
Well ID					je stop time				3	
purge start time				Well						
	emp C pl	<u> </u>		11	e start time	· · · · · · · · · · · · · · · · · · ·				$-\parallel$
ime		cor	d gallo			Temp C	ph	d cor	nd gallo	ns
ime				time					3=	
me		_		time						$\exists$
me		-		time						$\dashv$
urge stop time				time						$\dashv$
				purge	stop time			·		$\dashv$

qu

12-2

## WELLHEAD OBSERVATION FORM

Site Name/Number: Arch 608

Date: 6/13/08

Technican: | evi Fort



	Box in Good	Lock	Water in	Water Level	Well	Bolts	Bolts	Bolt Holes	Cracked or	Cracked or	Grout Level	
Well I.D.	Condition?	Missing?	Wellbox?	Relative to Cap?	Cap?	Missing?	Stripped?	Stripped?	Broken Lid?	Broken Box?	more than 1ft below TOC?	Additional Comments (such as missing lid, concrete needs
	X = Yes Blank = No	X = Yes (replaced) Blank = No	X = Yes Blank = No	A = Above cap B = Below cap L = Level w/cap	I = Intact M = Missing or Compromised (replaced)	X = Yes Blank = No	X = Yes Blank = No	X = Yes Blank = No	X ≃ Yes Blank = No	X = Yes Blank = No	X = Yes Blank = No	replacement, or other - explain)
Mw-25			X	В	T							
MW-10	X				I							
					***************************************							
						:						
								1-1				
											-	
												:
RUM INV	VENTORY					GENERAL	SITE CON	DITIONS				
rums on sit	Steel:	Yes No	(circle) Plastic:			Make notes o	n housekeeni	ine condition	s (such as tras mpound fenc	sh around ren es, grafitti on	nediation syste compound, et	em enclosure/compound, bent or
ote whethe	er drums are fu	ll or empty, s	olids or liqui	ds:	-				······································			•
um label ir	nfo (descriptio	n, date, conta	act info):		-							
	3-28-08, SS)				- - -							

# **NO.** 669923

# NON-HAZARDOUS WASTE DATA FORM

200 200 200 200	NGT. REQUIRED NAME BP WEST COAST PRODUCTS LLC ARCO # Sen Little NO. NGT. REQUIRED	
	ADDRESS P.O. BOX 80249 RANCHO SANTA MARGARITA	
Я	CITY, STATE, ZIP A 52688	
GENERATO	CONTAINERS: No	
1777289600498		
D BY	WASTE DESCRIPTION DISTRIBUTED WATER	
LETED	1. WATER 99-100% 5	
COMPLI	2. TPH <1% 6	
BEC	3	· · · · · · · · · · · · · · · · · · ·
10	4	
	PROPERTIES:	
	THE GENERATOR CERTIFIES THAT THE	###s 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	NON-HAZARDOUS.  Larry Moothart BESI for BP	117/19
	Transporter #2 EPA	DATÉ
ITER	NAME STOTIOS ENVIRONMENTAL NO. NO. NO.	
TRANSPORTER	SERVICE ORDER NO	
RANS	CITY, STATE, ZPANERON PARK, CA 95682 PICK UP DATE	
F	PHONE NO. 530-675-2031	
	TRUCK, UNIT, I.D. NO. TYPED OR PRINTED FULL NAME & SIGNATURE	DATE
	NAME INSTRAT, INC ID. NO. DISPOSAL METHOD	
	ADDRESS 1105 AIRFORT RD #C	
۸.	CITY, STATE, ZIPRIO VISTA, CA 945/1	
FACILITY	PHONE NO. 530-753-1829	
	TYPED OR PRINTED FULL NAME & SIGNATURE	
TSD		DATE
	GEN OLD/NEW L A TONS	
	TRANS S B	
	C/Q RT/CD HWDF NONE DISCREPANCY	· .

### Atlantic Richfield Company

A BP affiliated company

**Chain of Custody Record** 

**Project Name:** 

ARCO 608

BP BU/AR Region/Enfos Segment:

BP > Americas > West > Retail > Alameda > 608

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy): S+d / TAT

- 1		
	On-site Time: 0530	Temp: 70
	Off-site Time: 0800	Temp: 840
3	Sky Conditions: Clear	
	Meteorological Events:	
	Wind Speed: ——	Direction:

Lab Name: Cal Science	BP/AR Facility No.: 608	Consultant/Contractor: Stratus Environmental Inc.					
Address: 7440 Lincoln Way	DD/AD E- Tr. A 11	1110.					
Garden Grove Ca. 92841-1427	Site Lat/Long:	Address: 3330 Cameron Park Drive, Suite 550					
Lab PM: Linda Scharpenberg	C-15. CILLIDAY	Cameron Park, CA 95682					
Tele/Fax: 714-895-5494 714-895-7401 (fax)	E 6 D : 127	Consultant/Contractor Project No.: E608-03					
BP/AR PM Contact: Paul Supple	Provision on OOC (sind and )	Consultant/Contractor PM: Jay Johnson					
Address: 2010 Crow Canyon Place, Suite 150	Phase/N/DC.	Tele/Fax: (530) 676-6000 / (530) 676-6005					
San Ramon, CA	CL Di /T- 1	Report Type & QC Level: Level 1 with EDF					
Tele/Fax: 925-275-3506	Cost El	E-mail EDD To: shayes@stratusinc.net					
Lab Bottle Order No: Matrix		nvoice to: Atlantic Richfield Co.					
Item No. Samble Description Time Sook Soil/Solid Water/Liquid Air	Request Reques	Sample Point Lat/Long and Comments  *Oxy= MTBE,TAME,ETBE,DIPE,TBA					
1 MW-10 0736 43 X		X X					
2 MW-25 0644 6/3 X							
3		$\times$ $\times$					
4							
5							
6							
7							
8							
9 TB0608061308 0600 6/13 X	2 ×						
10		7 HOLD					
1301 1010	Relinquished By / Affiliation Date Time	Accepted By / Affiliation Date Time					
Sampler's Company: Stratus Environmental, Inc. Shipment Date: 06/(3/09)	levi ford. Stratus Env. 6/13/00 1200	Time					
Shipment Method: G-SO							
Shipment Tracking No: 105867110							
Special Instructions: Please cc results to rmiller(	@broadbentinc.com						
Custody Sools In Discov V. (27							
Custody Seals In Place: Yes / No Temp Blank: Ye	es / No   Cooler Temp on Receipt: °F/C   Trip Blank: Ye	es / No MS/MSD Sample Submitted: Ves / No					



June 30, 2008

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

Subject:

Calscience Work Order No.:

08-06-1455

Client Reference:

**ARCO 608** 

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 6/14/2008 and analyzed in accordance with the attached chain-of-custody.

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

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

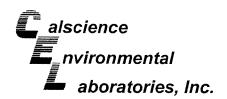
Sincerely,

Caiscience Environmental

Laboratories, Inc.

Linda Scharpenberg

Project Manager



#### **Analytical Report**

Stratus Environmental, inc.

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

Date Received:

06/14/08

Work Order No:

08-06-1455

Preparation:

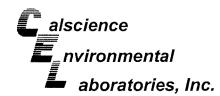
EPA 5030B

Method: EPA 8015B (M)

Project: ARCO 608

Page 1 of 1

							1 4	190 1 01 1
Client Sample Number		Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-10		08-06-1455-1-D	06/13/08 07:36	Aqueous	GC 29	06/18/08	06/19/08 08:41	080617B03
Parameter	Result	<u>RL</u>	DF	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	410	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	95	38-134						
MW-25		08-06-1455-2-D	06/13/08 06:44	Aqueous	GC 29	06/18/08	06/19/08 09:15	080617B03
<u>Parameter</u>	Result	RL	<u>DF</u>	<u>Qual</u>	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	69	38-134						
Method Blank		099-12-695-171	N/A	Aqueous	GC 29	06/18/08	06/18/08 19:11	080617B03
<u>Parameter</u>	Result	<u>RL</u>	DF	Qual	<u>Units</u>			
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,4-Bromofluorobenzene	69	38-134						



### **Analytical Report**

Stratus Environmental, inc.

3330 Cameron Park Drive, Suite 550

Cameron Park, CA 95682-8861

Date Received:

Work Order No:

Preparation: Method:

Units:

06/14/08

08-06-1455

**EPA 5030B** 

EPA 8260B ug/L

Project:	ARCO	608
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Page 1 of 1

7 10,000. 71.100.000											
Client Sample Number			L	ab Sample Number	Date/Time Collected	Matrix	Instrumen	Date t Prepared	Date/T d Analyz		QC Batch II
MW-10			08-06-	-1455-1-A	06/13/08 07:36	Aqueous	GC/MS Z	06/20/08	06/20/ 16:5		080620L01
Parameter	Result	RL	DF	<u>Qual</u>	<u>Parameter</u>			Result	<u>RL</u>	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Buty	Ether (MTBE	Ξ)	5.8	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alc	ohol (TBA)		ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl E	ther (DIPE)		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl B	Ether (ETBE)		ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Me	thyl Ether (TA	ME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol		•	ND	300	1	
Surrogates:	REC (%)	Control		Qual	Surrogates:			REC (%)	<u>Control</u>		<u>Qual</u>
		Limits		***************************************	•				<u>Limits</u>		
1,2-Dichloroethane-d4	105	73-157			Dibromofluoro	omethane		105	82-142		
Toluene-d8	105	82-112			1,4-Bromofluo	orobenzene		95	75-105		
MW-25			08-06-	1455-2-A	06/13/08 06:44	Aqueous	GC/MS Z	06/20/08	06/20/ 19:0		080620L01
		- Di		0 -1	S			Desuit			01
Parameter	Result	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Parameter</u>			Result	RL	DF	<u>Qual</u>
Benzene	ND	0.50	1		Methyl-t-Butyl		<del>.</del> )	2.2	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alc	· ,		ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Et	, ,		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl E	, ,		ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Me	thyl Ether (TA	ME)	0.58	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol			ND	300	1	
Surrogates:	<u>REC (%)</u>	Control Limits		Qual	Surrogates:			REC (%)	Control Limits		<u>Qual</u>
1,2-Dichloroethane-d4	111	73-157			Dibromofluoro	methane		112	82-142		
Toluene-d8	97	82-112			1,4-Bromofluc	probenzene		83	75-105		
Method Blank			099-12	2-703-287	N/A	Aqueous	GC/MS Z	06/20/08	06/20/ 16:26		080620L01
Parameter	Result	RL	DF	Qual	Parameter			Result	RL	DE	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl	Ether (MTRF	)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alc		,	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Et	` '		ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl E	, ,		ND	0.50	1	
Foluene	ND	0.50	1		Tert-Amyl-Met		ME)	ND	0.50	1	
Kylenes (total)	ND	0.50	1		Ethanol	,. = (171	,	ND	300	1	
Surrogates:	REC (%)	Control	,	Qual	Surrogates:			REC (%)	Control	•	Qual
<u>~~.,~gaidd.</u>	1120 (70)	Limits		2000					Limits		
1,2-Dichloroethane-d4	119	73-157			Dibromofluoro	methane		116	82-142		
Foluene-d8	98	82-112			1,4-Bromofluo				75-105		
·					,						

RL - Reporting Limit ,

DF - Dilution Factor ,

Qual - Qualifiers



### **Quality Control - Spike/Spike Duplicate**

aboratories, Inc.

Stratus Environmental, inc.

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

Date Received:

Work Order No:

Preparation:

**EPA 5030B** 

Method:

EPA 8015B (M)

06/14/08

08-06-1455

#### Project ARCO 608

Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number	
Aqueous	GC 29	06/18/08	06/18/08	080617S04	
			Matrix Instrument Prepared	Matrix Instrument Prepared Analyzed	

<u>Parameter</u>	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	104	99	38-134	4	0-25	



### Quality Control - Spike/Spike Duplicate

aboratories, Inc.

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

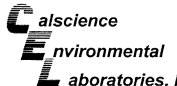
Date Received: Work Order No: Preparation: Method:

06/14/08 08-06-1455 EPA 5030B **EPA 8260B** 

#### Project ARCO 608

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-10	Aqueous	GC/MS Z	06/20/08	06/20/08	080620S01

<u>Parameter</u>	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	104	103	86-122	0	0-8	
Carbon Tetrachloride	103	101	78-138	2	0-9	
Chlorobenzene	94	96	90-120	2	0-9	
1,2-Dibromoethane	106	102	70-130	4	0-30	
1,2-Dichlorobenzene	107	108	89-119	1	0-10	
1,1-Dichloroethene	96	96	52-142	0	0-23	
Ethylbenzene	104	107	70-130	2	0-30	
Toluene	103	103	85-127	0	0-12	
Trichloroethene	100	101	78-126	1	0-10	
Vinyl Chloride	96	97	56-140	1	0-21	
Methyl-t-Butyl Ether (MTBE)	97	94	64-136	2	0-28	
Tert-Butyl Alcohol (TBA)	127	120	27-183	6	0-60	
Diisopropyl Ether (DIPE)	107	105	78-126	2	0-16	
Ethyl-t-Butyl Ether (ETBE)	110	106	67-133	4	0-21	
Tert-Amyl-Methyl Ether (TAME)	109	105	63-141	4	0-21	
Ethanol	86	93	11-167	8	0-64	



### **Quality Control - LCS/LCS Duplicate**

aboratories, Inc.

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

Date Received: Work Order No: Preparation: Method:

N/A 08-06-1455 **EPA 5030B** EPA 8015B (M)

Project: ARCO 608

Quality Control Sample ID	Matrix	Insti	rument	Da Prepa	-		ate yzed	LCS/LCSD Bat Number	ch
099-12-695-171	Aqueous	G	C 29	06/18	3/08	06/1	3/08	080617B03	
Parameter	LCS %	<u>6REC</u>	LCSD 9	%REC	%RE	C CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	95		103		78-	120	9	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: Work Order No: Preparation: Method:

N/A 08-06-1455 EPA 5030B EPA 8260B

Project: ARCO 608

Quality Control Sample ID	Matrix	Instrument	Date Prepared		ate lyzed	LCS/LCSD Bat Number	ch
099-12-703-287	Aqueous	GC/MS Z	06/20/08	06/2	0/08	080620L01	
Parameter	LCS %R	EC LCSD %	<u> 6REC 9</u>	6REC CL	RPD	RPD CL	Qualifiers
Benzene	104	103		87-117	1	0-7	
Carbon Tetrachloride	99	99	•	78-132	0	0-8	
Chlorobenzene	101	100		88-118	1	0-8	
1,2-Dibromoethane	100	105		80-120	4	0-20	
1,2-Dichlorobenzene	108	110		88-118	2	0-8	
1,1-Dichloroethene	99	98		71-131	0	0-14	
Ethylbenzene	113	110		80-120	3	0-20	
Toluene	102	103		85-127	1	0-7	
Trichloroethene	100	104		85-121	3	0-11	
Vinyl Chloride	95	95		64-136	0	0-10	
Methyl-t-Butyl Ether (MTBE)	91	96		67-133	5	0-16	
Tert-Butyl Alcohol (TBA)	111	95		34-154	15	0-19	
Diisopropyl Ether (DIPE)	102	107		80-122	5	0-8	
Ethyl-t-Butyl Ether (ETBE)	101	108		73-127	,7	0-11	
Tert-Amyl-Methyl Ether (TAME)	100	105		69-135	5	0-12	
Ethanol	116	78		34-124	40	0-44	



### **Glossary of Terms and Qualifiers**

Work Order Number: 08-06-1455

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

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A BP affiliated company

### **Chain of Custody Record**

Project Name: ARCO 608

BP BU/AR Region/Enfos Segment:

BP > Americas > West > Retail > Alameda > 608

State or Lead Regulatory Agency:

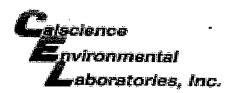
Requested Due Date (mm/dd/yy):

Std./TAT

1465

	rage_r or				
On-site Time: 0530	Temp: 70				
Off-site Time: 0800	Temp: 80				
Sky Conditions: Clear					
Meteorological Events:	· · · · · · · · · · · · · · · · · · ·				
Wind Speed:	Direction:				

Address: 7440 Lincoln Way  Garden Grove Ca. 92841-1427  Lab PM: Linda Scharpenberg  Tele/Fax: 714-895-5494 714-895-7401 (fax)  BP/AR PM Contact: Paul Supple  Address: 2010 Crow Canyon Place, Suite 150  San Ramon, CA  Sub Phase/WBS: 03-Analytical  Tele/Fax: 925-275-3506  Lab Bottle Order No:  Matrix  BP/AR Facility Address: 17601 Hesperian Boulevard, San Lorenzo  Site Lat/Long:  Cameron Park Drive, Suite 550  Cameron Park, CA 95682  Consultant/Contractor Project No.: E608-03  Consultant/Contractor PM: Jay Johnson  Tele/Fax: (530) 676-6000 / (530) 676-6005  Report Type & QC Level: Level 1 with EDF  E-mail EDD To: Shayes@stratusinc.net  Invoice to: Atlantic Richfield Co.  Sample Point Lat/Long and	Lab Name: Cal Science	BP/AR Facility No.: 608					
Size   Land   South	Address: 7440 Lincoln Way		Consultant/Contractor: Stratus Environmental, Inc.				
Cameron Park, CA 95682   Cameron Park, Cameron Park, CA 95682   Cameron Park, Camero	Garden Grove Ca. 92841-1427		Address: 3330 Cameron Park Drive, Suite 550				
TelePax   714.895.5494   714.895.7401 (fax)   E008.03     BP/AR PM Contact: Paul Supple   Provision of OCC (circle one)   Provision   TelePax   System   Sample Place Suite 150     San Ramene, CA   Suite 150   Suite Place	Lab PM: Linda Scharpenberg	G VC : GI I : TO TO	Cameron Park, CA 95682				
Provision of OCC   Gird   December   Decem		E C D :					
Address: 2010 Crow Canyon Place, Suite 150    Phase/WBS: 04-Monitoring   Report Type & QC Level: Level 1 with EDF		Province of OCC ( : 1	Consultant/Contractor PM: Jny Johnson				
San Ramon, CA		Phose W.P.C.	(200) 070 00007 (330) 070-0003				
TelePlase   925-275-3906							
Lab Bottle Order No:   Matrix   Preservative   Requested Analysis   Sample Description   Reservative   Requested Analysis   Sample Point Lat/Long and Comments   Co	Tele/Fax: 925-275-3506		E-mail EDD To: shayes@stratusinc.net				
Sample Description	Lab Bottle Order No: Matrix						
1 MW - 10 0 13 6 1/3 X	Item No. Sample Description Time Soil/Solid Water/Liquid	Taporatory No.	Sample Point Lat/Long and Comments				
2 MW - 2.5 0644 9/3 X							
3 4							
4   5   6   7   7   8   9   TO O GO SO GO			XX				
Sampler's Name: Levi Ford Relinquished By Affiliation Date Time Accepted By Affiliation Date Time Sampler's Company: Stratus Environmental, Inc.  Shipment Date: 06/13/02  Shipment Method: C-SO  Shipment Method: C-SO							
Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  Sampler's Company: Stratus Environmental, Inc.  Shipment Date: 06/13/09  Shipment Method: G-SO  Shipment Method: G-SO  Shipment Method: G-SO							
7 8 9 TO Obo Obo Ob 13 OB Sampler's Name: Levi Ford Sampler's Company: Stratus Environmental, Inc. Shipment Date: Ob / 13 / OP Shipment Method: G-SO	5						
Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time Shipment Date: 06/13/00  Shipment Method: G-SO  Relinquished By / Affiliation Date Time Accepted B	6						
9 TO O 608 O 6 13 08 O 6 13 X 2 X 1 D TIME  Sampler's Name: Levi Ford Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  Sampler's Company: Stratus Environmental, Inc.  Shipment Date: 06/13/00	7						
9 TO O 608 O 6 13 08 O 6 13 X 2 X 1 D TIME  Sampler's Name: Levi Ford Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  Sampler's Company: Stratus Environmental, Inc.  Shipment Date: 06/13/00	8						
Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  Sampler's Company: Stratus Environmental, Inc.  Shipment Date: 06/13/00  Shipment Method: G-SO  Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  Accepted By / Affiliation Date Time  Accepted By / Affiliation Date Time  Accepted By / Affiliation Date Time  Shipment Date: 06/13/00  G/14/03 01:00 Minuse Time							
Sampler's Name: Lewi Ford Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  Sampler's Company: Stratus Environmental, Inc.  Shipment Date: 06/13/00 (550)  Shipment Method: G-SO  Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time  6/14/08 01:00 Milliation Date Time  6/14/08 01:00 Milliation Date Time		2 × -	HOLD				
Sampler's Company: Stratus Environmental, Inc.    Levi Ford Stratus Env.   Levi Ford   Lev			11000				
Shipment Method: G-SO  Levi Ford. Stratus Env. 6/13/00 1200  Shipment Method: G-SO  Mild Mult CFC 3/14/16 9:00		Relinquished By / Affiliation Date Time	Accounted Day (Affiliation)				
Shipment Method: GSO  G/14/03 01:00 Million Mult CSC 3/14/18 9:00			Taccepted By 7 Miniation Date Time				
			milled allit CEL Club aid				
Special Instructions: Please or results to miller@broadbenting.com	Simplifient Method: GSO						
Please or results to miller@broadbenting.com	Special Instructions D						
Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp Blank: Yes / No Cool							
Custody Seats in Place: Yes / No   Temp Blank: Yes / No   Cooler Temp on Receipt: °F/C   Trip Blank: Yes / No   MS/MSD Sample Submitted: Yes / No							



WORK ORDER #: **08** - 0 6 - 1 4 6 5

### SAMPLE RECEIPT FORM

CLIENT: Stratus	DATE: 6/14/08
TEMPERATURE - SAMPLES RECEIVED BY:	
CALSCIENCE COURIER:  Chilled, cooler with temperature blank provided.  Chilled, cooler without temperature blank.  Chilled and placed in cooler with wet ice.  Ambient and placed in cooler with wet ice.  Ambient temperature (For Air & Filter only).	LABORATORY (Other than Calscience Courier): ° C Temperature blank.
°C Temperature blank.	Initial: 4/4
CUSTODY SEAL INTACT:	
Sample(s): Cooler: No (Not In	Not Present: Not Present:
SAMPLE CONDITION:	
Chain-Of-Custody document(s) received with samples	
COMMENTS:	

#### ATTACHMENT

### FIELD PROCEDURES FOR GROUNDWATER SAMPLING

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

### **Equipment Calibration**

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

### Groundwater and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

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

### Subjective Analysis of Groundwater

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

### Monitoring Well Sampling

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

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

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

### **Groundwater Sample Labeling and Preservation**

Samples are collected in appropriate containers supplied by the laboratory. All required chemical preservation is added to the bottles prior to delivery to Stratus. Sample label information includes a unique sample identification number, job identification number, date, and time. After labeling, all groundwater samples are placed in a Ziploc<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.

### APPENDIX B

GEOTRACKER UPLOAD CONFIRMATIONS

#### STATE WATER RESOURCES CONTROL BOARD

# **GEOTRACKER ESI**

UPLOADING A GEO\_WELL FILE

### **SUCCESS**

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

Submittal Type: GEO\_WELL

Submittal Title: 2Q08 GEO\_WELL 608

Facility Global ID: T0600100085
Facility Name: ARCO #00608
File Name: GEO\_WELL.zip

Organization Name: Broadbent & Associates, Inc.

Username: BROADBENT-C IP Address: 67.118.40.90

**Submittal Date/Time:** 7/7/2008 10:15:23 AM

**Confirmation Number:** 4805342733

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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!

Submittal Type: GWM\_R

Submittal Title: 2Q08 GW Monitoring

 Facility Global ID:
 T0600100085

 Facility Name:
 ARCO #00608

 File Name:
 08061455.zip

Organization Name: Broadbent & Associates, Inc.

Username: BROADBENT-C IP Address: 67.118.40.90

Submittal Date/Time: 7/7/2008 10:28:33 AM

**Confirmation Number:** 5383786857

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