

March 19, 2004

Alameda County  
MAR 29 2004  
Environmental Health

Mr. Don Hwang  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**Re: First Quarter 2004 Monitoring Report  
Former ARCO Service Station #6002  
6235 Seminary Avenue  
Oakland, California  
URS Project #38486727**

Dear Mr. Hwang:

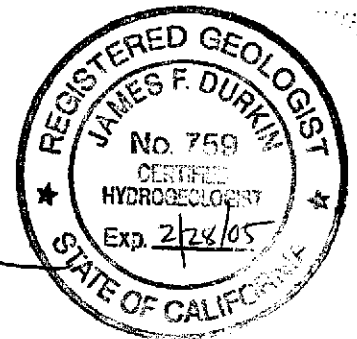
On behalf of Atlantic Richfield Company (ARCO - a BP affiliated company), URS Corporation (URS) is submitting the *First Quarter 2004 Groundwater Monitoring Report* for the Former ARCO Service Station #6002, located at 6235 Seminary Avenue, Oakland, California.

If you have any questions regarding this submission, please call (510) 874-3280.

Sincerely,

**URS CORPORATION**

Scott Robinson  
Project Manager

  
James Durkin, C.Hg.  
Senior Geologist

Enclosure: First Quarter 2004 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO, (electronic copy uploaded to ENFOS)



Atlantic Richfield Company  
(a BP affiliated company)

P.O. Box 6549  
Moraga, California 94570  
Phone: (925) 299-8891  
Fax: (925) 299-8872



Alameda County  
MAR 29 2004  
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RE: First Quarter 2004 Groundwater Monitoring Report  
Former ARCO Service Station #6002  
6235 Seminary Avenue  
Oakland, California  
URS Project #38486727

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

Submitted by:

Paul Supple  
Environmental Business Manager

**R E P O R T**

**FIRST QUARTER 2004  
GROUNDWATER MONITORING**

FORMER ARCO SERVICE STATION #6002  
6235 SEMINARY AVENUE  
OAKLAND, CALIFORNIA

*Prepared for*  
Atlantic Richfield Company

March 19, 2004

**URS**

URS Corporation  
1333 Broadway, Suite 800  
Oakland, California 94612

38486727

Date: March 19, 2004

Quarter: 1Q 04

### ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Former Facility No.: 6002 Address: 6235 Seminary Avenue, Oakland, California  
ARCO Environmental Business Manager: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson  
Consultant Project No.: 38486727  
Primary Agency Alameda County Health Care Services Agency

#### WORK PERFORMED THIS QUARTER (First – 2004):

1. Performed first quarter 2004 groundwater monitoring event on February 13, 2004.
2. Prepared and submitted first quarter 2004 groundwater monitoring report.
3. Performed well elevation survey on January 27, 2004 (Attachment D).
4. Performed well repairs on December 30, 2004 (Attachment E).

#### WORK PROPOSED FOR NEXT QUARTER (Second – 2004):

1. Perform second quarter 2004 groundwater monitoring event.
2. Prepare and submit second quarter 2004 groundwater monitoring report.

Current Phase of Project: GW monitoring/sampling  
Frequency of Groundwater Sampling: Annual (3<sup>rd</sup> quarter): MW-3, MW-4, MW-6, MW-7, and MW-8  
Quarterly: MW-5, VW-1, and VW-4  
Frequency of Groundwater Monitoring: Quarterly  
Is Free Product (FP) Present On-Site: No  
Bulk Soil Removed to Date : Approximately 370 cubic yards of TPH impacted soil  
Current Remediation Techniques: Natural Attenuation  
Approximate Depth to Groundwater: 7.35 (VW-1) to 12.38 (MW-5) feet  
Groundwater Gradient (direction): Southwest  
Groundwater Gradient (magnitude): 0.053 feet per foot

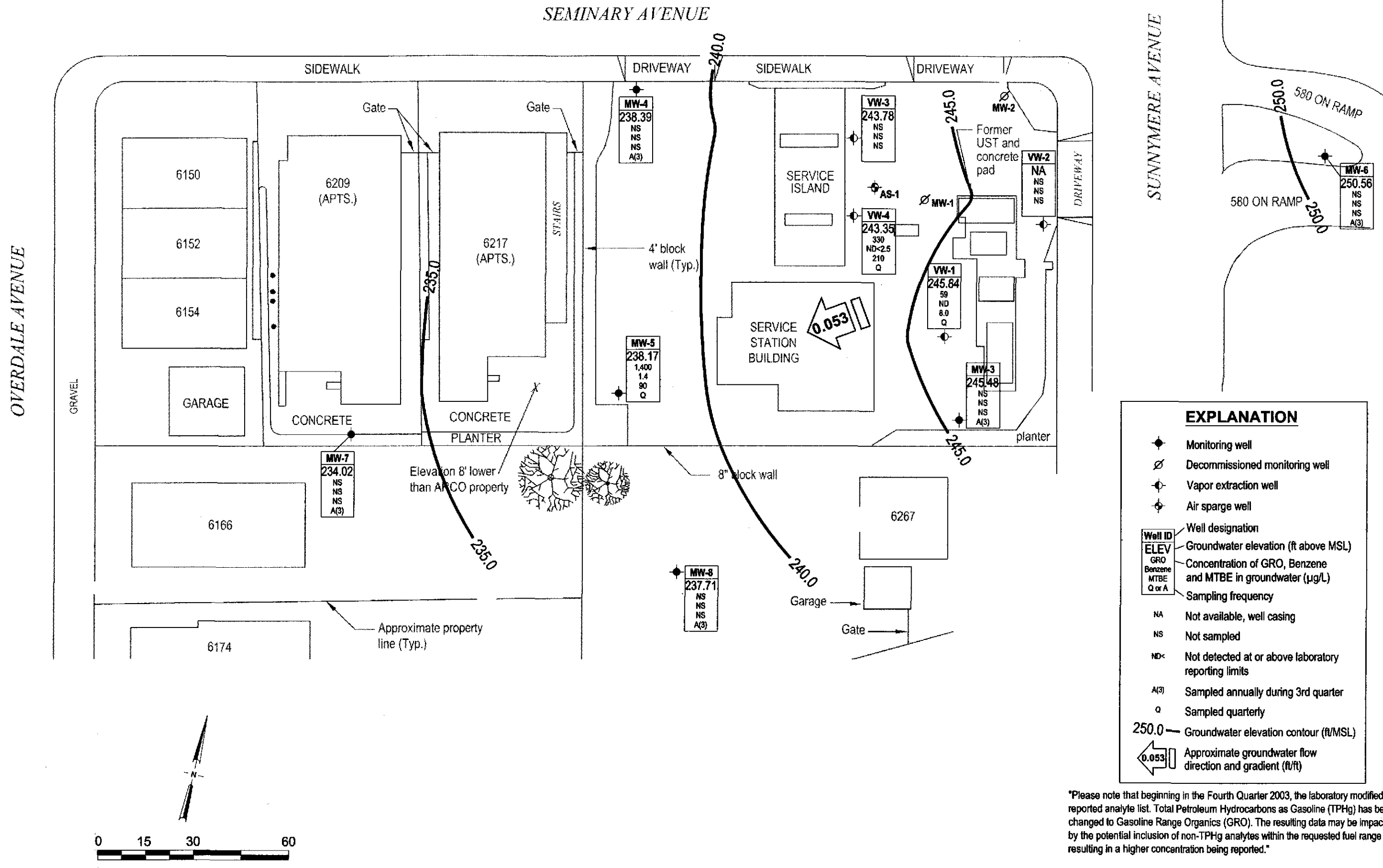
#### DISCUSSION:

GRO were detected in all three wells sampled this quarter with concentrations ranging from 59 µg/L (VW-1) to 1,400 µg/L (MW-5). MTBE was detected above the laboratory reporting limits in all three wells at concentrations ranging from 8.0 µg/L (VW-1) to 210 µg/L (VW-4). Benzene was detected above the laboratory reporting limits in one of the three wells at a concentration of 1.4 µg/L (MW-5). TBA was detected above the laboratory reporting limits in two wells at concentrations of 41 µg/L (MW-5) and 1,300 µg/L (VW-4).

**ATTACHMENTS:**

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – February 13, 2004
- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Groundwater Flow Direction and Gradient
- Table 3 – Fuel Oxygenate Analytical Data
- Attachment A – Field Procedures and Field Data Sheets
- Attachment B – Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C – EDCC and EDF/Geowell Submittal Confirmation
- Attachment D – Well Survey Data
- Attachment E – Well Repair Data Sheets

Mar 18, 2004 - 2:13pm  
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EXPLANATION	
	Monitoring well
	Decommissioned monitoring well
	Vapor extraction well
	Air sparge well
	Well designation
	Groundwater elevation (ft above MSL)
	Concentration of GRO, Benzene and MTBE in groundwater (µg/L)
	Sampling frequency
NA	Not available, well casing
NS	Not sampled
ND<	Not detected at or above laboratory reporting limits
A(3)	Sampled annually during 3rd quarter
Q	Sampled quarterly
250.0	Groundwater elevation contour (ft/MSL)
	Approximate groundwater flow direction and gradient (ft/ft)

\*Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPHg) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.\*

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

	Project No. 38486727 Former ARCO Service Station #6002 6235 Seminary Avenue Oakland, California	<b>GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP</b> First Quarter 2004 (February 13, 2004)	FIGURE <b>1</b>
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**Table 1  
Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/Not Purged	TOC Elevation (ft-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>
MW-3	03/15/95		248.35	5.00	NA	24.40	6.76	0.00	241.59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	05/30/95						7.81	0.00	240.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	09/01/95						8.65	0.00	239.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	11/13/95						8.25	0.00	240.10	120	45	0.7	ND<0.5	6.2	--	--	--	--
	02/23/96						6.64	0.00	241.71	ND<50	ND<0.5	ND<0.5	0.6	1.9	ND<3	--	--	--
	05/10/96						7.95	0.00	240.40	Not sampled: well sampled annually, during the first quarter								
	08/09/96						8.06	0.00	240.29	Not sampled: well sampled annually, during the first quarter								
	11/08/96						NR	NR	NR	Not sampled: inaccessible								
	03/21/97						8.21	0.00	240.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	05/27/97						8.25	0.00	240.10	Not sampled: well sampled annually, during the first quarter								
	08/05/97						8.29	0.00	240.06	Not sampled: well sampled annually, during the first quarter								
	10/29/97						8.58	0.00	239.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	02/25/98						7.69	0.00	240.66	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	05/12/98						8.20	0.00	240.15	Not sampled: well sampled annually, during the first quarter								
	07/28/98						8.55	0.00	239.80	Not sampled: well sampled annually, during the first quarter								
	10/27/98						8.30	0.00	240.05	Not sampled: well sampled annually, during the first quarter								
	02/08/99						7.90	0.00	240.45	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	06/01/99						8.40	0.00	239.95	Not sampled: well sampled annually, during the first quarter								
	08/25/99						8.49	0.00	239.86	Not sampled: well sampled annually, during the first quarter								
	10/29/99						8.52	0.00	239.83	Not sampled: well sampled annually, during the first quarter								
	02/16/00	NP					8.03	0.00	240.32	ND<50	ND<0.5	0.8	ND<0.5	ND<1	ND<3	--	8.51	8.51
	06/23/00						7.55	0.00	240.80	Not sampled: well sampled annually, during the first quarter								
	08/17/00						8.65	0.00	239.70	Not sampled: well sampled annually, during the first quarter								
	11/10/00						7.19	0.00	241.16	Not sampled: well sampled annually, during the first quarter								
	02/12/01	NP					8.60	0.00	239.75	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	0.81	0.81
	04/13/01						6.13	0.00	242.22	Not sampled: well sampled annually, during the first quarter								
	07/18/01						6.47	0.00	241.88	Not sampled: well sampled annually, during the first quarter								
	10/01/01						6.99	0.00	241.36	Not sampled: well sampled annually, during the first quarter								
	01/14/02	NP					5.47	0.00	242.88	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	--	--
	04/03/02						6.95	0.00	241.40	Not sampled: well sampled annually, during the first quarter								
	08/08/02						8.78	0.00	239.57	Not sampled: well sampled annually, during the first quarter								
	11/27/02						8.52	0.00	239.83	Not sampled: well sampled annually, during the first quarter								
	02/10/03 <sup>+</sup>	NP					8.40	0.00	239.95	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	0.7	6.4
	06/03/03						8.40	0.00	239.95	Not sampled: well sampled annually, during the first quarter								
	08/14/03						8.60	0.00	239.75	Not sampled: well sampled annually, during the first quarter								
	11/13/03						8.41	0.00	239.94	Not sampled: well sampled annually, during the third quarter								
	2/13/2004 <sup>+</sup>		253.88				8.40	0.00	245.48	Not sampled: well sampled annually, during the third quarter								

**Table 1  
Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/ Not Purged	TOC Elevation (ft.-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft.-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>
MW-4	03/15/95		242.91	4.50	NA	24.00	9.37	0.00	233.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	05/30/95						11.47	0.00	231.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	09/01/95						12.28	0.00	230.63	78	ND<0.5	0.7	ND<0.5	ND<0.5	ND<3	--	--	--
	11/13/95						11.75	0.00	231.16	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	02/23/96						8.51	0.00	234.40	59	1.2	7.4	1.6	9.3	3	--	--	--
	05/10/96						11.35	0.00	231.56	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	08/09/96						9.70	0.00	233.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	11/08/96						11.79	0.00	231.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	03/21/97						10.94	0.00	231.97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	81	--	--	--
	05/27/97						11.51	0.00	231.40	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	08/05/97						11.90	0.00	231.01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	10/29/97						12.00	0.00	230.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	02/25/98						8.34	0.00	234.57	ND<50	ND<0.5	0.9	ND<0.5	0.9	4	--	--	--
	05/12/98						10.93	0.00	231.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	07/28/98						12.08	0.00	230.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	10/27/98						11.40	0.00	231.51	ND<5,000	ND<50	ND<50	160	64	6,400	--	--	--
	02/08/99						8.40	0.00	234.51	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	06/01/99	NP					11.93	0.00	230.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	4.0	4.0
	08/25/99	NP					12.21	0.00	230.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	1.29	1.29
	10/29/99	NP					12.37	0.00	230.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	1.50	1.50
	02/16/00	NP					7.45	0.00	235.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	2.38	2.38
	06/23/00	NP					12.31	0.00	230.60	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	2.80	2.80
DUP	08/17/00						--	--	--	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--
	08/17/00	NP					11.92	0.00	230.99	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	2.38	2.38
	11/10/00	NP					10.80	0.00	232.11	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.55	1.55
	02/12/01	NP					11.65	0.00	231.26	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.12	1.12
	04/13/01	NP					8.17	0.00	234.74	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--
DUP	04/13/01						--	--	--	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--
	07/18/01	NP					8.51	0.00	234.40	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--
	10/01/01	NP					8.71	0.00	234.20	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--
	01/14/02	NP					7.13	0.00	235.78	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	--	--
DUP	01/14/02						--	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	--	--
	04/03/02	NP					10.1	0.00	232.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--
	08/08/02	NP					12.64	0.00	230.27	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	2.4	8.1
	11/27/02	NP					12.01	0.00	230.90	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	4.7	2.5	6.5
	02/10/03 <sup>+</sup>	NP					11.22	0.00	231.69	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	0.8	6.6
	06/03/03	NP					11.54	0.00	231.37	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	3.9	6.0
	08/14/03	NP					12.41	0.00	230.50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	1.8	6.3
	11/13/03						11.64	0.00	231.27	Not sampled: well sampled annually, during the third quarter								
	2/13/2004 <sup>b</sup>		248.62				10.28	0.00	238.34	Not sampled: well sampled annually, during the third quarter								



**Table 1  
Groundwater Elevation and Analytical Data**

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Well Number	Date Sampled	Purge/ Not Purged	TOC Elevation (ft.-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft.-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissoived Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>	
MW-5	03/15/95		244.82	5.00	NA	24.40	11.99	0.00	232.83	21,000	870	22	1,600	1,900	--	--	--	--	
	05/30/95						12.97	0.00	231.85	17,000	2,100	250	1,000	520	--	--	--	--	
	09/01/95						14.03	0.00	230.79	19,000	1,500	25	1,600	880	8,300	--	--	--	
	11/13/95						13.65	0.00	231.17	21,000	1,300	22	1,400	630	--	--	--	--	
	02/23/96						11.93	0.00	232.89	27,000	1,300	ND<50	1,600	1,500	730	--	--	--	
	05/10/96						13.05	0.00	231.77	17,000	460	21	760	480	1,000	--	--	--	
	08/09/96						13.22	0.00	231.60	16,000	420	14	870	390	1,500	--	--	--	
	11/08/96						NR	NR	NR	Not sampled: well inaccessible									
	03/21/97						13.24	0.00	231.58	18,000	110	ND<50	730	1,500	1,800	--	--	--	
	05/27/97						13.10	0.00	231.72	21,000	86	ND<20	810	1,700	1,700	--	--	--	
	08/05/97						13.14	0.00	231.68	340	2.2	ND<0.5	15	8.8	39	--	--	--	
	10/29/97						13.03	0.00	231.79	19,000	130	ND<20	1,400	620	1,700	--	--	--	
	02/25/98						11.33	0.00	233.49	8,500	19	13	190	100	170	--	--	--	
	05/12/98						12.81	0.00	232.01	10,000	34	ND<10	390	220	610	--	--	--	
	07/28/98						13.12	0.00	231.70	15,000	68	ND<10	690	620	1,000	--	--	--	
	10/27/98						12.90	0.00	231.92	15,000	60	ND<10	770	400	890	--	--	--	
	02/08/99						11.08	0.00	233.74	8,200	23	ND<10	290	120	ND<60	--	--	--	
	06/01/99	NP					12.95	0.00	231.87	11,000	33	3.3	340	180	580	--	--	1.0	1.0
	08/25/99	NP					12.99	0.00	231.83	9,200	26	14	420	270	1,100	--	--	0.37	0.37
	10/29/99	NP					13.10	0.00	231.72	11,000	19	9.8	260	150	590	--	--	1.27	1.27
	02/16/00	NP					8.21	0.00	236.61	12,000	8.1	10	340	160	130	--	--	1.42	1.42
	06/23/00	NP					12.90	0.00	231.92	9,680	38.0	ND<20.0	212	114	930	--	--	1.40	1.40
	08/17/00	NP					13.00	0.00	231.82	10,500	15.0	7.98	223	118	430	--	--	0.68	0.68
	11/10/00	NP					12.50	0.00	232.32	7,030	19.7	ND<10.0	190	43.6	445	--	--	1.27	1.27
	02/12/01	NP					12.81	0.00	232.01	8,840	33.9	ND<10.0	186	56.4	352	--	--	0.40	0.40
	04/13/01	NP					11.31	0.00	233.51	9,020	54.2	43.3	137	96.0	297	--	--	--	--
	07/18/01	NP					11.59	0.00	233.23	13,000	19	10	110	49	230	--	--	--	--
10/01/01	NP					11.84	0.00	232.98	8,500	6.9	ND<1.0	87	27	220	--	--	--	--	
01/14/02	NP					10.75	0.00	234.07	9,500	ND<20	ND<20	140	22	ND<200	--	--	--	--	
04/03/02	NP					12.50	0.00	232.32	2,400	21	ND<5.0	91	8.5	130	--	--	--	--	
DUP 04/03/02	NP					--	--	--	2,700	24.0	5.1	92	8.5	130	--	--	--	--	
08/08/02	NP					12.83	0.00	231.99	2,000	ND<20	ND<20	48	ND<20	520	--	--	0.8	6.9	
11/27/02	NP					12.79	0.00	232.03	2,200	ND<10	ND<10	33	ND<10	--	150	0.8	6.4		
02/10/03 <sup>4</sup>	NP					12.62	0.00	232.20	2,600	ND<2.5	ND<2.5	47	4.2	--	100	0.7	6.6		
06/03/03	NP					12.41	0.00	232.41	2,400	ND<5.0	ND<5.0	26	ND<5.0	--	160	1.8	6.3		
08/14/03						NR	NR	NR	Not sampled: well inaccessible										
11/13/03	NP					12.49	0.00	232.33	1,900	ND<5.0	ND<5.0	13	ND<5.0	--	90	0.9	6.4		
2/13/2004 <sup>6</sup>	NP		250.55			12.38	0.00	238.17	1,400	1.4	1.9	23	3.6	--	90	1.1	6.7		

**Table 1**  
**Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/Not Purged	TOC Elevation (ft-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>	
MW-6	06/29/95		NR	17.00	NA	30.00	6.63	0.00	NR	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	
	09/01/95		NR				NR	NR	NR	Not sampled									
	11/13/95		NR				7.70	0.00	NR	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--	
	02/23/96		NR				9.82	0.00	NR	ND<50	ND<0.5	0.8	ND<0.5	0.6	ND<3	--	--	--	
	05/10/96		NR				15.25	0.00	NR	Not sampled: well sampled annually, during the first quarter									
	08/09/96		252.20				11.11	0.00	241.09	Not sampled: well sampled annually, during the first quarter									
	11/08/96						9.31	0.00	242.89	Not sampled: well sampled annually, during the first quarter									
	03/21/97						9.40	0.00	242.80	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--	
	05/27/97						7.08	0.00	245.12	Not sampled: well sampled annually, during the first quarter									
	08/05/97						7.12	0.00	245.08	Not sampled: well sampled annually, during the first quarter									
	10/29/97						7.42	0.00	244.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--	
	02/25/98						10.35	0.00	241.85	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--	
	05/12/98						15.83	0.00	236.37	Not sampled: well sampled annually, during the first quarter									
	07/28/98						11.84	0.00	240.36	Not sampled: well sampled annually, during the first quarter									
	10/27/98						9.73	0.00	242.47	Not sampled: well sampled annually, during the first quarter									
	02/08/99						8.10	0.00	244.10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--	
	06/01/99						17.84	0.00	234.36	Not sampled: well sampled annually, during the first quarter									
	08/25/99						11.00	0.00	241.20	Not sampled: well sampled annually, during the first quarter									
	10/29/99						9.03	0.00	243.17	Not sampled: well sampled annually, during the first quarter									
	02/16/00	P					7.71	0.00	244.49	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	--	2.42	2.42
	06/23/00						6.69	0.00	245.51	Not sampled: well sampled annually, during the first quarter									
	08/17/00						6.95	0.00	245.25	Not sampled: well sampled annually, during the first quarter									
	11/10/00						11.79	0.00	240.41	Not sampled: well sampled annually, during the first quarter									
02/12/01	P					7.35	0.00	244.85	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	1.66	1.66	
DUP 02/12/01						--	--	--	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--	--	
04/13/01						10.52	0.00	241.68	Not sampled: well sampled annually, during the first quarter										
07/18/01						11.03	0.00	241.17	Not sampled: well sampled annually, during the first quarter										
10/01/01						11.31	0.00	240.89	Not sampled: well sampled annually, during the first quarter										
01/14/02	P					9.87	0.00	242.33	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	--	--	--	
04/03/02						12.19	0.00	240.01	Not sampled: well sampled annually, during the first quarter										
08/08/02						7.04	0.00	245.16	Not sampled: well sampled annually, during the first quarter										
11/27/02						6.85	0.00	245.35	Not sampled: well sampled annually, during the first quarter										
02/10/03 <sup>4</sup>	NP					6.74	0.00	245.46	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	1.1	7.4		
06/03/03						14.35	0.00	237.85	Not sampled: well sampled annually, during the first quarter										
08/14/03						10.74	0.00	241.46	Not sampled: well sampled annually, during the first quarter										
11/13/03						10.68	0.00	241.52	Not sampled: well sampled annually, during the third quarter										
2/13/2004 <sup>6</sup>			257.94			7.38	0.00	250.56	Not sampled: well sampled annually, during the third quarter										

**Table 1  
Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/Not Purged	TOC Elevation (ft.-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft.-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>		
MW-7	08/09/96		235.95	8.50	NA	13.30	NR	NR	NR	Not sampled: well was dry										
	11/08/96						NR	NR	NR	Not sampled: well was dry										
	01/27/97						NR	NR	NR	2,900	29	ND<5	ND<5	580	220	--	--	--		
	03/21/97						7.13	0.00	228.82	590	3.5	ND<0.5	ND<0.5	1.3	90	--	--	--		
	05/27/97						9.02	0.00	226.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--		
	08/05/97						12.33	0.00	223.62	110	0.5	ND<0.5	ND<0.5	0.8	81	--	--	--		
	10/29/97						NR	NR	NR	Not sampled: well was dry										
	02/25/98						8.04	0.00	227.91	ND<50	ND<0.5	0.6	ND<0.5	0.7	ND<3	--	--	--		
	05/12/98						8.88	0.00	227.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--		
	07/28/98						10.50	0.00	225.45	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--		
	10/27/98						8.75	0.00	227.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--		
	02/08/99						9.35	0.00	226.60	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--		
	06/01/99	NP					9.85	0.00	226.10	250	ND<0.5	0.6	ND<0.5	1.6	18	--	1.0	1.0		
	08/25/99	NP					11.31	0.00	224.64	119	ND<0.5	5.7	ND<0.5	ND<0.5	11	--	0.41	0.41		
	10/29/99	NP					9.08	0.00	226.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	1.29	1.29		
	02/25/00	NP					8.02	0.00	227.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	38	--	2.10	2.10		
	06/23/00	NP					10.68	0.00	225.27	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	14.4	--	1.60	1.60		
	08/17/00	NP					11.85	0.00	224.10	70.0	ND<0.500	0.678	ND<0.500	1.07	14.2	--	1.59	1.59		
	11/10/00	NP					9.62	0.00	226.33	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.09	1.09		
	02/12/01	NP					12.10	0.00	223.85	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	0.84	0.84		
	04/13/01	P					7.95	0.00	228.00	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--		
	07/18/01	P					8.20	0.00	227.75	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--		
	10/01/01	NP					8.59	0.00	227.36	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--		
	01/14/02	P					6.93	0.00	229.02	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	--	--		
	04/03/02	P					8.31	0.00	227.64	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--		
	08/08/02	P					12.11	0.00	223.84	Not sampled: insufficient water/recharge for purge/sample										
	11/27/02	NP					13.01	0.00	222.94	Not sampled: insufficient water										
	02/10/03 <sup>4</sup>	NP					10.02	0.00	225.93	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	1.5	6.7		
	06/03/03	NP					6.82	0.00	229.13	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	8.1	6.8		
	08/14/03	P					8.16	0.00	227.79	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	2.8	6.7		
	11/13/03						8.07	0.00	227.88	Not sampled: well sampled annually, during the third quarter										
	2/13/2004 <sup>9</sup>		241.64				7.62	0.00	234.02	Not sampled: well sampled annually, during the third quarter										

**Table 1**  
**Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/Not Purged	TOC Elevation (ft.-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft.-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>
MW-8	08/09/96		240.37	5.50	NA	13.90	9.41	0.00	230.96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	11/08/96						9.19	0.00	231.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	03/21/97						8.55	0.00	231.82	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	05/27/97						11.06	0.00	229.31	91	0.6	ND<0.5	ND<0.5	0.6	66	--	--	--
	08/05/97						9.32	0.00	231.05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	10/29/97						9.35	0.00	231.02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	02/25/98						7.08	0.00	233.29	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	05/12/98						8.61	0.00	231.76	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	07/28/98						9.63	0.00	230.74	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4	--	--	--
	10/27/98						9.30	0.00	231.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	02/08/99						5.56	0.00	234.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	06/01/99						NR	NR	NR	Not sampled: well inaccessible								
	08/25/99						NR	NR	NR	Not sampled: well inaccessible								
	10/29/99						NR	NR	NR	Not sampled: well inaccessible								
	02/16/00						NR	NR	NR	Not sampled: well inaccessible								
06/23/00	NP						9.45	0.00	230.92	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.90	1.90
08/17/00	NP						6.40	0.00	233.97	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	2.56	2.56
11/10/00	NP						6.25	0.00	234.12	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.93	1.93
DUP 11/10/00							--	--	--	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--
02/12/01	NP						8.11	0.00	232.26	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.65	1.65
04/13/01	P						5.19	0.00	235.18	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	--	--
07/18/01	NP						5.55	0.00	234.82	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--
10/01/01	NP						6.41	0.00	233.96	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--
01/14/02	P						5.07	0.00	235.30	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	--	--
04/03/02	P						8.60	0.00	231.77	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--	--
08/08/02	P						9.58	0.00	230.79	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	1.7	7.0
11/27/02	P						9.15	0.00	231.22	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	3.1	6.7
02/10/03*	P						8.55	0.00	231.82	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	1.3	6.6
06/03/03	P						8.72	0.00	231.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	9.1	6.3
08/14/03	P						9.52	0.00	230.85	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	5.5	6.4
11/13/03							9.45	0.00	230.92	Not sampled: well sampled annually, during the third quarter								
2/13/2004*			246.09				8.38	0.00	237.71	Not sampled: well sampled annually, during the third quarter								

**Table 1  
Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/ Not Purged	TOC Elevation (ft-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>
VW-1	02/23/96		NR	6.00	NA	13.50	5.29	0.00	NR	21,000	490	57	520	1,500	240	--	--	--
	05/10/96		NR				6.80	0.00	NR	3,700	61	ND<5	100	50	200	--	--	--
	08/09/96		NR				7.03	0.00	NR	970	2.7	ND<2.5	2.7	3.7	180	--	--	--
	11/08/96		NR				NR	NR	NR	Not sampled: well inaccessible								
	03/21/97		NR				7.51	0.00	NR	640	ND<4	ND<1	1	3	194	--	--	--
	05/27/97		NR				7.51	0.00	NR	Not sampled: well sampled semi-annually, during the first and third quarters								
	08/05/97		NR				7.51	0.00	NR	630	ND<1	ND<1	3	2	120	--	--	--
	10/29/97		NR				7.53	0.00	NR	600	ND<0.5	ND<0.5	ND<0.5	1.6	84	--	--	--
	02/25/98		NR				6.77	0.00	NR	230	ND<4	ND<0.7	1.2	0.5	27	--	--	--
	05/12/98		NR				7.43	0.00	NR	340	ND<0.5	0.5	2.3	0.8	29	--	--	--
	07/28/98		NR				7.00	0.00	NR	240	ND<0.5	ND<0.5	ND<0.5	1.1	54	--	--	--
	10/27/98		NR				7.52	0.00	NR	230	ND<0.5	ND<0.5	ND<0.5	ND<0.5	65	--	--	--
	02/08/99		NR				7.05	0.00	NR	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	36 <sup>3</sup>	--	--
	06/01/99	NP	NR				7.55	0.00	NR	180	ND<0.5	ND<0.5	ND<0.5	ND<0.5	23	--	1.0	1.0
	08/25/99	NP	NR				7.66	0.00	NR	130	ND<0.5	5.6	ND<0.5	ND<0.5	40	--	0.39	0.39
	10/29/99	NP	NR				7.59	0.00	NR	200	1.0	ND<0.5	0.6	1.6	36	--	0.89	0.89
	02/16/00	NP	NR				7.03	0.00	NR	210	ND<0.5	0.9	2.2	1.9	11	--	1.41	1.41
	06/23/00	NP	NR				7.71	0.00	NR	175	1.04	ND<0.500	ND<0.500	ND<0.500	14.4	--	1.90	1.90
	08/17/00	NP	NR				7.75	0.00	NR	180	ND<0.500	ND<0.500	0.622	0.760	23.7	--	0.63	0.63
	11/10/00	NP	NR				6.83	0.00	NR	157	0.955	ND<0.500	0.973	ND<0.500	32.5	--	1.03	1.03
	02/12/01	NP	NR				7.85	0.00	NR	273	0.627	ND<0.500	ND<0.500	0.507	9.19	--	0.47	0.47
	04/13/01	P	NR				5.11	0.00	NR	213	ND<0.500	ND<0.500	ND<0.500	ND<0.500	6.38	--	--	--
	07/18/01	P	NR				5.39	0.00	NR	270	ND<0.50	ND<0.50	ND<0.50	ND<0.50	20	--	--	--
	10/01/01	NP	NR				6.50	0.00	NR	200	ND<0.50	ND<0.50	ND<0.50	0.81	14	--	--	--
	01/14/02	P	NR				5.04	0.00	NR	110	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.4	--	--	--
	04/03/02	P	NR				7.51	0.00	NR	91	0.72	ND<0.50	ND<0.50	ND<0.50	12.0	--	--	--
	08/08/02	P	NR				9.58	0.00	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	33.0	--	0.6	6.3
	11/27/02	P	NR				7.42	0.00	NR	52	0.72	0.78	ND<0.50	ND<0.50	--	21	1.0	6.1
	02/10/03 <sup>4</sup>	NP	NR				7.38	0.00	NR	52	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	11	1.7	6.5
	06/03/03	P	NR				7.30	0.00	NR	71	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	13	3.3	6.3
	08/14/03	P	NR				7.59	0.00	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	18	0.3	6.1
	11/13/03	P	NR				7.43	0.00	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	13	0.6	6.1
	2/13/2004 <sup>6</sup>	P	253.19				7.35	0.00	245.84	59	ND<0.50	ND<0.50	ND<0.50	0.56	--	8.0	1.0	6.0
VW-3	08/08/02		NR	NA	NA	NA	8.85	0.00	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.5	--	0.7	6.1
	11/27/02		NR				8.80	0.00	NR	Not sampled: well not part of sampling program								
	02/10/03 <sup>4</sup>		NR				8.41	0.00	NR	Not sampled: well not part of sampling program								
	06/03/03		NR				8.71	0.00	NR	Not sampled: well not part of sampling program								
	08/14/03		NR				8.81	0.00	NR	Not sampled: well not part of sampling program								
	11/13/03		NR				8.75	0.00	NR	Not sampled: well not part of sampling program								
	2/13/2004 <sup>6</sup>		252.26				8.48	0.00	243.78	Not sampled: well not part of sampling program								

**Table 1  
Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/ Not Purged	TOC Elevation (ft.-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft.-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissoived Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>
VW-4	05/10/96		NR	6.00	NA	15.00	8.58	0.00	NR	13,000	2,500	41	420	660	43,000	--	--	--
	08/09/96		NR				11.70	0.00	NR	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6,200	--	--	--
	11/08/96		NR				9.38	0.00	NR	7,800	510	7	180	370	21,000	--	--	--
	03/21/97		NR				9.11	0.00	NR	10,000	290	10	270	230	8,900	--	--	--
	05/27/97		NR				9.34	0.00	NR	Not sampled: well sampled semi-annually, during the first and third quarters								
	08/05/97		NR				9.47	0.00	NR	ND<10,000	180	ND<100	ND<100	110	12,000	--	--	--
	10/29/97		NR				9.35	0.00	NR	9,800	200	69	260	360	4,900	--	--	--
	02/25/98		NR				7.08	0.00	NR	ND<50	2.5	ND<0.5	ND<0.5	0.7	ND<3	--	--	--
	05/12/98		NR				9.17	0.00	NR	3,200	ND<20	22	29	52	2,100	--	--	--
	07/28/98		NR				9.55	0.00	NR	ND<10,000	ND<100	ND<100	ND<100	ND<100	5,100	--	--	--
	10/27/98		NR				9.92	0.00	NR	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	02/08/99		NR				7.50	0.00	NR	ND<2,500	ND<25	ND<25	28	ND<25	2,400	3,100 <sup>3</sup>	--	--
	06/01/99	NP	NR				9.87	0.00	NR	2,100	2.5	1.1	2.5	15	3,300	--	2.0	2.0
	08/25/99	NP	NR				9.78	0.00	NR	1,300	4.4	4.9	1.7	2.9	4,600	--	0.36	0.36
	10/29/99	NP	NR				9.93	0.00	NR	1,400	ND<0.5	1.8	1.6	3.0	4,200	--	1.18	1.18
	02/16/00	NP	NR				7.45	0.00	NR	1,800	ND<0.5	2.9	15	10	3,400	--	1.01	1.01
DUP 1	06/23/00		--				--	--	--	1,260	ND<2.00	ND<2.00	ND<2.00	2.73	2,720	--	--	--
	06/23/00	NP	NR				9.74	0.00	NR	1,360	ND<2.00	2.26	ND<2.00	2.25	4,900	--	1.50	1.50
	08/17/00	NP	NR				9.95	0.00	NR	2,230	ND<10.0	ND<10.0	ND<10.0	ND<10.0	5,310	--	1.13	1.13
	11/10/00	NP	NR				9.22	0.00	NR	1,390	18.5	ND<5.00	ND<5.00	ND<5.00	8,840	--	1.25	1.25
	02/12/01	NP	NR				8.99	0.00	NR	1,400	9.42	ND<2.00	17.8	16.1	3,570	--	0.91	0.91
	04/13/01	NP	NR				7.80	0.00	NR	556	3.82	ND<1.25	ND<1.25	ND<1.25	2,450	--	--	--
	07/18/01	NP	NR				7.73	0.00	NR	2,100	9.2	ND<2.0	ND<2.0	ND<2.0	3,700	--	--	--
DUP 1	07/18/01		--				--	--	--	2,000	8.7	2.2	ND<2.0	ND<2.0	3,400	--	--	--
	10/01/01	NP	NR				6.69	0.00	NR	2,000	ND<10	ND<10	ND<10	13	5,900	--	--	--
DUP	10/01/01		--				--	--	--	1,800	ND<10	ND<10	ND<10	ND<10	5,800	--	--	--
	01/14/02	P	NR				5.93	0.00	NR	580	ND<2.0	ND<2.0	ND<2.0	ND<2.0	2,700	--	--	--
	04/03/02	NP	NR				9.6	0.00	NR	1,400	5.2	16.0	ND<5.0	9.6	2,200	--	--	--
	08/08/02		NR				10.01	0.00	NR	Not sampled: well not part of sampling program								
	11/27/02	P	NR				10.30	0.00	NR	ND<10,000	ND<100	ND<100	ND<100	ND<100	--	3,800	1.7	6.7
	02/10/03 <sup>4</sup>	NP	NR				10.06	0.00	NR	ND<5,000	ND<50	ND<50	ND<50	ND<50	--	2,500	1.0	6.8
	06/03/03	P	NR				10.04	0.00	NR	ND<1,000	ND<10	ND<10	ND<10	ND<10	--	440	1.9	6.6
	08/14/03	P	NR				9.66	0.00	NR	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	170	0.8	6.7
	11/13/03	P	NR				10.01	0.00	NR	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	130	1.7	6.4
	2/13/2004 <sup>4</sup>	P	252.69				9.34	0.00	243.35	330	ND<2.5	ND<2.5	ND<2.5	3.0	--	210	2.0	6.6

**Table 1  
Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

Well Number	Date Sampled	Purge/Not Purged	TOC Elevation (ft.-MSL)	Top of Screen (ft., bgs)	Bottom of Screen (ft., bgs)	Well Depth (ft., bgs)	Depth to Water (ft.)	FP Thickness (ft.)	Groundwater Elevation (ft.-MSL)	TPH-g/GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen <sup>5</sup> (mg/L)	pH Level <sup>5</sup>
MW-1	03/15/95		247.06				7.37	0.00	239.69	13,000	1,200	44	770	1,100	--	--	--	--
	05/30/95		247.06				8.48	0.00	238.58	19,000	1,600	30	890	1,400	--	--	--	--
	09/01/95		247.06				9.47	0.00	237.59	14,000	1,300	28	480	780	24,000	--	--	--
	11/13/95		247.06				8.78	0.01	238.29 <sup>1</sup>	11,000	570	17	260	410	--	25,000 <sup>2</sup>	--	--
	02/23/96		247.06				Well was decommissioned on 2-12-96											
MW-2	03/15/95		249.30				8.25	0.00	241.05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	05/30/95		249.30				9.93	0.00	239.37	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	09/01/95		249.30				10.69	0.00	238.61	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	--	--
	11/13/95		249.30				10.32	0.00	238.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--
	02/23/96		249.30				Well was decommissioned on 2-12-96											
VW-2	02/23/96		NR				6.92	0.00	NR	Not sampled: well not part of sampling program								
	08/08/02		NR				10.51	0.00	NR	Not sampled: well not part of sampling program								
AS-1	06/29/95		NR				9.20	0.00	NR	ND<50	1.6	ND<0.5	0.9	0.9	--	--	--	--

**Table 1**  
**Groundwater Elevation and Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

**Abbreviation**

--	= not analyzed, not available, or not applicable
*	= EPA method 8020 prior to 10/29/99
µg/L	= micrograms per liter
BTEX	= Benzene, toluene, ethylbenzene, xylenes by EPA method 8260B (EPA method 8021B from 10/29/99 to 2/10/03, and 8020 prior to 10/29/99).
DUP	= duplicate
ft-MSL	= elevation in feet, relative to mean sea level
GRO	= Gasoline Range Organics, C4- C12 Range
mg/L	= milligrams per liter
MTBE	= Methyl tertiary butyl ether
ND<	= not detected at or above the laboratory reporting limit
NR	= not reported; data not available or not measurable
NP	= Not purged prior to sampling.
P	= Purged prior to sampling.
TOC	= Top of Casing
TPH-g	= Total petroleum hydrocarbons as gasoline by modified EPA method 8260B (EPA Method 8015M prior to 2/10/03).
1	= [corrected elevation (Z')] = Z + (h * 0.73) where: Z: measured elevation, h: floating product thickness, 0.73: density ratio of oil to water
2	= analyzed by EPA method 8240
3	= also analyzed for fuel oxygenates
4	=TPH-g, BTEX and MTBE analyzed by EPA method 8260B beginning on 1st quarter 2003 sampling event
5	= Dissolved oxygen and pH levels are field measurements.
6	= Well Surveyed to NAVD'88 datum on 1/27/04.

**Source:** The data within this table collected prior to April 2002 was provided to URS by ARCO and their previous consultants. URS has not verified the accuracy of this information.

**Notes:** For previous historical groundwater elevation data please refer to Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6002, Oakland, California, (EMCON, February 23, 1996)

Beginning Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPGg) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.



**Table 2**  
**Groundwater Flow Direction and Gradient**

Former ARCO Service Station #6002  
6235 Seminary Avenue, Oakland, California

<b>Date Measured</b>	<b>Average Flow Direction</b>	<b>Average Hydraulic Gradient</b>
03/15/95	West-Southwest	0.08
05/30/95	West-Southwest	0.08
09/01/95	West-Southwest	0.09
11/13/95	West-Southwest	0.08
02/23/96	West-Southwest	0.08
05/10/96	West-Southwest	0.08
08/09/96	Southwest	0.08
11/08/96	Southwest	0.055
03/21/97	West-Southwest	0.051
05/27/97	West-Southwest	0.069
08/05/97	West	0.076
10/29/97	West-Southwest	0.036
02/25/98	West-Southwest	0.052
05/12/98	West	0.07
07/28/98	West	0.07
10/27/98	West-Southwest	0.06
02/08/99	West-Southwest	0.07
06/01/99	West-Northwest	0.07
08/25/99	West-Southwest	0.07
10/29/99	West	0.07
02/16/00	Southwest	0.05
06/23/00	West	0.042
08/17/00	West	0.087
11/10/00	West-Southwest	0.080
02/12/01	West-Southwest	0.074
04/13/01	West	0.085
07/18/01	West	0.075
10/01/01	West-Southwest	0.083
01/14/02	West-Southwest	0.072
04/03/02	West-Southwest	0.084
08/08/02	West-Southwest	0.088
11/27/02	West-Southwest	0.075
02/10/03	Southwest	0.062
06/03/03	West	0.069
08/14/03	West-Southwest	0.066
11/13/03	West-Southwest	0.066
<b>02/13/04</b>	<b>Southwest</b>	<b>0.053</b>

Source:

The data within this table collected prior to April 2002 was provided to URS by ARCO and their previous consultants. URS has not verified the accuracy of this information.

**Table 3**  
**Fuel Oxygenate Analytical Data**

Former ARCO Service Station #6002  
6235 Seminary Avenue  
Oakland, California

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-3	02/10/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
MW-4	02/10/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/03/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	08/14/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-5	02/10/03	ND<200	ND<100	100	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/03/03	ND<1,000	ND<200	160	ND<5.0	ND<5.0	ND<5.0	NA	NA
	11/13/03	ND<1,000	ND<200	90	ND<5.0	ND<5.0	ND<5.0	NA	NA
	02/13/04	ND<200	41	90	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-6	02/10/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
MW-7	02/10/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/03/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	08/14/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-8	02/10/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/03/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	08/14/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
VW-1	02/10/03	ND<40	ND<20	11	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/03/03	ND<100	ND<20	13	ND<0.50	ND<0.50	ND<0.50	NA	NA
	08/14/03	ND<100	ND<20	18	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	11/13/03	ND<100	ND<20	13	ND<0.50	ND<0.50	ND<0.50	NA	NA
	02/13/04	ND<100	ND<20	8.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
VW-4	02/10/03	ND<4,000	ND<2,000	2,500	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/03/03	ND<2,000	4,100	440	ND<10	ND<10	ND<10	NA	NA
	08/14/03	ND<1,000	3,200	170	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	11/13/03	ND<1,000	3,300	130	ND<5.0	ND<5.0	ND<5.0	NA	NA
	02/13/04	ND<500	1,300	210	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5

Note = All fuel oxygenate compounds analyzed using EPA Method 8260B  
1,2-DCA = 1,2-Dichloroethane  
DIPE = Di-isopropyl ether  
EDB = 1,2-Dibromoethane  
ETBE = Ethyl tert butyl ether  
µg/L = micrograms per liter  
MTBE = Methyl tert-butyl ether  
NA = Not analyzed  
ND< = Not detected at or above the laboratory reporting limit  
NS = Not sampled  
TAME = tert-Amyl methyl ether  
TBA = tert-Butyl alcohol

**ATTACHMENT A**  
**FIELD PROCEDURES AND FIELD DATA SHEETS**

## FIELD PROCEDURES

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### Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and depth to bottom, and checking for the presence of free phase petroleum product (free product), using either an electronic indicator and a clear Teflon™ bailer or an oil-water interface probe. Wells not containing free product are purged approximately three casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. Equipment and purging method used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially (approximately 80%) recover. Groundwater samples (both purge and no purge) are collected using a Teflon bailer, placed into appropriate Environmental Protection Agency- (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to a California State-certified laboratory. Wells with free product are not sampled and free product is removed according to California Code of Regulation, Title 23, Div. 3, Chap. 16, Section 2655, UST Regulations.

## WELL GAUGING DATA

Project # 040213-PA2 Date 2/13/04 Client 6002

Site 6235 Seminary Ave. Oakland, CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-3	4					8.40	24.53	TOC	
MW-4	4					10.28	24.30		
MW-5	4	0				9.12.38 PA	24.59		NPE 5'
MW-6	2					7.38	32.09		
MW-7	2					7.62	13.35		
MW-8	2					8.38	14.09		
VW-1	4					7.35	14.10		Purge
VW-3	4					8.48	14.23		
VW-4	4					9.34	14.98	↓	Purge

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA2	Station # 6002
Sampler: DA	Date: 2/13/04
Well I.D.: MW-5	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 24.59	Depth to Water: 12.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVD</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.34	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: ~~Bailer~~  
~~Disposable Bailer~~  
~~Positive Air Displacement~~  
~~Electric Submersible Extraction Pump~~  
 Other: \_\_\_\_\_

Sampling Method: Bailer  
 × Disposable Bailer  
 Extraction Port  
 Other: \_\_\_\_\_

Top of Screen: 5'      If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

1 Case Volume (Gals.)	x <u>No Purge</u>	=	_____ Gals. Calculated Volume
	Specified Volumes		

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
1209	62.8	6.7	545	-	clear, gas odor

Did well dewater? Yes  No       Gallons actually evacuated: -

Sampling Time: 1214      Sampling Date: 2/13/04

Sample I.D.: MW-5      Laboratory: Pace Sequoia Other \_\_\_\_\_

Analyzed for: TPH-L BTEX MTBE TPH-D Other: Oxy's, Ethanol, 1,2 DCA + EDB

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.1 mg/L
	Pre-purge:	mV	Post-purge:	mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA2	Station # 6002
Sampler: DA	Date: 2/13/04
Well I.D.: √W-1	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 14.10	Depth to Water: 7.35
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YS</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	<u>4"</u>	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u> Disposable Bailer Positive Air Displacement x Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> x Disposable Bailer Extraction Port Other: _____
--	--

Top of Screen: \_\_\_\_\_ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

4.4	x	3	=	13.2	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
1134	61.8	6.0	754	4.5	cloudy tan
1135	62.3	6.0	762	9	"
1136	62.6	6.0	765	13.5	"

Did well dewater? Yes <u>(No)</u>	Gallons actually evacuated: 13.5
Sampling Time: 1140	Sampling Date: 2/13/04
Sample I.D.: √W-1	Laboratory: Pace <u>Sequonia</u> Other _____
Analyzed for: <u>TPH-G BTEX</u> MTBE TPH-D Other: <u>Oxy's, Ethanol, 1,2 DCA + EDB</u>	
D.O. (if req'd):	Pre-purge: _____ mg/L      Post-purge: 1.0 mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV      Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA2	Station # 6002
Sampler: DA	Date: 2/13/04
Well I.D.: VW-4	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: 14.98	Depth to Water: 9.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): <u>(YSI)</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <input type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Positive Air Displacement <input checked="" type="checkbox"/> Electric Submersible Extraction Pump Other: _____	Sampling Method: <input type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Other: _____
--	--

Top of Screen: \_\_\_\_\_      If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

<u>3.7</u>	x	<u>3</u>	=	<u>11.1</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <u>(µS)</u> )	Gals. Removed	Observations
1150	60.0	6.3	760	4	grey, turbid
1151	62.4	6.4	695	8	clear, slight gas odor
1152	62.8	6.6	704	11.5	"

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Gallons actually evacuated: 11.5
Sampling Time: 1155	Sampling Date: 2/13/04
Sample I.D.: VW-4	Laboratory: Pace <u>(Sequoia)</u> Other _____
Analyzed for: <u>(TPH-G RTEx)</u> MTBE TPH-D Other: Oxy's, Ethanol, 1,2 DCA + EDB	
D.O. (if req'd):	Pre-purge: _____ mg/L      Post-purge: 2.0 mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV      Post-purge: _____ mV



**BP GEM OIL COMPANY TYPE A BILL OF LADING**

SOURCE RECORD BILL OF LADING FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT BP GEM OIL COMPANY FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY DILLARD ENVIRONMENTAL TO THE ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY IN LIVERMORE, CALIFORNIA.

The contractor performing this work is PLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Avenue, San Jose, CA 95112 (phone [408] 573-0555). Blaine Tech Services, Inc. is authorized by BP GEM OIL COMPANY to recover, collect, apportion into loads the Non-Hazardous Well Purgewater that is drawn from wells at the BP GEM Oil Company facility indicated below and deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one BP GEM facility to the designated destination point; from one BP GEM facility to the designated destination point via another BP GEM facility; from a BP GEM facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of BP GEM Oil Company.

This Source Record BILL OF LADING was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the BP GEM Oil Company facility described below:

6002

Station #

6235 Seminary Ave. Oakland, CA

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

25

added equip. 5  
rinse water \_\_\_\_\_

any other adjustments \_\_\_\_\_

TOTAL GALS. RECOVERED 30

loaded onto BTS vehicle # 49

BTS event #

time date

040213-DA2

1230

2-13-04

signature

David Allbut

\*\*\*\*\*  
REC'D AT

time

date

unloaded by  
signature \_\_\_\_\_

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

**ATTACHMENT B**

**LABORATORY PROCEDURES,  
CERTIFIED ANALYTICAL REPORTS,  
AND CHAIN-OF-CUSTODY RECORDS**

## **LABORATORY PROCEDURES**

---

### **Laboratory Procedures**

The groundwater samples were analyzed for the presence of the chemicals mentioned in the chain of custody using standard EPA methods. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical reports and chain-of-custody record are presented in this attachment. The analytical data provided by the laboratory approved by Atlantic Richfield Company have been reviewed and verified by that laboratory.



3 March, 2004

Scott Robinson  
URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland, CA 94612

RE: ARCO #6002, Oakland, CA  
Work Order: MNB0482

Enclosed are the results of analyses for samples received by the laboratory on 02/17/04 15:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Hartley For Lisa Race  
Senior Project Manager

CA ELAP Certificate #1210



URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland CA, 94612

Project: ARCO #6002, Oakland, CA  
Project Number: INTRIM-50675  
Project Manager: Scott Robinson

MNB0482  
Reported:  
03/03/04 19:10

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-5	MNB0482-01	Water	02/13/04 12:14	02/17/04 15:15
VW-1	MNB0482-02	Water	02/13/04 11:40	02/17/04 15:15
VW-4	MNB0482-03	Water	02/13/04 11:55	02/17/04 15:15

URS Corporation [Arco]  
 1333 Broadway, Suite 800  
 Oakland CA, 94612

 Project: ARCO #6002, Oakland, CA  
 Project Number: INTRIM-50675  
 Project Manager: Scott Robinson

 MNB0482  
 Reported:  
 03/03/04 19:10

**Volatile Organic Compounds by EPA Method 8260B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-5 (MNB0482-01) Water    Sampled: 02/13/04 12:14    Received: 02/17/04 15:15</b>									
Ethanol	ND	200	ug/l	2	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	41	40	"	"	"	"	"	"	
Methyl tert-butyl ether	90	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Benzene	1.4	1.0	"	"	"	"	"	"	
Toluene	1.9	1.0	"	"	"	"	"	"	
Ethylbenzene	23	1.0	"	"	"	"	"	"	
Xylenes (total)	3.6	1.0	"	"	"	"	"	"	
Gasoline Range Organics	1400	100	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.2 %		78-129	"	"	"	"	
<b>VW-1 (MNB0482-02) Water    Sampled: 02/13/04 11:40    Received: 02/17/04 15:15</b>									
Ethanol	ND	100	ug/l	1	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	8.0	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	0.56	0.50	"	"	"	"	"	"	
Gasoline Range Organics	59	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		94.8 %		78-129	"	"	"	"	

URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland CA, 94612

Project: ARCO #6002, Oakland, CA  
Project Number: INTRIM-50675  
Project Manager: Scott Robinson

MNB0482  
Reported:  
03/03/04 19:10

**Volatile Organic Compounds by EPA Method 8260B  
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>VW-4 (MNB0482-03) Water    Sampled: 02/13/04 11:55    Received: 02/17/04 15:15</b>									
Ethanol	ND	500	ug/l	5	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	1300	100	"	"	"	"	"	"	
Methyl tert-butyl ether	210	2.5	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.5	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	2.5	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.5	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	2.5	"	"	"	"	"	"	
Benzene	ND	2.5	"	"	"	"	"	"	
Toluene	ND	2.5	"	"	"	"	"	"	
Ethylbenzene	ND	2.5	"	"	"	"	"	"	
Xylenes (total)	3.0	2.5	"	"	"	"	"	"	
Gasoline Range Organics	330	250	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		93.4 %		78-129	"	"	"	"	

URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland CA, 94612

Project: ARCO #6002, Oakland, CA  
Project Number: INTRIM-50675  
Project Manager: Scott Robinson

MNB0482  
Reported:  
03/03/04 19:10

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch 4B27015 - EPA 5030B P/T**
**Blank (4B27015-BLK1)**

Prepared &amp; Analyzed: 02/27/04

Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	20	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	4.73		"	5.00		94.6	78-129			

**Laboratory Control Sample (4B27015-BS1)**

Prepared &amp; Analyzed: 02/27/04

Ethanol	171	100	ug/l	200		85.5	31-143			
tert-Butyl alcohol	47.2	20	"	50.0		94.4	56-131			
Methyl tert-butyl ether	10.2	0.50	"	10.0		102	63-137			
Di-isopropyl ether	9.95	0.50	"	10.0		99.5	76-130			
Ethyl tert-butyl ether	10.8	0.50	"	10.0		108	81-121			
tert-Amyl methyl ether	10.6	0.50	"	10.0		106	82-140			
1,2-Dichloroethane	9.67	0.50	"	10.0		96.7	77-136			
1,2-Dibromoethane (EDB)	10.9	0.50	"	10.0		109	77-132			
Benzene	10.0	0.50	"	10.0		100	78-124			
Toluene	10.1	0.50	"	10.0		101	78-129			
Ethylbenzene	9.08	0.50	"	10.0		90.8	84-117			
Xylenes (total)	28.2	0.50	"	30.0		94.0	83-125			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	4.71		"	5.00		94.2	78-129			

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.*



URS Corporation [Arco]  
 1333 Broadway, Suite 800  
 Oakland CA, 94612

 Project: ARCO #6002, Oakland, CA  
 Project Number: INTRIM-50675  
 Project Manager: Scott Robinson

 MNB0482  
 Reported:  
 03/03/04 19:10

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4B27015 - EPA 5030B P/T</b>										
<b>Laboratory Control Sample (4B27015-BS2)</b>					Prepared & Analyzed: 02/27/04					
Methyl tert-butyl ether	9.41	0.50	ug/l	10.1		93.2	63-137			
Benzene	5.70	0.50	"	6.48		88.0	78-124			
Toluene	35.0	0.50	"	29.7		118	78-129			
Ethylbenzene	7.27	0.50	"	7.20		101	84-117			
Xylenes (total)	37.3	0.50	"	33.7		111	83-125			
Gasoline Range Organics	379	50	"	440		86.1	70-113			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.68</i>		"	<i>5.00</i>		<i>93.6</i>	<i>78-129</i>			
<b>Laboratory Control Sample Dup (4B27015-BSD1)</b>					Prepared: 02/27/04 Analyzed: 02/28/04					
Ethanol	237	100	ug/l	200		118	31-143	32.4	20	QR-02
tert-Butyl alcohol	47.4	20	"	50.0		94.8	56-131	0.423	20	
Methyl tert-butyl ether	10.0	0.50	"	10.0		100	63-137	1.98	13	
Di-isopropyl ether	9.63	0.50	"	10.0		96.3	76-130	3.27	9	
Ethyl tert-butyl ether	10.4	0.50	"	10.0		104	81-121	3.77	9	
tert-Amyl methyl ether	10.4	0.50	"	10.0		104	82-140	1.90	12	
1,2-Dichloroethane	10.1	0.50	"	10.0		101	77-136	4.35	13	
1,2-Dibromoethane (EDB)	10.6	0.50	"	10.0		106	77-132	2.79	9	
Benzene	9.74	0.50	"	10.0		97.4	78-124	2.63	12	
Toluene	10.1	0.50	"	10.0		101	78-129	0.00	10	
Ethylbenzene	9.17	0.50	"	10.0		91.7	84-117	0.986	10	
Xylenes (total)	28.2	0.50	"	30.0		94.0	83-125	0.00	11	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.77</i>		"	<i>5.00</i>		<i>95.4</i>	<i>78-129</i>			
<b>Laboratory Control Sample Dup (4B27015-BSD2)</b>					Prepared: 02/27/04 Analyzed: 02/28/04					
Methyl tert-butyl ether	9.35	0.50	ug/l	10.1		92.6	63-137	0.640	13	
Benzene	5.77	0.50	"	6.48		89.0	78-124	1.22	12	
Toluene	35.9	0.50	"	29.7		121	78-129	2.54	10	
Ethylbenzene	7.29	0.50	"	7.20		101	84-117	0.275	10	
Xylenes (total)	38.0	0.50	"	33.7		113	83-125	1.86	11	
Gasoline Range Organics	369	50	"	440		83.9	70-113	2.67	9	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.00</i>		"	<i>5.00</i>		<i>100</i>	<i>78-129</i>			

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.*

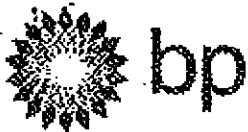
URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland CA, 94612

Project: ARCO #6002, Oakland, CA  
Project Number: INTRIM-50675  
Project Manager: Scott Robinson

MNB0482  
Reported:  
03/03/04 19:10

#### Notes and Definitions

- QR-02 The RPD result exceeded the control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



**Chain of Custody Record** MNK0482

Project Name 6002 GWM  
 BP BU/GEM CO Portfolio Retail  
 BP Laboratory Contract Number: Atlantic Richfield Company  
 Requested Due Date (mm/td/yy) 14 day TAT

On-site Time: 1224 Temp: 60.1  
 Off-site Time: 1245 Temp: 60.3  
 Sky Conditions: cloudy  
 Meteorological Events: \_\_\_\_\_  
 Wind Speed: 6 Direction: N

Date: 2/13/04

Send To:	BP/GEM Facility No.: <u>ARCO 6002</u>	Consultant/Contractor: <u>URS</u>
Lab Name: <u>SEQUOIA</u>	BP/GEM Facility Address: <u>6235 Seminary Ave, OAKLAND, CA</u>	Address: <u>500 12th St., Ste. 200</u>
Lab Address: <u>885 Jarvis Dr.</u>	Site ID No. <u>ARCO 6002</u>	<u>Oakland, CA 94609-4014</u>
<u>Morgan Hill, CA 95037</u>	Site Lab Code: _____	e-mail EDD: <u>donna.casper@URSCorp.com</u>
	California Global ID #: <u>T0600100105</u>	Consultant/Contractor Project No.: <u>15-0006002.01 00127</u>
Lab PM <u>Theresa Allen</u>	BP/GEM PM Contact: <u>PAUL SUPPLE</u>	Consultant Tele/Fax: <u>510-893-3600/510-874-3268</u>
Tele/Fax: <u>408-776-9600 / 408-782-0308</u>	Address: <u>P.O. Box 6549</u>	Consultant/Contractor PM: <u>Scott Robinson</u>
Report Type & QC Level: <u>1 Send BDF Reports</u>	<u>Moraga, CA 94570</u>	Invoice to: Consultant/Contractor of <u>BP/GEM</u> (Circle one)
BP/GEM Account No.: _____	Tele/Fax: <u>925-298-8891/925-299-8872</u>	BP/GEM Work Release No: <u>INTRIM -50625</u>

Item No.	Sample Description	Time	Matrix				Laboratory No.	No. of containers	Preservatives			Requested Analysis							Sample Point Lat/Long and Comments		
			Solid	Liquid	Secimens	Alt			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	TPH-G / BTEX C80:V80E1-8260	TPH-D (8015)	MTBE (8021)	MTBE (8260)	MTBE, TAME, ETBE DPE, TBA (8260)	1,2-DCA & EDB (8260)		Ethanol (8260)	
1	MA-5	1214		✓			01	3					✓								
	✓ VW-1	1140		✓			02	1					✓								
	✓ VW-4	1155		✓			03	1					✓								
4	FB-0A			✓			004														
	FB-6002-021304			✓			0501	2													on hold
6																					
7																					
8																					
9																					
10																					

Sampler's Name: <u>David Allbert</u>	Relinquished By / Affiliation: <u>David Allbert / BTS</u>	Date: <u>2/17/04</u>	Time: <u>1410</u>	Accepted By / Affiliation: <u>Nelen Hernandez</u>	Date: <u>2-17-04</u>	Time: <u>1416</u>
Sampler's Company: <u>Blaine Tech</u>						
Instrument Date: _____						
Instrument Method: _____						
Tracking No: _____						

Notes: Address Invoice to BP/GEM but send to URS for approval

Freeze Yes  No  NH Temperature Blank Yes  No  Cooler Temperature on Receipt 6 °F/C Trip Blank Yes  No

# SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: bp  
 REC. BY (PRINT) NN  
 WORKORDER: MNB0482

DATE REC'D AT LAB: 2-17-04  
 TIME REC'D AT LAB: 1410/1515  
 DATE LOGGED IN: ~~1410~~ 2-18-04

DRINKING WATER for regulatory purposes: YES /  NO  
 WASTE WATER for regulatory purposes: YES /  NO

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) <input checked="" type="radio"/> Present / <input checked="" type="radio"/> Absent Intact / Broken*	01		MW-5	(3) VOS	HCL	L	2-17-04	2275070
2. Chain-of-Custody <input checked="" type="radio"/> Present / <input checked="" type="radio"/> Absent*	02		VW1	↓	↓	↓	↓	↓
3. Traffic Reports or Packing List: Present / <input checked="" type="radio"/> Absent	03		VW	↓	↓	↓	↓	↓
4. Airbill: Present / <input checked="" type="radio"/> Absent*	04		TB-6002-021304	2 VOS	HCL	L	2-17-04	↓
5. Airbill #:								
6. Sample Labels: <input checked="" type="radio"/> Present / <input checked="" type="radio"/> Absent								
7. Sample IDs: <input checked="" type="radio"/> Listed / <input checked="" type="radio"/> Not Listed on Chain-of-Custody								
8. Sample Condition: <input checked="" type="radio"/> Intact / <input checked="" type="radio"/> Broken* / <input checked="" type="radio"/> Leaking*								
9. Does information on chain-of-custody, traffic reports and sample labels agree? <input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No*								
10. Sample received within hold time: <input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No*								
11. Adequate sample volume received? <input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No*								
12. Proper Preservatives used: <input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No*								
13. Temp Rec. at Lab: Is temp 4 +/- 2°C? <input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No**								

2-17-04 NN

(Acceptance range for samples requiring thermal pres.)  
 \*\*Exception (if any): METALS / DFF ON ICE or Problem COC

\*IF CIRCLED, CONTACT PROJECT MANAGER AND ATTACH RECORD OF RESOLUTION.

**ATTACHMENT C**

**EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION**

---

## Error Summary Log

03/04/04

EDF 1.2i All files present in deliverable.

---

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #6002, Oakland, CA
Work Order Number:	MNB0482
Global ID:	T0600100105
Lab Report Number:	MNB0482030320041910

## Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
MNB04820303200 MW-5 41910		MNB048201	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
MNB04820303200 VW-1 41910		MNB048202	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
MNB04820303200 VW-4 41910		MNB048203	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
		4B27015BSD1	WQ	BD1	8260TPH	SW5030B	//	02/27/04	02/28/04	4B27015	1
		4B27015BSD2	WQ	BD2	8260TPH	SW5030B	//	02/27/04	02/28/04	4B27015	1
		4B27015BS1	WQ	BS1	8260TPH	SW5030B	//	02/27/04	02/27/04	4B27015	1
		4B27015BS2	WQ	BS2	8260TPH	SW5030B	//	02/27/04	02/27/04	4B27015	1
		4B27015BLK1	WQ	LB1	8260TPH	SW5030B	//	02/27/04	02/27/04	4B27015	1

# EDFSAMP: Error Summary Log

03/04/04

Error type	Logcode	Projname	Npdlwo	Sampid	Matrix
There are no errors in this data file					



# EDFTEST: Error Summary Log

03/04/04

Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
There are no errors in this data file					//	0

# EDFRES: Error Summary Log

03/04/04

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
There are no errors in this data file						//	0	

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## EDFQC: Error Summary Log

03/04/04

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Error type	Lablctcti	Anmcode	Parlabel	Qccode	Labqcid
There are no errors in this data files					

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## EDFCL: Error Summary Log

03/04/04

---

Error type	Crevdate	Anmcode	Exmcode	Parlabel	Cicode
There are no errors in this data file	//				

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Your EDF file has been successfully uploaded!

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**Confirmation Number:** 3169689834

**Date/Time of Submittal:** 3/4/2004 5:52:29 PM

**Facility Global ID:** T0600100105

**Facility Name:** ARCO

**Submittal Title:** QMR 1Q 2004 Site 6002

**Submittal Type:** GW Monitoring Report

Logged in as URSCORP-OAKLAND  
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### UPLOADING A GEO\_WELL FILE

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

**Submittal Title: 1st Quarter 2004 Geowell Data for Site #6002**

**Submittal Date/Time: 2/23/2004 1:06:50 PM**

**Confirmation Number: 5603748917**

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**ATTACHMENT D**

**WELL SURVEY DATA**

**BP/ARCO Survey Sheet**

Site: 6002  
 Date: 1/27/2004

Well ID	X-coord (NAD'83)	Y-coord (NAD'83)	Top of Casing (NAVD'88)	Top of Lid (NAVD'88)	Ground Surface (NAVD'88)	Comments
MW-3	-122.1739364	37.7800165	253.88	254.28	254.28	
MW-4	-122.1743459	37.7802436	248.62	249.09	249.09	
MW-5	-122.1743023	37.7799866	250.55	250.84	250.84	
MW-6	-122.1735987	37.7802970	257.94	258.13	258.13	
MW-7	-122.1745806	37.7799084	241.64	242.14	242.14	
MW-8	-122.1742087	37.7798408	246.09	246.62	246.62	
MW-11	-122.1739692	37.7800844	253.19	253.74	253.74	
MW-12	-122.1738889	37.7801948	256.24	256.56	256.56	
MW-9	-122.1740902	37.7802342	252.26	252.66	252.66	
MW-10	-122.1740832	37.7801674	252.68	253.85	252.97+/-	2 lids. Upper lid on top of island; ground surface shown is lower lid elevation.



**ATTACHMENT E**  
**WELL REPAIR DATA SHEETS**

REPAIR DATA SHEET

Client ARCO 6002 Date DEC 30, 2003

Site Address 6235 SEMINARY AVE Oakland CA

Job Number 031230-MK1 Technician MIKE KOUCH

Repair Location MW-3

Deficiencies Corrected REPLACED WELL BOX,  
Cut Down CASINGS (-11) SO WELL  
Box Will BE at the ~~right~~  
Correct ~~to~~ GRADE (NO SECURITY  
MARK PRESENT)

Materials Used 1 WELL BOX 4 BAGS of  
CONCRETE ~~High~~

Repair Location UW-1

Deficiencies Corrected REPLACED LID, 2 BELTS  
7 ADDED 2 NEW BELTS

Materials Used 2 BELTS 1-12" ENCO LID

Repair Location MW-6

Deficiencies Corrected REPLACED LOCK

Materials Used 1 LOCK (2357)

Repair Location \_\_\_\_\_

Deficiencies Corrected \_\_\_\_\_

Materials Used \_\_\_\_\_

Repair Location \_\_\_\_\_

Deficiencies Corrected \_\_\_\_\_

Materials Used \_\_\_\_\_

Repair Location \_\_\_\_\_

Deficiencies Corrected \_\_\_\_\_

Materials Used \_\_\_\_\_