Atlantic Richfield Company
(a BP affiliated company)

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

27 October 2006

Re: Third Quarter 2006 Annual Ground-Water Monitoring Report
Atlantic Richfield Company (a BP affiliated company) Station #2162
15135 Hesperian Boulevard
San Leandro, CA
ACEH Case #RO0000190

"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

Third Quarter 2006 Annual Ground-Water Monitoring Report
Atlantic Richfield Company Station #2162
15135 Hesperian Boulevard
San Leandro, California

Prepared for

Mr. Paul Supple
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
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27 October 2006

Project No. 06-08-620

Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
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BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

16 October 2006

Project No. 06-08-620

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

Attn.: Mr. Paul Supple

Re: Third Quarter 2006 Annual Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #2162, 15135 Hesperian Boulevard, San Leandro, California. ACEH Case #RO0000190.

Dear Mr. Supple:

Provided herein is the *Third Quarter 2006 Annual Ground-Water Monitoring Report* for Atlantic Richfield Company Station #2162 (herein referred to as Station #2162) located at 15135 Hesperian Boulevard, San Leandro, California (Property). This report presents a summary of results from annual ground-water monitoring conducted during the Third Quarter of 2006.

A request for case closure was submitted on 4 June 2004 to Alameda County Environmental Health (ACEH), and is still pending. A copy of the case closure request is enclosed for your convenience.

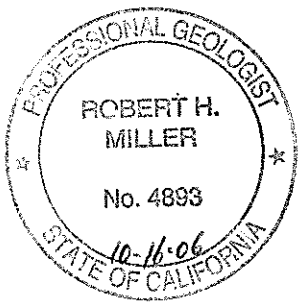
Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.
Senior Engineer

Robert H. Miller, P.G., C.HG.
Principal Hydrogeologist



Enclosures

cc: Mr. Stephen Plunkett, ACEH (Submitted via ACEH ftp site)
Mr. Karl Busche, City of San Leandro Environmental Services Division (Electronic copy uploaded to GeoTracker)

STATION #2162 ANNUAL GROUND-WATER MONITORING REPORT

Facility: #2162 Address:	15135 Hesperian Boulevard, San Leandro, California
Environmental Business Manager:	Mr. Paul Supple
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0000190
Consulting Company/Contact Person:	Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus, (530) 566-1400
Consultant Project No.:	06-08-620

WORK PERFORMED THIS QUARTER (Third Quarter 2006):

1. Prepared and submitted Second Quarter 2006 Status Report. Work performed by BAI.
2. Conducted ground-water monitoring/sampling for Third Quarter 2006 on 31 July 2006. Work performed by URS.

WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter 2006):

1. Submitted Third Quarter 2006 Annual Ground-Water Monitoring Report (contained herein).
2. No environmental work activities are scheduled to be completed on the Property during Fourth Quarter 2006.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Monitoring/sampling; Case closure request pending**
Frequency of ground-water sampling:	**MW-3 and MW-4 = Annual (3Q)** **MW-1 and MW-2 = Annual (3Q Gauge only)**
Frequency of ground-water monitoring:	**Annual**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**N/A**
Depth to ground water (below TOC):	**7.22 (MW-2) to 8.75 (MW-4) feet**
General ground-water flow direction:	**South-southwest**
Approximate hydraulic gradient:	**0.003 feet per foot**

DISCUSSION:

On 31 July 2006, URS conducted the Third Quarter 2006 annual ground-water monitoring and sampling event. Water levels were gauged from the four wells at the Site (Well locations are shown on Drawing 1). No difficulties were encountered during water level monitoring. Water level elevations were between historic minimum and maximum ranges, as summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the south-southwest at 0.003 ft/ft, consistent with historical data (see Table 3).

Consistent with the current ground-water sampling schedule, water samples were collected from wells MW-3 and MW-4. No irregularities were encountered during sampling. Samples were submitted to Test America Analytical Testing Corporation (Morgan Hill, CA). No irregularities were encountered during laboratory analysis of the samples, with the exception of the following: The laboratory control sample recovery was above method control limits for 1,2-Dichloroethane. As the analyte was not detected (ND) within the samples the data was not impacted. Methyl tert-butyl ether (MTBE) was detected above the laboratory reporting limit in one of the two wells sampled at a concentration of 4.3 micrograms per liter (µg/L) in MW-3. No other fuel components were detected at or above their respective laboratory reporting limits. Laboratory analytical results are summarized in Table 1 and

Table 2. A copy of the Laboratory Analytical Report, including chain of custody documentation is provided in Appendix A.

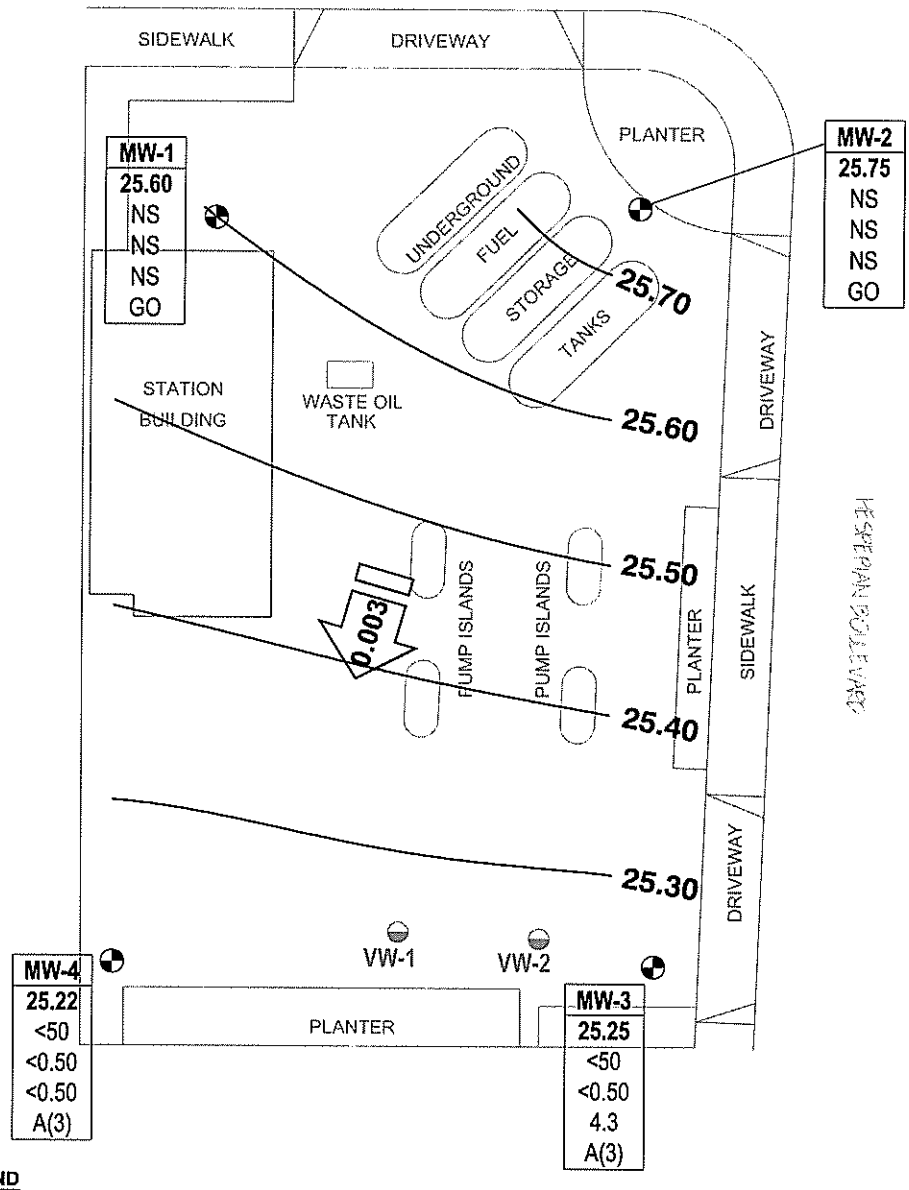
On 4 June 2004, URS submitted a Case Closure Request report to Ms. Eva Chu of ACEH. Response to this case closure request by ACEH is still pending. A copy of the 4 June 2004 Case Closure Request is provided in Appendix B.

CLOSURE:

The findings presented in this report are based upon: observations of URS field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Test America (Morgan Hill, California). Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

ATTACHMENTS:

Drawing 1.	Ground-Water Elevation Contour and Analytical Summary Map, 31 July 2006, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
Table 1.	Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #2162, 15135 Hesperian Blvd., San Leandro, California
Table 2.	Summary of Fuel Additives Analytical Data, Station #2162, 15135 Hesperian Blvd., San Leandro, California
Table 3.	Historical Ground-Water Flow Direction and Gradient, Station #2162, 15135 Hesperian Blvd., San Leandro, California
Appendix A.	URS Ground-Water Sampling Data Package (Includes Laboratory Report and Chain of Custody Documentation, Field and Laboratory Procedures, and Field Data Sheets)
Appendix B.	URS Request for Case Closure, submitted 4 June 2004
Appendix C.	GeoTracker Upload Confirmation



LEGEND

- MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- 25.40 — GROUND-WATER ELEVATION CONTOURS (FT MSL)
- 0.003 — APPROXIMATE GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)
- Well — WELL DESIGNATION
- ELEV — GROUND-WATER ELEVATION (FT ABOVE MSL)
- GRO / Benzene / MTBE — GRO, BENZENE AND MTBE CONCENTRATIONS IN GROUND WATER (µg/L)
- A/Q — SAMPLING FREQUENCY
- < — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
- GO — GAUGED ONLY
- A(3) — ANNUAL SAMPLING DURING 3RD QUARTER
- NS — NOT SAMPLED

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

N

0 30 60
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 06-08-620 Date: 10/04/06

Station #2162
15135 Hesperian Boulevard
San Leandro, California

Ground-Water Elevation Contour and Analytical Summary Map
31 July 2006

Drawing
1

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

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

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1															
6/20/2000	--		31.19	8.0	16.0	8.33	22.86	<50	<0.5	0.8	<0.5	<1.0	<10	--	--
9/29/2000	--		31.19	8.0	16.0	9.07	22.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		31.19	8.0	16.0	8.69	22.5	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/23/2001	--		31.19	8.0	16.0	8.19	23.0	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
6/20/2001	--		31.19	8.0	16.0	8.97	22.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		31.19	8.0	16.0	9.56	21.63	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		31.19	8.0	16.0	8.4	22.79	<50	<0.5	<0.5	<0.5	0.63	<2.5	--	--
3/14/2002	--		31.19	8.0	16.0	8.05	23.14	<50	<0.5	<0.5	<0.5	<0.5	170	--	--
4/18/2002	--		31.19	8.0	16.0	8.27	22.92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		31.19	8.0	16.0	8.88	22.31	<50	<0.5	<0.5	<0.5	<0.5	11	1.0	8.2
10/09/02	NP	a	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
03/28/03	NP	a, c	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
4/7/2003	NP		31.19	8.0	16.0	8.28	22.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.9
7/9/2003	NP		31.19	8.0	16.0	8.62	22.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	7.2
10/08/2003	--	d, e	31.13	8.0	16.0	9.19	21.94	--	--	--	--	--	--	--	--
01/13/2004	--		31.13	8.0	16.0	8.35	22.78	--	--	--	--	--	--	--	--
04/05/2004	--		33.70	8.0	16.0	7.29	26.41	--	--	--	--	--	--	--	--
07/12/2004	NP		33.70	8.0	16.0	9.00	24.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	7.0
10/19/2004	--		33.70	8.0	16.0	9.47	24.23	--	--	--	--	--	--	--	--
01/11/2005	--		33.70	8.0	16.0	7.64	26.06	--	--	--	--	--	--	--	--
04/14/2005	--		33.70	8.0	16.0	7.35	26.35	--	--	--	--	--	--	--	--
08/01/2005	--		33.70	8.0	16.0	8.21	25.49	--	--	--	--	--	--	--	--
7/31/2006	**--**		**33.70**	**8.0**	**16.0**	**8.10**	**25.6**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-2															
6/20/2000	--		30.38	8.0	16.0	7.38	23.0	--	--	--	--	--	--	--	--
9/29/2000	--		30.38	8.0	16.0	8.08	22.3	266	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		30.38	8.0	16.0	7.8	22.58	175	<0.5	<0.5	0.659	<0.5	<2.5	--	--
3/23/2001	--		30.38	8.0	16.0	7.23	23.15	351	<0.5	<0.5	0.912	<0.5	<2.5	--	--
6/20/2001	--		30.38	8.0	16.0	7.98	22.4	360	<0.5	<0.5	0.74	<0.5	<2.5	--	--
9/22/2001	--		30.38	8.0	16.0	8.55	21.83	190	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

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

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

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2 Cont.															
12/28/2001	--		30.38	8.0	16.0	7.53	22.85	130	<0.5	0.93	<0.5	0.51	<2.5	--	--
3/14/2002	--		30.38	8.0	16.0	7.17	23.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/18/2002	--		30.38	8.0	16.0	7.31	23.07	74	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P		30.38	8.0	16.0	7.93	22.45	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	7.6
10/9/2002	P		30.38	8.0	16.0	8.55	21.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	0.7	7.3
03/28/03	P	c	30.38	8.0	16.0	7.3	23.08	<50	<0.50	0.83	<0.50	<0.50	<0.50	1.48	7.7
4/7/2003	P		30.38	8.0	16.0	7.36	23.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.0
7/9/2003	P		30.38	8.0	16.0	7.71	22.67	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	7.6
10/08/2003	--		30.38	8.0	16.0	8.25	22.13	--	--	--	--	--	--	--	--
01/13/2004	--		30.38	8.0	16.0	7.55	22.83	--	--	--	--	--	--	--	--
04/05/2004	--		32.97	8.0	16.0	7.29	25.68	--	--	--	--	--	--	--	--
07/12/2004	NP		32.97	8.0	16.0	8.09	24.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.2
10/19/2004	--		32.97	8.0	16.0	8.29	24.68	--	--	--	--	--	--	--	--
01/11/2005	--		32.97	8.0	16.0	6.81	26.16	--	--	--	--	--	--	--	--
04/14/2005	--		32.97	8.0	16.0	6.69	26.28	--	--	--	--	--	--	--	--
08/01/2005	--		32.97	8.0	16.0	7.40	25.57	--	--	--	--	--	--	--	--
7/31/2006	**--**		**32.97**	**8.0**	**16.0**	**7.22**	**25.75**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-3															
6/20/2000	--		30.3	8.0	15.0	7.75	22.55	--	--	--	--	--	--	--	--
9/29/2000	--		30.3	8.0	15.0	8.46	21.84	<50	<0.5	<0.5	<0.5	<0.5	128	--	--
12/17/2000	--		30.3	8.0	15.0	8.01	22.29	<50	<0.5	<0.5	<0.5	<0.5	46.7	--	--
3/23/2001	--		30.3	8.0	15.0	7.7	22.6	<50	<0.5	<0.5	<0.5	<0.5	26.8	--	--
6/20/2001	--		30.3	8.0	15.0	8.23	22.07	<50	<0.5	<0.5	<0.5	<0.5	30	--	--
9/22/2001	--		30.3	8.0	15.0	8.89	21.41	<50	<0.5	<0.5	<0.5	<0.5	12	--	--
12/28/2001	--		30.3	8.0	15.0	7.83	22.47	<50	<0.5	<0.5	<0.5	<0.5	6.2	--	--
3/14/2002	--		30.3	8.0	15.0	7.48	22.82	<50	<0.5	<0.5	<0.5	<0.5	47	--	--
4/18/2002	--		30.3	8.0	15.0	7.62	22.68	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P	b (TPH-g)	30.3	8.0	15.0	8.23	22.07	100	<1.0	<1.0	<1.0	<1.0	330	0.9	7.6
10/9/2002	P		30.3	8.0	15.0	8.83	21.47	<50	<0.5	<0.5	<0.5	<0.5	61	0.5	7.4
03/28/03	P	c	30.3	8.0	15.0	7.85	22.45	52	<0.50	1.2	<0.50	<0.50	45	1.42	7.6

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

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

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-3 Cont.															
4/7/2003	P		30.3	8.0	15.0	7.71	22.59	56	<0.50	<0.50	<0.50	<0.50	56	1.1	6.8
7/9/2003	P		30.3	8.0	15.0	8.0	22.3	<500	<5.0	<5.0	<5.0	<5.0	87	1.6	7.4
10/08/2003	P		30.30	8.0	15.0	8.59	21.71	<50	<0.50	<0.50	<0.50	<0.50	25	0.9	--
01/15/2004	P		30.30	8.0	15.0	7.90	22.40	<50	<0.50	<0.50	<0.50	<0.50	9.8	2.9	7.3
04/05/2004	P		32.89	8.0	15.0	7.61	25.28	<50	<0.50	<0.50	<0.50	<0.50	15	1.5	7.0
07/12/2004	P		32.89	8.0	15.0	8.45	24.44	<50	<0.50	<0.50	<0.50	<0.50	7.3	1.6	6.9
10/19/2004	P		32.89	8.0	15.0	8.95	23.94	<50	<0.50	<0.50	<0.50	<0.50	5.0	0.96	7.1
01/11/2005	P		32.89	8.0	15.0	7.27	25.62	<50	<0.50	<0.50	<0.50	<0.50	2.3	--	7.2
04/14/2005	P		32.89	8.0	15.0	7.10	25.79	<50	<0.50	<0.50	<0.50	1.5	5.6	2.0	7.2
08/01/2005	P		32.89	8.0	15.0	7.71	25.18	<50	<0.50	<0.50	<0.50	<0.50	5.2	1.18	7.0
7/31/2006	**P**		**32.89**	**8.0**	**15.0**	**7.64**	**25.25**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**4.3**	**--**	**6.8**
MW-4															
6/20/2000	--		30.39	10.0	18.0	8.87	21.52	--	--	--	--	--	--	--	--
9/29/2000	--		30.39	10.0	18.0	9.61	20.78	<50	1.02	<0.5	<0.5	<0.5	12.2	--	--
12/17/2000	--		30.39	10.0	18.0	9.17	21.22	<50	<0.5	<0.5	<0.5	<0.5	5.81	--	--
3/23/2001	--		30.39	10.0	18.0	8.7	21.69	<50	<0.5	<0.5	<0.5	<0.5	3.04	--	--
6/20/2001	--		30.39	10.0	18.0	9.51	20.88	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		30.39	10.0	18.0	10.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	5.2	--	--
12/28/2001	--		30.39	10.0	18.0	8.86	21.53	<50	<0.5	<0.5	<0.5	<0.5	4.3	--	--
3/14/2002	--		30.39	10.0	18.0	8.52	21.87	<50	<0.5	<0.5	<0.5	<0.5	5.1	--	--
4/18/2002	--		30.39	10.0	18.0	8.76	21.63	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		30.39	10.0	18.0	9.39	21.00	<50	<0.5	<0.5	<0.5	<0.5	30	1.8	7.8
10/9/2002	NP		30.39	10.0	18.0	10.08	20.31	<50	<0.5	<0.5	<0.5	<0.5	28	1.0	8.0
03/28/03	NP	c	30.39	10.0	18.0	8.88	21.51	<50	<0.50	1.3	<0.50	<0.50	4.4	0.98	7.2
4/7/2003	NP		30.39	10.0	18.0	8.78	21.61	<50	<0.50	<0.50	<0.50	<0.50	14	1.1	7.0
7/9/2003	NP		30.39	10.0	18.0	9.14	21.25	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.6	7.4
10/08/2003	NP		30.39	10.0	18.0	9.77	20.62	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.6	6.4
01/15/2004	P		30.39	10.0	18.0	8.68	21.71	<50	1.4	0.84	<0.50	1.5	6.6	2.9	7.1
04/05/2004	NP		33.97	10.0	18.0	8.77	25.20	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	7.0
07/12/2004	NP		33.97	10.0	18.0	9.46	24.51	<50	<0.50	<0.50	<0.50	<0.50	1.0	2.5	6.6

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

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

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4 Cont.															
10/19/2004	NP		33.97	10.0	18.0	9.91	24.06	<50	<0.50	<0.50	<0.50	<0.50	4.4	1.21	7.9
01/11/2005	P		33.97	10.0	18.0	7.80	26.17	59	2.0	<0.50	<0.50	<0.50	11	0.9	7.1
04/14/2005	NP		33.97	10.0	18.0	8.07	25.90	<50	<0.50	<0.50	<0.50	<0.50	0.64	2.8	7.4
08/01/2005	NP		33.97	10.0	18.0	8.58	25.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.48	5.7
7/31/2006	**P**		**33.97**	**10.0**	**18.0**	**8.75**	**25.22**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**--**	**6.7**

SYMBOLS AND ABBREVIATIONS:
--- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in feet below ground surface
ft bgs = feet below ground surface
GRO = Gasoline Range Organics, range C4-C12
GWE = Groundwater elevation measured in feet above mean sea level
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in feet above mean sea level
TPH-g = Total petroleum hydrocarbons as gasoline
ug/L = Micrograms per liter

FOOTNOTES:
a = Well not accessable - car parked over.
b = Hydrocarbon pattern is present in the requested fuel quantitation range but does not represent the pattern of the requested fuel
c =TPH-g, BTEX and MTBE analyzed by EPA method 8260 beginning on 1st Quarter 2003 sampling event (3/28/03)
d = Guaged with stinger in well
e = Well casing lowered 0.06 feet during well repairs on 9/17/2003

NOTES:
Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPHg was changed to GRO. The resulting data may be impacted by the potential of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

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

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

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
3/28/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
3/28/2003	<100	<20	45	<0.50	<0.50	0.73	<0.50	<0.50	
4/7/2003	<100	<20	56	<0.50	<0.50	0.72	<0.50	<0.50	
7/9/2003	<1,000	<200	87	<5.0	<5.0	<5.0	<5.0	<5.0	
10/08/2003	<100	<20	25	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	9.8	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	15	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	7.3	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	**<300**	**<20**	**4.3**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	c
MW-4									
3/28/2003	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/08/2003	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data

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

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
01/11/2005	<100	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	**<300**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**c**

SYMBOLS AND ABBREVIATIONS:
< = Not detected at or above specified laboratory reporting limit
--- = Not analyzed/applicable/measured/available
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = Tert-amyl methyl ether
TBA = Tert-butyl alcohol
ug/L = Micrograms per liter

FOOTNOTES:
a = The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.
b = The calbration verification for ethanol was within method limits but outside contract limits.
c = LCS rec. above meth. control limits. Analyte ND. Data not impacted.

NOTES:
All fuel oxygenate compounds analyzed using EPA Method 8260B

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

Table 3. Historical Ground-Water Flow Direction and Gradient

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

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

FOOTNOTES:
a = Direction at underground storage tanks
b = Direction at dispensers

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

APPENDIX A

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

URS

August 22, 2006

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

Groundwater Sampling Data Package
Arco Service Station #2162
15135 Hesperian Boulevard
San Leandro, CA
Field Work Performed: 07/31/06

General Information
Data Submittal Prepared/Reviewed by: Alok Kolekar
Phone Number: 510-874-3152
On-Site Supplier Representative: Blaine Tech
Scope of Work Performed: Groundwater Monitoring in accordance with 3rd Quarter 2006 protocols as identified in the Quarterly Monitoring Program Table in the Field and Laboratory Procedures Attachment.
Variations from Work Scope: None

This submittal presents the tabulation of data collected in association with routine groundwater monitoring. The attachments include, at a minimum, sampling procedures, field data collected, laboratory results, chain of custody documentation, and waste management activities. 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.

Alok D. Kolekar, P.E.
Project Manager

cc: Paul Supple, Atlantic Richfield Company (RM), electronic copy uploaded to ENFOS

URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612-1924
Tel: 510.893.3600
Fax: 510.874.3268

URS

Attachments

Field and Laboratory Procedures
Laboratory Report
Chain of Custody Documentation
Field Data Sheets
    Well Gauging Data
    Well Monitoring Data Sheets

FIELD & LABORATORY PROCEDURES

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.

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 RM have been reviewed and verified by that laboratory.

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17 August, 2006

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

RE: ARCO #2162, San Leandro, CA
Work Order: MPH0051

Enclosed are the results of analyses for samples received by the laboratory on 08/01/06 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race
Senior Project Manager

CA ELAP Certificate # 1210

The results in this laboratory report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPGCLN Technical Specifications, applicable Federal, State, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPGCLN. This entire report was reviewed and approved for release.

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URS Corporation [Arco]	Project: ARCO #2162, San Leandro, CA	MPH0051
1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-3	MPH0051-01	Water	07/31/06 11:45	08/01/06 18:00
MW-4	MPH0051-02	Water	07/31/06 11:20	08/01/06 18:00
TB-2162-07312006	MPH0051-03	Water	07/31/06 00:00	08/01/06 18:00

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies.

These samples were received with no custody seals.

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URS Corporation [Arco]	Project: ARCO #2162, San Leandro, CA	MPH0051
1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

Total Purgeable Hydrocarbons by GC/MS (CA LUFT)

TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MPH0051-01) Water Sampled: 07/31/06 11:45 Received: 08/01/06 18:00									
Gasoline Range Organics (C4-C12)	ND	50	ug/l	1	6H10026	08/10/06	08/10/06	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		*139 %*	*60-145*		"	"	"	"	
MW-4 (MPH0051-02) Water Sampled: 07/31/06 11:20 Received: 08/01/06 18:00									
Gasoline Range Organics (C4-C12)	ND	50	ug/l	1	6H10026	08/10/06	08/10/06	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		*89 %*	*60-145*		"	"	"	"	

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1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

Volatile Organic Compounds by EPA Method 8260B

TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MPH0051-01) Water Sampled: 07/31/06 11:45 Received: 08/01/06 18:00									
tert-Amyl methyl ether	ND	0.50	ug/l	1	6H10026	08/10/06	08/10/06	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	LP
Ethanol	ND	300	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**4.3**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*139 %*	*60-145*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95 %*	*60-120*		"	"	"	"	
Surrogate: Dibromofluoromethane		*113 %*	*75-130*		"	"	"	"	
Surrogate: Toluene-d8		*117 %*	*70-130*		"	"	"	"	
MW-4 (MPH0051-02) Water Sampled: 07/31/06 11:20 Received: 08/01/06 18:00									
tert-Amyl methyl ether	ND	0.50	ug/l	1	6H10026	08/10/06	08/10/06	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	LP
Ethanol	ND	300	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89 %*	*60-145*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*60-120*		"	"	"	"	
Surrogate: Dibromofluoromethane		*107 %*	*75-130*		"	"	"	"	
Surrogate: Toluene-d8		*94 %*	*70-130*		"	"	"	"	

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URS Corporation [Arco]	Project: ARCO #2162, San Leandro, CA	MPH0051
1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) - Quality Control

TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6H10026 - EPA 5030B P/T / LUFT GCMS										
Blank (6H10026-BLK1)				Prepared & Analyzed: 08/10/06						
Gasoline Range Organics (C4-C12)	ND	50	ug/l							
Surrogate: 1,2-Dichloroethane-d4	*1.99*		"	*2.50*		*80*	*60-145*			
Laboratory Control Sample (6H10026-BS1)				Prepared & Analyzed: 08/10/06						
Gasoline Range Organics (C4-C12)	541	50	ug/l	440		123	75-140			
Surrogate: 1,2-Dichloroethane-d4	*2.21*		"	*2.50*		*88*	*60-145*			
Matrix Spike (6H10026-MS1)	**Source: MPH0228-03**			Prepared & Analyzed: 08/10/06						
Gasoline Range Organics (C4-C12)	628	50	ug/l	440	67	128	75-140			
Surrogate: 1,2-Dichloroethane-d4	*2.42*		"	*2.50*		*97*	*60-145*			
Matrix Spike Dup (6H10026-MSD1)	**Source: MPH0228-03**			Prepared & Analyzed: 08/10/06						
Gasoline Range Organics (C4-C12)	560	50	ug/l	440	67	112	75-140	11	20	
Surrogate: 1,2-Dichloroethane-d4	*2.41*		"	*2.50*		*96*	*60-145*			

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1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control
TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6H10026 - EPA 5030B P/T / EPA 8260B										
Blank (6H10026-BLK1)				Prepared & Analyzed: 08/10/06						
tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	300	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*1.99*		"	*2.50*		*80*	*60-145*			
Surrogate: 4-Bromofluorobenzene	*2.78*		"	*2.50*		*111*	*60-120*			
Surrogate: Dibromofluoromethane	*2.44*		"	*2.50*		*98*	*75-130*			
Surrogate: Toluene-d8	*2.45*		"	*2.50*		*98*	*70-130*			
Laboratory Control Sample (6H10026-BS1)				Prepared & Analyzed: 08/10/06						
tert-Amyl methyl ether	13.8	0.50	ug/l	15.0		92	65-135			
Benzene	4.41	0.50	"	5.16		85	70-125			
tert-Butyl alcohol	116	20	"	143		81	60-135			
Di-isopropyl ether	13.0	0.50	"	15.1		86	70-130			
1,2-Dibromoethane (EDB)	14.4	0.50	"	14.9		97	80-125			
1,2-Dichloroethane	19.0	0.50	"	14.7		129	75-125			HL
Ethanol	184	300	"	142		130	15-150			
Ethyl tert-butyl ether	15.2	0.50	"	15.0		101	65-130			
Ethylbenzene	7.09	0.50	"	7.54		94	70-130			
Methyl tert-butyl ether	7.23	0.50	"	7.02		103	50-140			
Toluene	32.8	0.50	"	37.2		88	70-120			
Xylenes (total)	42.9	0.50	"	41.2		104	80-125			
Surrogate: 1,2-Dichloroethane-d4	*2.21*		"	*2.50*		*88*	*60-145*			
Surrogate: 4-Bromofluorobenzene	*2.62*		"	*2.50*		*105*	*60-120*			
Surrogate: Dibromofluoromethane	*2.44*		"	*2.50*		*98*	*75-130*			
Surrogate: Toluene-d8	*2.49*		"	*2.50*		*100*	*70-130*			

TestAmerica
ANALYTICAL TESTING CORPORATION

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.testamericainc.com

URS Corporation [Arco]	Project: ARCO #2162, San Leandro, CA	MPH0051
1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6H10026 - EPA 5030B P/T / EPA 8260B										
Matrix Spike (6H10026-MS1)	**Source: MPH0228-03**			Prepared & Analyzed: 08/10/06						
tert-Amyl methyl ether	18.2	0.50	ug/l	15.0	0.47	118	65-135			
Benzene	5.56	0.50	"	5.16	ND	108	70-125			
tert-Butyl alcohol	140	20	"	143	ND	98	60-135			
Di-isopropyl ether	18.6	0.50	"	15.1	ND	123	70-130			
1,2-Dibromoethane (EDB)	15.4	0.50	"	14.9	ND	103	80-125			
1,2-Dichloroethane	19.3	0.50	"	14.7	ND	131	75-125			HL
Ethanol	151	300	"	142	ND	106	15-150			
Ethyl tert-butyl ether	16.2	0.50	"	15.0	ND	108	65-130			
Ethylbenzene	7.40	0.50	"	7.54	ND	98	70-130			
Methyl tert-butyl ether	8.42	0.50	"	7.02	ND	120	50-140			
Toluene	43.4	0.50	"	37.2	ND	117	70-120			
Xylenes (total)	42.1	0.50	"	41.2	ND	102	80-125			
Surrogate: 1,2-Dichloroethane-d4	*2.42*		"	*2.50*		*97*	*60-145*			
Surrogate: 4-Bromofluorobenzene	*2.93*		"	*2.50*		*117*	*60-120*			
Surrogate: Dibromofluoromethane	*2.75*		"	*2.50*		*110*	*75-130*			
Surrogate: Toluene-d8	*2.74*		"	*2.50*		*110*	*70-130*			
Matrix Spike Dup (6H10026-MSD1)	**Source: MPH0228-03**			Prepared & Analyzed: 08/10/06						
tert-Amyl methyl ether	17.0	0.50	ug/l	15.0	0.47	110	65-135	7	25	
Benzene	5.14	0.50	"	5.16	ND	100	70-125	8	15	
tert-Butyl alcohol	135	20	"	143	ND	94	60-135	4	35	
Di-isopropyl ether	19.4	0.50	"	15.1	ND	128	70-130	4	35	
1,2-Dibromoethane (EDB)	15.5	0.50	"	14.9	ND	104	80-125	0.6	15	
1,2-Dichloroethane	17.9	0.50	"	14.7	ND	122	75-125	8	10	
Ethanol	150	300	"	142	ND	106	15-150	0.7	35	
Ethyl tert-butyl ether	16.6	0.50	"	15.0	ND	111	65-130	2	35	
Ethylbenzene	6.79	0.50	"	7.54	ND	90	70-130	9	15	
Methyl tert-butyl ether	9.70	0.50	"	7.02	ND	138	50-140	14	25	
Toluene	37.9	0.50	"	37.2	ND	102	70-120	14	15	
Xylenes (total)	41.9	0.50	"	41.2	ND	102	80-125	0.5	15	
Surrogate: 1,2-Dichloroethane-d4	*2.41*		"	*2.50*		*96*	*60-145*			
Surrogate: 4-Bromofluorobenzene	*2.36*		"	*2.50*		*94*	*60-120*			
Surrogate: Dibromofluoromethane	*2.63*		"	*2.50*		*105*	*75-130*			
Surrogate: Toluene-d8	*2.62*		"	*2.50*		*105*	*70-130*			

TestAmerica
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URS Corporation [Arco]	Project: ARCO #2162, San Leandro, CA	MPH0051
1333 Broadway, Suite 800	Project Number: G0C2C-0010	**Reported:**
Oakland CA, 94612	Project Manager: Alok Kolekar	08/17/06 15:09

Notes and Definitions

LP	LCS rec.above meth. control limits. Analyte ND. Data not impacted
HL	Analyte recovery above established limit
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Chain of Custody Record

Project Name: Analytical for QMR Sampling

BP BU/AR Region/Enfos Segment: BP > Americas > West Coast > Retail > WCBU > CA > Central > 2162 > HistoricalBL

State or Lead Regulatory Agency: California Regional Water Quality Control Board - San Fr

Requested Due Date (mm/dd/yy): 10 Day TAT

BTS# 060731-SC2

On-site Time: 1025	Temp: 70°
Off-site Time: 1205	Temp: 70°
Sky Conditions: Clear	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: Sequoia	BP/AR Facility No.: 2162	Consultant/Contractor: URS
Address: 885 Jarvis Drive	BP/AR Facility Address: 15135 Hesperian Blvd., San Leandro, CA 945	Address: 1333 Broadway, Suite 800
Morgan Hill, CA 95037	Site Lat/Long: 37.70001 / -122.1303	Oakland, CA 94612
Lab PM: Lisa Race / Katt Min	California Global ID No.: T0600100084	Consultant/Contractor Project No.: 38487350
Tele/Fax: 408.782.8156 / 408.782.6308	Enfos Project No.: G0C2C-0010	Consultant/Contractor PM: Alok Kolekar
BP/AR PM Contact: Paul Supple	Provision or RCOP: Provision	Tele/Fax: 510.874.3152 / 510.874.3268
Address: P.O. Box 6549	Phase/WBS: 04 - Mon/Remed by Natural Attenuation	Report Type & QC Level: Level 1 with EDF
Moraga, CA 94570	Sub Phase/Task: 03 - Analytical	E-mail EDD To: jane_field@URSCorp.com
Tele/Fax: 925.299.8891 / 925.299.8872	Cost Element: 05 - Subcontracted Costs	Invoice to: Atlantic Richfield Company

Lab Bottle Order No: 2162

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: GRO / BTEX (8260)	Requested Analysis: MTBE, TAME, ETBE, DIPE, TBA (8260)	Requested Analysis: 1,2-DCA & EDB (8260)	Requested Analysis: ETHANOL (8260)	Sample Point Lat/Long and Comments
1	MW-3	1145	07/31/06		X		01	3				X		X	X	X	X	MPA 0051
2	MW-4	1170	↓		X		02	3				X		X	X	X	X	
3	TB-2162-073106	—	↓		X		03	2				X						ON HOLD
4																		
5																		
6																		
7																		
8																		
9																		
10																		

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: S. Carmack						
Sampler's Company: Blaine Tech Services	BTS	7/31/06	1657		7/31/06	1657
Shipment Date:		7/1/06	1830		8-1-06	1731
Shipment Method:		8-1-06	1800		8/1/06	1800
Shipment Tracking No:						

Special Instructions: CC to bpedf@broadbentinc.com

Custody Seals In Place Yes ___ No ___ Temp Blank Yes ✓ No ___ Cooler Temperature on Receipt 8.1 °F/C Trip Blank Yes ✓ No ___

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: UPS
REC. BY (PRINT): Felix
WORKORDER: MPH0051

DATE REC'D AT LAB: 8/1/04
TIME REC'D AT LAB: 1800
DATE LOGGED IN: 8-2-04

For Regulatory Purposes?
DRINKING WATER YES / NO
WASTE WATER YES / NO

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	pH	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) Present / (Absent) Intact / Broken*									
2. Chain-of-Custody (Present) / Absent*									
3. Traffic Reports or Packing List: Present / (Absent)									
4. Airbill: Airbill / Sticker Present / (Absent)									
5. Airbill #:									
6. Sample Labels: (Present) / Absent									
7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody									
8. Sample Condition: (Intact) / Broken* / Leaking*									
9. Does information on chain-of-custody, traffic reports and sample labels agree? (Yes) / No*									
10. Sample received within hold time? Yes / (No*)									
11. Adequate sample volume received? (Yes) / No*									
12. Proper preservatives used? (Yes) / No*									
13. Trip Blank / Temp Blank Received? (circle which, if yes) (Yes) / No*									
14. Read Temp: 2.1°C Corrected Temp: 2.1°C Is corrected temp 4 +/-2°C? (Yes) / No**									
(Acceptance range for samples requiring thermal pres.) **Exception (if any): METALS / (OFF ON ICE) or Problem COC									

8/1/04 SEL

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

SRL Revision 7
Replaces Rev 5 (07/13/04)

WELL GAUGING DATA

Project # 060731-SC2 Date 07/31/06 Client ARCo 2162

Site 15135 Hesperian Blvd. San Leandro, CA

Well ID	Well Size (in.)	Time 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-1	4	1048				8.10	15.95		6.0
MW-2	4	1042				7.22	16.10		6.0
MW-3	4	1058				7.64	15.02		
MW-4	4	1106				8.75	17.77		

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 060731-SC2	Station # ARCO2162
Sampler: SC	Date: 07/31/06
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 15.02	Depth to Water: 7.64
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- Positive Air Displacement
- (X) Electric Submersible
- Extraction Pump
- Other: _____

Sampling Method:
- Bailer
- (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.

4.8 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 14.4 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1135	74.9	6.8	736	4.8	brownish clear
1136	74.7	6.7	751	9.6	" "
1137	73.6	6.8	740	14.4	" "

Did well dewater? Yes (No)	Gallons actually evacuated: 14.4
Sampling Time: 1145	Sampling Date: 07/31/06
Sample I.D.: MW-3	Laboratory: Pace Sequoia Other TA
Analyzed for: GRO BTEX MTBE DRO	Other: See COC

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge:)	0.98	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 060731-SC2	Station # ARCO 2162
Sampler: SC	Date: 07/31/06
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 17.77	Depth to Water: 8.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / ~~Disposable Bailer~~ / Positive Air Displacement / ~~Electric Submersible~~ / Extraction Pump / Other: ____

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / Other: ____

Top of Screen: NP@ 8'

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	3 (SC) Specified Volumes	=	Calculated Volume Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1115	70.6	6.7	806	—	Clear; brownish sand, solids
					no odor

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1120 Sampling Date: 07/31/06

Sample I.D.: MW-4 Laboratory: Pace Sequoia Other TE

Analyzed for: GRO BTEX MTBE DRO Other: See COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.84 (SC) 1.92 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 BLAINE 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:

ARCO 2162

Station #

15135 Hesperian Blvd. San Leandro, Ca

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

14.4

added equip. rinse water 0.6

any other adjustments

TOTAL GALS. RECOVERED 15

loaded onto BTS vehicle # 20

BTS event # 060731-SC2

time 1206

date 07/31/18

signature

* *

REC'D AT

time

date

unloaded by signature

WELLHEAD INSPECTION CHECKLIST
BP / GEM

Date 07/31/06

Site Address 15135 Hesperian Blvd. San Leandro, CA

Job Number 060731-SC1 Technician SC

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-1	X							
MW-2		X						
MW-3	X							
MW-4	X							

NOTES:

APPENDIX B

URS REQUEST FOR CASE CLOSURE DATED 4 JUNE 2004

URS

June 4, 2004

Ms. eva chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: Request for Case Closure
Atlantic Richfield Company Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

Dear Ms. chu:

On behalf of Atlantic Richfield Company (RM) – a BP affiliated company, URS Corporation (URS) is requesting Case Closure for Atlantic Richfield Company Service Station #2162 located at 15135 Hesperian Boulevard, San Leandro, California (the Site- Figure 1). Remediation activities at the Site have been successful in reducing the constituents of concern (COC) in soil and groundwater (See Attachment A for Site Closure Summary). This letter includes a brief Site history and addresses the six points defining a Low Risk Groundwater Case as laid out in *Supplemental Instructions to State Water Board, December 8, 1995, Interim Guidance on Required Cleanup at Low Risk Fuel Sites* (California Regional Water Quality Control Board (CRWQCB), January 5, 1996).

SITE HISTORY AND EXISTING CONDITIONS

The Site is an active gasoline retail station that consists of a station building, four 10,000 gallon double wall fiberglass tanks, four islands, and 8 dispensers. The Site is predominantly covered with concrete and asphalt. It is bound by Ruth Court to the north, Hesperian Boulevard to the east, and commercial buildings to the south and west. Shallow subsurface deposits in the region generally consist of a heterogeneous mixture of moderately to poorly sorted clay, silt, sand, and gravel (Helley, et al, 1979). Geologic data derived on-site from soil borings indicate unconsolidated sediments consisting of interbedded silt and silty clay from 1 to 9 feet below ground surface (bgs). A sand and gravel unit underlie these silts and silty clays. A silt unit encountered at 13 feet below ground surface (bgs) underlies the sand and gravel unit.

An underground storage tank (UST) leak was reported in September of 1991. The tanks were removed and replaced with four, double-wall fiberglass, 10,000 gallon tanks in the first quarter of 1992. Environmental investigations at the Site began in 1992, when four monitoring wells were installed. Product lines and dispensers were again replaced in January 2003.

A Limited Soil Performance Test was completed in the third quarter of 1991 to determine if Soil Vapor Extraction (SVE) was feasible at the Site. Two vapor wells were installed and the results of the test showed that SVE was not an effective remediation technique due to an insufficient radius of influence by the system. This was likely controlled by the Site lithology, which is predominantly silt and clay with subordinate sandy silt and sand in discontinuous lenses.

URS

CRITERIA FOR CLOSURE AS A LOW-RISK GROUNDWATER SITE

Supplemental Instructions to State Water Board, December 8, 1995, Interim Guidance on Required Cleanup at Low Risk Fuel Sites (CRWQCB, January 5, 1996) lists six criteria for closure of a low-risk groundwater Site. These six criteria are addressed in the following paragraphs.

1. *Leak has been stopped and ongoing sources, including free product, have been removed or remediated.*

   An underground storage tank (UST) leak was reported in September of 1991. During January and February of 1992, the tanks and product lines were excavated, removed and replaced. The USTs were replaced with four, double-wall fiberglass, 10,000 gallon tanks. Approximately 50,000 gallons of water was removed from the tank pit and approximately 100 cubic yards (approximately 130 tons) of contaminated soil were excavated & removed during these activities (Attachment D).

   The product lines and dispensers were replaced again in January 2003. Twelve soil samples were taken during the line upgrade performed in 2003 (Attachment D). One sample (S-L4-3.5) yielded a Total petroleum hydrocarbons as gasoline (TPH-g) concentration (200 milligrams per kilogram [mg/kg]) that exceeded the Environmental Screening Levels (ESL) for shallow soils (> 3m) that are a current or potential source of drinking water (100 mg/kg)(Attachment B). One sample (S-L1-3.5) yielded a benzene concentration (0.072 mg/kg) that exceeds the ESL (0.044 mg/kg). One sample (S-L4-3.5) yielded a total xylenes concentration (0.072 mg/kg) that meets the ESL (1.5 mg/kg). 3 samples (S-L1-3.5, S-L3-3.5, and S-D5-3) yielded Methyl-tert butyl ether (MTBE) concentrations (0.14 mg/kg, 0.55 mg/kg, and 0.093 mg/kg, respectively) that exceed the ESL (0.023mg/kg). Approximately 140 cubic yards (183 tons) of soil were excavated and removed from the Site during this upgrade of the product lines and dispensers.

2. *The Site has been adequately characterized*

   The *Preliminary Tank Replacement Assessment Report* prepared by Roux Associates documents the geologic data derived from seven boreholes drilled onsite. Borings logs from the installation of the four monitoring wells and cross sections A-A', B-B', and C-C' provide further geologic information (Attachments E and F, respectively).

   Groundwater at this Site has been monitored since 1992 through a network of four monitoring wells. Wells MW-1 and MW-2 are adjacent to the underground storage tanks (UST). Wells MW-3 and MW-4 are located downgradient at the southern boundary of the Site (Figure 1).

3. *The dissolved hydrocarbon plume is not migrating*

   Groundwater monitoring occurred from 1992 to the most recent sampling event in April 2004. Groundwater monitoring data from June 2000 through the most recent sampling event is included as Table 1. Historical groundwater monitoring data exists from February 1996 through February 2000 (Attachment C).

The constituents of concern at the Site are TPH-g/gasoline range organics (GRO), benzene, toluene, ethylbenzene, xylenes (BTEX), and MTBE. TPH-g/GRO have been non-detect and/or below ESLs for groundwater that is a current or potential drinking water resource in all wells since March 2002 (Table 1). The ESL's for groundwater that is a current or potential drinking water resource are included as Attachment B. The ESL for TPH-g in this case is 100 micrograms per liter (µg/L), 1 µg/L for benzene, and 5 µg/L for MTBE (Attachment B). The maximum TPH-g/GRO concentration was detected in well MW-2 at a concentration of 2,100 µg/L in October 1999. All wells have shown an overall decreasing trend in GRO concentrations since 1996 (Figures 2, 3, 4 and 5). Table 1 lists groundwater analytical results for the Site from June 20, 2000 to April 5, 2004. Historic groundwater data is included as Attachment C.

BTEX has been non-detect and/or below ESLs in all wells since December 2000. The maximum benzene concentration was detected in well MW-3 at a concentration of 12 µg/L in May 1996. Maximum concentrations for toluene, ethylbenzene and xylenes were 3.2 µg/L (MW-3), 45 µg/L (MW-2) and 28 µg/L (MW-2), respectively.

Wells MW-1, MW-2, MW-3, and MW-4 have shown a decreasing trend in MTBE concentrations since 1996 (Figures 2 through 5). MTBE has not been detected in well MW-1 since April 2003, or well MW-2 since September 2000. The maximum MTBE concentration was detected in well MW-3 at a concentration of 1,900 µg/L in June 1997. Concentrations have shown a decreasing trend from June 1997 to 15 µg/L in April 2004 (Figure 4). The MTBE concentration trend in well MW-4 has shown a decreasing trend from July 2002 (30 µg/L) to 1.3 µg/L in April 2004, thus below the ESL (Figure 5).

Figure 1 shows the most recent monitoring results and the distribution of analyte detections. Constituent concentrations are discussed further with respect to the ESLs in the discussion of criterion 5.

4. *No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.*

   Contamination at Site 2162 is restricted to the shallow groundwater zone, which is not likely to be used as a drinking water source. The lateral extent of contamination is limited to the immediate station area. The nearest domestic water well is located cross-gradient, 878 feet south-southeast of the Site, and the nearest surface water body is Lake Chabot which is 1.4 miles northeast of the Site. Sensitive receptors are therefore unlikely to be impacted.

5. *The Site presents no significant threat to human health*

   As indicated by the analytical results, the current GRO and BTEX concentrations in the four on-site monitoring wells do not exceed the ESLs for groundwater that is a current or potential source of drinking water (Attachment B). In addition, MTBE concentrations in MW-1 and MW-2 do not exceed the ESLs. MTBE exceeds the ESL (5 µg/L) in well MW-3 with a concentrations of 15 µg/L. Considering the downward trend of MTBE concentrations in MW-3 since 1997, it appears that this strong decreasing trend will continue. Thus, the future impairment of off-site receptors due to MTBE migration does not appear to be a significant risk.

URS

In addition to the residual COC's in soil impact on groundwater, direct exposure to human receptors from Site soils was considered. Human receptors that may potentially come in direct contact with soils include construction/trench workers. A comparison of ESLs protective of construction workers was used to evaluate potential health risk to direct exposure from soil. ESLs from Table K-3, *Direct Exposure Screening Levels Construction/Trench Worker Exposure*, in Volume 2 of the ESL document (Regional Water Quality Control Board, 2003) were compared with concentrations in Site soil (Attachment B). There were no exceedances of the selected direct exposure ESL.

6. *The Site presents no significant risk to the environment*

Surface waters, wetlands and other sensitive receptors are not likely to be impacted by contamination at Site 2162, as the extent of contamination is limited both vertically and laterally to the immediate station area, and is attenuating significantly. Also, there are no Site specific exposure pathways likely to cause impacts off site. The Site therefore presents no significant risk to the environment.

RECOMMENDATIONS

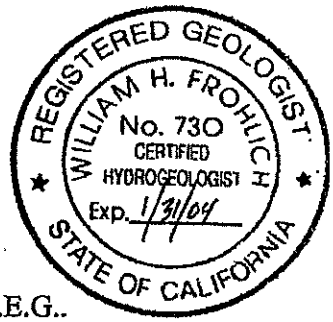
Based on the forgoing information, Atlantic Richfield Company Service Station No. 2162 meets the criteria for closure of a Low Risk Groundwater Case Site and URS respectfully requests closure of the Site. Should you have any questions or concerns, please contact me at (510) 874-3280.

Sincerely,

URS CORPORATION

Scott Robinson
Project Manager

William Frohlich, C.Hg., C.E.G..
Senior Geologist

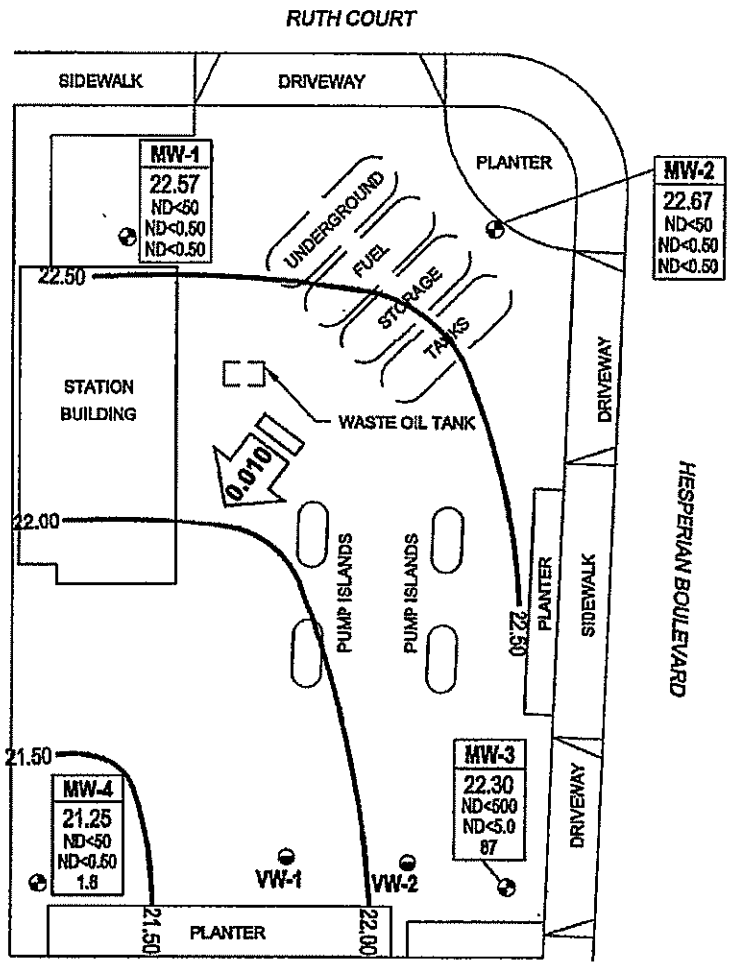


cc: Mr. Paul V. Supple, RM (electronic copy uploaded to ENFOS)

URS

ATTACHMENTS:

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – July 9, 2003
- Figure 2 – Concentration and Groundwater Elevation Trends for well MW-1
- Figure 3 – Concentration and Groundwater Elevation Trends for well MW-2
- Figure 4 – Concentration and Groundwater Elevation Trends for well MW-3
- Figure 5 – Concentration and Groundwater Elevation Trends for well MW-4
- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Fuel Oxygenate Analytical Data
- Table 3 – Groundwater Flow Direction and Gradient
- Attachment A – Site Closure Summary Form
- Attachment B – ESLs for Groundwater that is Current or Potential Source of Drinking Water.
- Attachment C – Historical Groundwater Data
- Attachment D – Historical Soil Data
- Attachment E – Boring Logs
- Attachment F – Site plan and Cross Sections



LEGEND

- MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- 22.00 — WATER TABLE CONTOUR (FT ABOVE MSL)
- 0.010 — APPROXIMATE GROUNDWATER FLOW GRADIENT AND DIRECTION (FT/FT)
- Well — WELL DESIGNATION
- ELEV — GROUNDWATER ELEVATION (FT ABOVE MSL)
- TPH-g / Benzene / MTBE — TPH-g, BENZENE AND MTBE CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
- ND< — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS

North

0 30 FT

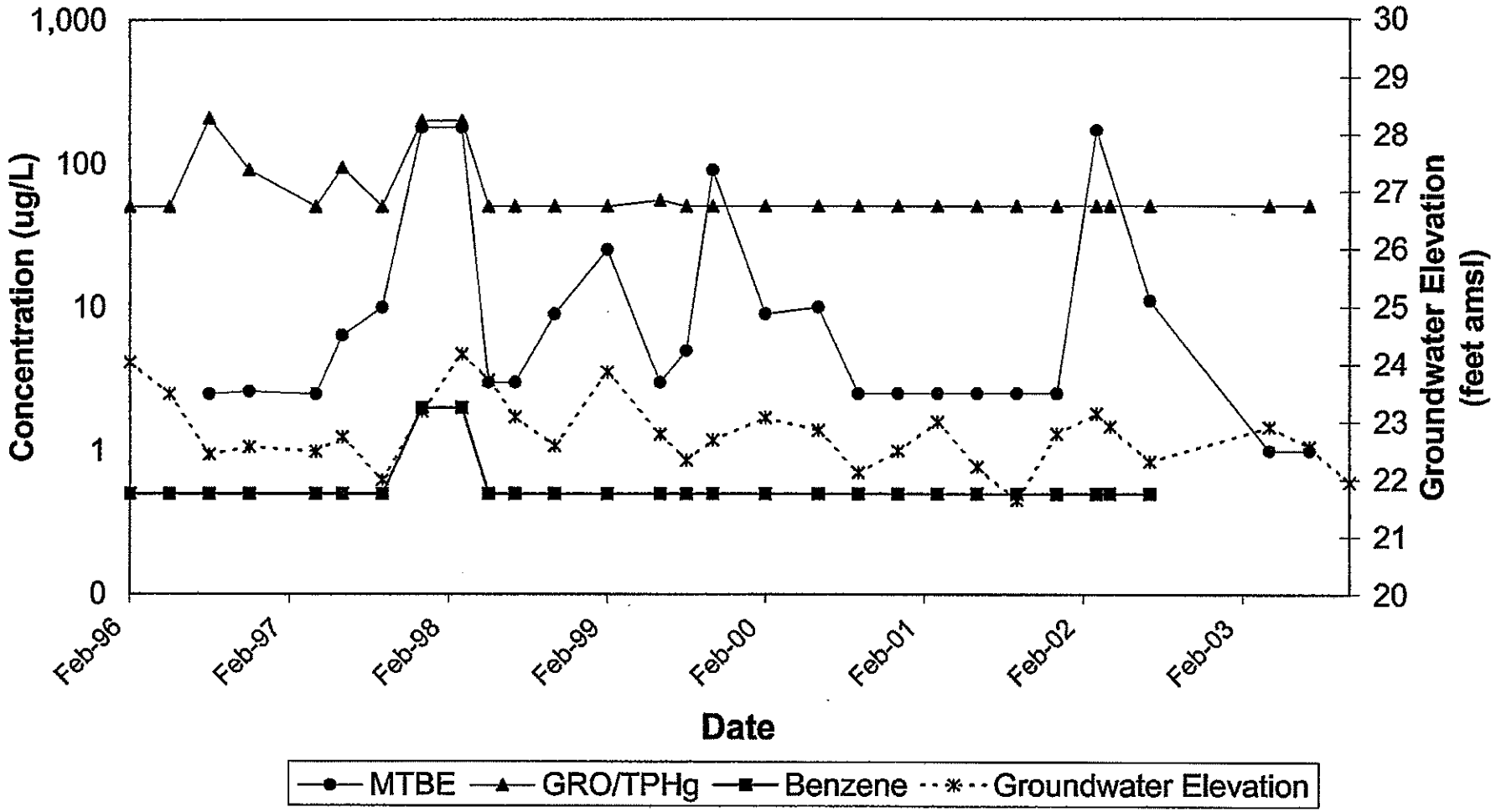
SCALE

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

URS	Project No. 38486326 Arco Service Station 2162 15135 Hesperian Boulevard San Leandro, California	GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP Third Quarter 2003 (July 9, 2003)	FIGURE 1

X:\x_srv_wasp\SF GEMS\Sites\Scott Robinson\Past Suppiet\2162\Monitoring\Qtr. 3, 2003\Drawings\GWEC-AS_7-9-03.dwg, 08/05/2003 03:54:57 PM, JKMT, URS

Concentration and Groundwater Elevation Trends
Well MW-1

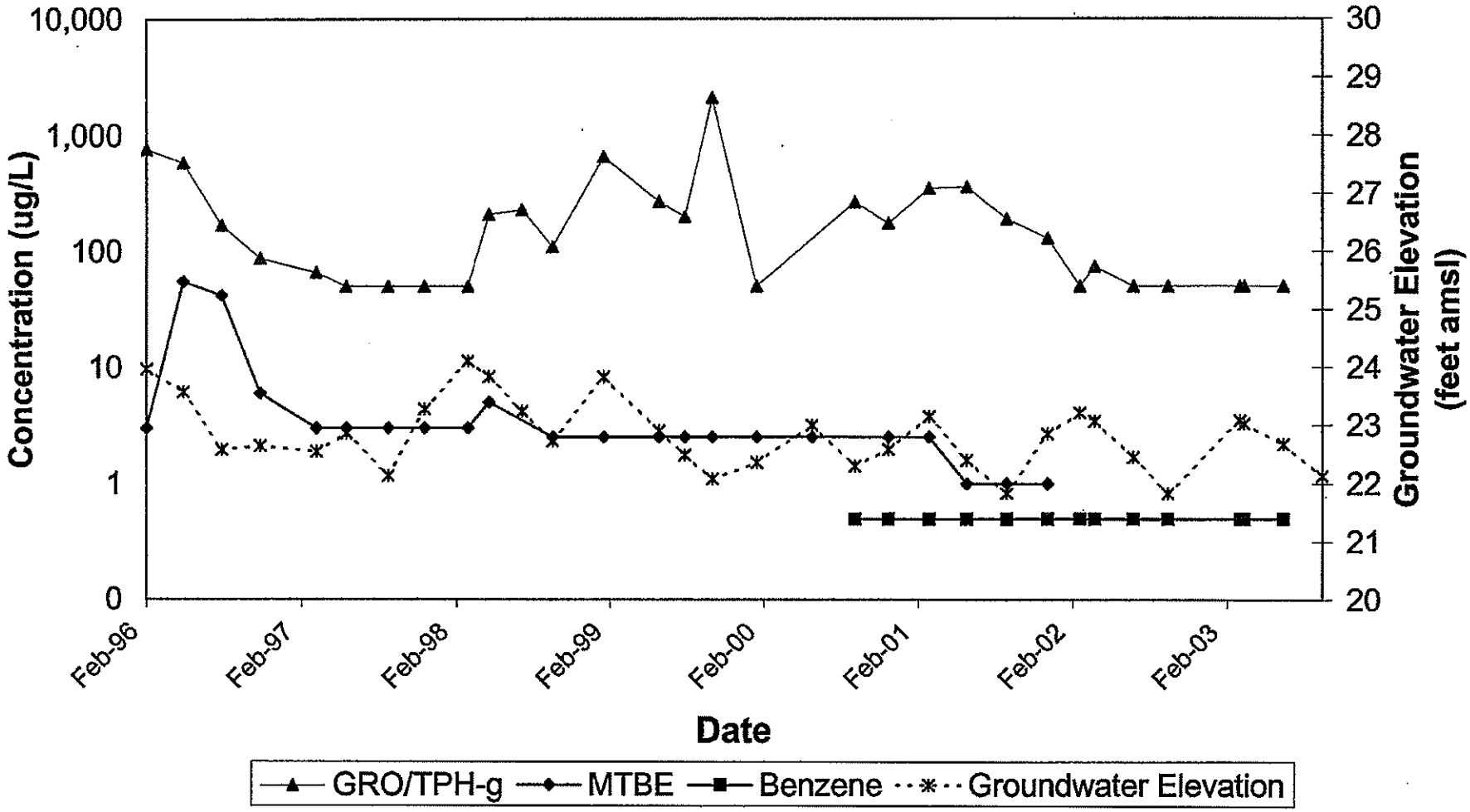


Atlantic Richfield Company
Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

URS Corporation

Figure 2

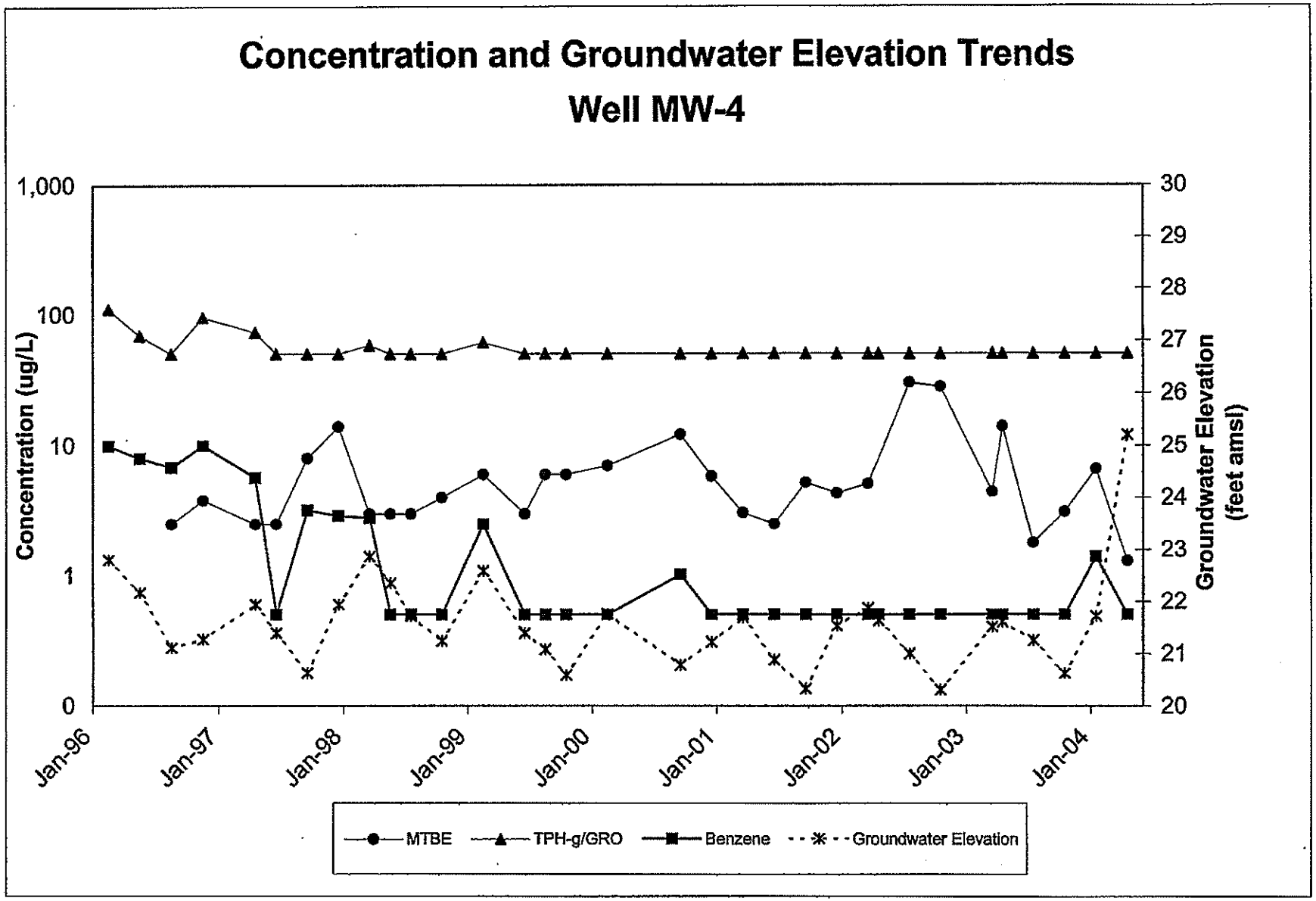
Concentration and Groundwater Elevation Trends
Well MW-2



Atlantic Richfield Company Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

URS Corporation

Figure 3

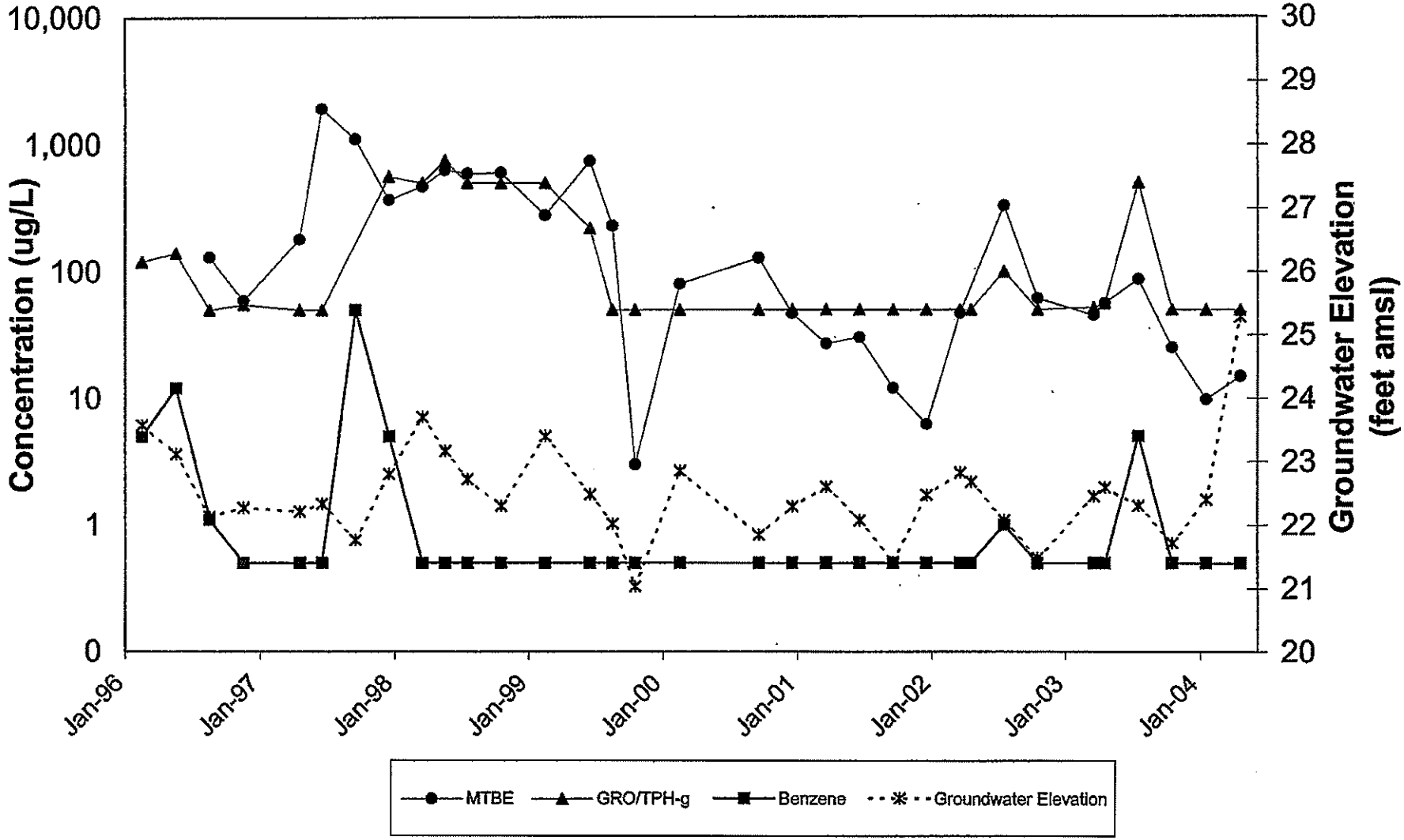


Atlantic Richfield Company Service Station #2162
15135 Hesperian Boulevard
San Leandro, CA

URS Corporation

Figure 5

Concentration and Groundwater Elevation Trends
Well MW-3



Atlantic Richfield Company Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

URS Corporation

Figure 4

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

Well Number	Date Sampled	Purge /No Purge	Top of Riser Elevation (ft., MSL)	Top of Screen (ft., bgs)	Bottom of Casing (ft., bgs)	Depth to Groundwater (ft., TOC)	Groundwater Elevation (ft., MSL)	GRO[fh] / TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen (mg/L)	pH
		Environmental Screening Levels for shallow soils (> 3m) where groundwater is a potential or current drinking water resource.						*100 µg/L*	*1 µg/L*	*40 µg/L*	*30 µg/L*	*13 µg/L*	*5 µg/L*		
MW-1	06/20/00		31.19	8.0	15.9	8.33	22.86	ND<50	ND<0.5	0.8	ND<0.5	ND<1.0	ND<10	NA	NA
	09/29/00					9.07	22.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/17/00	oils (> 3m) where groundwater is a potential or curr				8.69	22.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/23/01					8.19	23.00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	06/20/01					8.97	22.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	09/22/01					9.56	21.63	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/28/01					8.40	22.79	ND<50	ND<0.5	ND<0.5	ND<0.5	0.63	ND<2.5	NA	NA
	03/14/02					8.05	23.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	170	NA	NA
	04/18/02					8.27	22.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NS	NA	NA
	07/19/02	NP				8.88	22.31	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	11	1.0	8.2
	10/09/02[a]					NM	NM	NS	NS	NS	NS	NS	NS	NS	NS
	03/28/03[a,c]					NM	NM	NS	NS	NS	NS	NS	NS	NS	NS
	04/07/03	NP				8.28	22.91	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.6	6.9
	07/09/03	NP				8.62	22.57	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	7.2
	10/08/03		31.13 [e]			9.19 [d]	21.94	Sampled Annually During the 3rd Quarter							
	01/15/04[f]					8.35	22.78	Sampled Annually During the 3rd Quarter							
	04/05/04[g,h]		**33.70**			**8.10**	**25.60**	**Sampled Annually During the 3rd Quarter**							
MW-2	06/20/00		30.38	8.0	15.9	7.38	23.00	NS	NS	NS	NS	NS	NS	NA	NA
	09/29/00					8.08	22.30	266	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/17/00					7.80	22.58	175	ND<0.5	ND<0.5	0.659	ND<0.5	ND<2.5	NA	NA
	03/23/01					7.23	23.15	351	ND<0.5	ND<0.5	0.912	ND<0.5	ND<2.5	NA	NA
	06/20/01					7.98	22.40	360	ND<0.5	ND<0.5	0.74	ND<0.5	ND<2.5	NA	NA
	09/22/01					8.55	21.83	190	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/28/01					7.53	22.85	130	ND<0.5	0.93	ND<0.5	0.51	ND<2.5	NA	NA
	03/14/02					7.17	23.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/18/02					7.31	23.07	74	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NS	NA	NA
	07/19/02	P				7.93	22.45	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	1.1	7.6
	10/09/02	P				8.55	21.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	0.7	7.3
	03/28/03[c]	P				7.30	23.08	ND<50	ND<0.50	0.83	ND<0.50	ND<0.50	ND<0.50	1.48	7.7
	04/07/03	P				7.36	23.02	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.4	7.0
	07/09/03	P				7.71	22.67	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.5	7.6
	10/08/03					8.25	22.13	Sampled Annually During the 3rd Quarter							
	01/15/04[f]					7.55	22.83	Sampled Annually During the 3rd Quarter							
	04/05/04[g,h]		**32.97**			**7.29**	**25.68**	**Sampled Annually During the 3rd Quarter**							

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

Well Number	Date Sampled	Purge /No Purge	Top of Riser Elevation (ft., MSL)	Top of Screen (ft., bgs)	Bottom of Casing (ft., bgs)	Depth to Groundwater (ft., TOC)	Groundwater Elevation (ft., MSL)	GRO[fh] / TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen (mg/L)	pH
		Environmental Screening Levels for shallow soils (> 3m) where groundwater is a potential or current drinking water resource.						*100 µg/L*	*1 µg/L*	*40 µg/L*	*30 µg/L*	*13 µg/L*	*5 µg/L*		
MW-3	06/20/00		30.30	9.0	14.8	7.75	22.55	NS	NS	NS	NS	NS	NS	NA	NA
	09/29/00					8.46	21.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	128	NA	NA
	12/17/00					8.01	22.29	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	46.7	NA	NA
	03/23/01					7.70	22.60	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	26.8	NA	NA
	06/20/01					8.23	22.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	30	NA	NA
	09/22/01					8.89	21.41	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	12	NA	NA
	12/28/01					7.83	22.47	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.2	NA	NA
	03/14/02					7.48	22.82	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	47	NA	NA
	04/18/02					7.62	22.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NS	NA	NA
	07/19/02	P				8.23	22.07	100[b]	ND<1.0	ND<1.0	ND<1.0	ND<1.0	330	0.9	7.6
	10/09/02	P				8.83	21.47	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	61	0.5	7.4
	03/28/03[c]	P				7.85	22.45	52	ND<0.50	1.2	ND<0.50	ND<0.50	45	1.42	7.6
	04/07/03	P				7.71	22.59	56	ND<0.50	ND<0.50	ND<0.50	ND<0.50	56	1.1	6.8
	07/09/03	P				8.00	22.30	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	87	1.6	7.4
	10/08/03	P				8.59	21.71	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	25	0.9	7.0
	01/15/04[f]	P				7.90	22.40	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	9.8	2.9	7.3
	04/05/04[g,h]	**P**	**32.89**			**7.61**	**25.28**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**15**	**1.5**	**7.0**
MW-4	06/20/00		30.39	8.0	17.5	8.87	21.52	NS	NS	NS	NS	NS	NS	NA	NA
	09/29/00					9.61	20.78	ND<50	1.02	ND<0.5	ND<0.5	ND<0.5	12.2	NA	NA
	12/17/00					9.17	21.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.81	NA	NA
	03/23/01					8.70	21.69	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.04	NA	NA
	06/20/01					9.51	20.88	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	09/22/01					10.06	20.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.2	NA	NA
	12/28/01					8.86	21.53	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.3	NA	NA
	03/14/02					8.52	21.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.1	NA	NA
	04/18/02					8.76	21.63	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NS	NA	NA
	07/19/02	NP				9.39	21.00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	30	1.8	7.8
	10/09/02	NP				10.08	20.31	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	28	1.0	8.0
	03/28/03[c]	NP				8.88	21.51	ND<50	ND<0.50	1.3	ND<0.50	ND<0.50	4.4	0.98	7.2
	04/07/03	NP				8.78	21.61	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	14	1.1	7.0
	07/09/03	NP				9.14	21.25	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	1.6	7.4
	10/08/03	NP				9.77[d]	20.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.1	2.6	6.4
	01/15/04[f]	P				8.68	21.71	ND<50	1.4	0.84	ND<0.50	1.5	6.6	2.9	7.1
	04/05/04[g,h]	**NP**	**33.97**			**8.77**	**25.20**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**1.3**	**1.2**	**7.0**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

bgs	= below ground surface
ft.	= feet
GRO	= Gasoline Range Organics (C4-C12)
mg/L	= Milligrams per liter equivalent to parts per million (ppm)
MSL	= Mean sea level
MTBE	= Methyl tertiary butyl ether
ND<	= Not detected at or above specified laboratory reporting limit
NP	= No Purge
NS	= Not sampled
P	= Purge
TOC	= Top of casing
TPH	= Total petroleum hydrocarbons
µg/L	= Micrograms per liter equivalent to parts per billion (ppb)
a	= Well not accessable - car parked over.
b	= Hydrocarbon pattern is present in the requested fuel quantitation range but does not represent the pattern of the requested fuel
c	=TPH-g, BTEX and MTBE analyzed by EPA method 8260 beginning on 1st Quarter 2003 sampling event (3/28/03)
d	= Guaged with stinger in well
e	= Well casing lowered 0.06 feet during well repairs on 9/17/03
f	= Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPH-g) has been changed to Gasoline Range Organics (GRO). The resulting sata may be impacted by the potential inclusion of non-TPH-g analytes within requested fuel range resulting in a higher concentration being reported.
g	= Wells surveyed to NAVD'88 datum by URS Corporation on February 23, 2004.
h	= Beginning Second Quarter 2004, the carbon range for GRO has been changed from C6-C10 to C4-C12.

Source: The data within this table collected prior to July 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

Table 2
Fuel Oxygenate Analytical Data

ARCO Service Station #2162
15135 Hesperian Boulevard
San Leandro, 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-1	04/07/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	07/09/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-2	03/28/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	04/07/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	07/09/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-3	03/28/03	ND<100	ND<20	45	ND<0.50	ND<0.50	0.73	ND<0.50	ND<0.50
	04/07/03	ND<100	ND<20	56	ND<0.50	ND<0.50	0.72	ND<0.50	ND<0.50
	07/09/03	ND<1,000	ND<200	87	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	10/08/03	ND<100	ND<20	25	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	01/15/04	ND<100	ND<20[a]	9.8	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50[a]
	04/05/04	**ND<100**	**ND<20**	**15**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-4	03/28/03	ND<100	ND<20	4.4	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	04/07/03	ND<100	ND<20	14	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	07/09/03	ND<100	ND<20	1.8	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	10/08/03	ND<100	ND<20	3.1	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	01/15/04	ND<100	ND<20[a]	6.6	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50[a]
	04/05/04	**ND<100**	**ND<20**	**1.3**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**

Notes:

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
MTBE = Methyl tert-butyl ether
ND< = Not detected at or above specified laboratory reporting limit
TAME = Tert-amyl methyl ether
TBA = Tert-butyl alcohol
µg/L = Micrograms per liter
a = The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.

Table 3
Groundwater Flow Direction and Gradient

ARCO Service Station #2162
15135 Hesperian Boulevard
San Leandro, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	Southwest	0.010
09/29/00	Southwest	0.010
12/17/00	Southwest	0.010
03/23/01	Southwest	0.011
06/20/01	Southwest	0.013
09/22/01	Southwest	0.012
12/28/01	Southwest	0.010
03/14/02	Southwest	0.011
04/18/02	Southwest	0.012
07/19/02	Southwest	0.012
10/09/02	Southwest	0.013
03/28/03	Southwest	0.013
04/07/03	Southwest	0.011
07/09/03	Southwest	0.010
10/08/03	Southwest	0.010
01/15/04	Southwest	0.008
04/05/04	**South-Southwest**	**0.004**

Source: The data within this table collected prior to July 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

ATTACHMENT A

SITE CLOSURE SUMMARY FORM

SITE INFORMATION SUMMARY

I. SITE INFORMATION

Site Facility Name: **ARCO Service Station No. 2162**	
Site Facility Address: **15135 Hesperian Boulevard, San Leandro, California**	
RWQCB LUST Case No: **01-0091**	URF Filing Date:
Responsible Parties (include addresses and phone numbers)	
owner: **Atlantic Richfield Company**	operator: **Same**
PO Box 6549	
Moraga, CA 94570	

Tank No.	Size in Gallons	Contents	Closed In-Place/Removed?	Date
1	10,000	Gasoline	Currently In Use	3/27/92
2	10,000	Gasoline	Currently In Use	3/27/92
3	10,000	Gasoline	Currently In Use	3/27/92
4	10,000	Gasoline	Currently In Use	3/27/92

II. INITIAL SITE ASSESSMENT (Information from previous investigations at nearby sites and other available sources may be used for applicable items if necessary)

Cause and Estimated Quantity of Release:		
Nearest Surface Water Bodies (including any unnamed creeks, tributaries, canals, etc.): **Lake Chabot**	Their Geographical Distances From the Site: **1.4 miles NE of site**	
Nearest domestic Water Wells (both public and private) within 2000 ft.: **None**	Their Geographical Distances From the Site: **878 feet south-southeast of site**	
Minimum Groundwater Depth: **6.60 ft**	Max Depth: **10.08 ft**	Flow Direction: **Southwest**
Site Ground Surface Elevation and Geology: **Approximately 30 ft above mean sea level**		
Current Site and Surrounding Land Use: **Active Service Station.** **Surrounding site use is mixed residential and commercial.**		
Preferential Pathways Such as Subsurface Utilities? Yes No If Yes, Describe:		
Number of Soil Borings: **12**	Number of Monitoring Wells: **4**	

III. REMEDIATION

Material	Amount (Include Units)	Action (Treatment or Disposal w/ Destination)	Date
Free Product	NA		
Soil	NA		
Groundwater	NA		
Vapor	NA		
Commets:			

MAXIMUM DOCUMENTED SOIL POLLUTANT CONCENTRATIONS

POLLUTANT	Location	Soil (ppm)		POLLUTANT	Location	Soil (ppm)	
	Date(s) 6/5/91	Initial	Residual		Date(s) 6/5/91	Initial	Residual
TPH (Gas)	**B4-7.5**	**2400**		Xylene	**B4-7.5**	**260**	
TPH (Diesel)	**N/A**			Ethylbenzene	**B4-7.5**	**41**	
Benzene	**B4-7.5**	**17**		Oil & Grease	**N/A**		
Toluene	**B4-7.5**	**62**		Heavy Metals	**N/A**		
MTBE	**S-L3-3.5**	**0.55**	(1/03/03)	Motor Oil	**N/A**		
Chlorinated Solvents	**N/A**			Other	**B4** located @E corner of UST Pad		

GROUNDWATER CONCENTRATION (ppb) TRENDS AT SOURCE AREAS & PLUME/SITE BOUNDARIES

Date	location	Benzene	MTBE	GRO	DRO	Toluene	Ethyl benzene	Xylenes	Chlor. VOCs	Other	DTW (feet)
9/30/92	MW-1	6.2	180 (3/25/98)	1,100	NA	ND<0.5	6.9	ND<0.5	NA	NA	10.68
7/09/03	MW-1	ND<0.5	ND<0.5	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	NA	NA	8.62
1/14/93	MW-2	9.6	33 (4/1/97)	7,800	NA	5	340	920	NA	NA	6.56
7/09/03	MW-2	ND<0.5	ND<0.5	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	NA	NA	7.71
4/14/93	MW-3	86	1900(6/10/97)	360	NA	2.1	5.1	4.0	NA	NA	7.41
4/05/04	MW-3	ND<0.5	15	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	NA	NA	7.61
9/30/92	MW-4	81	3.8 (11/20/96)	330	NA	ND<0.5	ND<0.5	ND<0.5	NA	NA	11.15
4/05/04	MW-4	ND<0.5	1.3	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	NA	NA	8.77

IV. LIST TECHNICAL REPORTS, CORRESPONDENCE, ETC. IN CHRONOLOGICAL ORDER

TITLE / SUBJECT	DATE
Preliminary Tank Assessment	**8/28/91**
Limited Soil Performance Test/ SVE Feasibility Study	**7/16/91**
UST Replacement and Soil Sampling	**7/7/92**
Well Installation Report	**3/30/95**
Product Line Removal and Upgrade Soil Sampling Report	**4/28/03**
Quarterly Monitoring	**1992-present**

V. ENCLOSE FOLLOWING FIGURES AND TABLES

1. Site maps showing locations of existing buildings, former/current UST areas, subsurface utilities and other pathways, groundwater flow direction etc.
2. Summary tables of all soil sampling results available, including any tank/excavation pit samples and confirmation samples, with sampling dates, location-identifications and depths (if applicable).
3. Summary tables of all groundwater sampling results available, including depth to water/product measurements, with sampling dates and location-identifications.
4. Figures showing all soil and groundwater sampling locations and monitoring well locations.

Additional Comments:

See attached reports described above.

ATTACHMENT B

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs) Shallow Soils (<3m bgs) Where Groundwater IS Current or Potential Source of Drinking Water.

TABLE K-3. ENVIRONMENTAL SCREENING LEVELS (ESLs) Direct Exposure Screening Levels Construction/Trench Worker Exposure Scenerio.

CRWQCB, 2003. Screening for Environmental Concerns at Sites with Contaminated Soils and Groundwater, Volume 2: Background Documentation for the Development of Tier 1 Environmental Screening Levels

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

	[1]Shallow Soil		
CHEMICAL PARAMETER	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	[3]Groundwater (ug/L)
ACENAPHTHENE	1.6E+01	1.6E+01	2.0E+01
ACENAPHTHYLENE	1.3E+01	1.3E+01	3.0E+01
ACETONE	2.4E-01	2.4E-01	7.0E+02
ALDRIN	2.9E-02	1.0E-01	2.0E-03
ANTHRACENE	2.8E+00	2.8E+00	7.3E-01
ANTIMONY	6.3E+00	4.0E+01	6.0E+00
ARSENIC	5.5E+00	5.5E+00	3.6E+01
BARIUM	7.5E+02	1.5E+03	1.0E+03
BENZENE	4.4E-02	4.4E-02	1.0E+00
BENZO(a)ANTHRACENE	3.8E-01	1.3E+00	2.7E-02
BENZO(b)FLUORANTHENE	3.8E-01	1.3E+00	2.9E-02
BENZO(k)FLUORANTHENE	3.8E-01	1.3E+00	2.9E-02
BENZO(g,h,i)PERYLENE	2.7E+01	2.7E+01	1.0E-01
BENZO(a)PYRENE	3.8E-02	1.3E-01	1.4E-02
BERYLLIUM	4.0E+00	8.0E+00	2.7E+00
BIPHENYL, 1,1-	6.5E-01	6.5E-01	5.0E-01
BIS(2-CHLOROETHYL)ETHER	1.8E-04	1.8E-04	1.4E-02
BIS(2-CHLOROISOPROPYL)ETHER	5.4E-03	5.4E-03	5.0E-01
BIS(2-ETHYLHEXYL)PHTHALATE	1.6E+02	5.7E+02	4.0E+00
BORON	1.6E+00	2.0E+00	1.6E+00
BROMODICHLOROMETHANE	1.2E-02	3.9E-02	1.0E+02
BROMOFORM	2.2E+00	2.2E+00	1.0E+02
BROMOMETHANE	2.2E-01	3.9E-01	9.8E+00
CADMIUM	1.7E+00	7.4E+00	2.2E+00
CARBON TETRACHLORIDE	1.2E-02	3.5E-02	5.0E-01
CHLORDANE	4.4E-01	1.7E+00	4.0E-03
CHLOROANILINE, p-	5.3E-02	5.3E-02	5.0E+00
CHLOROBENZENE	1.5E+00	1.5E+00	2.5E+01
CHLOROETHANE	6.3E-01	8.5E-01	1.2E+01
CHLOROFORM	9.8E-02	2.7E-01	1.0E+02
CHLOROMETHANE	2.9E-01	4.2E-01	2.7E+00
CHLOROPHENOL, 2-	1.2E-02	1.2E-02	1.8E-01
CHROMIUM (Total)	5.8E+01	5.8E+01	5.0E+01
CHROMIUM III	7.5E+02	7.5E+02	1.8E+02
CHROMIUM VI	1.8E+00	1.8E+00	1.1E+01
CHRYSENE	3.8E+00	1.3E+01	2.9E-01
COBALT	4.0E+01	8.0E+01	3.0E+00
COPPER	2.3E+02	2.3E+02	3.1E+00
CYANIDE (Free)	1.0E+02	5.0E+02	1.0E+00
DIBENZO(a,h)ANTHTRACENE	1.1E-01	3.8E-01	8.5E-03
DIBROMOCHLOROMETHANE	1.9E-02	5.8E-02	1.0E+02
1,2-DIBROMO-3-CHLOROPROPANE	1.1E-03	1.1E-03	2.0E-01
DIBROMOETHANE, 1,2-	3.3E-04	3.3E-04	5.0E-02
DICHLOROBENZENE, 1,2-	1.1E+00	1.1E+00	1.0E+01

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Shallow Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
DICHLOROBENZENE, 1,3-	7.2E-01	7.2E-01	6.3E+00
DICHLOROBENZENE, 1,4-	4.7E-02	1.3E-01	5.0E+00
DICHLOROBENZIDINE, 3,3-	7.7E-03	7.7E-03	2.9E-02
DICHLORODIPHENYLDICHLOROETHANE (DDD)	2.4E+00	1.0E+01	1.0E-03
DICHLORODIPHENYLDICHLOROETHYLENE (DDE)	1.7E+00	4.0E+00	1.0E-03
DICHLORODIPHENYLTRICHLOROETHANE (DDT)	1.7E+00	4.0E+00	1.0E-03
DICHLOROETHANE, 1,1-	2.0E-01	2.0E-01	5.0E+00
DICHLOROETHANE, 1,2-	4.5E-03	4.5E-03	5.0E-01
DICHLOROETHYLENE, 1,1-	1.0E+00	1.0E+00	6.0E+00
DICHLOROETHYLENE, Cis 1,2-	1.9E-01	1.9E-01	6.0E+00
DICHLOROETHYLENE, Trans 1,2-	6.7E-01	6.7E-01	1.0E+01
DICHLOROPHENOL, 2,4-	3.0E-01	3.0E-01	3.0E-01
DICHLOROPROPANE, 1,2-	5.2E-02	1.2E-01	5.0E+00
DICHLOROPROPENE, 1,3-	3.3E-02	5.9E-02	5.0E-01
DIELDRIN	2.3E-03	2.3E-03	1.9E-03
DIETHYLPHTHALATE	3.5E-02	3.5E-02	1.5E+00
DIMETHYLPHTHALATE	3.5E-02	3.5E-02	1.5E+00
DIMETHYLPHENOL, 2,4-	6.7E-01	6.7E-01	1.0E+02
DINITROPHENOL, 2,4-	4.0E-02	4.0E-02	1.4E+01
DINITROTOLUENE, 2,4-	8.5E-04	8.5E-04	1.1E-01
1,4 DIOXANE	1.8E-03	1.8E-03	3.0E+00
DIOXIN (2,3,7,8-TCDD)	4.5E-06	1.8E-05	5.0E-06
ENDOSULFAN	4.6E-03	4.6E-03	8.7E-03
ENDRIN	6.5E-04	6.5E-04	2.3E-03
ETHYLBENZENE	3.3E+00	3.3E+00	3.0E+01
FLUORANTHENE	4.0E+01	4.0E+01	8.0E+00
FLUORENE	8.9E+00	8.9E+00	3.9E+00
HEPTACHLOR	1.4E-02	1.4E-02	3.8E-03
HEPTACHLOR EPOXIDE	1.5E-02	1.5E-02	3.8E-03
HEXACHLOROBENZENE	2.7E-01	9.6E-01	1.0E+00
HEXACHLOROBUTADIENE	1.0E+00	1.0E+00	2.1E-01
HEXACHLOROCYCLOHEXANE (gamma) LINDANE	4.9E-02	4.9E-02	8.0E-02
HEXACHLOROETHANE	2.4E+00	2.4E+00	7.0E-01
INDENO(1,2,3-cd)PYRENE	3.8E-01	1.3E+00	2.9E-02
LEAD	2.0E+02	7.5E+02	2.5E+00
MERCURY	2.5E+00	1.0E+01	1.2E-02
METHOXYCHLOR	1.9E+01	1.9E+01	1.9E-02
METHYLENE CHLORIDE	7.7E-02	7.7E-02	5.0E+00
METHYL ETHYL KETONE	3.9E+00	3.9E+00	4.2E+03
METHYL ISOBUTYL KETONE	2.8E+00	2.8E+00	1.2E+02
METHYL MERCURY	1.2E+00	1.0E+01	3.0E-03
METHYLNAPHTHALENE (total 1- & 2-)	2.5E-01	2.5E-01	2.1E+00
METHYL TERT BUTYL ETHER	2.3E-02	2.3E-02	5.0E+00
MOLYBDENUM	4.0E+01	4.0E+01	3.5E+01

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	[1]Shallow Soil		
CHEMICAL PARAMETER	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	[3]Groundwater (ug/L)
NAPHTHALENE	4.2E+00	4.2E+00	2.1E+01
NICKEL	1.5E+02	1.5E+02	8.2E+00
PENTACHLOROPHENOL	4.4E+00	5.0E+00	1.0E+00
PERCHLORATE	1.6E+00	2.0E+01	7.0E-01
PHENANTHRENE	1.1E+01	1.1E+01	4.6E+00
PHENOL	7.6E-02	7.6E-02	5.0E+00
POLYCHLORINATED BIPHENYLS (PCBs)	2.2E-01	7.4E-01	1.4E-02
PYRENE	8.5E+01	8.5E+01	2.0E+00
SELENIUM	1.0E+01	1.0E+01	5.0E+00
SILVER	2.0E+01	4.0E+01	1.9E-01
STYRENE	1.5E+00	1.5E+00	1.0E+01
tert-BUTYL ALCOHOL	7.3E-02	7.3E-02	1.2E+01
TETRACHLOROETHANE, 1,1,1,2-	2.4E-02	2.4E-02	1.3E+00
TETRACHLOROETHANE, 1,1,2,2-	9.0E-03	1.8E-02	1.0E+00
TETRACHLOROETHYLENE	8.8E-02	2.5E-01	5.0E+00
THALLIUM	1.0E+00	1.3E+01	2.0E+00
TOLUENE	2.9E+00	2.9E+00	4.0E+01
TOXAPHENE	4.2E-04	4.2E-04	2.0E-04
TPH (gasolines)	1.0E+02	1.0E+02	1.0E+02
TPH (middle distillates)	1.0E+02	1.0E+02	1.0E+02
TPH (residual fuels)	5.0E+02	1.0E+03	1.0E+02
TRICHLOROBENZENE, 1,2,4-	7.6E+00	7.6E+00	2.5E+01
TRICHLOROETHANE, 1,1,1-	7.8E+00	7.8E+00	6.2E+01
TRICHLOROETHANE, 1,1,2-	3.3E-02	7.0E-02	5.0E+00
TRICHLOROETHYLENE	2.6E-01	4.6E-01	5.0E+00
TRICHLOROPHENOL, 2,4,5-	1.8E-01	1.8E-01	1.1E+01
TRICHLOROPHENOL, 2,4,6-	1.7E-01	1.7E-01	5.0E-01
VANADIUM	1.1E+02	2.0E+02	1.5E+01
VINYL CHLORIDE	6.7E-03	1.9E-02	5.0E-01
XYLENES	1.5E+00	1.5E+00	1.3E+01
ZINC	6.0E+02	6.0E+02	8.1E+01

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Shallow Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
Electrical Conductivity (mS/cm, USEPA Method 120.1 MOD)	2.0	4.0	not applicable
Sodium Adsorption Ratio	5.0	12	not applicable

Notes:

1. Shallow soils defined as soils less than or equal to 3 meters (approximately 10 feet) below ground surface.
2. Category "Residential Land Use" generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.)
3. Assumes potential discharge of groundwater into a freshwater, marine or estuary surface water system.

Source of soil ESLs: Refer to Appendix 1, Tables A-1 and A-2.

Source of groundwater ESLs: Refer to Appendix 1, Table F-1a.

Soil data should be reported on dry-weight basis (see Appendix 1, Section 6.2).

Soil ESLs intended to address direct-exposure, groundwater protection, ecologic (urban areas) and nuisance concerns under noted land-use scenarios. **Soil gas data should be collected for additional evaluation of potential indoor-air impacts at sites with significant areas of VOC-impacted soil. See Section 2.6 and Table E.**

Groundwater ESLs intended to be address drinking water, surface water, indoor-air and nuisance concerns. **Use in conjunction with soil gas screening levels to more closely evaluate potential impacts to indoor-air if groundwater screening levels for this concern approached or exceeded (refer to Section 2.6 and Appendix 1, Table F-1a).**

Aquatic habitat goals for bioaccumulation concerns not considered in selection of groundwater goals (refer to Section 2.7).

Refer to appendices for summary of ESL components.

TPH -Total Petroleum Hydrocarbons. TPH ESLs must be used in conjunction with ESLs for related chemicals (e.g., BTEX, PAHs, oxidizers, etc.). See Volume 1, Section 2.2 and Appendix 1, Chapter 5.

TABLE K-3. DIRECT-EXPOSURE SCREENING LEVELS
CONSTRUCTION/TRENCH WORKER EXPOSURE SCENARIO

CHEMICAL	Final Screening Level (mg/kg)	Basis	Carcinogens (Risk = 10^{-6}) (mg/kg)	Noncarcinogens HQ = 0.2 (mg/kg)	Noncarcinogens (HQ = 1.0) (mg/kg)	Saturation (mg/kg)
ACENAPHTHENE	3.5E+04	noncarcinogenic effects	-	3.5E+04	1.7E+05	NA
ACENAPHTHYLENE	2.6E+04	=fluorene	-	2.6E+04	1.3E+05	NA
ACETONE	1.3E+04	noncarcinogenic effects	-	1.3E+04	6.6E+04	1.0E+05
*ALDRIN	1.2E+00	carcinogenic effects	1.2E+00	1.2E+01	6.0E+01	NA
ANTHRACENE	2.1E+05	noncarcinogenic effects	-	2.1E+05	1.1E+06	NA
ANTIMONY	3.1E+02	noncarcinogenic effects	-	3.1E+02	1.5E+03	NA
*ARSENIC	1.6E+01	carcinogenic effects	1.6E+01	1.8E+02	9.2E+02	NA
BARIUM	2.5E+03	noncarcinogenic effects	-	2.5E+03	1.2E+04	NA
*BENZENE	1.7E+01	carcinogenic effects	1.7E+01	5.7E+01	2.9E+02	8.7E+02
*BENZO(a)ANTHRACENE	1.5E+01	carcinogenic effects	1.5E+01	-	-	NA
*BENZO(b)FLUORANTHENE	1.5E+01	carcinogenic effects	1.5E+01	-	-	NA
*BENZO(k)FLUORANTHENE	1.5E+01	carcinogenic effects	1.5E+01	-	-	NA
BENZO(g,h,i)PERYLENE	1.4E+04	noncarcinogenic effects	-	1.4E+04	7.0E+04	NA
*BENZO(a)PYRENE	1.5E+00	carcinogenic effects	1.5E+00	-	-	NA
*BERYLLIUM	9.8E+01	noncarcinogenic effects	1.1E+02	9.8E+01	4.9E+02	NA
BIPHENYL, 1,1-	2.8E+04	noncarcinogenic effects	-	2.8E+04	1.4E+05	NA
*BIS(2-CHLOROETHYL)ETHER	7.4E+00	carcinogenic effects	7.4E+00	-	-	9.6E+03
BIS(2-CHLOROISOPROPYL)ETHER	2.3E+02	carcinogenic effects	2.3E+02	8.2E+03	4.1E+04	7.9E+02
*BIS(2-ETHYLHEXYL)PHTHALATE	6.4E+03	carcinogenic effects	6.4E+03	8.0E+03	4.0E+04	NA
BORON	4.6E+04	noncarcinogenic effects	-	4.6E+04	2.3E+05	NA
*BROMODICHLOROMETHANE	3.5E+01	carcinogenic effects	3.5E+01	1.8E+03	9.2E+03	3.0E+03
BROMOFORM	2.6E+03	carcinogenic effects	2.6E+03	8.0E+03	4.0E+04	NA
BROMOMETHANE	3.1E+01	noncarcinogenic effects	-	3.1E+01	1.6E+02	3.1E+03
*CADMIUM	3.8E+01	carcinogenic effects	3.8E+01	3.8E+02	1.9E+03	NA
*CARBON TETRACHLORIDE	8.4E+00	carcinogenic effects	8.4E+00	1.8E+01	8.8E+01	1.1E+03
*CHLORDANE	2.1E+01	carcinogenic effects	2.1E+01	2.6E+02	1.3E+03	NA
CHLOROANILINE, p-	1.6E+03	noncarcinogenic effects	-	1.6E+03	8.0E+03	NA
CHLOROBENZENE	6.8E+02	saturation limit	-	1.2E+03	6.2E+03	6.8E+02
CHLOROETHANE	2.8E+02	carcinogenic effects	2.8E+02	4.2E+04	2.1E+05	1.6E+03
*CHLOROFORM	2.9E+01	noncarcinogenic effects	8.3E+01	2.9E+01	1.4E+02	2.9E+03
CHLOROMETHANE	1.1E+02	carcinogenic effects	1.1E+02	1.3E+03	6.4E+03	4.1E+03
CHLOROPHENOL, 2-	5.9E+02	noncarcinogenic effects	-	5.9E+02	2.8E+03	5.5E+04
CHROMIUM (Total)	-	-	-	-	-	NA
CHROMIUM III	1.2E+06	noncarcinogenic effects	-	1.2E+06	5.8E+06	NA
*CHROMIUM VI	1.8E+00	carcinogenic effects	1.8E+00	2.3E+03	1.2E+04	NA
*CHRYSENE	1.5E+02	carcinogenic effects	1.5E+02	-	-	NA

TABLE K-3. DIRECT-EXPOSURE SCREENING LEVELS
CONSTRUCTION/TRENCH WORKER EXPOSURE SCENARIO

CHEMICAL	Final Screening Level (mg/kg)	Basis	Carcinogens (Risk = 10^{-6}) (mg/kg)	Noncarcinogens HQ = 0.2 (mg/kg)	Noncarcinogens (HQ = 1.0) (mg/kg)	Saturation (mg/kg)
COBALT	9.4E+01	carcinogenic effects	9.4E+01	1.0E+02	5.2E+02	NA
COPPER	3.1E+04	noncarcinogenic effects	-	3.1E+04	1.5E+05	NA
CYANIDE (Free)	8.2E+03	noncarcinogenic effects	-	8.2E+03	4.1E+04	NA
*DIBENZO(a,h)ANTHTRACENE	4.3E+00	carcinogenic effects	4.3E+00	-	-	NA
*DIBROMOCHLOROMETHANE	8.6E+01	carcinogenic effects	8.6E+01	3.2E+03	1.6E+04	NA
*1,2-DIBROMO-3-CHLOROPROPANE	1.6E+00	carcinogenic effects	1.6E+00	1.3E+01	6.4E+01	3.9E+02
*DIBROMOETHANE, 1,2-	5.8E+00	noncarcinogenic effects	7.4E+00	5.8E+00	2.9E+01	NA
DICHLOROBENZENE, 1,2-	6.0E+02	saturation limit	-	9.1E+03	4.6E+04	6.0E+02
DICHLOROBENZENE, 1,3-	1.3E+02	noncarcinogenic effects	-	1.3E+02	6.7E+02	6.0E+02
*DICHLOROBENZENE, 1,4-	2.0E+02	carcinogenic effects	2.0E+02	4.0E+03	2.0E+04	NA
*DICHLOROBENZIDINE, 3,3-	1.7E+01	carcinogenic effects	1.7E+01	-	-	NA
*DICHLORODIPHENYLDICHLOROETHANE (DDD)	1.2E+02	carcinogenic effects	1.2E+02	-	-	NA
*DICHLORODIPHENYLDICHLOROETHYLENE (DDE)	8.7E+01	carcinogenic effects	8.7E+01	-	-	NA
*DICHLORODIPHENYLTRICHLOROETHANE (DDT)	8.7E+01	carcinogenic effects	8.7E+01	3.0E+02	1.5E+03	NA
*DICHLOROETHANE, 1,1-	2.6E+02	carcinogenic effects	2.6E+02	4.1E+03	2.0E+04	1.7E+03
*DICHLOROETHANE, 1,2-	3.3E+01	carcinogenic effects	3.3E+01	6.9E+01	3.4E+02	1.8E+03
DICHLOROETHYLENE, 1,1-	1.0E+03	noncarcinogenic effects	-	1.0E+03	5.0E+03	1.5E+03
DICHLOROETHYLENE, Cis 1,2-	3.5E+02	noncarcinogenic effects	-	3.5E+02	1.8E+03	1.2E+03
DICHLOROETHYLENE, Trans 1,2-	5.7E+02	noncarcinogenic effects	-	5.7E+02	2.8E+03	3.1E+03
DICHLOROPHENOL, 2,4-	1.2E+03	noncarcinogenic effects	-	1.2E+03	6.0E+03	NA
*DICHLOROPROPANE, 1,2-	4.7E+01	noncarcinogenic effects	5.9E+01	4.7E+01	2.4E+02	1.1E+03
*DICHLOROPROPENE, 1,3-	2.0E+01	carcinogenic effects	2.0E+01	1.3E+02	6.6E+02	1.4E+03
*DIELDRIN	1.2E+00	carcinogenic effects	1.2E+00	2.0E+01	1.0E+02	NA
DIETHYLPHTHALATE	3.2E+05	noncarcinogenic effects	-	3.2E+05	1.6E+06	NA
DIMETHYLPHTHALATE	4.0E+06	noncarcinogenic effects	-	4.0E+06	2.0E+07	NA
DIMETHYLPHENOL, 2,4-	4.9E+03	noncarcinogenic effects	-	4.9E+03	2.5E+04	NA
DINITROPHENOL, 2,4-	8.0E+02	noncarcinogenic effects	-	8.0E+02	4.0E+03	NA
*DINITROTOLUENE, 2,4-	6.4E+01	carcinogenic effects	6.4E+01	8.0E+02	4.0E+03	NA
*1,4-DIOXANE	7.4E+02	carcinogenic effects	7.4E+02	-	-	NA
*DIOXIN (2,3,7,8-TCDD)	2.3E-04	carcinogenic effects	2.3E-04	-	-	NA
ENDOSULFAN	2.4E+03	noncarcinogenic effects	-	2.4E+03	1.2E+04	NA
ENDRIN	1.2E+02	noncarcinogenic effects	-	1.2E+02	6.0E+02	NA
ETHYLBENZENE	4.0E+02	saturation limit	8.0E+02	1.6E+04	7.9E+04	4.0E+02
FLUORANTHENE	1.4E+04	noncarcinogenic effects	-	1.4E+04	7.0E+04	NA
FLUORENE	2.6E+04	noncarcinogenic effects	-	2.6E+04	1.3E+05	NA
*HEPTACHLOR	4.9E+00	carcinogenic effects	4.9E+00	2.0E+02	1.0E+03	NA

TABLE K-3. DIRECT-EXPOSURE SCREENING LEVELS
CONSTRUCTION/TRENCH WORKER EXPOSURE SCENARIO

CHEMICAL	Final Screening Level (mg/kg)	Basis	Carcinogens (Risk = 10^{-6}) (mg/kg)	Noncarcinogens HQ = 0.2 (mg/kg)	Noncarcinogens (HQ = 1.0) (mg/kg)	Saturation (mg/kg)
*HEPTACHLOR EPOXIDE	3.6E+00	carcinogenic effects	3.6E+00	5.2E+00	2.6E+01	NA
*HEXACHLOROBENZENE	1.1E+01	carcinogenic effects	1.1E+01	3.2E+02	1.6E+03	NA
HEXACHLOROBUTADIENE	1.2E+02	noncarcinogenic effects	2.6E+02	1.2E+02	6.0E+02	NA
*HEXACHLOROCYCLOHEXANE (gamma) LINDANE	2.5E+01	carcinogenic effects	2.5E+01	1.7E+02	8.3E+02	NA
*HEXACHLOROETHANE	4.0E+02	noncarcinogenic effects	5.1E+02	4.0E+02	2.0E+03	NA
*INDENO(1,2,3-cd)PYRENE	1.5E+01	carcinogenic effects	1.5E+01	-	-	NA
LEAD	7.5E+02	=occupational	-	-	-	NA
MERCURY	1.1E+02	noncarcinogenic effects	-	1.1E+02	5.7E+02	NA
METHOXYCHLOR	2.0E+03	noncarcinogenic effects	-	2.0E+03	1.0E+04	NA
*METHYLENE CHLORIDE	3.8E+02	carcinogenic effects	3.8E+02	1.7E+04	8.5E+04	2.4E+03
METHYL ETHYL KETONE	3.4E+04	saturation limit	-	6.2E+04	3.1E+05	3.4E+04
METHYL ISOBUTYL KETONE	6.5E+03	noncarcinogenic effects	-	6.5E+03	3.3E+04	1.7E+04
METHYL MERCURY	4.1E+01	noncarcinogenic effects	-	4.1E+01	2.0E+02	NA
METHYLNAPHTHALENE (total 1- & 2-)	1.3E+04	noncarcinogenic effects	-	1.3E+04	6.4E+04	NA
*METHYL TERT BUTYL ETHER	2.8E+03	carcinogenic effects	2.8E+03	4.7E+04	2.4E+05	2.1E+04
MOLYBDENUM	3.9E+03	noncarcinogenic effects	-	3.9E+03	1.9E+04	NA
NAPHTHALENE	4.6E+02	noncarcinogenic effects	-	4.6E+02	2.3E+03	NA
*NICKEL	1.0E+03	carcinogenic effects	1.0E+03	1.5E+04	7.7E+04	NA
*PENTACHLOROPHENOL	1.5E+02	carcinogenic effects	1.5E+02	7.1E+03	3.5E+04	NA
PERCHLORATE	7.7E+01	noncarcinogenic effects	-	7.7E+01	3.9E+02	NA
PHENANTHRENE	2.6E+04	=fluorene	-	2.6E+04	1.3E+05	NA
PHENOL	2.4E+05	noncarcinogenic effects	-	2.4E+05	1.2E+06	NA
*POLYCHLORINATED BIPHENYLS (PCBs)	6.7E+00	noncarcinogenic effects	6.4E+00	6.7E+00	3.4E+01	NA
PYRENE	2.3E+04	noncarcinogenic effects	-	2.3E+04	1.1E+05	NA
SELENIUM	3.9E+03	noncarcinogenic effects	-	3.9E+03	1.9E+04	NA
SILVER	3.9E+03	noncarcinogenic effects	-	3.9E+03	1.9E+04	NA
STYRENE	1.5E+03	saturation limit	-	3.7E+04	1.9E+05	1.5E+03
tert-BUTYL ALCOHOL	1.3E+04	carcinogenic effects	1.3E+04	-	-	3.2E+05
TETRACHLOROETHANE, 1,1,1,2-	2.6E+02	carcinogenic effects	2.6E+02	4.3E+03	2.2E+04	2.0E+03
*TETRACHLOROETHANE, 1,1,2,2-	3.4E+01	carcinogenic effects	3.4E+01	8.7E+03	4.3E+04	2.0E+03
*TETRACHLOROETHYLENE	3.7E+01	carcinogenic effects	3.7E+01	3.2E+03	1.6E+04	2.3E+02
THALLIUM	5.1E+01	noncarcinogenic effects	-	5.1E+01	2.6E+02	NA
TOLUENE	6.5E+02	saturation limit	-	5.3E+03	2.7E+04	6.5E+02
TOXAPHENE	1.7E+01	carcinogenic effects	1.7E+01	-	-	NA
TPH (gasolines)	2.3E+04	=pyrene	-	2.3E+04	1.1E+05	NA
TPH (middle distillates)	2.3E+04	=pyrene	-	2.3E+04	1.1E+05	NA

TABLE K-3. DIRECT-EXPOSURE SCREENING LEVELS
CONSTRUCTION/TRENCH WORKER EXPOSURE SCENARIO

CHEMICAL	Final Screening Level (mg/kg)	Basis	Carcinogens (Risk = 10^{-6}) (mg/kg)	Noncarcinogens HQ = 0.2 (mg/kg)	Noncarcinogens (HQ = 1.0) (mg/kg)	Saturation (mg/kg)
TPH (residual fuels)	2.3E+04	=pyrene	-	2.3E+04	1.1E+05	NA
*TRICHLOROBENZENE, 1,2,4-	6.2E+03	noncarcinogenic effects	1.1E+04	6.2E+03	3.1E+04	NA
TRICHLOROETHANE, 1,1,1-	1.2E+03	saturation limit	-	1.7E+03	8.7E+03	1.2E+03
*TRICHLOROETHANE, 1,1,2-	6.3E+01	carcinogenic effects	6.3E+01	3.0E+02	1.5E+03	1.8E+03
*TRICHLOROETHYLENE	1.5E+02	noncarcinogenic effects	2.6E+02	1.5E+02	7.4E+02	1.3E+03
TRICHLOROPHENOL, 2,4,5-	1.9E+04	noncarcinogenic effects	-	1.9E+04	9.3E+04	NA
*TRICHLOROPHENOL, 2,4,6-	2.9E+02	carcinogenic effects	2.9E+02	-	-	NA
VANADIUM	5.4E+03	noncarcinogenic effects	-	5.4E+03	2.7E+04	NA
*VINYL CHLORIDE	2.4E+00	carcinogenic effects	2.4E+00	-	-	1.2E+03
XYLENES	4.2E+02	saturation limit	-	2.2E+03	1.1E+04	4.2E+02
ZINC	2.3E+05	noncarcinogenic effects	-	2.3E+05	1.2E+06	NA

Primary source: USEPA Region IX Preliminary Remediation Goals (PRGs, USEPA 2002), modified as noted below. See text for discussion.

Notes:

See text for equations and assumptions used in models.

Final screening level is lowest of individual screening levels for carcinogenic effects and noncarcinogenic effects (based on HQ=0.2) or screening level for construction/trench workers if lower (see Table K-3). Saturation limit used as upper limit for volatile organic compounds that are liquid at ambient conditions (see text).

Carcinogens: Based on target cancer risk of 10^{-6}; modified with respct to CalEPA/OEHHA slope factors when available (marked by "*"). Screening levels for PCBs based on updated USEPA slope factors as presented in USEPA Region IX Preliminary Remediation Goals document (USEPA 2002).

Noncarcinogens: Adjusted to target hazard quotient of 0.2 for use in tables. Screening levels based on hazard quotient of 1.0 provided for reference.

Saturation: Theoretical soil saturation level in the absence of free product; calculated for volatile organic compounds that are liquids under ambient conditions (refer to Table J).

TPH:Total Petroleum Hydrocarbons. See text for discussion of different TPH categories. Direct exposure screening levels after Massachusetts Department of Environmental Protection (see text).

Residential screening level for lead from Interim Guidance for Evaluating Lead-Based Paint and Asbestos Containing Materials at Proposed School Sites (DTSC 2001).

ATTACHMENT C

HISTORICAL GROUNDWATER DATA

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

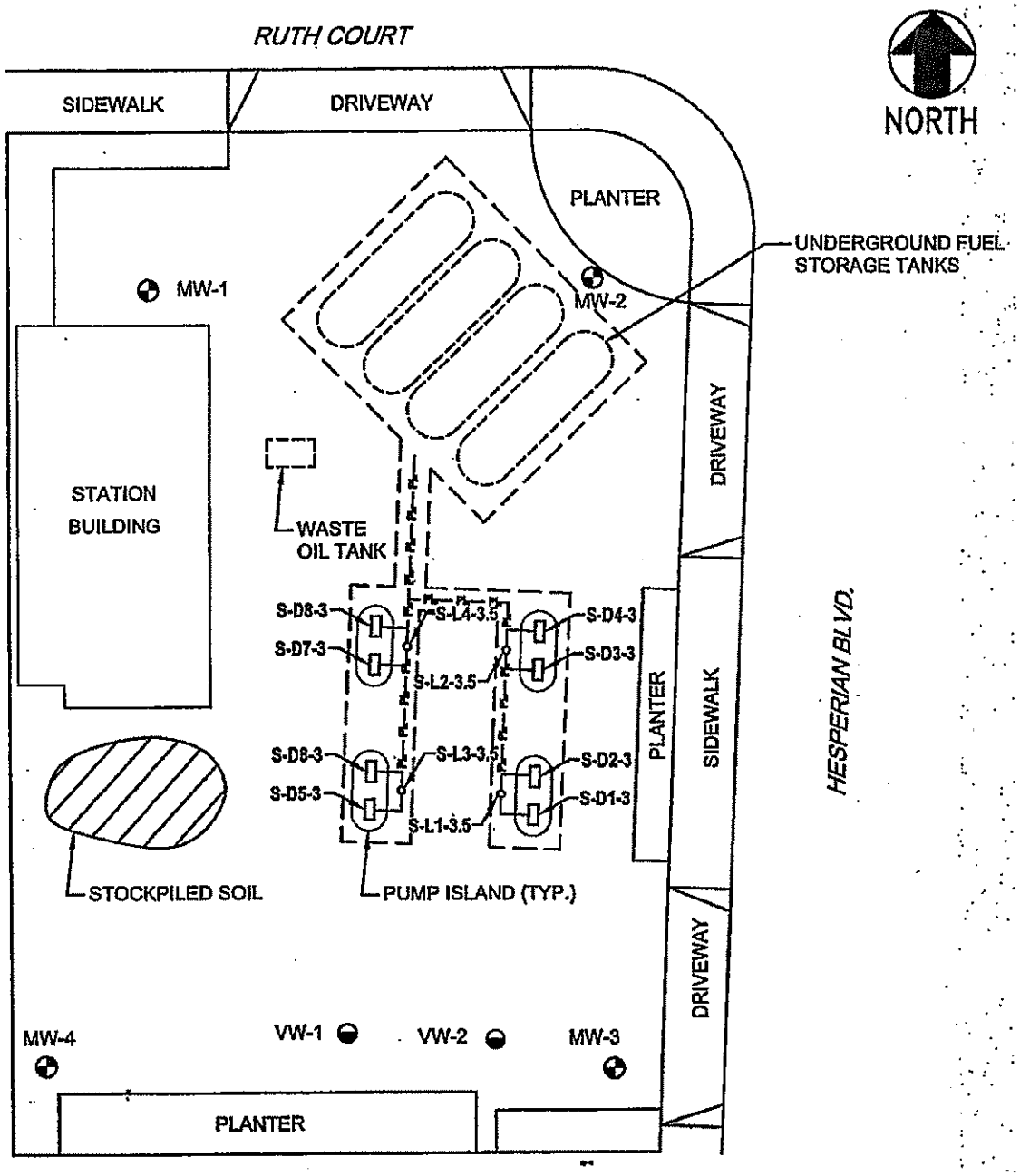
ARCO Service Station 2162
15135 Hesperian Boulevard, San Leandro, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-1	02/26/96	31.19	7.14	24.05	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	
MW-1	05/23/96	31.19	7.70	23.49	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	
MW-1	08/21/96	31.19	8.75	22.44	210	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-1	11/20/96	31.19	8.62	22.57	91	<0.5	<0.5	<0.5	<0.5	2.6	NA	NA	
MW-1	04/01/97	31.19	8.70	22.49	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-1	06/10/97	31.19	8.45	22.74	94	<0.5	<0.5	0.68	0.56	6.4	NA	NA	NP
MW-1	09/17/97	31.19	9.20	21.99	<50	<0.5	<0.5	<0.5	<0.5	10	NA	1.0	NP
MW-1	12/12/97	31.19	8.00	23.19	<200	<2	<2	<2	<2	180	NA	2.0	NP
MW-1	03/25/98	31.19	7.00	24.19	<200	<2	<2	3	<2	180	NA	2.0	
MW-1	05/14/98	31.19	7.46	23.73	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.17	P
MW-1	07/31/98	31.19	8.10	23.09	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
MW-1	10/12/98	31.19	8.60	22.59	<50	<0.5	<0.5	<0.5	<0.5	9	NA	2.5	NP
MW-1	02/11/99	31.19	7.32	23.87	<50	<0.5	<0.5	<0.5	<0.5	25	NA	1.0	P
MW-1	06/23/99	31.19	8.40	22.79	55	<0.5	<0.5	<0.5	<0.5	<3	NA	1.36	NP
MW-1	08/23/99	31.19	8.85	22.34	<50	<0.5	0.6	<0.5	<0.5	5	NA	1.42	NP
MW-1	10/27/99	31.19	8.50	22.69	<50	<0.5	<0.5	<0.5	<1	90	NA	0.83	NP
MW-1	02/09/00	31.19	8.11	23.08	<50	<0.5	<0.5	<0.5	<1	9	NA	0.77	NP
MW-2	02/26/96	30.38	6.41	23.97	770	<0.5	<0.5	45	28	NA	NA	NA	
MW-2	05/23/96	30.38	6.80	23.58	590	0.50	<0.5	35	18	NA	NA	NA	
MW-2	08/21/96	30.38	7.80	22.58	170	<0.5	<0.5	21	6.3	<2.5	NA	NA	
MW-2	11/20/96	30.38	7.73	22.65	88	<0.5	<0.5	7.9	1.1	<2.5	NA	NA	
MW-2	04/01/97	30.38	7.83	22.55	66	<0.5	<0.5	3.6	0.56	33	NA	NA	
MW-2	06/10/97	30.38	7.52	22.86	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-2	09/17/97	30.38	8.24	22.14	<50	<0.5	<0.5	<0.5	<0.5	<3.0	NA	0.6	NP
MW-2	12/12/97	30.38	7.10	23.28	<50	<0.5	<0.5	<0.5	<0.5	<3.0	NA	1.2	NP
MW-2	03/25/98	30.38	6.27	24.11	<50	<0.5	<0.5	0.7	0.5	55	NA	1.0	
MW-2	05/14/98	30.38	6.54	23.84	210	<0.5	<0.5	3.3	<0.5	42	NA	1.47	P
MW-2	07/31/98	30.38	7.14	23.24	230	<0.5	<0.5	3.9	<0.5	6	NA	1.0	P

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 2162
15135 Hesperian Boulevard, San Leandro, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-2	10/12/98	30.38	7.65	22.73	110	<0.5	<0.5	1.5	<0.5	<3	NA	1.0	P
MW-2	02/11/99	30.38	6.55	23.83	660	<0.5	<0.5	6.7	0.7	3	NA	1.0	P
MW-2	06/23/99	30.38	7.48	22.90	270	<0.5	<0.5	2.2	0.8	<3	NA	NM	P
MW-2	08/23/99	30.38	7.89	22.49	200	<0.5	0.9	1.8	<0.5	<3	NA	1.17	P
MW-2	10/27/99	30.38	8.30	22.08	2,100	1.0	2.5	14	3	3	NA	0.75	NP
MW-2	02/09/00	30.38	8.02	22.36	<50	<0.5	<0.5	<0.5	<1	5	NA	0.69	NP
MW-3	02/26/96	30.30	6.72	23.58	120	5.0	<0.5	<0.5	<0.5	NA	NA	NA	
MW-3	05/23/96	30.30	7.18	23.12	140	12	<0.5	<0.5	<0.5	NA	NA	NA	
MW-3	08/21/96	30.30	8.17	22.13	<50	1.1	<0.5	<0.5	<0.5	130	NA	NA	
MW-3	11/20/96	30.30	8.03	22.27	55	<0.5	<0.5	<0.5	<0.5	59	NA	NA	
MW-3	04/01/97	30.30	8.09	22.21	<50	<0.5	<0.5	<0.5	<0.5	180	NA	NA	NP
MW-3	06/10/97	30.30	7.97	22.33	<50	<0.5	<0.5	<0.5	<0.5	1,900	NA	NA	NP
MW-3	09/17/97	30.30	8.54	21.76	<5,000	<50	<50	<50	<50	1,100	860	2.2	NP
MW-3	12/12/97	30.30	7.50	22.80	560	<5.0	<5.0	<5.0	5.0	370	NA	1.4	NP
MW-3	03/25/98	30.30	6.60	23.70	<500	<5	<5	<5	<5	470	NA	1.0	
MW-3	05/14/98	30.30	7.13	23.17	750	<5	<5	<5	<5	630	NA	1.97	P
MW-3	07/31/98	30.30	7.58	22.72	<500	<5	<5	<5	<5	590	NA	1.0	P
MW-3	10/12/98	30.30	8.00	22.30	<500	<5	<5	<5	<5	600	NA	2.0	P
MW-3	02/11/99	30.30	6.90	23.40	<500	<5	<5	<5	<5	280	NA	1.0	P
MW-3	06/23/99	30.30	7.82	22.48	220	<0.5	3.2	<0.5	<0.5	740	NA	1.98	P
MW-3	08/23/99	30.30	8.28	22.02	<50	<0.5	1.1	<0.5	<0.5	230	NA	1.20	P
MW-3	10/27/99	30.30	9.27	21.03	<50	<0.5	<0.5	<0.5	<1	<3	NA	0.81	NP
MW-3	02/09/00	30.30	7.45	22.85	<50	<0.5	<0.5	<0.5	<1	80	NA	0.81	P
MW-4	02/26/96	30.39	7.59	22.80	110	9.9	<0.5	<0.5	<0.5	NA	NA	NA	
MW-4	05/23/96	30.39	8.22	22.17	69	8.0	<0.5	<0.5	<0.5	NA	NA	NA	
MW-4	08/21/96	30.39	9.28	21.11	<50	6.8	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-4	11/20/96	30.39	9.12	21.27	95	10	0.59	<0.5	0.52	3.8	NA	NA	



LEGEND

MW-1	GROUNDWATER MONITORING WELL
VW-1	SOIL VAPOR EXTRACTION WELL
S-L1-3.5	FUEL LINE SAMPLING LOCATION
S-D1-3	FUEL DISPENSER SAMPLING LOCATION
	EXPOSED PRODUCT LINE PIPING
	APPROXIMATE LIMITS OF EXCAVATION

0 25 50

SCALE IN FEET

URS

Project No. 38486067

Arco Service Station No. 2162
15135 Hesperian Boulevard
San Leandro, California

SOIL SAMPLING LOCATION PLAN
January 10, 2003

FIGURE
2

Soil Analytical Data
ARCO Service Station No. 2162
15135 Hesperian Boulevard
San Leandro, California

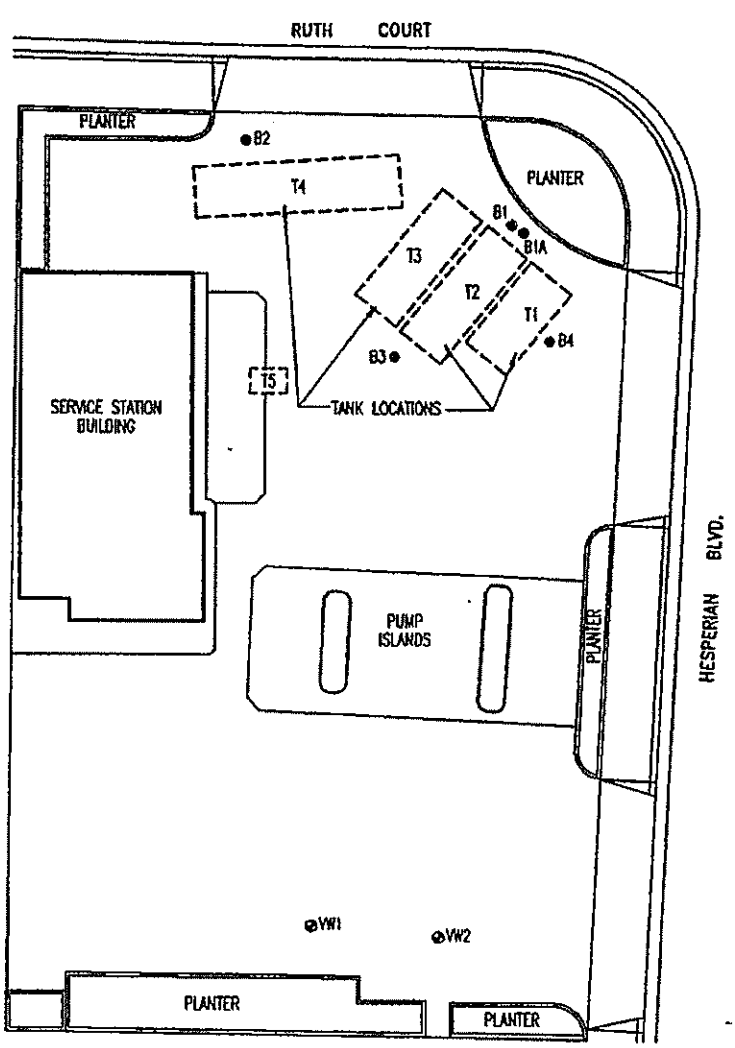
TABLE 1
Product Line/Dispenser Analytical Results

Soil Sample ID	Sample	Date	TPH as gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MTBE (ppm)
S-D1-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D2-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D3-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D4-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D5-3	3	1/10/03	**0.75**	ND<0.005	ND<0.005	**0.021**	**0.03**	**0.093**
S-D6-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.01	**0.021**
S-D7-3	3	1/10/03	**5.7**	ND<0.025	ND<0.025	**0.1**	**0.49**	ND<0.12
S-D8-3	3	1/10/03	**46**	ND<0.025	**0.13**	**0.17**	**0.36**	ND<0.25
S-L1-3.5	3.5	1/10/03	ND<0.5	**0.072**	**0.0095**	**0.029**	**0.032**	**0.14**
S-L2-3.5	3.5	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-L3-3.5	3.5	1/10/03	ND<2.5	ND<0.025	ND<0.025	ND<0.025	ND<0.05	**0.55**
S-L4-3.5	3.5	1/10/03	**200**	ND<0.025	**2.1**	**1.4**	**1.5**	ND<0.25

TABLE 2
Soil Stockpile Analytical Results

Soil Sample ID	Sample	Date	TPH as gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MTBE (ppm)	Total Lead (ppm)
SP (1-4) Composite	--	1/10/03	**0.79**	ND<0.025	ND<0.025	**0.032**	**0.14**	ND<0.12	**19**

TPH = Total purgeable petroleum hydrocarbons using EPA Method 8015B, modified.
BTEX = Benzene, toluene, ethylbenzene, total xylenes using EPA Method 8021B.
MTBE = Methyl Tertiary Butyl Ether.
ppb = Parts per billion.
ppm = Parts per million.
ND< = Less than stated laboratory detection limit.



EXPLANATION

- ●B1 SOIL BORING LOCATIONS AND DESIGNATIONS.
- ⊕VW1 VAPOR EXTRACTION TEST WELL LOCATIONS AND DESIGNATIONS.
- [ ] FORMER UNDERGROUND STORAGE TANK LOCATION.

T1	6,000 GAL. STEEL TANK.
T2	8,000 GAL. STEEL TANK.
T3	8,000 GAL. STEEL TANK.
T4	12,000 GAL. FIBERGLASS TANK.
T5	560 GAL. WASTE OIL TANK.

0' 30' 60'

APPROXIMATE SCALE

ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING & MANAGEMENT

COMPILED BY:	T.R.
PREPARED BY:	R.P.
PROJECT MNGR.	G.M.
DATE:	06/92
SCALE:	AS SHOWN
PROJECT NO.	A117W01
FILE NAME:	AR216201

PREPARED FOR: ARCO PRODUCTS COMPANY

TITLE: SITE PLAN

ARCO FACILITY NO. 2162

FIGURE 2

Table 2. Summary of Soil Analyses: Sidewall and Product Lines
ARCO Facility No. 2162, San Leandro, California

Sample Number	Date Sampled	Depth Sampled	TPH-G (1)	BTEX Distinction (1)			
				Benzene	Toluene	Ethylbenzene	Xylenes
Excavation Sidewall Samples:							
SW-1	12/5/91	9	500	ND	0.4	3.5	8.4
SW-2	12/5/91	10	140	0.1	0.38	3.0	7.2
SW-3	12/5/91	10	150	0.26	0.11	2.1	2.0
SW-4	12/5/91	10	610	0.47	7.1	11	82
SW-5	12/5/91	10	1,000	2.3	9.2	25	220
Product Line Samples:							
L-1	2/4/92	3	ND	ND	ND	ND	ND
L-2	2/4/92	3.5	4.4	0.082	0.013	0.21	0.3
L-3	2/4/92	3	ND	ND	ND	ND	ND
L-4	2/4/92	3	ND	0.0063	0.0076	ND	0.029
L-5	2/4/92	3	110	0.65	0.17	1.2	0.14
L-6	2/4/92	2.5	16	1.0	0.2	0.96	4.0
L-7	2/4/92	4	12	0.28	0.018	0.35	0.78

FOOTNOTES
(1) = Concentrations reported in mg/kg (= parts per million).
TPH-G = Total Petroleum Fuel Hydrocarbons as Low/Medium Boiling Point Hydrocarbons (USEPA Method 8015).
BTEX Distinction (USEPA Method 8020).
ND = Not Detected.

ATTACHMENT E

BORING LOGS AND WELL COMPLETION REPORTS

ROUX

SYMBOL KEY

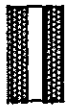
LITHOLOGIC SYMBOL KEY
(Unified Soil Classification System)

		Fill
	SW	Well Graded Sand
	SP	Poorly Graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	PT	Peat
	OL	Low Plasticity Organic Silt
	OH	High Plasticity Organic Silt
	ML	Low Plasticity Silt
	MH	High Plasticity Silt
	GW	Well Graded Gravel
	GP	Poorly Graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	CL	Low Plasticity Clay
	CH	High Plasticity Clay

SAMPLER SYMBOL KEY

	Continuous Core Barrel
	Standard Penetration Test
	Modified California Sampler
	Shelby Sampler

WELL CONSTRUCTION SYMBOL KEY

	Sand Pack w/Slotted Casing
	Sand Pack
	Concrete Grout/Fill
	Bentonite Grout/Seal
	Cement/Bentonite Grout

NE	Ground Water Not Encountered
	Water Level at Time of Drilling.
	Stabilized Water Level.

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B1	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling		Drill Bit Diameter: 6 inches	Total Depth: 11.5 ft
Driller: S. Stone		Backfill Material: Bentonite Grout	from 0 ft to 11.5 ft
Drilling Method: Hollow Stem Auger		Sampler: CA Modified Split-spoon	
Drilling Equipment: Mobile B-53		Depth to Water at Time of Drilling: 9.5 ft	

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock Pea gravel					
	CLAY, Silty, black-brown.	OL				
	CLAY, Silty, brown.	CL				
5	CLAY, Silty, green-grey, little medium(-) sand, slight hydrocarbon odor	OL		6-9-12		No Recovery For OVM
		SM ▽				
10	SAND, medium Silty, green-brown, some fine gravel, wet, strong hydrocarbon odor.			2-3-4	3.3	
15						

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. **B1A**	
Logged By: **Jon Florez**	Checked By: **L.E.**	Date Started: **6/5/91**	Date Completed: **6/5/91**
Drilling Co: **Gregg Drilling**		Drill Bit Diameter: **6 inches**	Total Depth: **9.0 ft**
Driller: **S. Stone**		Backfill Material: **Bentonite Grout**	from **0 ft** to **9.0 ft ft**
Drilling Method: **Hollow Stem Auger**		Sampler: **CA Modified Split-spoon**	
Drilling Equipment: **Mobile B-53**		Depth to Water at Time of Drilling:	

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock					
	Pea gravel					
	CLAY, Silty, black-brown.	OL				
	CLAY, Silty, brown.	CL				
5	CLAY, Silty, green-grey, little medium(-) sand, slight hydrocarbon odor.	OL				
	SILT, clayey, dark brown, light brown mottling, moderate to strong hydorcarbon odor.	MH		6-9-12		OVM Malfunction
10						
15						

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. **B2**	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling		Drill Bit Diameter: 6 inches	Total Depth: 9.5 ft
Driller: S. Stone		Backfill Material: Bentonite Grout	from 0 ft to 9.5 ft ft
Drilling Method: Hollow Stem Auger		Sampler: CA Modified Split-spoon	
Drilling Equipment: Mobile B-53		Depth to Water at Time of Drilling: 9.0 ft	

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock Pea gravel					
	CLAY, Silty, black.	OL				
5	SILT, Sandy, brown-green with orange mottling, damp, few rootlets, mild hydrocarbon odor.	ML		4-7-10	76.7	
		SP		5-4-10	10.5	
	SAND, medium to fine(+), green, and fine(-) gravel, moist, mild hydrocarbon odor.					
10						
15						

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B3	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling		Drill Bit Diameter: 6 inches	Total Depth: 10.5 ft
Driller: S. Stone		Backfill Material: Bentonite Grout	from 0 ft to 10.5 ft ft
Drilling Method: Hollow Stem Auger		Sampler: CA Modified Split-spoon	
Drilling Equipment: Mobile B-53		Depth to Water at Time of Drilling: 10.0 ft	

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock					
	GRAVEL, Sandy, with lens of white medium sand.					
	SILT, Clayey, black, organic odor? SILT, brown-orange , trace lenses of fine gravel. SILT, Clayey, black, with piece of glass.					
	SILT, greenish-black to dark brown, trace shell fragments, trace medium sand, very slight odor.	OL		4-7-12	10.5	
5		CL				
	CLAY, silty, green-brown, 1-2 inch lense of green sand at top of sampler, moist, trace of separate phase petroleum hydrocarbon.			3-6-8	207.5	
	SAND, medium(+), green, little silt, wet.	SW		4-6-10		No Recovery For OVM
10						
15						

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B4	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling		Drill Bit Diameter: 6 inches	Total Depth: 15.0 ft
Driller: S. Stone		Backfill Material: Bentonite Grout	from 0 ft to 15.0 ft ft
Drilling Method: Hollow Stem Auger		Sampler: CA Modified Split-spoon	
Drilling Equipment: Mobile B-53		Depth to Water at Time of Drilling: 9.5 ft	

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock					
	SAND, medium, yellow.					
	SILT, Clayey, black.					
	SILT, Sandy, brown-green, and gravel.					
	SILT, black, trace fine gravel.					
	SILT, green with brown mottling, trace fine sand, trace rootlets, slight hydrocarbon odor.	OL		4-6-8	10.5	
5						
	SILT, green-grey, moist, strong hydrocarbon odor, trace dark brown to black separate phase petroleum hydrocarbon.			4-8-8	992	
	1/2-inch thick lens of medium to fine, green-grey gravel					
	SAND, fine, green-grey, wet.	SM		4-3-8		
	GRAVEL, medium to fine, green-grey, and fine sand, wet, trace brown separate phase petroleum hydrocarbon.	GP				
10	GRAVEL, medium, green-grey, wet, trace brown separate phase petroleum hydrocarbon.					
	SAND, fine, wet, separate phase petroleum hydrocarbon noted.	SM		7-17-5		
	GRAVEL, fine, green, wet, separate phase petroleum hydrocarbon noted.	GP				
	SAND, medium, brown, and fine gravel, wet, separate phase petroleum hydrocarbon noted.	SP				
	GRAVEL, medium to fine, green-grey, and fine sand, wet, slight hydrocarbon odor.	GM		2-3-5		
	SILT, brown-orange with dark brown mottling, moist, no odor noted.	ML				
	SILT, brown, trace medium flecks of black organic matter, damp.			3-4-6		
15						

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA	Log of Well No. VW1
Date Started: 6/5/91 Completed: 6/5/91	Measuring Point Elevation: 30 ft Total Depth: 10.5 ft
Logged By: Jonathan Florez Checked By: L.E.	Water Level During Drilling: 10.0 ft Stabilized: ft
Drilling Co: Gregg Drilling Driller: S. Stone	Casing: 2" sched. 40 PVC Drill Bit Diameter: 6 inches
Drilling Method: Hollow Stem Auger	Perforation: 0.020 Slotted PVC from 8.7 ft to 3.7 ft
Drilling Equipment: Mobile B-53	Pack: #3 Monterey Sand from 9.0 ft to 3.3 ft
Sampler: CA Modified Split-spoon	Seal: Bentonite Chips from 3.3 ft to 2.3 ft
	Cement/Bentonite Grout from 2.3 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & basecrock						
	SAND, medium to fine, brown, and medium to fine(+) gravel.						
	SILT, Clayey, black, trace fine sand.	OL					
	SILT, Clayey, black, trace 2mm. brown needles.				5-13-16		OVM Malfunction
5	SILT, Sandy, green, moist, rootlet fragments.						
					6-8-7		OVM Malfunction
	SAND, coarse to fine(+), green, little fine gravel, moist.	SW					
	SAND, Silty(+) to clayey, green, moist.	SM					
		▽			3-6-8		OVM Malfunction
10							1.5-foot thick bentonite seal below vapor extraction well
15							

ROUX

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA	Log of Well No. VW2
Date Started: 6/5/91 Completed: 6/5/91	Measuring Point Elevation: 30 ft Total Depth: 9.8 ft
Logged By: Jonathan Florez Checked By: L.E.	Water Level During Drilling: 9.8 ft Stabilized: ft
Drilling Co: Gregg Drilling Driller: S. Stone	Casing: 2" sched. 40 PVC Drill Bit Diameter: 6 inches
Drilling Method: Hollow Stem Auger	Perforation: 0.020 Slotted PVC from 9 ft to 4 ft
Drilling Equipment: Mobile B-53	Pack: #3 Monterey Sand from 9.3 ft to 3.7 ft
Sampler: Cuttings	Seal: Bentonite Chips from 3.7 ft to 2.7 ft
	Cement/Bentonite Grout from 2.7 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & basecrock						
	SAND, medium to fine, brown, and fine gravel.						
	SILT, Clayey, black.	OL					
5							
	SILT, Clayey, green.						
10							0.5-foot thick bentonite seal below vapor extraction well
15							

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

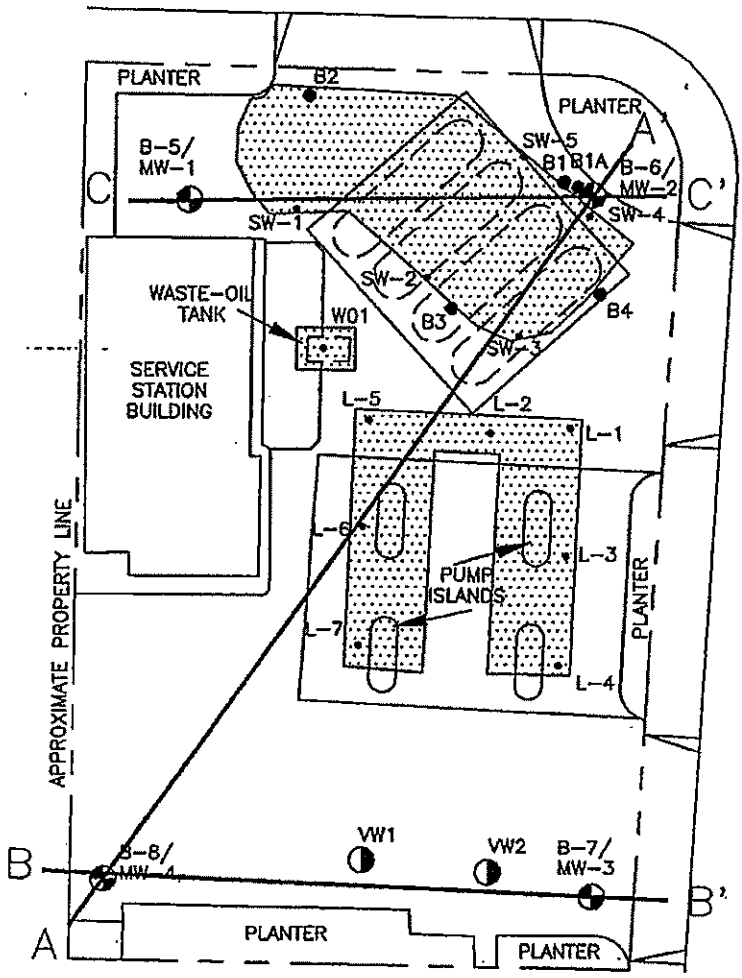
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

ATTACHMENT F

SITE MAP AND CROSS SECTIONS

RUTH COURT



HESPERIAN BOULEVARD

EXPLANATION

B-8/ MW-4 = Monitoring well RESNA September 1992

VW2 = Vapor extraction well (Roux Associates, Inc., 1991)

B4 = Soil boring (Roux Associates, Inc., 1991)

L-7 = Product line sample

SW-5 = Sidewall soil sample

= Former underground storage tank and product line excavations

= Existing underground storage tank

N

Approximate Scale

30 15 0 30 60

feet

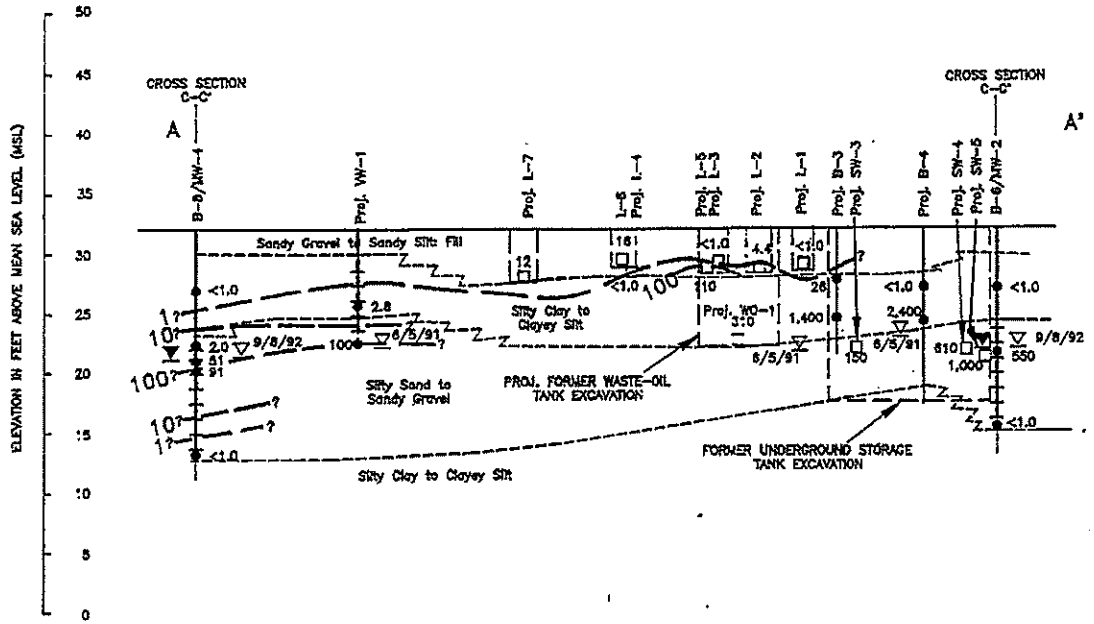
Source: Modified from site plan provided by Roux Associates. and survey data from John Koch, licensed land surveyor (9/16/92)

RESNA
Working to Restore Nature

PROJECT 62019.02

GENERALIZED SITE PLAN
ARCO Station 2162
15135 Hesperian Boulevard
San Leandro, California

PLATE
2



EXPLANATION

- = Product line and tank excavations
- 100 = Line of equal concentration of TPHg in soil, in parts per million (ppm)
- 1,000 = Laboratory analyzed product line excavation soil sample showing TPHg concentration in ppm
- 2,400 = Laboratory analyzed soil sample showing TPHg concentration in ppm
- = Well casing
- = Well screen
- = Boring
- = Initial water level
- = Static water level (10/16/92)

Approximate Vertical Scale

20 10 0 20 40

feet

Approximate Horizontal Scale

10 5 0 10 20

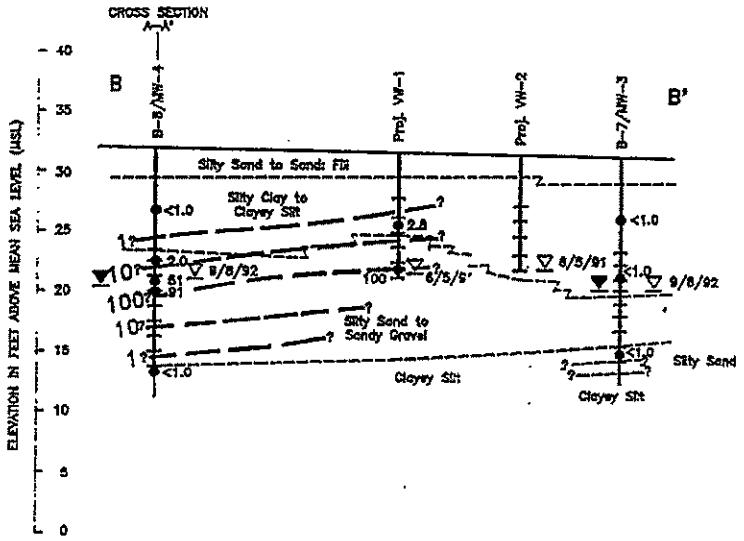
feet

RESNA
Working to Restore Nature

PROJECT 62019.C2

GEOLOGIC CROSS SECTION A-A'
ARCO Station 2162
15135 Hesperian Boulevard
San Leandro, California

PLATE 8



EXPLANATION

100 — = Line of equal concentration of TPHg in soil, in parts per million (ppm)

2,400 = Laboratory analyzed soil sample showing TPHg concentration in ppm

= Well casing

= Well screen

= Boring

= Initial water level

= Static water level (10/16/92)

Approximate Vertical Scale

20 10 0 20 40

feet

Approximate Horizontal Scale

10 5 0 10 20

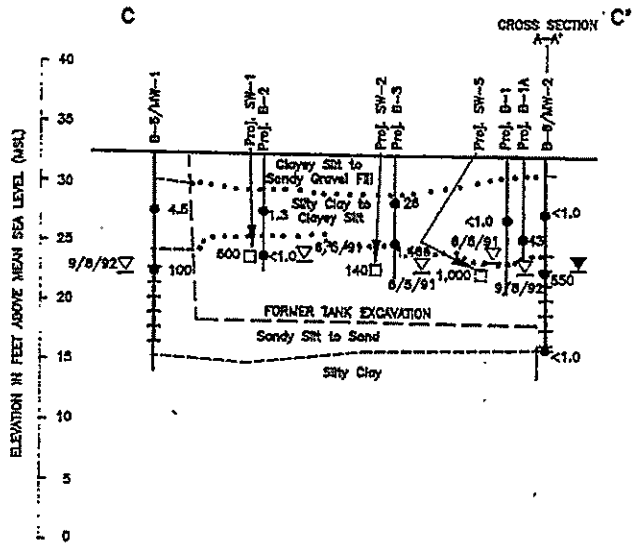
feet

RESNA
Working to Restore Nature

PROJECT 62019.02

GEOLOGIC CROSS SECTION B-B'
ARCO Station 2162
15135 Hesperian Boulevard
San Leandro, California

PLATE
9



EXPLANATION

- = Product line and tank excavations
- 100 = Line of equal concentration of TPHg in soil, in parts per million (ppm)
- 1,000 = Laboratory analyzed tank excavation sidewall soil sample showing TPHg concentration in ppm
- 2,400 = Laboratory analyzed soil sample showing TPHg concentration in ppm
- = Well casing
- = Well screen
- = Boring
- = Initial water level
- = Static water level (10/16/92)

NOTE: Dotted line denotes inferred stratigraphic contact through former excavation tank.

Approximate Vertical Scale

20 10 0 20 40

feet

Approximate Horizontal Scale

10 5 0 10 20

feet

RESNA
Working to Restore Nature

PROJECT 62019.02

GEOLOGIC CROSS SECTON C-C'
ARCO Station 2162
15135 Hesperian Boulevard
San Leandro, California

PLATE
10

APPENDIX C

GEOTRACKER UPLOAD CONFIRMATION

Electronic Submittal Information

Main Menu | View/Add Facilities | Upload EDD | Check EDD

Your EDF file has been successfully uploaded!

Confirmation Number: 9441612899
Date/Time of Submittal: 10/19/2006 4:10:44 PM
Facility Global ID: T0600100084
Facility Name: ARCO # 02162
Submittal Title: 3Q 06 GW Monitoring
Submittal Type: GW Monitoring Report

Click here to view the detections report for this upload.

ARCO # 02162 15135 HESPERIAN BLVD SAN LEANDRO, CA 94578	**Regional Board - Case #: 01-0091** SAN FRANCISCO BAY RWQCB (REGION 2) **Local Agency (lead agency) - Case #: 1259** ALAMEDA COUNTY LOP - **(SP)**

CONF #	TITLE	QUARTER
9441612899	3Q 06 GW Monitoring	Q3 2006

SUBMITTED BY	SUBMIT DATE	STATUS
Broadbent & Associates, Inc.	10/19/2006	PENDING REVIEW

SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	2
# FIELD POINTS WITH DETECTIONS	1
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	0
SAMPLE MATRIX TYPES	WATER

METHOD QA/QC REPORT

METHODS USED	8260FA,8260TPH
TESTED FOR REQUIRED ANALYTES?	Y
LAB NOTE DATA QUALIFIERS	Y

QA/QC FOR 8021/8260 SERIES SAMPLES

TECHNICAL HOLDING TIME VIOLATIONS	0
METHOD HOLDING TIME VIOLATIONS	0
LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT	0
LAB BLANK DETECTIONS	0
DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?	
- LAB METHOD BLANK	Y
- MATRIX SPIKE	Y
- MATRIX SPIKE DUPLICATE	Y
- BLANK SPIKE	Y
- SURROGATE SPIKE	Y

WATER SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	N
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	Y
SURROGATE SPIKES % RECOVERY BETWEEN 85-115%	N
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	Y

SOIL SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	n/a
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	n/a
SURROGATE SPIKES % RECOVERY BETWEEN 70-125%	n/a
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	n/a

FIELD QC SAMPLES

SAMPLE	COLLECTED	DETECTIONS > REPDL
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

Logged in as BROADBENT-C (CONTRACTOR) CONTACT SITE ADMINISTRATOR.

#2162

Electronic Submittal Information

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_WELL FILE

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

Submittal Title:	**3Q 06 GEO_WELL**
Submittal Date/Time:	**10/19/2006 4:03:53 PM**
Confirmation Number:	4184020817

Back to Main Menu

Logged in as BROADBENT-C
(CONTRACTOR)

CONTACT SITE ADMINISTRATOR.