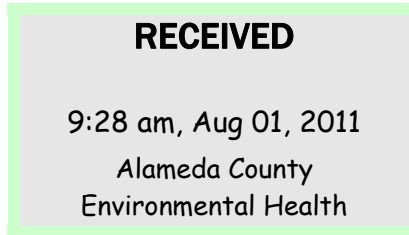


# Atlantic Richfield Company

**Shannon Couch**  
Project Manager

PO Box 1257  
San Ramon, CA 94583  
Phone: (925) 275-3804  
Fax: (925) 275-3815  
E-Mail: shannon.couch@bp.com



July 29, 2011

Re: Second Quarter 2011 Semi-Annual Groundwater Monitoring Report  
Atlantic Richfield Company Station #6113  
785 East Stanley Boulevard, Livermore, California  
ACEH Case #RO0000393

"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,

A handwritten signature in black ink, consisting of a large, stylized 'S' followed by a horizontal line and a large loop.

Shannon Couch  
Project Manager

Attachment

**SECOND QUARTER 2011 SEMI-ANNUAL  
GROUNDWATER MONITORING REPORT**

Atlantic Richfield Company Station #6113  
785 East Stanley Blvd, Livermore, California  
ACEH Case #RO0000393

Prepared for

Ms. Shannon Couch  
Project Manager  
Atlantic Richfield Company  
P.O. Box 1257  
San Ramon, California 94583

Prepared by



1324 Mangrove Avenue, Suite 212  
Chico, California 95926  
(530) 566-1400  
[www.broadbentinc.com](http://www.broadbentinc.com)

July 29, 2011

Project No. 06-82-637

Broadbent & Associates, Inc.  
1324 Mangrove Ave., Suite 212  
Chico, CA 95926  
Voice (530) 566-1400  
Fax (530) 566-1401

Creating Valuable Solutions, Building Trust



July 29, 2011

Project No. 06-82-637

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

Attn.: Ms. Shannon Couch

Re: Second Quarter 2011 Semi-Annual Groundwater Monitoring Report, Atlantic Richfield Company Station #6113, 785 East Stanley Blvd, Livermore, California;  
ACEH Case #RO0000393.

Dear Ms. Couch:

Attached is the *Second Quarter 2011 Semi-Annual Groundwater Monitoring Report* for Atlantic Richfield Company (a BP affiliated company) Station #6113 located at 785 East Stanley Blvd., Livermore, Alameda County, California (Site). This report presents a summary of current developments regarding the Site through the Second Quarter 2011. Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

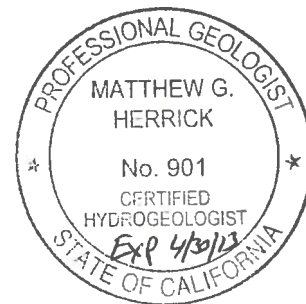
Sincerely,  
BROADBENT & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'Jason Duda', is written over the name of the Project Scientist.

Jason Duda  
Project Scientist

A handwritten signature in black ink, appearing to read 'Matthew G. Herrick', is written over the name of the Senior Hydrogeologist.

Matthew G. Herrick, P.G., C.HG  
Senior Hydrogeologist



Enclosure

cc: Mr. Paresh Khatri, ACEH (Submitted via ACEH ftp Site)  
Mr. Paul M. Smith/Ms. Danielle Stefani, Livermore-Pleasanton Fire Department  
(submitted via GeoTracker)  
Electronic copy uploaded to GeoTracker

**SECOND QUARTER 2011 SEMI-ANNUAL  
GROUNDWATER MONITORING REPORT  
STATION #6113, LIVERMORE, CALIFORNIA**

Broadbent & Associates, Inc. (BAI) is pleased to present this *Second Quarter 2011 Monitoring Report* on behalf of Atlantic Richfield Company (a BP affiliated company) for Station #6113 located in Livermore, Alameda County, California. Reporting is being submitted to the Alameda County Environmental Health Services Agency (ACEH) consistent with the requirements under the legal authority of the California Regional Water Quality Control Board as codified by California Code of Regulations Title 23, Section 2652(d). A summary description of current developments regarding the site is provided below.

Facility Name / Address:	<u>Station #6113 / 785 East Stanley Blvd., Livermore, CA</u>
Client Project Manager / Title:	<u>Ms. Shannon Couch / Project Manager</u>
BAI Contact:	<u>Jason Duda, (530) 566-1400</u>
BAI Project No.:	<u>06-82-637</u>
Primary Regulatory Agency / ID No.:	<u>ACEH Case #RO0000393</u>
Current phase of project:	<u>Monitoring</u>
List of Acronyms / Abbreviations:	<u>See end of report text for list of acronyms/abbreviations used in report.</u>

**WORK PERFORMED THIS QUARTER (Second Quarter 2011):**

1. Prepared and submitted the *First Quarter 2011 Status Report*.
2. Conducted groundwater monitoring/sampling for Second Quarter 2011 on May 18, 2011.

**WORK SCHEDULED FOR NEXT QUARTER (Third Quarter 2011):**

1. Prepare and submit *Second Quarter 2011 Semi-Annual Groundwater Monitoring Report* (contained herein).
2. No environmental field work is presently scheduled during the Third Quarter of 2011.

**GROUNDWATER MONITORING PLAN SUMMARY:**

Groundwater level gauging:	<u>MW-2, MW-4, MW-7, MW-9, (2Q and 4Q)</u> <u>MW-11, MW-12, RMW-13, VW-1,</u> <u>VW-2, and VW-4</u>
Groundwater sample collection:	<u>MW-4, MW-7, MW-11, MW-12, (2Q and 4Q)</u> <u>RMW-13, and VW-1</u> <u>MW-9 (4Q)</u>
Biodegradation indicator parameter monitoring:	<u>NA</u>

**QUARTERLY RESULTS SUMMARY:**

**LNAPL**

LNAPL observed this quarter:	<u>No</u>	(yes/no)
LNAPL recovered this quarter:	<u>None</u>	(gal)
Cumulative LNAPL recovered:	<u>Unknown</u>	(gal)

**Groundwater Elevation and Gradient:**

Depth to groundwater:	<u>15.77 (VW-1) to 19.17 (MW-11)</u>	(ft below TOC)
Gradient direction:	<u>North</u>	(compass direction)
Gradient magnitude:	<u>0.02</u>	(ft/ft)
Average change in elevation:	<u>2.41</u>	(ft since last measurement)

**Laboratory Analytical Data**

Summary:	<u>GRO were detected in three of the six wells sampled at a maximum concentration of 26,000 µg/L in RMW-3. Benzene was detected in RMW-13 at a concentration of 4,700 µg/L. MTBE was detected in four of the six wells sampled at a maximum concentration of 380 µg/L in RMW-13.</u>
----------	--

## ACTIVITIES CONDUCTED & RESULTS:

Second Quarter 2011 semi-annual groundwater monitoring was conducted on May 18, 2011 by BAI personnel in accordance with the monitoring plan summary detailed above. No irregularities were noted during water level gauging. Light, Non-Aqueous Phase Liquid (LNAPL, or free product) was not noted to be present in the wells monitored during this event. Depth to water measurements ranged from 15.77 ft at VW-1 to 19.17 ft at MW-11. Resulting groundwater surface elevations ranged from 438.23 ft at MW-11 to 442.72 ft at MW-9. Groundwater elevations are summarized in Table 1. Water level elevations yielded a horizontal groundwater gradient to the north at approximately 0.02 ft/ft. Field methods used during groundwater monitoring are provided in Appendix A. Field data sheets are included in Appendix B. A Site Location Map is presented as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Groundwater samples were collected on May 18, 2011, from wells MW-4, MW-7, MW-11, MW-12, RMW-13, and VW-1 at Station #6113, consistent with the current monitoring schedule. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California) for analysis of Gasoline-Range Organics (GRO, C6-C12) by EPA Method 8015M; for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE), Ethyl Tertiary Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Tert-Butyl Alcohol (TBA) and Ethanol by EPA Method 8260B. The GRO concentrations observed in the samples collected from wells MW-4 and VW-1 were "quantitated against gasoline." No other significant irregularities were encountered during analysis of the samples. The laboratory analytical report, including chain-of-custody documentation, is provided in Appendix C.

Hydrocarbons in the GRO range were detected above the laboratory reporting limit in three of the six wells sampled at concentrations up to 26,000 micrograms per liter ( $\mu\text{g/L}$ ) in well RMW-13. Benzene, Ethylbenzene, and Total Xylenes were detected above the laboratory reporting limits in well RMW-3 at concentrations of 4,700  $\mu\text{g/L}$ , 1,700  $\mu\text{g/L}$ , and 2,200  $\mu\text{g/L}$ , respectively. MTBE was detected above the laboratory reporting limit in four of the six wells sampled at concentrations up to 380  $\mu\text{g/L}$  in well RMW-13. The remaining analytes were not detected above their laboratory reporting limits in the wells sampled this last monitoring event. Groundwater monitoring laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 2. Groundwater monitoring data (GEO\_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix D.

## DISCUSSION:

Groundwater levels were between historic minimum and maximum elevations for each well gauged this quarter, with the exception of RMW-13 which reached a maximum elevation of 440.60 ft. It should be noted that this is only the third time groundwater levels have been gauged in RMW-13. Groundwater elevations yielded a horizontal groundwater gradient to the north at approximately 0.02 ft/ft, generally consistent with the historic gradient measurements presented in Table 3.

This event's detected analytical concentrations were within the historic minimum and maximum ranges recorded for each well with the following exceptions: GRO, Total Xylenes, and MTBE reached historic minimum concentrations in well RMW-13. As stated above, it is important to recognize that this is only the third sampling event conducted on RMW-13. The next semi-annual groundwater monitoring and sampling event is scheduled to be conducted during the Fourth Quarter 2011.

## RECOMMENDATIONS:

The *Work Plan to Conduct a Mobile Dual-Phase Extraction Event* was submitted to ACEH on March 7, 2011. Upon receipt of approval from ACEH regarding this Work Plan, preparation and conduct of a mobile dual-phase extraction event will commence.

## LIMITATIONS:

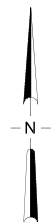
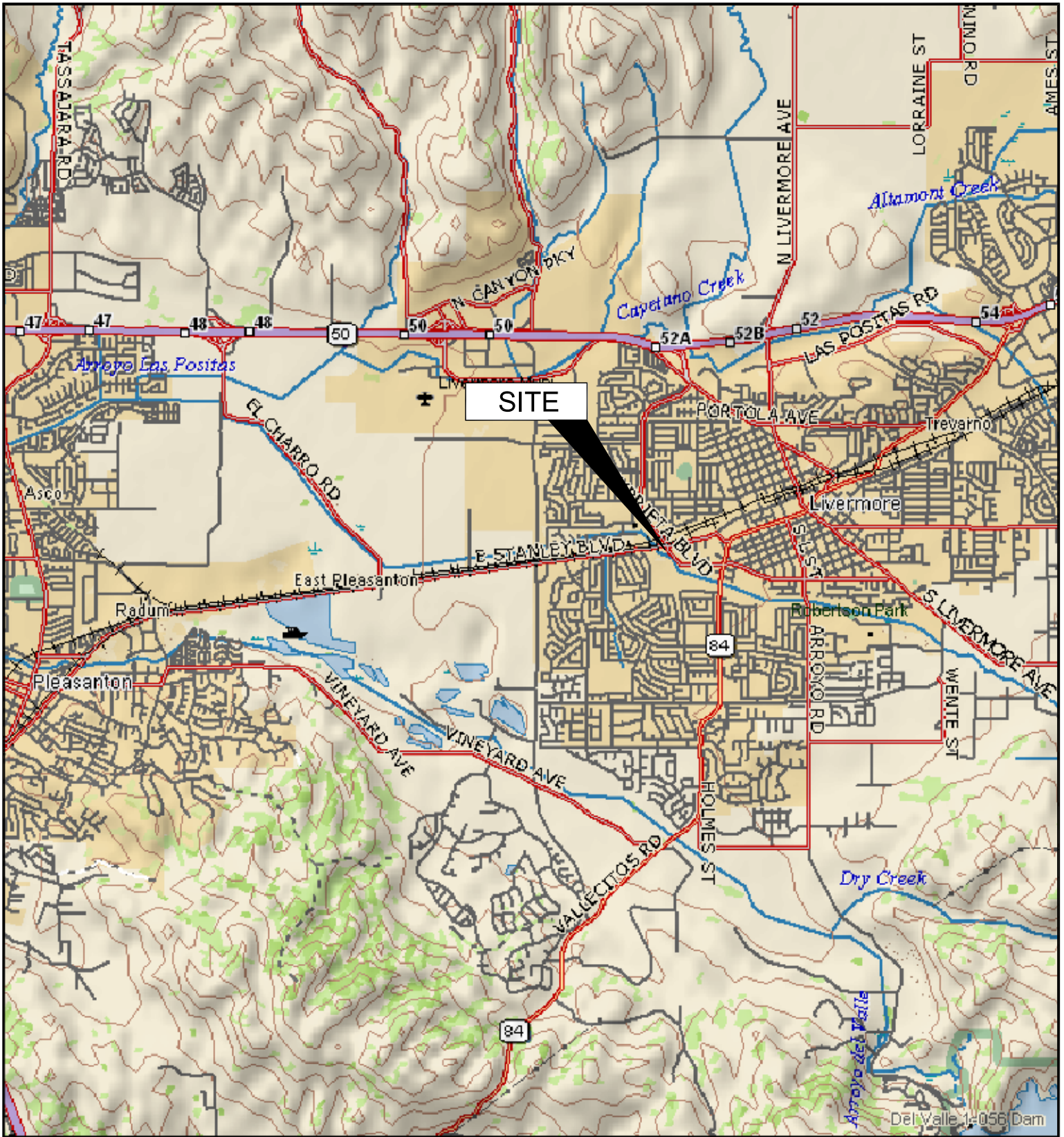
The findings presented in this document are based upon: observations of BAI field personnel (see Appendices A and B), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California). Our services were performed in accordance with the generally accepted standard of practice at the time this document 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 groundwater conditions could exist beyond points explored in this investigation. Also changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

## ATTACHMENTS:

- Drawing 1: Site Location Map
- Drawing 2: Groundwater Elevation Contours and Analytical Summary Map, May 18, 2011
  
- Table 1: Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
- Table 2: Summary of Fuel Additives Analytical Data
- Table 3: Historic Groundwater Gradient – Direction and Magnitude
  
- Appendix A: Field Methods
- Appendix B: Field Data Sheets and Non-Hazardous Waste Data Form
- Appendix C: Laboratory Report and Chain-of-Custody Documentation
- Appendix D: GeoTracker Upload Confirmation Receipts

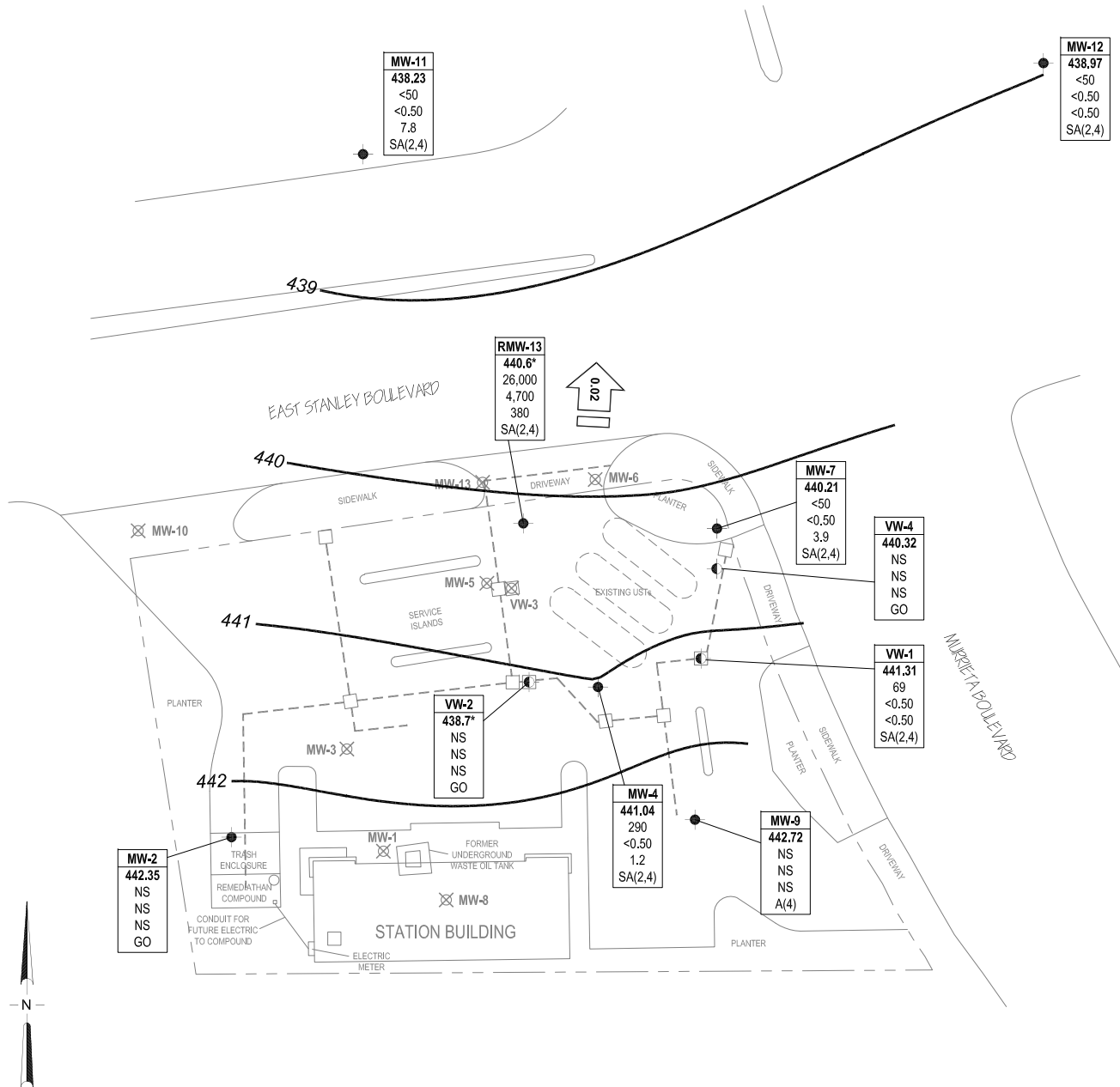
## LIST OF COMMONLY USED ACCRONYMS/ABBREVIATIONS:

ACEH:	Alameda County Environmental Health	ft/ft:	feet per foot
BAI:	Broadbent & Associates, Inc.	gal:	Gallons
BTEX:	Benzene, Toluene, Ethylbenzene, Total Xylenes	GRO:	Gasoline-Range Organics
1,2-DCA:	1,2-Dichloroethane	LNAPL:	Light Non-Aqueous Phase Liquid
DIPE:	Di-Isopropyl Ether	MTBE:	Methyl Tertiary Butyl Ether
DO:	Dissolved Oxygen	NO <sub>3</sub> :	Nitrate as Nitrogen
DRO:	Diesel-Range Organics	ppb:	parts per billion
EDB:	1,2-Dibromomethane	SO <sub>4</sub> :	Sulfate
Eh:	Oxidation Reduction Potential	TAME:	Tert-Amyl Methyl Ether
EPA:	Environmental Protection Agency	TBA:	Tertiary Butyl Ether
ETBE:	Ethyl Tertiary Butyl Ether	TOC:	Top of Casing
Fe <sup>2+</sup> :	Ferrous Iron	µg/L:	micrograms per liter



APPROXIMATE SCALE (mi)

IMAGE SOURCE: DELORME



### LEGEND

- Monitoring well
- Vapor extraction well
- Abandoned well
- 442 Groundwater elevation contour (ft/MSL)

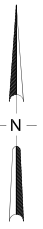
Well	Well Designation
ELEV	Ground-water Elevation
GRO	GRO, Benzene and MTBE concentration (µg/L)
Benzene	
MTBE	
A/SA	Sampling frequency
A(4)	Sampled annually, 4th quarter
SA(2,4)	Semi-annual sampling, 2nd and 4th quarters
GO	Gauge only
NS	Not Sampled
NS	Not Sampled
NS	Not Sampled
NM	Not Measured
*	Not Used in Contouring

0.02 Approximate groundwater flow gradient (ft/ft)

Vault box

Piping trench

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



**BROADBENT & ASSOCIATES, INC.**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
 1324 Mangrove Ave, Suite 212, Chico, California 95926  
 Project No.: 06-82-637 Date: 6/7/2011

Station #6113  
 785 East Stanley Boulevard  
 Livermore, California

Groundwater Elevation Contour and  
 Analytical Summary Map  
 May 18, 2011



**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-1</b>															
3/23/1995	--	457.04	29.00	44.00	14.12	442.92	--	--	--	--	--	--	--	--	e
5/31/1995	--		29.00	44.00	14.45	442.59	--	--	--	--	--	--	--	--	e
8/31/1995	--		29.00	44.00	17.12	439.92	--	--	--	--	--	--	--	--	e
11/28/1995	--		29.00	44.00	16.34	440.70	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		29.00	44.00	13.23	443.81	--	--	--	--	--	--	--	--	e
5/23/1996	--		29.00	44.00	14.02	443.02	--	--	--	--	--	--	--	--	e
8/8/1996	--		29.00	44.00	16.13	440.91	--	--	--	--	--	--	--	--	e
11/7/1996	--		29.00	44.00	17.28	439.76	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
3/27/1997	--		29.00	44.00	14.91	442.13	--	--	--	--	--	--	--	--	e
5/19/1997	--		29.00	44.00	16.47	440.57	--	--	--	--	--	--	--	--	e
5/18/1998	--		29.00	44.00	14.69	442.35	--	--	--	--	--	--	--	--	e
11/2/1998	--		29.00	44.00	25.94	431.10	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
6/4/1999	--		29.00	44.00	17.38	439.66	--	--	--	--	--	--	--	--	e
11/11/1999	P		29.00	44.00	18.63	438.41	<50	<0.5	<0.5	<0.5	<1	<3	1.03	--	
6/20/2000	--		29.00	44.00	17.09	439.95	--	--	--	--	--	--	3.1	--	e
8/29/2000	--		29.00	44.00	18.20	438.84	--	--	--	--	--	--	2.66	--	e
11/29/2000	P		29.00	44.00	20.30	436.74	<50.0	<0.500	<0.500	<0.500	1.36	<2.50	0.71	--	
5/2/2001	--		29.00	44.00	22.39	434.65	--	--	--	--	--	--	--	--	e
8/15/2001	--		29.00	44.00	24.97	432.07	--	--	--	--	--	--	--	--	e
10/5/2001	P		29.00	44.00	25.09	431.95	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.78	--	
1/21/2002	--		29.00	44.00	24.58	432.46	--	--	--	--	--	--	--	--	e
4/26/2002	--		29.00	44.00	24.19	432.85	--	--	--	--	--	--	--	--	e
10/7/2002	--		29.00	44.00	20.13	436.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	--	
05/01/2003	--		29.00	44.00	17.98	439.06	--	--	--	--	--	--	--	--	r
10/27/2005	--	459.41	29.00	44.00	18.45	440.96	--	--	--	--	--	--	--	--	
04/12/2006	--		29.00	44.00	15.18	444.23	--	--	--	--	--	--	--	--	
10/31/2006	--		29.00	44.00	19.18	440.23	--	--	--	--	--	--	--	--	
4/19/2007	--		29.00	44.00	23.20	436.21	--	--	--	--	--	--	--	--	
10/16/2007	--		29.00	44.00	38.28	421.13	--	--	--	--	--	--	--	--	
4/24/2008	--		29.00	44.00	25.97	433.44	--	--	--	--	--	--	--	--	

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-1 Cont.</b>															
6/18/2008	--	459.41	29.00	44.00	--	--	--	--	--	--	--	--	--	--	k
<b>MW-2</b>															
3/23/1995	--	457.74	28.00	38.00	14.15	443.59	--	--	--	--	--	--	--	--	
5/31/1995	--		28.00	38.00	14.67	443.07	--	--	--	--	--	--	--	--	e
8/31/1995	--		28.00	38.00	17.24	440.50	--	--	--	--	--	--	--	--	e
11/28/1995	--		28.00	38.00	16.40	441.34	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		28.00	38.00	13.55	444.19	--	--	--	--	--	--	--	--	e
5/23/1996	--		28.00	38.00	14.29	443.45	--	--	--	--	--	--	--	--	e
8/8/1996	--		28.00	38.00	16.19	441.55	--	--	--	--	--	--	--	--	e
11/7/1996	--		28.00	38.00	17.50	440.24	65	0.6	7.4	2.1	12	5	--	--	
3/27/1997	--		28.00	38.00	15.32	442.42	--	--	--	--	--	--	--	--	e
5/19/1997	--		28.00	38.00	16.62	441.12	--	--	--	--	--	--	--	--	e
5/18/1998	--		28.00	38.00	15.12	442.62	--	--	--	--	--	--	--	--	e
11/2/1998	--		28.00	38.00	26.66	431.08	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
6/4/1999	--		28.00	38.00	17.74	440.00	--	--	--	--	--	--	--	--	e
11/11/1999	P		28.00	38.00	18.75	438.99	<50	<0.5	<0.5	<0.5	<1	<3	0.82	--	
6/20/2000	--		28.00	38.00	17.21	440.53	--	--	--	--	--	--	2.6	--	e
8/29/2000	--		28.00	38.00	18.25	439.49	--	--	--	--	--	--	2.65	--	e
11/29/2000	P		28.00	38.00	20.69	437.05	<50.0	<0.500	0.581	0.827	4.38	<2.50	0.88	--	
5/2/2001	--		28.00	38.00	22.69	435.05	--	--	--	--	--	--	--	--	e
8/15/2001	--		28.00	38.00	25.15	432.59	--	--	--	--	--	--	--	--	e
10/5/2001	P		28.00	38.00	25.22	432.52	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.8	--	
1/21/2002	--		28.00	38.00	24.70	433.04	--	--	--	--	--	--	--	--	e
4/26/2002	--		28.00	38.00	24.53	433.21	--	--	--	--	--	--	--	--	e
10/7/2002	--		28.00	38.00	19.45	438.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	--	
05/01/2003	--		28.00	38.00	18.18	439.56	--	--	--	--	--	--	--	--	r
10/27/2005	--	460.07	28.00	38.00	--	--	--	--	--	--	--	--	--	--	t
04/12/2006	--		28.00	38.00	15.30	444.77	--	--	--	--	--	--	--	--	
10/31/2006	--		28.00	38.00	19.48	440.59	--	--	--	--	--	--	--	--	
4/19/2007	--		28.00	38.00	23.85	436.22	--	--	--	--	--	--	--	--	

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-2 Cont.</b>															
10/16/2007	--	460.07	28.00	38.00	36.78	423.29	--	--	--	--	--	--	--	--	
4/24/2008	--		28.00	38.00	26.38	433.69	--	--	--	--	--	--	--	--	
10/15/2008	--		28.00	38.00	37.21	422.86	--	--	--	--	--	--	--	--	
4/28/2009	--		28.00	38.00	33.30	426.77	--	--	--	--	--	--	--	--	
11/9/2009	--		28.00	38.00	21.87	438.20	--	--	--	--	--	--	--	--	
4/12/2010	--		28.00	38.00	18.53	441.54	--	--	--	--	--	--	--	--	
11/4/2010	--		28.00	38.00	19.31	440.76	--	--	--	--	--	--	--	--	
<b>5/18/2011</b>	<b>--</b>		<b>28.00</b>	<b>38.00</b>	<b>17.72</b>	<b>442.35</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	
<b>MW-3</b>															
3/23/1995	--	456.97	28.50	38.50	14.13	442.84	--	--	--	--	--	--	--	--	e
5/31/1995	--		28.50	38.50	14.46	442.51	--	--	--	--	--	--	--	--	e
8/31/1995	--		28.50	38.50	17.06	439.91	--	--	--	--	--	--	--	--	e
11/28/1995	--		28.50	38.50	16.27	440.70	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		28.50	38.50	13.14	443.83	--	--	--	--	--	--	--	--	e
5/23/1996	--		28.50	38.50	13.95	443.02	--	--	--	--	--	--	--	--	e
8/8/1996	--		28.50	38.50	16.03	440.94	--	--	--	--	--	--	--	--	e
11/7/1996	--		28.50	38.50	17.26	439.71	<50	<0.5	0.9	<0.5	1.5	<3	--	--	
3/27/1997	--		28.50	38.50	14.85	442.12	--	--	--	--	--	--	--	--	e
5/19/1997	--		28.50	38.50	16.40	440.57	--	--	--	--	--	--	--	--	e
5/18/1998	--		28.50	38.50	14.66	442.31	--	--	--	--	--	--	--	--	e
11/2/1998	--		28.50	38.50	25.85	431.12	<1,000	<10	<10	<10	<10	1,700	--	--	
6/4/1999	--		28.50	38.50	17.35	439.62	--	--	--	--	--	--	--	--	e
11/11/1999	P		28.50	38.50	18.58	438.39	<50	<0.5	<0.5	<0.5	<1	<3	0.79	--	
6/20/2000	--		28.50	38.50	17.03	439.94	--	--	--	--	--	--	2.8	--	e
8/29/2000	--		28.50	38.50	18.25	438.72	--	--	--	--	--	--	3.39	--	e
11/29/2000	--		28.50	38.50	20.27	436.70	<50.0	<0.500	<0.500	1.08	3.34	<2.50	0.67	--	
5/2/2001	--		28.50	38.50	22.33	434.64	--	--	--	--	--	--	--	--	e
8/15/2001	--		28.50	38.50	25.03	431.94	--	--	--	--	--	--	--	--	e
10/5/2001	P		28.50	38.50	25.17	431.80	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.79	--	
1/21/2002	--		28.50	38.50	24.79	432.18	--	--	--	--	--	--	--	--	e

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-3 Cont.</b>															
4/26/2002	--	456.97	28.50	38.50	24.27	432.70	--	--	--	--	--	--	--	--	e
10/7/2002	--		28.50	38.50	20.20	436.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	--	
05/01/2003	--		28.50	38.50	18.27	438.70	--	--	--	--	--	--	--	--	c, e
10/03/2003	P		28.50	38.50	20.07	436.90	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.2	7.3	d
04/06/2004	--	459.32	28.50	38.50	17.24	442.08	--	--	--	--	--	--	--	--	e
10/28/2004	P		28.50	38.50	19.38	439.94	<50	<0.50	<0.50	<0.50	<0.50	<0.50	8.1	7.3	
04/13/2005	--		28.50	38.50	16.02	443.30	--	--	--	--	--	--	--	--	
10/27/2005	--		28.50	38.50	--	--	--	--	--	--	--	--	--	--	t
04/12/2006	--		28.50	38.50	15.12	444.20	--	--	--	--	--	--	--	--	
10/31/2006	P		28.50	38.50	19.14	440.18	400	5.5	<0.50	5.5	9.6	22	--	7.64	
4/19/2007	--		28.50	38.50	23.07	436.25	--	--	--	--	--	--	--	--	
10/16/2007	--		28.50	38.50	--	--	--	--	--	--	--	--	--	--	f
4/24/2008	--		28.50	38.50	25.65	433.67	--	--	--	--	--	--	--	--	
9/10/2008	--		28.50	38.50	--	--	--	--	--	--	--	--	--	--	k
<b>MW-4</b>															
3/23/1995	--	456.55	21.00	27.00	15.39	441.16	210	2.1	0.6	0.8	2.1	--	--	--	
5/31/1995	--		21.00	27.00	15.32	441.23	190	1.6	<0.5	0.7	0.9	--	--	--	
8/31/1995	--		21.00	27.00	17.86	438.69	160	1.2	0.7	<0.5	<2	<3	--	--	
11/28/1995	--		21.00	27.00	17.18	439.37	150	0.7	<0.5	0.7	1.4	<3	--	--	
2/22/1996	--		21.00	27.00	14.80	441.75	100	<0.5	<0.5	<0.6	0.8	<3	--	--	
5/23/1996	--		21.00	27.00	14.43	442.12	86	<0.5	<0.5	<0.5	<0.7	<3	--	--	
8/8/1996	--		21.00	27.00	16.80	439.75	98	<0.5	<0.5	<0.5	1.3	<3	--	--	
11/7/1996	--		21.00	27.00	17.90	438.65	140	<0.5	<0.5	<0.9	1.3	<3	--	--	
3/27/1997	--		21.00	27.00	15.22	441.33	<50	1.1	<0.5	<0.5	1.6	<3	--	--	
5/19/1997	--		21.00	27.00	16.98	439.57	62	<0.5	<0.5	<0.5	0.6	<3	--	--	
5/18/1998	--		21.00	27.00	14.99	441.56	<50	<0.5	<0.5	<0.5	<0.5	64	--	--	
11/2/1998	--		21.00	27.00	25.29	431.26	74	<0.5	<0.5	<0.5	<0.5	96	--	--	
6/4/1999	P		21.00	27.00	17.95	438.60	100	<0.5	<0.5	<0.5	<0.5	38	--	--	
11/11/1999	P		21.00	27.00	19.25	437.30	88	<0.5	<0.5	<0.5	<1	10	0.77	--	
6/20/2000	--		21.00	27.00	17.79	438.76	<50.0	<0.500	<0.500	<0.500	<0.500	62.3	--	--	q

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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-4 Cont.</b>															
6/20/2000	P	456.55	21.00	27.00	17.79	438.76	<50.0	<0.500	<0.500	<0.500	<0.500	82.4	1.3	--	
8/29/2000	P		21.00	27.00	18.90	437.65	56	<0.500	<0.500	<0.500	<0.500	47.9	0.97	--	
11/29/2000	P		21.00	27.00	20.50	436.05	<50.0	<0.500	<0.500	<0.500	<0.500	9.88/10.4	0.59	--	s
5/2/2001	--		21.00	27.00	22.65	433.90	<50.0	<0.500	<0.500	<0.500	<0.500	59.4/68.4	--	--	s
5/2/2001	P		21.00	27.00	22.65	433.90	<50.0	<0.500	<0.500	<0.500	<0.500	61.1/70.9	0.74	--	q, s
8/15/2001	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
10/5/2001	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
1/21/2002	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
4/26/2002	P		21.00	27.00	20.15	436.40	110	<0.50	<0.50	<0.50	<0.50	150	0.21	--	
10/7/2002	P		21.00	27.00	20.76	435.79	96	<0.50	<0.50	0.54	<0.50	260	1.0	--	a
05/01/2003	P		21.00	27.00	19.67	436.88	120	1.3	<0.50	<0.50	<0.50	86	1.7	--	c
10/03/2003	P		21.00	27.00	20.23	436.32	<50	<0.50	<0.50	<0.50	<0.50	22	13.5	6.8	d
04/06/2004	P	458.88	21.00	27.00	18.13	440.75	96	<0.50	<0.50	<0.50	<0.50	17	1.6	6.8	
10/28/2004	P		21.00	27.00	20.02	438.86	<50	<0.50	<0.50	<0.50	<0.50	4.5	1.2	6.7	
04/13/2005	P		21.00	27.00	16.68	442.20	<50	<0.50	<0.50	<0.50	<0.50	2.8	0.8	6.7	
10/27/2005	P		21.00	27.00	19.05	439.83	400	14	<0.50	11	1.8	22	1.0	6.9	
04/12/2006	P		21.00	27.00	15.47	443.41	100	<0.50	<0.50	<0.50	<0.50	1.9	1.6	7.2	
10/31/2006	P		21.00	27.00	19.67	439.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.63	
4/19/2007	NP		21.00	27.00	22.72	436.16	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.92	7.36	
10/16/2007	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
4/24/2008	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
10/15/2008	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
4/28/2009	--		21.00	27.00	--	--	--	--	--	--	--	--	--	--	f
11/9/2009	NP		21.00	27.00	22.73	436.15	270	4.6	<0.50	<0.50	<0.50	3.1	--	--	x (GRO)
4/12/2010	P		21.00	27.00	19.25	439.63	1,200	2.0	<0.50	<0.50	<0.50	2.7	0.81	6.87	
11/4/2010	P		21.00	27.00	20.40	438.48	330	<0.50	<0.50	<0.50	<0.50	1.7	0.44	6.5	x (GRO)
<b>5/18/2011</b>	<b>P</b>		<b>21.00</b>	<b>27.00</b>	<b>17.84</b>	<b>441.04</b>	<b>290</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>1.2</b>	<b>1.04</b>	<b>7.1</b>	<b>x (GRO)</b>
<b>MW-5</b>															
3/23/1995	--	455.84	43.00	63.00	13.97	441.87	68	4.2	3.4	2.3	12	--	--	--	
5/31/1995	--		43.00	63.00	--	--	--	--	--	--	--	--	--	--	g

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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-5 Cont.</b>															
8/31/1995	--	455.84	43.00	63.00	--	--	--	--	--	--	--	--	--	--	g
11/28/1995	--		43.00	63.00	16.46	439.38	960	41	24	38	210	<5	--	--	
2/22/1996	--		43.00	63.00	13.34	442.50	--	--	--	--	--	--	--	--	f
5/23/1996	--		43.00	63.00	14.36	441.48	7,100	440	180	270	1,700	<50	--	--	
8/8/1996	--		43.00	63.00	16.38	439.46	--	--	--	--	--	--	--	--	f
11/7/1996	--		43.00	63.00	17.26	438.58	5,600	230	86	210	1,100	<80	--	--	
3/27/1997	--		43.00	63.00	15.95	439.89	--	--	--	--	--	--	--	--	f
5/19/1997	--		43.00	63.00	16.64	439.20	7,600	480	140	400	1,200	<40	--	--	
5/18/1998	--		43.00	63.00	14.75	441.09	990	46	13	45	180	4	--	--	
11/2/1998	--		43.00	63.00	27.83	428.01	14,000	690	140	550	2,200	100	--	--	
6/4/1999	P		43.00	63.00	17.47	438.37	8,300	690	370	90	440	1,400	--	--	
11/11/1999	P		43.00	63.00	18.80	437.04	18,000	900	190	1,100	3,200	72	0.86	--	
6/20/2000	P		43.00	63.00	17.14	438.70	10,200	618	122	832	2,020	<50.0	1.6	--	
8/29/2000	P		43.00	63.00	18.60	437.24	12,300	436	166	711	2,120	517	0.79	--	
11/29/2000	P		43.00	63.00	20.57	435.27	26,000	491	149	1,090	3,810	671/<20.0	0.51	--	s
5/2/2001	--		43.00	63.00	--	--	--	--	--	--	--	--	--	--	k
<b>MW-6</b>															
3/23/1995	--	454.93	48.00	68.00	13.38	441.55	<50	1.5	<0.5	<0.5	0.9	--	--	--	
5/31/1995	--		48.00	68.00	13.96	440.97	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
8/31/1995	--		48.00	68.00	16.71	438.22	150	9	1.8	4	12	<3	--	--	
11/28/1995	--		48.00	68.00	15.65	439.28	<50	0.6	<0.5	<0.5	0.8	<3	--	--	
2/22/1996	--		48.00	68.00	12.53	442.40	<50	1.9	<0.5	0.8	2.1	<3	--	--	
5/23/1996	--		48.00	68.00	13.24	441.69	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
8/8/1996	--		48.00	68.00	16.65	438.28	<50	0.5	<0.5	<0.5	0.5	<3	--	--	
11/7/1996	--		48.00	68.00	16.65	438.28	110	5.3	1.3	3.1	6.6	<3	--	--	
3/27/1997	--		48.00	68.00	14.25	440.68	<50	2.3	<0.5	0.9	3.5	4	--	--	
5/19/1997	--		48.00	68.00	15.87	439.06	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
5/18/1998	--		48.00	68.00	14.00	440.93	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/2/1998	--		48.00	68.00	24.95	429.98	<50	1.2	<0.5	<0.5	<0.5	3	--	--	
6/4/1999	P		48.00	68.00	16.68	438.25	310	41	3.8	11	19	33	--	--	

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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-6 Cont.</b>															
11/11/1999	P	454.93	48.00	68.00	16.12	438.81	<50	0.5	<0.5	<0.5	<1	<3	0.92	--	
6/20/2000	P		48.00	68.00	16.63	438.30	<50.0	<0.500	<0.500	<0.500	<0.500	17.3	1.9	--	
8/29/2000	--		48.00	68.00	17.91	437.02	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--	q
8/29/2000	P		48.00	68.00	17.91	437.02	<50.0	<0.500	0.551	<0.500	<0.500	<2.50	1.67	--	
11/29/2000	P		48.00	68.00	20.30	434.63	<50.0	<0.500	<0.500	<0.500	1.03	<2.50	0.79	--	
5/2/2001	P		48.00	68.00	22.20	432.73	3,230	1,300	33.6	89.4	136	1,810/2,310	0.95	--	s
8/15/2001	P		48.00	68.00	27.95	426.98	<50	<0.50	<0.50	<0.50	<0.50	21/25	0.63	--	s
10/5/2001	P		48.00	68.00	28.05	426.88	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.85	--	
1/21/2002	P		48.00	68.00	26.81	428.12	<50	<0.50	<0.50	<0.50	<0.50	<5.0	0.91	--	
4/26/2002	P		48.00	68.00	26.27	428.66	<50	<0.50	<0.50	<0.50	<0.50	17	0.75	--	
10/7/2002	P		48.00	68.00	20.05	434.88	60	13	1.7	1.7	3.5	8	2.8	--	a
05/01/2003	P		48.00	68.00	17.62	437.31	<50	5.4	<0.50	0.63	1.3	12	1.6	--	c
10/03/2003	P		48.00	68.00	19.62	435.31	80	2.6	<2.5	<2.5	<2.5	120	5.1	6.9	d
04/06/2004	P	457.24	48.00	68.00	16.88	440.36	<2,500	<25	<25	<25	<25	1,700	4.1	7.0	
10/28/2004	P		48.00	68.00	19.20	438.04	3,200	<25	<25	<25	<25	3,100	6.8	6.9	
04/13/2005	P		48.00	68.00	15.15	442.09	<5,000	<50	<50	<50	<50	3,900	3.9	7.0	
10/27/2005	P		48.00	68.00	18.12	439.12	<5,000	<50	<50	<50	<50	2,900	3.15	7.0	
04/12/2006	P		48.00	68.00	15.32	441.92	<5,000	<50	<50	<50	<50	3,400	4.3	7.6	
10/31/2006	P		48.00	68.00	18.85	438.39	2,700	<25	<25	<25	<25	3,400	--	10.36	u, v
4/19/2007	P		48.00	68.00	22.25	434.99	970	<25	<25	<25	<25	2,200	5.54	10.52	v
10/16/2007	P		48.00	68.00	37.17	420.07	2,700	240	<25	50	55	2,600	4.56	10.26	v, w (MTBE)
4/24/2008	P		48.00	68.00	24.55	432.69	15,000	5,300	200	620	470	4,200	2.15	6.90	
9/10/2008	--		48.00	68.00	--	--	--	--	--	--	--	--	--	--	k
<b>MW-7</b>															
3/23/1995	--	454.92	48.00	68.00	13.29	441.63	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
5/31/1995	--		48.00	68.00	13.72	441.20	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
8/31/1995	--		48.00	68.00	16.53	438.39	<50	<0.5	<0.5	<0.5	1.2	<3	--	--	
11/28/1995	--		48.00	68.00	15.50	439.42	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		48.00	68.00	12.30	442.62	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
5/23/1996	--		48.00	68.00	13.02	441.90	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	

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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-7 Cont.</b>															
8/8/1996	--	454.92	48.00	68.00	--	--	--	--	--	--	--	--	--	--	m
11/7/1996	--		48.00	68.00	16.50	438.42	<50	<0.5	<0.5	<0.5	0.8	<3	--	--	
3/27/1997	--		48.00	68.00	14.22	440.70	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
5/19/1997	--		48.00	68.00	15.74	439.18	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
5/18/1998	--		48.00	68.00	13.82	441.10	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/2/1998	--		48.00	68.00	24.80	430.12	<50	<0.5	<0.5	<0.5	<0.5	4	--	--	
6/4/1999	P		48.00	68.00	16.55	438.37	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/11/1999	P		48.00	68.00	18.02	436.90	<50	<0.5	<0.5	<0.5	<1	<3	1.03	--	
6/20/2000	P		48.00	68.00	16.50	438.42	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	1.3	--	
8/29/2000	P		48.00	68.00	17.80	437.12	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	1.67	--	
11/29/2000	P		48.00	68.00	19.61	435.31	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.51	--	
5/2/2001	P		48.00	68.00	22.05	432.87	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50/2.66	0.9	--	s
8/15/2001	P		48.00	68.00	27.55	427.37	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.84	--	
10/5/2001	P		48.00	68.00	27.59	427.33	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.62	--	
1/21/2002	P		48.00	68.00	26.50	428.42	<50	<0.50	<0.50	<0.50	<0.50	15/21	0.65	--	s
4/26/2002	P		48.00	68.00	26.22	428.70	<50	<0.50	<0.50	<0.50	<0.50	18	0.61	--	
10/7/2002	--		48.00	68.00	20.04	434.88	<50	1.2	<0.50	<0.50	0.77	41	4.8	--	
05/01/2003	P		48.00	68.00	17.47	437.45	<50	<0.50	<0.50	<0.50	0.5	43	2.7	--	c
10/03/2003	P		48.00	68.00	19.55	435.37	<50	<1.0	<1.0	<1.0	<1.0	49	5.7	7.1	d
04/06/2004	P	457.17	48.00	68.00	16.60	440.57	<50	<0.50	<0.50	<0.50	0.75	0.76	0.7	7.0	
10/28/2004	P		48.00	68.00	19.17	438.00	<50	<0.50	<0.50	<0.50	<0.50	14	6.7	6.9	
04/13/2005	P		48.00	68.00	14.84	442.33	<50	<0.50	<0.50	<0.50	<0.50	1.7	2.3	6.9	
10/27/2005	P		48.00	68.00	17.38	439.79	<50	<0.50	<0.50	<0.50	<0.50	2.3	2.16	7.0	
04/12/2006	P		48.00	68.00	14.84	442.33	<50	<0.50	<0.50	<0.50	<0.50	1.1	3.0	7.2	
10/31/2006	P		48.00	68.00	18.74	438.43	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.55	
4/19/2007	P		48.00	68.00	22.11	435.06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.37	7.60	
10/16/2007	P		48.00	68.00	37.23	419.94	140	68	6.8	<0.50	5.0	24	4.87	8.02	
4/24/2008	P		48.00	68.00	24.47	432.70	<50	<0.50	0.99	<0.50	<0.50	22	1.96	7.24	
10/15/2008	P		48.00	68.00	43.40	413.77	<50	<0.50	<0.50	<0.50	<0.50	8.2	2.31	7.14	
4/28/2009	P		48.00	68.00	32.13	425.04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.78	6.93	



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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-7 Cont.</b>															
11/9/2009	P	457.17	48.00	68.00	22.15	435.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	6.8	
4/12/2010	P		48.00	68.00	18.49	438.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.55	
11/4/2010	P		48.00	68.00	19.90	437.27	<50	<0.50	<0.50	<0.50	<0.50	0.59	4.15	8.4	
<b>5/18/2011</b>	<b>P</b>		<b>48.00</b>	<b>68.00</b>	<b>16.96</b>	<b>440.21</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>3.9</b>	<b>4.45</b>	<b>10.6</b>	
<b>MW-8</b>															
3/23/1995	--	456.97	47.00	67.00	11.55	445.42	--	--	--	--	--	--	--	--	e
5/31/1995	--		47.00	67.00	12.37	444.60	--	--	--	--	--	--	--	--	e
8/31/1995	--		47.00	67.00	15.68	441.29	--	--	--	--	--	--	--	--	e
11/28/1995	--		47.00	67.00	14.15	442.82	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		47.00	67.00	10.97	446.00	--	--	--	--	--	--	--	--	e
5/23/1996	--		47.00	67.00	11.90	445.07	--	--	--	--	--	--	--	--	e
8/8/1996	--		47.00	67.00	13.85	443.12	--	--	--	--	--	--	--	--	e
11/7/1996	--		47.00	67.00	15.08	441.89	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
3/27/1997	--		47.00	67.00	12.96	444.01	--	--	--	--	--	--	--	--	e
5/19/1997	--		47.00	67.00	14.35	442.62	--	--	--	--	--	--	--	--	e
5/18/1998	--		47.00	67.00	12.97	444.00	--	--	--	--	--	--	--	--	e
11/2/1998	--		47.00	67.00	26.01	430.96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
6/4/1999	--		47.00	67.00	15.53	441.44	--	--	--	--	--	--	--	--	e
11/11/1999	P		47.00	67.00	16.67	440.30	<50	<0.5	<0.5	<0.5	<1	<3	1.01	--	
6/20/2000	--		47.00	67.00	15.29	441.68	--	--	--	--	--	--	2.4	--	e
8/29/2000	--		47.00	67.00	16.59	440.38	--	--	--	--	--	--	3.37	--	e
11/29/2000	P		47.00	67.00	19.80	437.17	<50.0	<0.500	<0.500	<0.500	0.772	<2.50	1.35	--	
5/2/2001	--		47.00	67.00	22.12	434.85	--	--	--	--	--	--	--	--	e
8/15/2001	--		47.00	67.00	27.63	429.34	--	--	--	--	--	--	--	--	e
10/5/2001	P		47.00	67.00	27.65	429.32	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.07	--	
1/21/2002	--		47.00	67.00	26.73	430.24	--	--	--	--	--	--	--	--	e
4/26/2002	--		47.00	67.00	26.39	430.58	--	--	--	--	--	--	--	--	e
10/7/2002	--		47.00	67.00	18.43	438.54	<50	<0.50	<0.50	<0.50	0.86	<0.50	4.2	--	
05/01/2003	--		47.00	67.00	16.47	440.50	--	--	--	--	--	--	--	--	r
10/27/2005	--		47.00	67.00	17.14	439.83	--	--	--	--	--	--	--	--	

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-8 Cont.</b>															
04/12/2006	--	456.97	47.00	67.00	14.08	442.89	--	--	--	--	--	--	--	--	
10/31/2006	--		47.00	67.00	18.12	438.85	--	--	--	--	--	--	--	--	
4/19/2007	--		47.00	67.00	22.39	434.58	--	--	--	--	--	--	--	--	
10/16/2007	--		47.00	67.00	38.18	418.79	--	--	--	--	--	--	--	--	
4/24/2008	--		47.00	67.00	25.43	431.54	--	--	--	--	--	--	--	--	
6/18/2008	--		47.00	67.00	--	--	--	--	--	--	--	--	--	--	k
<b>MW-9</b>															
3/23/1995	--	456.18	48.00	68.00	13.18	443.00	--	--	--	--	--	--	--	--	e
5/31/1995	--		48.00	68.00	12.66	443.52	--	--	--	--	--	--	--	--	e
8/31/1995	--		48.00	68.00	14.40	441.78	--	--	--	--	--	--	--	--	e
11/28/1995	--		48.00	68.00	14.26	441.92	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		48.00	68.00	12.05	444.13	--	--	--	--	--	--	--	--	e
5/23/1996	--		48.00	68.00	12.07	444.11	--	--	--	--	--	--	--	--	e
8/8/1996	--		48.00	68.00	14.12	442.06	--	--	--	--	--	--	--	--	e
11/7/1996	--		48.00	68.00	15.42	440.76	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
3/27/1997	--		48.00	68.00	13.01	443.17	--	--	--	--	--	--	--	--	e
5/19/1997	--		48.00	68.00	14.60	441.58	--	--	--	--	--	--	--	--	e
5/18/1998	--		48.00	68.00	12.60	443.58	--	--	--	--	--	--	--	--	e
11/2/1998	--		48.00	68.00	25.08	431.10	--	--	--	--	--	--	--	--	e
6/4/1999	P		48.00	68.00	15.87	440.31	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/11/1999	P		48.00	68.00	17.02	439.16	<50	<0.5	<0.5	<0.5	<1	<3	0.96	--	
6/20/2000	--		48.00	68.00	15.54	440.64	--	--	--	--	--	--	2.1	--	e
8/29/2000	--		48.00	68.00	16.81	439.37	--	--	--	--	--	--	2.59	--	e
11/29/2000	P		48.00	68.00	18.81	437.37	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.81	--	
5/2/2001	--		48.00	68.00	22.09	434.09	--	--	--	--	--	--	--	--	e
8/15/2001	--		48.00	68.00	27.59	428.59	--	--	--	--	--	--	--	--	e
10/5/2001	--		48.00	68.00	27.63	428.55	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	--	q
10/5/2001	P		48.00	68.00	27.63	428.55	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.93	--	
1/21/2002	--		48.00	68.00	26.77	429.41	--	--	--	--	--	--	--	--	e
4/26/2002	--		48.00	68.00	26.41	429.77	--	--	--	--	--	--	--	--	e

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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-9 Cont.</b>															
10/7/2002	P	456.18	48.00	68.00	18.85	437.33	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	--	
05/01/2003	--		48.00	68.00	17.84	438.34	--	--	--	--	--	--	--	--	c, e
10/03/2003	P		48.00	68.00	18.69	437.49	<50	1.1	0.57	<0.50	<0.50	<0.50	4.9	6.8	d
04/06/2004	--	458.55	48.00	68.00	16.08	442.47	--	--	--	--	--	--	--	--	e
10/28/2004	P		48.00	68.00	18.35	440.20	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.8	6.9	
04/13/2005	--		48.00	68.00	14.09	444.46	--	--	--	--	--	--	--	--	e
10/27/2005	P		48.00	68.00	17.41	441.14	<50	0.51	<0.50	<0.50	<0.50	1.4	2.56	7.0	
04/12/2006	--		48.00	68.00	14.18	444.37	--	--	--	--	--	--	--	--	
10/31/2006	P		48.00	68.00	17.97	440.58	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.46	
4/19/2007	--		48.00	68.00	22.37	436.18	--	--	--	--	--	--	--	--	
10/16/2007	P		48.00	68.00	37.75	420.80	<50	0.83	<0.50	<0.50	<0.50	<0.50	1.27	7.59	
4/24/2008	--		48.00	68.00	24.89	433.66	--	--	--	--	--	--	--	--	
10/15/2008	P		48.00	68.00	44.16	414.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.14	7.08	
4/28/2009	--		48.00	68.00	32.61	425.94	--	--	--	--	--	--	--	--	
11/9/2009	P		48.00	68.00	20.69	437.86	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.33	6.82	
4/12/2010	--		48.00	68.00	17.29	441.26	--	--	--	--	--	--	--	--	
11/4/2010	P		48.00	68.00	18.62	439.93	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.73	6.8	
<b>5/18/2011</b>	<b>--</b>		<b>48.00</b>	<b>68.00</b>	<b>15.83</b>	<b>442.72</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	
<b>MW-10</b>															
3/23/1995	--	456.85	32.00	52.00	14.86	441.99	--	--	--	--	--	--	--	--	e
5/31/1995	--		32.00	52.00	15.63	441.22	--	--	--	--	--	--	--	--	e
8/31/1995	--		32.00	52.00	14.40	442.45	--	--	--	--	--	--	--	--	e
11/28/1995	--		32.00	52.00	17.24	439.61	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		32.00	52.00	14.30	442.55	--	--	--	--	--	--	--	--	e
5/23/1996	--		32.00	52.00	14.93	441.92	--	--	--	--	--	--	--	--	e
8/8/1996	--		32.00	52.00	17.20	439.65	--	--	--	--	--	--	--	--	e
11/7/1996	--		32.00	52.00	18.25	438.60	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
3/27/1997	--		32.00	52.00	15.77	441.08	--	--	--	--	--	--	--	--	e
5/19/1997	--		32.00	52.00	17.38	439.47	--	--	--	--	--	--	--	--	e
5/18/1998	--		32.00	52.00	15.47	441.38	--	--	--	--	--	--	--	--	e

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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-10 Cont.</b>															
11/2/1998	--	456.85	32.00	52.00	26.94	429.91	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
6/4/1999	--		32.00	52.00	17.19	439.66	--	--	--	--	--	--	--	--	e
11/11/1999	P		32.00	52.00	19.35	437.50	<50	<0.5	<0.5	<0.5	<1	<3	0.68	--	
6/20/2000	--		32.00	52.00	17.92	438.93	--	--	--	--	--	--	2.9	--	e
8/29/2000	--		32.00	52.00	19.15	437.70	--	--	--	--	--	--	1.54	--	e
11/29/2000	P		32.00	52.00	21.30	435.55	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.95	--	
5/2/2001	--		32.00	52.00	29.95	426.90	--	--	--	--	--	--	--	--	e
8/15/2001	--		32.00	52.00	30.74	426.11	--	--	--	--	--	--	--	--	e
10/5/2001	P		32.00	52.00	30.95	425.90	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.89	--	
1/21/2002	--		32.00	52.00	28.97	427.88	--	--	--	--	--	--	--	--	e
4/26/2002	--		32.00	52.00	28.50	428.35	--	--	--	--	--	--	--	--	e
10/7/2002	--		32.00	52.00	21.15	435.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.0	--	
05/01/2003	--		32.00	52.00	18.90	437.95	--	--	--	--	--	--	--	--	c, e
10/03/2003	P		32.00	52.00	20.64	436.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	7.1	d
04/06/2004	--	459.20	32.00	52.00	17.99	441.21	--	--	--	--	--	--	--	--	e
10/28/2004	P		32.00	52.00	20.27	438.93	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.9	7.1	
04/13/2005	--		32.00	52.00	16.25	442.95	--	--	--	--	--	--	--	--	e
10/27/2005	P		32.00	52.00	19.03	440.17	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.38	7.2	
04/12/2006	--		32.00	52.00	14.95	444.25	--	--	--	--	--	--	--	--	
10/31/2006	P		32.00	52.00	20.20	439.00	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.30	
4/19/2007	--		32.00	52.00	24.00	435.20	--	--	--	--	--	--	--	--	
10/16/2007	NP		32.00	52.00	38.99	420.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.20	7.36	
4/24/2008	--		32.00	52.00	26.62	432.58	--	--	--	--	--	--	--	--	
9/10/2008	--		32.00	52.00	--	--	--	--	--	--	--	--	--	--	k
<b>MW-11</b>															
3/23/1995	--	455.07	38.00	45.00	17.34	437.73	--	--	--	--	--	--	--	--	
5/31/1995	--		38.00	45.00	16.68	438.39	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
8/31/1995	--		38.00	45.00	20.20	434.87	--	--	--	--	--	--	--	--	h
11/28/1995	--		38.00	45.00	17.80	437.27	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		38.00	45.00	15.97	439.10	--	--	--	--	--	--	--	--	h

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-11 Cont.</b>															
5/23/1996	--	455.07	38.00	45.00	15.50	439.57	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
8/8/1996	--		38.00	45.00	17.77	437.30	--	--	--	--	--	--	--	--	h
11/7/1996	--		38.00	45.00	17.45	437.62	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
3/27/1997	--		38.00	45.00	15.77	439.30	--	--	--	--	--	--	--	--	h
5/19/1997	--		38.00	45.00	16.80	438.27	<50	1.1	4.5	<0.5	2.2	<3	--	--	
5/18/1998	--		38.00	45.00	15.38	439.69	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/2/1998	--		38.00	45.00	24.15	430.92	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
6/4/1999	P		38.00	45.00	18.39	436.68	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/11/1999	P		38.00	45.00	18.62	436.45	<50	<0.5	<0.5	<0.5	<1	<3	1.01	--	
6/20/2000	P		38.00	45.00	17.82	437.25	<50.0	0.631	<0.500	<0.500	<0.500	<2.50	4.1	--	
8/29/2000	--		38.00	45.00	19.50	435.57	--	--	--	--	--	--	--	--	h
11/29/2000	P		38.00	45.00	20.60	434.47	<50.0	<0.500	<0.500	<0.500	1.63	<2.50	0.97	--	
5/2/2001	P		38.00	45.00	22.42	432.65	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	1.04	--	
8/15/2001	--		38.00	45.00	27.41	427.66	--	--	--	--	--	--	--	--	h
10/5/2001	P		38.00	45.00	27.59	427.48	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.05	--	
1/21/2002	--		38.00	45.00	26.75	428.32	--	--	--	--	--	--	--	--	h
4/26/2002	P		38.00	45.00	26.50	428.57	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.47	--	
10/7/2002	--		38.00	45.00	20.79	434.28	<50	<0.50	<0.50	<0.50	<0.50	1.0	1.4	--	
05/01/2003	P		38.00	45.00	20.55	434.52	<50	<0.50	<0.50	<0.50	<0.50	1.5	3.2	--	c
10/03/2003	P		38.00	45.00	20.58	434.49	<50	<0.50	<0.50	<0.50	<0.50	3.1	3.0	7.1	d
04/06/2004	P	457.40	38.00	45.00	17.52	439.88	<50	<0.50	<0.50	<0.50	<0.50	14	5.1	6.7	
10/28/2004	P		38.00	45.00	20.32	437.08	<50	<0.50	<0.50	<0.50	<0.50	29	1.3	7.2	
04/13/2005	P		38.00	45.00	16.20	441.20	<50	<0.50	<0.50	<0.50	<0.50	3.7	2.8	7.0	
10/27/2005	P		38.00	45.00	21.98	435.42	<50	<0.50	<0.50	<0.50	<0.50	21	1.04	7.2	
04/12/2006	--		38.00	45.00	--	--	--	--	--	--	--	--	--	--	Well inaccessible m
10/31/2006	--		38.00	45.00	--	--	--	--	--	--	--	--	--	--	
4/19/2007	P		38.00	45.00	22.38	435.02	<50	<0.50	<0.50	<0.50	<0.50	12	7.11	7.57	
10/16/2007	P		38.00	45.00	37.11	420.29	<50	<0.50	<0.50	<0.50	<0.50	6.6	0.60	7.57	
4/24/2008	P		38.00	45.00	26.10	431.30	<50	<0.50	<0.50	<0.50	<0.50	17	1.83	7.26	
10/15/2008	--		38.00	45.00	43.34	414.06	--	--	--	--	--	--	--	--	

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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-11 Cont.</b>															
4/28/2009	P	457.40	38.00	45.00	32.85	424.55	<50	<0.50	<0.50	<0.50	<0.50	5.3	5.89	7.23	
11/9/2009	P		38.00	45.00	22.99	434.41	<50	<0.50	<0.50	<0.50	<0.50	12	0.72	7.0	
4/12/2010	P		38.00	45.00	21.14	436.26	<50	<0.50	<0.50	<0.50	<0.50	10	2.03	7.25	
11/4/2010	P		38.00	45.00	20.62	436.78	<50	<0.50	<0.50	<0.50	<0.50	9.9	1.64	6.9	
<b>5/18/2011</b>	<b>P</b>		<b>38.00</b>	<b>45.00</b>	<b>19.17</b>	<b>438.23</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>7.8</b>	<b>4.28</b>	<b>--</b>	<b>lw</b>
<b>MW-12</b>															
3/23/1995	--	455.04	18.00	34.50	15.54	439.50	--	--	--	--	--	--	--	--	h
5/31/1995	--		18.00	34.50	15.66	439.38	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
8/31/1995	--		18.00	34.50	18.23	436.81	--	--	--	--	--	--	--	--	h
11/28/1995	--		18.00	34.50	17.53	437.51	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
2/22/1996	--		18.00	34.50	14.45	440.59	--	--	--	--	--	--	--	--	h
5/23/1996	--		18.00	34.50	14.88	440.16	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
8/8/1996	--		18.00	34.50	17.30	437.74	--	--	--	--	--	--	--	--	h
11/7/1996	--		18.00	34.50	18.30	436.74	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
3/27/1997	--		18.00	34.50	15.69	439.35	--	--	--	--	--	--	--	--	h
5/19/1997	--		18.00	34.50	17.41	437.63	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
5/18/1998	--		18.00	34.50	15.21	439.83	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	
11/2/1998	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
6/4/1999	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
11/11/1999	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
6/20/2000	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
8/29/2000	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
11/29/2000	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
5/2/2001	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
8/15/2001	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
10/5/2001	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
1/21/2002	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
4/26/2002	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
10/7/2002	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
05/01/2003	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	c, m

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Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-12 Cont.</b>															
10/03/2003	--	455.04	18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
04/06/2004	P	457.37	18.00	34.50	18.14	439.23	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	6.4	
10/28/2004	P		18.00	34.50	20.66	436.71	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.7	6.8	
04/13/2005	P		18.00	34.50	16.25	441.12	<50	<0.50	<0.50	<0.50	0.55	<0.50	1.9	7.5	
10/27/2005	P		18.00	34.50	19.77	437.60	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.81	7.0	
04/12/2006	P		18.00	34.50	16.08	441.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	7.2	
10/31/2006	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	
4/19/2007	NP		18.00	34.50	22.34	435.03	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.66	7.28	
10/16/2007	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	f
4/24/2008	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	m
10/15/2008	--		18.00	34.50	--	--	--	--	--	--	--	--	--	--	f
4/28/2009	NP		18.00	34.50	32.21	425.16	<50	<0.50	<0.50	<0.50	<0.50	1.4	7.68	6.63	
11/9/2009	NP		18.00	34.50	23.74	433.63	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	
4/12/2010	NP		18.00	34.50	19.93	437.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.18	
11/4/2010	NP		18.00	34.50	21.53	435.84	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.96	7.0	
<b>5/18/2011</b>	<b>NP</b>		<b>18.00</b>	<b>34.50</b>	<b>18.40</b>	<b>438.97</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>2.93</b>	<b>--</b>	<b>z</b>
<b>MW-13</b>															
1/21/2002	P	NS	--	--	24.61	--	15,000	160	68	1,700	3,200	4,900/5,200	0.71	--	
4/26/2002	P		--	--	24.20	--	17,000	98	<100	1,700	3,400	1,600	0.6	--	
10/7/2002	--		--	--	20.12	--	14,000	510	<50	2,200	2,300	2,800	0.8	--	b
05/01/2003	P		--	--	17.82	--	21,000	230	<50	1,900	2,300	1,600	1.9	--	c
10/03/2003	P		--	--	19.91	--	19,000	570	55	1,900	2,300	2,400	0.8	6.9	d
04/06/2004	P	457.91	--	--	17.14	440.77	15,000	470	35	1,600	1,300	1,800	2.0	6.7	
10/28/2004	P		--	--	18.83	439.08	18,000	350	<25	1,900	1,800	1,800	0.8	6.7	
04/13/2005	P		--	--	15.23	442.68	9,700	110	<25	860	280	920	0.9	6.9	
10/27/2005	P		--	--	18.45	439.46	11,000	120	12	1,500	450	580	0.75	6.8	
04/12/2006	P		--	--	15.06	442.85	4,700	65	<10	450	69	470	1.2	6.8	
10/31/2006	P		--	--	19.06	438.85	15,000	150	<25	1,700	400	710	--	6.87	
4/19/2007	NP		--	--	22.21	435.70	14,000	60	<25	1,800	640	330	1.44	7.09	
10/16/2007	--		--	--	--	--	--	--	--	--	--	--	--	--	f

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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>MW-13 Cont.</b>															
4/24/2008	NP	457.91	--	--	24.68	433.23	1,400	4.5	1.1	9.4	15	49	2.78	7.25	
9/10/2008	--		--	--	--	--	--	--	--	--	--	--	--	--	k
<b>RMW-13</b>															
4/12/2010	NP	458.03	15.00	35.00	18.50	439.53	63,000	7,800	200	1,600	6,400	1,500	2.47	7.21	y
11/4/2010	NP		15.00	35.00	18.83	439.20	31,000	4,000	<120	1,700	2,500	390	1.01	7.40	
<b>5/18/2011</b>	<b>NP</b>		<b>15.00</b>	<b>35.00</b>	<b>17.43</b>	<b>440.60</b>	<b>26,000</b>	<b>4,700</b>	<b>&lt;50</b>	<b>1,700</b>	<b>2,200</b>	<b>380</b>	<b>2.34</b>	<b>7.3</b>	
<b>VW-1</b>															
8/29/2000	P	NS	24.00	45.00	17.40	--	2,360	27.6	11.6	26.3	33.2	110	4.47	--	
11/29/2000	P		24.00	45.00	18.75	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.46	--	
5/2/2001	--		24.00	45.00	21.59	--	--	--	--	--	--	--	--	--	
8/15/2001	P		24.00	45.00	24.62	--	1,200	6.3	4.3	1.7	1.3	20/17	--	--	s
8/15/2001	--		24.00	45.00	24.62	--	1,200	6.2	4.1	1.8	1.1	20/17	--	--	q
10/5/2001	P		24.00	45.00	24.75	--	1,500	140	55	28	82	610/660	0.71	--	s
1/21/2002	P		24.00	45.00	24.59	--	6,700	810	350	270	1,100	2,600/3,400	0.69	--	s
1/21/2002	--		24.00	45.00	24.59	--	8,000	770	320	96	1,100	2,500/3,200	--	--	q, s
4/26/2002	P		24.00	45.00	24.27	--	370	26	2.1	6.6	1.7	48	0.5	--	
4/26/2002	--		24.00	45.00	24.27	--	350	24	1.6	5.9	1.6	45	--	--	q
10/7/2002	P		24.00	45.00	19.20	--	410	25	2.2	8	4.3	88	1.7	--	b
05/01/2003	P		24.00	45.00	16.60	--	240	6.4	<0.50	3.3	1.3	36	1.7	--	c
10/03/2003	P		24.00	45.00	18.82	--	180	1.5	<0.50	0.69	<0.50	12	1.1	7.3	d
04/06/2004	P	457.08	24.00	45.00	15.78	441.30	300	2.2	<0.50	3.0	1.3	13	2.4	7.2	
10/28/2004	P		24.00	45.00	18.33	438.75	210	<0.50	<0.50	0.67	<0.50	<0.50	1.2	7.1	
04/13/2005	P		24.00	45.00	14.02	443.06	740	1.8	<0.50	3.6	1.1	9.6	2.4	7.1	
10/27/2005	P		24.00	45.00	17.65	439.43	1,500	78	73	36	81	13	1.64	7.3	
04/12/2006	P		24.00	45.00	13.89	443.19	230	1.4	<0.50	2.2	0.76	1.6	1.4	7.3	
10/31/2006	P		24.00	45.00	17.87	439.21	80	<0.50	<0.50	2.3	0.82	<0.50	--	7.76	
4/19/2007	P		24.00	45.00	21.09	435.99	250	1.6	<0.50	4.7	1.3	3.0	1.15	7.66	
10/16/2007	NP		24.00	45.00	37.10	419.98	12,000	2,300	1,900	860	2,800	150	2.65	7.61	
4/24/2008	NP		24.00	45.00	24.40	432.68	<50	<0.50	<0.50	<0.50	<0.50	4.5	4.95	7.47	



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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>VW-1 Cont.</b>															
10/15/2008	--	457.08	24.00	45.00	43.07	414.01	--	--	--	--	--	--	--	--	
4/28/2009	NP		24.00	45.00	31.06	426.02	3,500	140	2.8	25	4.0	19	6.38	7.02	
11/9/2009	P		24.00	45.00	21.12	435.96	230	1.8	<0.50	<0.50	<0.50	1.1	2.28	6.95	x (GRO)
4/12/2010	P		24.00	45.00	17.27	439.81	410	0.80	<0.50	<0.50	<0.50	<0.50	3.38	7.21	
11/4/2010	P		24.00	45.00	18.65	438.43	160	<0.50	<0.50	<0.50	<0.50	<0.50	1.15	6.9	x (GRO)
<b>5/18/2011</b>	<b>P</b>		<b>24.00</b>	<b>45.00</b>	<b>15.77</b>	<b>441.31</b>	<b>69</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>0.71</b>	<b>7.5</b>	<b>x (GRO)</b>
<b>VW-2</b>															
8/29/2000	--	NS	28.00	49.50	--	--	--	--	--	--	--	--	--	--	nc
11/29/2000	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	nc
5/2/2001	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	
10/5/2001	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	nc
1/21/2002	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	nc
4/26/2002	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	m
10/7/2002	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	nc
05/01/2003	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	c, g
10/03/2003	--		28.00	49.50	--	--	--	--	--	--	--	--	--	--	Well inaccessible g
04/06/2004	--	458.64	28.00	49.50	16.96	441.68	--	--	--	--	--	--	--	--	
10/28/2004	--		28.00	49.50	19.35	439.29	--	--	--	--	--	--	--	--	
04/13/2005	--		28.00	49.50	15.51	443.13	--	--	--	--	--	--	--	--	
10/27/2005	--		28.00	49.50	18.50	440.14	--	--	--	--	--	--	--	--	
04/12/2006	--		28.00	49.50	14.92	443.72	--	--	--	--	--	--	--	--	
10/31/2006	--		28.00	49.50	19.01	439.63	--	--	--	--	--	--	--	--	
4/19/2007	--		28.00	49.50	22.52	436.12	--	--	--	--	--	--	--	--	
10/16/2007	--		28.00	49.50	38.58	420.06	--	--	--	--	--	--	--	--	
4/24/2008	--		28.00	49.50	24.91	433.73	--	--	--	--	--	--	--	--	
10/15/2008	--		28.00	49.50	43.31	415.33	--	--	--	--	--	--	--	--	
4/28/2009	--		28.00	49.50	32.56	426.08	--	--	--	--	--	--	--	--	
11/9/2009	--		28.00	49.50	22.38	436.26	--	--	--	--	--	--	--	--	
4/12/2010	--		28.00	49.50	18.50	440.14	--	--	--	--	--	--	--	--	
11/4/2010	--		28.00	49.50	19.87	438.77	--	--	--	--	--	--	--	--	

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>VW-2 Cont.</b>															
5/18/2011	--	458.64	28.00	49.50	16.94	441.70	--	--	--	--	--	--	--	--	
<b>VW-3</b>															
8/29/2000	P	NS	15.50	24.00	17.93	--	25,400	3,540	10,600	1,280	43,000	44,700	--	--	
11/29/2000	P		15.50	24.00	19.75	--	54,200	9,450	1,870	2,350	9,400	12,300/15,100	0.47	--	s
5/2/2001	--		15.50	24.00	--	--	--	--	--	--	--	--	--	--	k
<b>VW-4</b>															
8/29/2000	--	NS	17.00	30.00	--	--	--	--	--	--	--	--	--	--	g
11/29/2000	--		17.00	30.00	19.45	--	36,100	3,700	206	1,850	7,890	6,430/8,460	--	--	q, s
11/29/2000	P		17.00	30.00	19.45	--	37,500	4,510	206	2,100	9,030	6,770/7,880	0.42	--	s
5/2/2001	--		17.00	30.00	21.66	--	--	--	--	--	--	--	--	--	
8/15/2001	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	
10/5/2001	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	f
1/21/2002	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	f
4/26/2002	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	f
10/7/2002	--		17.00	30.00	19.25	--	--	--	--	--	--	--	--	--	
05/01/2003	--		17.00	30.00	17.29	--	--	--	--	--	--	--	--	--	c
10/03/2003	P		17.00	30.00	19.10	--	48,000	3,300	1,700	3,600	21,000	1,600	10.5	6.7	d, n
04/06/2004	--	456.99	17.00	30.00	18.05	438.94	--	--	--	--	--	--	--	--	
10/28/2004	--		17.00	30.00	18.71	438.28	--	--	--	--	--	--	--	--	
04/13/2005	--		17.00	30.00	14.62	442.37	--	--	--	--	--	--	--	--	
10/27/2005	--		17.00	30.00	18.00	438.99	--	--	--	--	--	--	--	--	
04/12/2006	--		17.00	30.00	14.42	442.57	--	--	--	--	--	--	--	--	
10/31/2006	--		17.00	30.00	18.30	438.69	--	--	--	--	--	--	--	--	
4/19/2007	--		17.00	30.00	20.91	436.08	--	--	--	--	--	--	--	--	
10/16/2007	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	f
4/24/2008	--		17.00	30.00	23.40	433.59	--	--	--	--	--	--	--	--	
10/15/2008	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	f
4/28/2009	--		17.00	30.00	--	--	--	--	--	--	--	--	--	--	f
11/9/2009	--		17.00	30.00	21.65	435.34	--	--	--	--	--	--	--	--	

**Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
<b>VW-4 Cont.</b>															
4/12/2010	--	456.99	17.00	30.00	17.80	439.19	--	--	--	--	--	--	--	--	
11/4/2010	--		17.00	30.00	19.13	437.86	--	--	--	--	--	--	--	--	
<b>5/18/2011</b>	<b>--</b>		<b>17.00</b>	<b>30.00</b>	<b>16.67</b>	<b>440.32</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	

Symbols & Abbreviations:

-- = Not analyzed/applicable/measured/available  
< = Not detected at or above specified laboratory reporting limit  
DO = Dissolved oxygen  
DTW = Depth to water in ft bgs  
GRO = Gasoline range organics  
GWE = Groundwater elevation measured in ft  
mg/L = Milligrams per liter  
MTBE = Methyl tert-butyl ether  
NP = Well not purged prior to sampling  
P = Well purged prior to sampling  
TOC = Top of casing measured in ft  
TPH-g = Total petroleum hydrocarbons as gasoline  
µg/L = Micrograms per liter

Footnotes:

a = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel  
b = Chromatogram Pattern: C6-C10  
c = TPH-g, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and MTBE analyzed using EPA Method 8260B beginning second quarter 2003 (05/01/03)  
d = This sample was analyzed 3 days after the EPA recommended holding time. The results may still be useful for their intended purpose  
e = Well sampled annually in the fourth quarter  
f = Well dry  
g = Well inaccessible  
h = Well sampled semi-annually in second and fourth quarters  
k = Well abandoned  
m = Unable to locate well  
n = Sheen in well  
q = Duplicate sample  
r = Well removed from sampling schedule  
s = Original sample analyzed by 8021B and confirmation by 8260  
t = Bolts securing well box cover stripped at head. Unable to sample well  
u = Hydrocarbon result partly due to individ. peak(s) in quant. range  
v = pH measurement is believed to be erroneous  
w = Sample > 4x spike concentration  
x = Quantitation of unknown hydrocarbon(s) in sample based on gasoline  
y = Replacement well for abandoned wells MW-6 and MW-13 installed on 3/11/2010, and surveyed on 4/23/2010  
z = pH probe malfunctioned, pH measurement not collected

Notes:

Beginning in the second quarter 2003 (05/01/03) TPH-g and BTEX were analyzed using EPA Method 8260B, and MTBE was analyzed by EPA Method 8260B beginning in fourth quarter 2002. Prior to 05/01/03, TPH-g was analyzed by EPA Method 8015; BTEX by EPA Method 8021B (EPA method 8020 before 11/11/99); and MTBE by EPA Method 8021B. (EPA method 8020 before 11/11/99). Any MTBE detection by 8021B was confirmed by EPA Method 8260 beginning third quarter 2000 (08-29-00 results)

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

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

Wells were resurveyed to NAVD '88 datum by URS Corporation on March 8, 2004

Values for DO and pH were obtained through field measurements

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present

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**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-1</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-2</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	5	--	--	--	--	--	
11/2/1998	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-3</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	1,700	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	<0.50	<0.50	a
10/28/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/31/2006	<300	<20	22	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-4</b>									
8/31/1995	--	--	<3	--	--	--	--	--	
11/28/1995	--	--	<3	--	--	--	--	--	
2/22/1996	--	--	<3	--	--	--	--	--	

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-4 Cont.</b>									
5/23/1996	--	--	<3	--	--	--	--	--	
8/8/1996	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
3/27/1997	--	--	<3	--	--	--	--	--	
5/19/1997	--	--	<3	--	--	--	--	--	
5/18/1998	--	--	64	--	--	--	--	--	
11/2/1998	--	--	96	--	--	--	--	--	
6/4/1999	--	--	38	--	--	--	--	--	
11/11/1999	--	--	10	--	--	--	--	--	
6/20/2000	--	--	62.3	--	--	--	--	--	
6/20/2000	--	--	82.4	--	--	--	--	--	
8/29/2000	--	--	47.9	--	--	--	--	--	
11/29/2000	--	--	9.88/10.4	--	--	--	--	--	
5/2/2001	--	--	59.4/68.4	--	--	--	--	--	
5/2/2001	--	--	61.1/70.9	--	--	--	--	--	
4/26/2002	--	--	150	--	--	--	--	--	
10/7/2002	<400	<200	260	<5.0	<5.0	<5.0	<5.0	<5.0	
05/01/2003	<100	25	86	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<100	<20	22	<1.0	<1.0	<1.0	<0.50	<0.50	a
04/06/2004	<100	<20	17	<0.50	<0.50	<0.50	<0.50	<0.50	
10/28/2004	<100	<20	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	22	<0.50	<0.50	<0.50	<0.50	<0.50	
04/12/2006	<300	<20	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	b
10/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/19/2007	<300	<20	<0.50	<0.50	<0.50	0.66	<0.50	<0.50	
11/9/2009	<300	12	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
4/12/2010	<300	<10	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	
11/4/2010	<300	<10	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>5/18/2011</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>1.2</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-5</b>									

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-5 Cont.</b>									
11/28/1995	--	--	<5	--	--	--	--	--	
5/23/1996	--	--	<50	--	--	--	--	--	
11/7/1996	--	--	<80	--	--	--	--	--	
5/19/1997	--	--	<40	--	--	--	--	--	
5/18/1998	--	--	4	--	--	--	--	--	
11/2/1998	--	--	100	--	--	--	--	--	
6/4/1999	--	--	1,400	--	--	--	--	--	
11/11/1999	--	--	72	--	--	--	--	--	
6/20/2000	--	--	<50.0	--	--	--	--	--	
8/29/2000	--	--	517	--	--	--	--	--	
11/29/2000	--	--	671/<20.0	--	--	--	--	--	
<b>MW-6</b>									
8/31/1995	--	--	<3	--	--	--	--	--	
11/28/1995	--	--	<3	--	--	--	--	--	
2/22/1996	--	--	<3	--	--	--	--	--	
5/23/1996	--	--	<3	--	--	--	--	--	
8/8/1996	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
3/27/1997	--	--	4	--	--	--	--	--	
5/19/1997	--	--	<3	--	--	--	--	--	
5/18/1998	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	3	--	--	--	--	--	
6/4/1999	--	--	33	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
6/20/2000	--	--	17.3	--	--	--	--	--	
8/29/2000	--	--	<2.50	--	--	--	--	--	
8/29/2000	--	--	<2.50	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
5/2/2001	--	--	1,810/2,310	--	--	--	--	--	
8/15/2001	--	--	21/25	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	



**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-6 Cont.</b>									
1/21/2002	--	--	<5.0	--	--	--	--	--	
4/26/2002	--	--	17	--	--	--	--	--	
10/7/2002	<40	<20	8	<0.50	<0.50	<0.50	<0.50	<0.50	
05/01/2003	<100	<20	12	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<500	<100	120	<5.0	<5.0	<5.0	<2.5	<2.5	a
04/06/2004	<5,000	<1,000	1,700	<25	<25	<25	<25	<25	
10/28/2004	<5,000	<1,000	3,100	<25	<25	<25	<25	<25	
04/13/2005	<10,000	<2,000	3,900	<50	<50	<50	<50	<50	
10/27/2005	<10,000	<2,000	2,900	<50	<50	<50	<50	<50	b
04/12/2006	<30,000	<2,000	3,400	<50	<50	<50	<50	<50	b
10/31/2006	<15,000	<1,000	3,400	<25	<25	<25	<25	<25	b
4/19/2007	<15,000	<1,000	2,200	<25	<25	<25	<25	<25	
10/16/2007	<15,000	<1,000	2,600	<25	<25	<25	<25	<25	c (MTBE)
4/24/2008	<6,000	1,500	4,200	<10	<10	<10	<10	<10	
<b>MW-7</b>									
8/31/1995	--	--	<3	--	--	--	--	--	
11/28/1995	--	--	<3	--	--	--	--	--	
2/22/1996	--	--	<3	--	--	--	--	--	
5/23/1996	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
3/27/1997	--	--	<3	--	--	--	--	--	
5/19/1997	--	--	<3	--	--	--	--	--	
5/18/1998	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	4	--	--	--	--	--	
6/4/1999	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
6/20/2000	--	--	<2.50	--	--	--	--	--	
8/29/2000	--	--	<2.50	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
5/2/2001	--	--	<2.50/2.66	--	--	--	--	--	
8/15/2001	--	--	<2.5	--	--	--	--	--	

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-7 Cont.</b>									
10/5/2001	--	--	<2.5	--	--	--	--	--	
1/21/2002	--	--	15/21	--	--	--	--	--	
4/26/2002	--	--	18	--	--	--	--	--	
10/7/2002	<40	<20	41	<0.50	<0.50	<0.50	<0.50	<0.50	
05/01/2003	<100	<20	43	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<200	<40	49	<2.0	<2.0	<2.0	<1.0	<1.0	a
04/06/2004	<100	<20	0.76	<0.50	<0.50	<0.50	<0.50	<0.50	
10/28/2004	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/12/2006	<300	<20	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	b
10/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
4/19/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/16/2007	<300	<20	24	<0.50	<0.50	<0.50	<0.50	<0.50	
4/24/2008	<300	<10	22	<0.50	<0.50	<0.50	<0.50	<0.50	
10/15/2008	<300	<10	8.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/28/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	d
11/9/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/12/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/4/2010	<300	<10	0.59	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>5/18/2011</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>3.9</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-8</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-9</b>									

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-9 Cont.</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
6/4/1999	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	<0.50	<0.50	a
10/28/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	b
10/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
10/16/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/15/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/9/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-10</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	<0.50	<0.50	a
10/28/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
10/16/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-11</b>									

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-11 Cont.</b>									
11/28/1995	--	--	<3	--	--	--	--	--	
5/23/1996	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
5/19/1997	--	--	<3	--	--	--	--	--	
5/18/1998	--	--	<3	--	--	--	--	--	
11/2/1998	--	--	<3	--	--	--	--	--	
6/4/1999	--	--	<3	--	--	--	--	--	
11/11/1999	--	--	<3	--	--	--	--	--	
6/20/2000	--	--	<2.50	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
5/2/2001	--	--	<2.50	--	--	--	--	--	
10/5/2001	--	--	<2.5	--	--	--	--	--	
4/26/2002	--	--	<2.5	--	--	--	--	--	
10/7/2002	<40	<20	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	
05/01/2003	<100	<20	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<100	<20	3.1	<1.0	<1.0	<1.0	<0.50	<0.50	a
04/06/2004	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
10/28/2004	<100	<20	29	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	3.7	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	21	<0.50	<0.50	<0.50	<0.50	<0.50	
04/12/2006	--	--	--	--	--	--	--	--	Well inaccessible
4/19/2007	<300	<20	12	<0.50	<0.50	<0.50	<0.50	<0.50	
10/16/2007	<300	<20	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	
4/24/2008	<300	<10	17	<0.50	<0.50	<0.50	<0.50	<0.50	
4/28/2009	<300	<10	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	d
11/9/2009	<300	<10	12	<0.50	<0.50	<0.50	<0.50	<0.50	
4/12/2010	<300	<10	10	<0.50	<0.50	<0.50	<0.50	<0.50	
11/4/2010	<300	<10	9.9	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>5/18/2011</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>7.8</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-12</b>									
11/28/1995	--	--	<3	--	--	--	--	--	

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-12 Cont.</b>									
5/23/1996	--	--	<3	--	--	--	--	--	
11/7/1996	--	--	<3	--	--	--	--	--	
5/19/1997	--	--	<3	--	--	--	--	--	
5/18/1998	--	--	<3	--	--	--	--	--	
04/06/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/28/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
04/12/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
4/19/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/28/2009	<300	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	d
11/9/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/12/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>5/18/2011</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-13</b>									
1/21/2002	--	--	4,900/5,200	--	--	--	--	--	
4/26/2002	--	--	1,600	--	--	--	--	--	
10/7/2002	<4,000	<2,000	2,800	<50	<50	<50	<50	<50	
05/01/2003	<10,000	<2,000	1,600	<50	<50	<50	<50	<50	
10/03/2003	<10,000	<2,000	2,400	<100	<100	<100	<50	<50	a
04/06/2004	<5,000	<1,000	1,800	<25	<25	<25	<25	<25	
10/28/2004	<5,000	<1,000	1,800	<25	<25	<25	<25	<25	
04/13/2005	<5,000	<1,000	920	<25	<25	<25	<25	<25	
10/27/2005	<2,000	<400	580	<10	<10	<10	<10	<10	
04/12/2006	<6,000	<400	470	<10	<10	<10	<10	<10	b
10/31/2006	<15,000	<1,000	710	<25	<25	<25	<25	<25	b
4/19/2007	<15,000	<1,000	330	<25	<25	<25	<25	<25	
4/24/2008	<300	14	49	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>RMW-13</b>									

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>RMW-13 Cont.</b>									
4/12/2010	<75,000	<2,500	1,500	<120	<120	<120	<120	<120	
11/4/2010	<75,000	<2,500	390	<120	<120	<120	130	<120	
<b>5/18/2011</b>	<b>&lt;30,000</b>	<b>&lt;1,000</b>	<b>380</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;50</b>	
<b>VW-1</b>									
8/29/2000	--	--	110	--	--	--	--	--	
11/29/2000	--	--	<2.50	--	--	--	--	--	
8/15/2001	--	--	20/17	--	--	--	--	--	
8/15/2001	--	--	20/17	--	--	--	--	--	
10/5/2001	--	--	610/660	--	--	--	--	--	
1/21/2002	--	--	2,600/3,400	--	--	--	--	--	
1/21/2002	--	--	2,500/3,200	--	--	--	--	--	
4/26/2002	--	--	48	--	--	--	--	--	
4/26/2002	--	--	45	--	--	--	--	--	
10/7/2002	<80	<40	88	<1.0	<1.0	<1.0	<1.0	<1.0	
05/01/2003	<100	<20	36	<0.50	<0.50	<0.50	<0.50	<0.50	
10/03/2003	<100	<20	12	<1.0	<1.0	<1.0	<0.50	<0.50	a
04/06/2004	<100	<20	13	<0.50	<0.50	<0.50	<0.50	<0.50	
10/28/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	9.6	<0.50	<0.50	<0.50	<0.50	<0.50	
10/27/2005	<100	<20	13	<0.50	<0.50	<0.50	<0.50	<0.50	
04/12/2006	<300	<20	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	b
10/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
4/19/2007	<300	<20	3.0	<0.50	<0.50	<0.50	<0.50	<0.50	
10/16/2007	<15,000	<1,000	150	<25	<25	<25	<25	<25	b
4/24/2008	<300	<10	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	
4/28/2009	<300	<10	19	<0.50	<0.50	<0.50	<0.50	<0.50	d
11/9/2009	<300	<10	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	
4/12/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>5/18/2011</b>	<b>&lt;300</b>	<b>&lt;10</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	

**Table 2. Summary of Fuel Additives Analytical Data**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>VW-2</b>									
10/03/2003	--	--	--	--	--	--	--	--	Well inaccessible
<b>VW-3</b>									
8/29/2000	--	--	44,700	--	--	--	--	--	
11/29/2000	--	--	12,300/15,100	--	--	--	--	--	
<b>VW-4</b>									
11/29/2000	--	--	6,430/8,460	--	--	--	--	--	
11/29/2000	--	--	6,770/7,880	--	--	--	--	--	
10/03/2003	<100,000	<20,000	1,600	<1,000	<1,000	<1,000	<500	<500	a

Symbols & Abbreviations:

-- = Not analyzed/applicable/measured/available

< = Not detected at or above specified laboratory reporting limit

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

Footnotes:

a = This sample was analyzed 3 days after the EPA recommended holding time. The results may still be useful for their intended purpose

b = Calibration verification for ethanol was within method limits but outside contract limits

c = Sample >4x spike concentration

d = Calibrtn. verif. recov. Below method CL for TAME

Notes:

All volatile organic compounds analyzed using EPA Method 8260B

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



**Table 3. Historical Groundwater Gradient - Direction and Magnitude**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

<b>Date Measured</b>	<b>Approximate Gradient Direction</b>	<b>Approximate Gradient Magnitude (ft/ft)</b>
3/23/1995	Northwest	0.035
5/31/1995	North-Northwest	0.028
8/31/1995	North-Northwest	0.03
11/28/1995	North-Northwest	0.025
2/22/1996	North-Northwest	0.031
5/23/1996	North-Northwest	0.025
8/8/1996	North	0.019
11/7/1996	North-Northeast	0.019
3/27/1997	North-Northwest	0.021
5/19/1997	North	0.019
5/18/1998	North	0.02
11/2/1998	North	0.02
6/4/1999	North	0.02
11/11/1999	North	0.03
6/20/2000	North-Northeast	0.014
8/29/2000	North-Northeast	0.013
11/29/2000	North-Northwest	0.026
5/2/2001	Northeast	0.026
8/15/2001	Northeast	0.047
10/5/2001	Northeast	0.031
1/21/2002	Northeast	0.033
4/26/2002	Northeast	0.031
10/7/2002	Northeast	0.017
5/1/2003	North-Northeast	0.011
10/3/2003	North-Northeast	0.016
4/6/2004	North-Northeast	0.013
10/28/2004	North-Northeast	0.014
4/13/2005	North-Northwest	0.02
10/27/2005	North-Northwest	0.01 to 0.03
4/12/2006	Northeast	0.01
10/31/2006	Northeast	0.014
4/19/2007	Northeast	0.013
10/16/2007	Northeast	0.031
4/24/2008	North-Northwest	0.013
10/15/2008	Northeast	0.070
4/28/2009	Northeast	0.008
11/9/2009	Northeast	0.02
4/12/2010	North-Northeast	0.03

**Table 3. Historical Groundwater Gradient - Direction and Magnitude**  
**ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA**

<b>Date Measured</b>	<b>Approximate Gradient Direction</b>	<b>Approximate Gradient Magnitude (ft/ft)</b>
11/4/2010	Northeast	0.01
<b>5/18/2011</b>	<b>North</b>	<b>0.02</b>

Notes:

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

**APPENDIX A**  
**FIELD METHODS**

## BROADBENT & ASSOCIATES INC. FIELD PROCEDURES

### A.1 QUALITY ASSURANCE/QUALITY CONTROL FIELD PROTOCOLS

Field protocols have been implemented to enhance the accuracy and reliability of data collection, groundwater sample collection, transportation and laboratory analysis. Discussion of these protocols is provided below.

#### A.1.1 Water Level & Free-Product Measurement

Prior to groundwater sample collection from each monitoring well, the presence of separate-phase hydrocarbons (SPH or free product, FP) and depth to groundwater shall be measured. Depth to groundwater will be measured with a standard water level indicator that has been decontaminated prior to its use in accordance with procedures discussed below. Depth to groundwater will be gauged from a saw cut notch at the top of the well casing on each well head. Where FP is suspected, the initial gauging will be done with an oil-water interface probe. Once depth to water has been measured, the first retrieval of a new disposable bailer will be scrutinized for the presence of SPH/FP.

#### A.1.2 Monitoring Well Purging

Subsequent to measuring depth to groundwater and prior to the collection of groundwater samples, purging of standing water within the monitoring well will be performed if called for. Consistent with the American Society for Testing and Materials (ASTM) Standard D6452-99, Section 7.1, the well will be purged of approximately three wetted-casing volumes of water, or until the well is dewatered, or until monitored field parameters indicate stabilization. The well will be purged using a pre-cleaned disposable bailer or submersible pump and disposable plastic tubing dedicated to each individual well. The well will be purged at a low flow rate to minimize the possibility of purging the well dry. So that the sample collected is representative of formation water, several field parameters will be monitored during the purging process. The sample will not be collected until these parameters (i.e. temperature, pH, and conductivity) have stabilized to within 10% of the previously measured value. If a well is purged dry, the sample should not be collected until the well has recovered to a minimum 50% of its initial volume.

#### A.1.3 Groundwater Sample Collection

Once the wells are satisfactorily purged, water samples will be collected from each well. Water samples for organic analyses will be collected using a pre-cleaned, new, disposable bailer and transferred into the appropriate, new, laboratory-prepared containers such that no head space or air bubbles are present in the sample container (if appropriate to the analysis). The samples will be properly labeled (i.e. sample identification, sampler initials, date/time of collection, site location, requested analyses), placed in an ice chest with bagged ice or ice substitute, and delivered to the contracted analytical laboratory.

#### A.1.4 Surface Water Sample Collection

Unless specified otherwise, surface water samples will be collected from mid-depth in the central area of the associated surface water body. Water samples will be collected into appropriate, new, laboratory-prepared containers by dipping the container into the surface water unless the container has a preservative present. If a sample preservative is present, a new, cleaned non-preserved surrogate container will be used to obtain the sample which will then be directly transferred into a new, laboratory-provided, preserved container. Samples will be properly labeled and transported as described above.

#### A.1.5 Decontamination Protocol

Prior to use in each well, re-usable groundwater sampling equipment (e.g., water level indicator, oil-interface probe, purge pump, etc.) will be decontaminated. Decontamination protocol will include thoroughly cleaning with a solution of Liquinox, rinsing with clean water, and final rinsing with control water (potable water of known quality, distilled, or de-ionized water). Pre-cleaned new disposable bailers and disposable plastic tubing will be dedicated to each individual well.

#### A.1.6 Chain of Custody Procedures

Sample identification documents will be carefully prepared so identification and chain of custody can be maintained and sample disposition can be controlled. The sample identification documents include Chain-of-Custody (COC) records and Daily Field Report forms. Chain of custody procedures are outlined below.

##### Field Custody Procedures

The field sampler is individually responsible for the care and custody of the samples collected until they are properly transferred.

Samples will have unique labels. The information on these labels will correspond to the COC which shows the identification of individual samples and the contents of the shipping container. The original COC will accompany the shipment and a copy will be retained by the field sampler.

##### Transfer of Custody and Shipment

A COC will accompany samples during transfer and shipment. When transferring samples, the individual relinquishing and the individual receiving the samples will each sign, date, and note the time on the COC. This documents the sample custody transfer.

Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis, with a separate COC accompanying each shipment. Shipments will be accompanied by the original COC. Samples will be delivered by BAI personnel to the laboratory, or shipped by responsible courier. When a shipping courier is utilized, the sample shipment number will be identified on the COC.

#### A.1.7 Field Records

In addition to sample identification numbers and COC records, Daily Field Report records will be maintained by field staff to provide daily records of significant events, observations, and measurements during field investigations. These documents will contain observed information such as: the personnel present, site conditions, sampling procedures, measurement procedures, calibration records, equipment used, supplies used, etc. Field measurements will be recorded on the appropriate forms. Entries on the data forms will be signed and dated. The data forms will be kept as permanent file records.

**APPENDIX B**

FIELD DATA SHEETS AND NON-HAZARDOUS WASTE DATA FORM



**Groundwater Sampling Data Sheet**

Well I.D.: mw-4  
 Project Name/Location: BP/ARCO 6/13 Project #: 06-82-637  
 Sampler's Name: AS & TR Date: 5/18/11  
 Purging Equipment: Wiler  
 Sampling Equipment: boiler  
 Casing Type: PVC

Casing Diameter: 4 inch  
 Total Well Depth: 26.68 feet  
 Depth to Water: 17.84 feet  
 Water Column Thickness: 8.84 feet  
 Unit Casing Volume\*: x 0.65 gallon / foot  
 Casing Water Volume: = 5.74 gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = 17.2 gallons

**\*UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present): \_\_\_\_\_

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1050	1.04	—	—	874	17.1	6.9	
2	1055	X	X	X	868	18.2	7.0	
4	1059	X	X	X	868	18.3	7.1	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 4.0 gallons  
 Depth to Water at Sample Collection: \_\_\_\_\_ feet  
 Sample Collection Time: 1105

Purged Dry? (Y/N) (N)

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Groundwater Sampling Data Sheet**

Well I.D.: MW-7  
 Project Name/Location: BS/ARCO 6113 Project #: 06-82637  
 Sampler's Name: SJS Date: 5/18/11  
 Purging Equipment: boiler  
 Sampling Equipment: boiler

Casing Type: PVC  
 Casing Diameter: 4 inch  
 Total Well Depth: 67.45 feet  
 Depth to Water: 16.96 feet  
 Water Column Thickness: = 50.49 feet  
 Unit Casing Volume\*: x 0.65 gallon / foot  
 Casing Water Volume: = 32.8 gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = 98 gallons

**\*UNIT CASING VOLUMES**  
 2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present):

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1020	4.45	-	-	418	17.1	10.5	
5	1029	X	X	X	415	17.7	10.6	
10	1032	X	X	X	420	18.0	10.6	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 10.0 gallons  
 Depth to Water at Sample Collection: 16.96 feet  
 Sample Collection Time: 1040 Purged Dry? (Y/N) (N)

Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Groundwater Sampling Data Sheet**

Well I.D.: mw-11  
 Project Name/Location: RD/ARCO 6113 Project #: 06-82-63 >  
 Sampler's Name: SB + JR Date: 5/18/11  
 Purging Equipment: boiler  
 Sampling Equipment: boiler

Casing Type: PVC

Casing Diameter: 2 inch  
 Total Well Depth: 45.00 feet  
 Depth to Water: 19.17 feet  
 Water Column Thickness: 25.83 feet  
 Unit Casing Volume\*: x 0.16 gallon / foot  
 Casing Water Volume: = 4.13 gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = 12.4 gallons

**\*UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present):

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1209	4.28	—	—	731	19.8	*	
2	1213	X	X	X	733	18.6	—	
4	1216	X	X	X	746	19.4	—	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 4.0 gallons  
 Depth to Water at Sample Collection:            feet  
 Sample Collection Time: 1220

Purged Dry? (Y/N) (N)

Comments: \* pH probe broke

**Groundwater Sampling Data Sheet**

Well I.D.: mw-12  
 Project Name/Location: BP/ARCO 6113 Project #: 06-82-637  
 Sampler's Name: SBS + JTR Date: 5/18/11  
 Purging Equipment: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_

Casing Type: PVC  
 Casing Diameter: 2 inch  
 Total Well Depth: 34.04 feet  
 Depth to Water: 18.40 feet  
 Water Column Thickness: = \_\_\_\_\_ feet  
 Unit Casing Volume\*: x \_\_\_\_\_ gallon / foot  
 Casing Water Volume: = \_\_\_\_\_ gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = \_\_\_\_\_ gallons

**\*UNIT CASING VOLUMES**  
 2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present): \_\_\_\_\_

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1242	2.93	—	—	643	17.4	*	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 0 gallons  
 Depth to Water at Sample Collection: \_\_\_\_\_ feet  
 Sample Collection Time: 1245  
 Purged Dry? (Y/N) (N)

Comments: NP @ 18'  
\* pt probe broke

**Groundwater Sampling Data Sheet**

Well I.D.: RMW-13  
 Project Name/Location: RR/ARCO 6113 Project #: 06-82-637  
 Sampler's Name: SB & JR Date: 5/18/11  
 Purging Equipment: \_\_\_\_\_  
 Sampling Equipment: bailey

Casing Type: PVC

Casing Diameter: 4 inch  
 Total Well Depth: 35.00 feet  
 Depth to Water: 17.43 feet  
 Water Column Thickness: = \_\_\_\_\_ feet  
 Unit Casing Volume\*: x \_\_\_\_\_ gallon / foot  
 Casing Water Volume: = \_\_\_\_\_ gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = \_\_\_\_\_ gallons

**\*UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present): \_\_\_\_\_

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1114	234	—	—	1190	17.6	7.3	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: \_\_\_\_\_ gallons

Depth to Water at Sample Collection: \_\_\_\_\_ feet

Sample Collection Time: 1115

Purged Dry? (Y (N)) (N)

Comments: NP@15:00

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**Groundwater Sampling Data Sheet**

Well I.D.: VW-1  
 Project Name/Location: BP/ARCO 6/13 Project #: 06-82-637  
 Sampler's Name: SB + JR Date: 5/18/11  
 Purging Equipment: Diaper  
 Sampling Equipment: Diaper

Casing Type: PVC  
 Casing Diameter: 4 inch  
 Total Well Depth: 44.34 feet  
 Depth to Water: - 15.77 feet  
 Water Column Thickness: = 0.65 feet  
 Unit Casing Volume\*: x 28.57 gallon / foot  
 Casing Water Volume: = 18.5 gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = 55.7 gallons

**\*UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present): \_\_\_\_\_

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1437	0.71	—	—	873	17.5	7.0	
5	0446	X	X	X	882	17.3	7.4	
10	0956	X	X	X	879	17.8	7.5	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

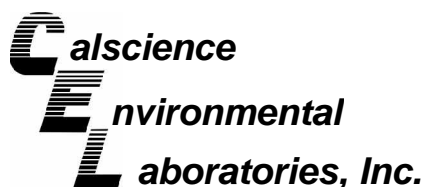
Total Water Volume Purged: 100 gallons  
 Depth to Water at Sample Collection: — feet  
 Sample Collection Time: 1000

Purged Dry? (Y/N) (N)

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**APPENDIX C**

**LABORATORY REPORT  
AND CHAIN-OF-CUSTODY DOCUMENTATION**



June 01, 2011

Jason Duda  
Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Subject: **CalScience Work Order No.: 11-05-1318**  
**Client Reference: BP 6113**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 5/19/2011 and analyzed in accordance with the attached chain-of-custody.

CalScience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard CalScience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

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

Sincerely,

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

CalScience Environmental  
Laboratories, Inc.  
Richard Villafania  
Project Manager

## Analytical Report



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: BP 6113

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-4</b>	<b>11-05-1318-1-D</b>	<b>05/18/11 11:05</b>	<b>Aqueous</b>	<b>GC 57</b>	<b>05/24/11</b>	<b>05/24/11 14:28</b>	<b>110524B01</b>

Comment(s): -LW Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	290	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	115	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-7</b>	<b>11-05-1318-2-D</b>	<b>05/18/11 10:40</b>	<b>Aqueous</b>	<b>GC 57</b>	<b>05/24/11</b>	<b>05/24/11 12:54</b>	<b>110524B01</b>

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	92	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-11</b>	<b>11-05-1318-3-D</b>	<b>05/18/11 12:20</b>	<b>Aqueous</b>	<b>GC 57</b>	<b>05/24/11</b>	<b>05/24/11 15:00</b>	<b>110524B01</b>

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-12</b>	<b>11-05-1318-4-D</b>	<b>05/18/11 12:45</b>	<b>Aqueous</b>	<b>GC 57</b>	<b>05/24/11</b>	<b>05/24/11 15:31</b>	<b>110524B01</b>

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	115	38-134	

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



## Analytical Report



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: BP 6113

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
RMW-13	11-05-1318-5-D	05/18/11 11:15	Aqueous	GC 57	05/24/11	05/25/11 01:26	110524B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	26000	2500	50		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	102	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW-1	11-05-1318-6-D	05/18/11 10:00	Aqueous	GC 57	05/24/11	05/24/11 16:02	110524B01

Comment(s): -LW Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	69	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	97	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-695-1,080	N/A	Aqueous	GC 57	05/24/11	05/24/11 11:20	110524B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	106	38-134			

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

## Analytical Report



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: BP 6113

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	11-05-1318-1-A	05/18/11 11:05	Aqueous	GC/MS BB	05/24/11	05/24/11 17:51	110524L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	1.2	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	96	80-128			Dibromofluoromethane	101	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	97	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	11-05-1318-2-A	05/18/11 10:40	Aqueous	GC/MS BB	05/24/11	05/24/11 14:55	110524L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	3.9	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	97	80-128			Dibromofluoromethane	98	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	95	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11	11-05-1318-3-A	05/18/11 12:20	Aqueous	GC/MS BB	05/24/11	05/24/11 18:20	110524L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	7.8	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	81	80-128			Dibromofluoromethane	93	80-127		
Toluene-d8	104	80-120			1,4-Bromofluorobenzene	93	68-120		

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



## Analytical Report



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: BP 6113

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-12	11-05-1318-4-B	05/18/11 12:45	Aqueous	GC/MS FFF	05/25/11	05/26/11 10:14	110525L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	104	80-128			Dibromofluoromethane	100	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	102	68-120		

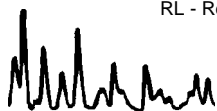
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
RMW-13	11-05-1318-5-A	05/18/11 11:15	Aqueous	GC/MS BB	05/24/11	05/24/11 19:18	110524L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	4700	100	200		Methyl-t-Butyl Ether (MTBE)	380	50	100	
1,2-Dibromoethane	ND	50	100		Tert-Butyl Alcohol (TBA)	ND	1000	100	
1,2-Dichloroethane	ND	50	100		Diisopropyl Ether (DIPE)	ND	50	100	
Ethylbenzene	1700	50	100		Ethyl-t-Butyl Ether (ETBE)	ND	50	100	
Toluene	ND	50	100		Tert-Amyl-Methyl Ether (TAME)	ND	50	100	
Xylenes (total)	2200	50	100		Ethanol	ND	30000	100	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	93	80-128			Dibromofluoromethane	97	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	97	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW-1	11-05-1318-6-A	05/18/11 10:00	Aqueous	GC/MS BB	05/24/11	05/24/11 19:48	110524L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	91	80-128			Dibromofluoromethane	96	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	96	68-120		

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



## Analytical Report



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: BP 6113

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>Method Blank</b>	<b>099-12-703-1,717</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC/MS BB</b>	<b>05/24/11</b>	<b>05/24/11 13:56</b>	<b>110524L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	95	80-128			Dibromofluoromethane	97	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	96	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>Method Blank</b>	<b>099-12-703-1,723</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC/MS FFF</b>	<b>05/25/11</b>	<b>05/26/11 05:12</b>	<b>110525L02</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	104	80-128			Dibromofluoromethane	99	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	104	68-120		

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





## Quality Control - Spike/Spike Duplicate



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project BP 6113

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-7	Aqueous	GC 57	05/24/11	05/24/11	110524S01

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	91	89	38-134	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

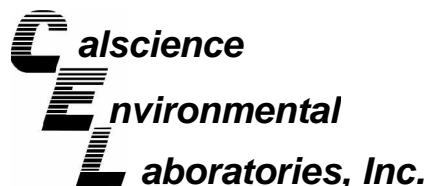
Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B

Project BP 6113

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-7	Aqueous	GC/MS BB	05/24/11	05/24/11	110524S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	99	99	76-124	0	0-20	
Carbon Tetrachloride	94	95	74-134	1	0-20	
Chlorobenzene	103	102	80-120	0	0-20	
1,2-Dibromoethane	97	99	80-120	3	0-20	
1,2-Dichlorobenzene	102	105	80-120	2	0-20	
1,2-Dichloroethane	98	95	80-120	3	0-20	
Ethylbenzene	101	102	78-126	1	0-20	
Toluene	100	99	80-120	1	0-20	
Trichloroethene	96	98	77-120	2	0-20	
Methyl-t-Butyl Ether (MTBE)	84	88	67-121	3	0-49	
Tert-Butyl Alcohol (TBA)	135	157	36-162	15	0-30	
Diisopropyl Ether (DIPE)	84	87	60-138	3	0-45	
Ethyl-t-Butyl Ether (ETBE)	85	87	69-123	3	0-30	
Tert-Amyl-Methyl Ether (TAME)	89	89	65-120	0	0-20	
Ethanol	120	117	30-180	3	0-72	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: 05/19/11  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B

Project BP 6113

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-05-1308-14	Aqueous	GC/MS FFF	05/25/11	05/25/11	110525S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	93	94	76-124	1	0-20	
Carbon Tetrachloride	88	89	74-134	2	0-20	
Chlorobenzene	93	94	80-120	1	0-20	
1,2-Dibromoethane	92	94	80-120	2	0-20	
1,2-Dichlorobenzene	89	91	80-120	3	0-20	
1,2-Dichloroethane	93	94	80-120	1	0-20	
Ethylbenzene	88	91	78-126	4	0-20	
Toluene	89	93	80-120	4	0-20	
Trichloroethene	89	90	77-120	2	0-20	
Methyl-t-Butyl Ether (MTBE)	93	95	67-121	2	0-49	
Tert-Butyl Alcohol (TBA)	143	155	36-162	8	0-30	
Diisopropyl Ether (DIPE)	94	96	60-138	2	0-45	
Ethyl-t-Butyl Ether (ETBE)	93	95	69-123	3	0-30	
Tert-Amyl-Methyl Ether (TAME)	91	94	65-120	3	0-20	
Ethanol	117	119	30-180	2	0-72	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: N/A  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: BP 6113

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-1,080	Aqueous	GC 57	05/24/11	05/24/11	110524B01

<u>Parameter</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	94	89	78-120	5	0-20	

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: N/A  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: BP 6113

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-1,717	Aqueous	GC/MS BB	05/24/11	05/24/11	110524L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	99	100	80-120	73-127	1	0-20	
Carbon Tetrachloride	97	102	74-134	64-144	6	0-20	
Chlorobenzene	100	103	80-120	73-127	3	0-20	
1,2-Dibromoethane	95	97	79-121	72-128	2	0-20	
1,2-Dichlorobenzene	101	105	80-120	73-127	4	0-20	
1,2-Dichloroethane	95	97	80-120	73-127	2	0-20	
Ethylbenzene	101	104	80-120	73-127	3	0-20	
Toluene	98	101	80-120	73-127	3	0-20	
Trichloroethene	98	100	79-127	71-135	2	0-20	
Methyl-t-Butyl Ether (MTBE)	88	91	69-123	60-132	4	0-20	
Tert-Butyl Alcohol (TBA)	97	102	63-123	53-133	4	0-20	
Diisopropyl Ether (DIPE)	92	96	59-137	46-150	5	0-37	
Ethyl-t-Butyl Ether (ETBE)	92	94	69-123	60-132	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	90	94	70-120	62-128	4	0-20	
Ethanol	100	108	28-160	6-182	7	0-57	

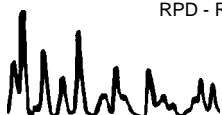
Total number of LCS compounds : 15

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate



Broadbent & Associates, Inc.  
1324 Mangrove Ave, Ste 212  
Chico, CA 95926-2642

Date Received: N/A  
Work Order No: 11-05-1318  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: BP 6113

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-1,723	Aqueous	GC/MS FFF	05/25/11	05/26/11	110525L02		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	106	106	80-120	73-127	0	0-20	
Carbon Tetrachloride	99	98	74-134	64-144	2	0-20	
Chlorobenzene	102	103	80-120	73-127	1	0-20	
1,2-Dibromoethane	104	103	79-121	72-128	1	0-20	
1,2-Dichlorobenzene	100	101	80-120	73-127	1	0-20	
1,2-Dichloroethane	105	105	80-120	73-127	0	0-20	
Ethylbenzene	101	102	80-120	73-127	1	0-20	
Toluene	104	105	80-120	73-127	1	0-20	
Trichloroethene	102	102	79-127	71-135	0	0-20	
Methyl-t-Butyl Ether (MTBE)	106	105	69-123	60-132	1	0-20	
Tert-Butyl Alcohol (TBA)	101	99	63-123	53-133	2	0-20	
Diisopropyl Ether (DIPE)	109	109	59-137	46-150	1	0-37	
Ethyl-t-Butyl Ether (ETBE)	106	107	69-123	60-132	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	104	105	70-120	62-128	1	0-20	
Ethanol	112	110	28-160	6-182	2	0-57	

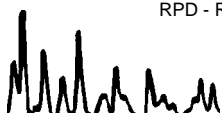
Total number of LCS compounds : 15

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

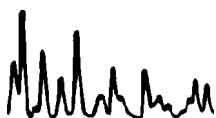


Work Order Number: 11-05-1318
 

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<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
ET	Sample was extracted past end of recommended maximum holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.





# Laboratory Management Program LaMP Chain of Custody Record

1318

Page \_\_\_\_ of \_\_\_\_

BP/ARC Project Name: BP 6113

Req Due Date (mm/dd/yy): \_\_\_\_\_

Rush TAT: Yes \_\_\_ No X

BP/ARC Facility No: \_\_\_\_\_ 6113

Lab Work Order Number: \_\_\_\_\_

Lab Name: Calscience	BP/ARC Facility Address: 785 E. Stanley Boulevard	Consultant/Contractor: Broadbent & Associates, Inc.
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Livermore, CA	Consultant/Contractor Project No: 06-82-637-401-880
Lab PM: Richard Villafania	Lead Regulatory Agency: ACEH	Address: 1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone: 714-895-5494	California Global ID No.: T0600100111	Consultant/Contractor PM: Jason Duda
Lab Shipping Acct: 9225	Enfos Proposal No: 005X5-0001	Phone: 530-566-1400
Lab Bottle Order No:	Accounting Mode: Provision <u>X</u> OOC-BU ___ OOC-RM ___	Email EDD To: jduda@broadbentinc.com
Other Info:	Stage: Execute (4) Activity: Project Spend (80)	Invoice To: BP/ARC <u>X</u> Contractor ___

BP/ARC EBM: Chuck Carmel				Matrix		No. Containers / Preservative							Requested Analyses						Report Type & QC Level	
EBM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Methanol	GRO (8015)	BTEX (8260)	5 Olys (8260)	EDB (8260)	1,2-DCA (8260)	Ethanol (8260)	Standard <u>X</u>	
EBM Email:																			Full Data Package ___	
Lab No.	Sample Description	Date	Time																Comments	
1	MW-4	5-18-11	1105	X			6			X		X	X	X	X	X	X			
2	MW-7	5-18-11	1040	X			6			X		X	X	X	X	X	X			
	<del>MW-9</del>			X			6			X		X	X	X	X	X	X			
3	MW-11	5-18-11	1220	X			6			X		X	X	X	X	X	X			
4	MW-12	5-18-11	1243	X			6			X		X	X	X	X	X	X			
5	RMW-13	5-18-11	1115	X			6			X		X	X	X	X	X	X			
6	VW-1	5-18-11	1060	X			6			X		X	X	X	X	X	X			
7	TB-6113- 110518	5-18-11		X			2													Hold

Sampler's Name: <u>James Ramos / Sam Parley</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: <u>BAI</u>	<u>James</u>		<u>5-19-11</u>	<u>1630</u>	<u>[Signature]</u>		<u>5/20/11</u>	<u>1030</u>
Shipment Method: <u>GSC</u> Ship Date: <u>5-19-11</u>								
Shipment Tracking No: <u>107158268</u>								

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No    Temp Blank: Yes / No    Cooler Temp on Receipt: \_\_\_\_\_ °F/C    Trip Blank: Yes / No    MS/MSD Sample Submitted: Yes / No

1318

1 FROM

DATE 5-19-11

COMPANY Broadbent & Associates, Inc.

ADDRESS 875 Cotting Lane, Suite G

ADDRESS

CITY Varaville

SENDERS NAME James Rames

STE/ROOM

ZIP CODE 95688

PHONE NUMBER 707-455-7290

2

COMPANY CAL SCIENCE

NAME Kistina

ADDRESS 7440 LINCOLN WAY

ADDRESS

CITY GARDEN GROVE

STE/ROOM

ZIP CODE 92841

3 YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

4 SPECIAL INSTRUCTIONS

**GSO**  
GOLDEN STATE OVERNIGHT

1-800-322-5555  
WWW.GSO.COM

**SHIPPING AIR BILL**

4 PACKAGE INFORMATION

LETTER (MAX 8 OZ)

PACKAGE (WT) \_\_\_\_\_

DECLARED VALUE \$ \_\_\_\_\_

COD AMOUNT \$ \_\_\_\_\_ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE  PRIORITY OVERNIGHT BY 10:30 AM  EARLY PRIORITY BY 8:00 AM  SATURDAY DELIVERY

\*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

6 RELEASE SIGNATURE \_\_\_\_\_  
SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7

8 PICK UP INFORMATION

TIME 107158268 DRIVER # ROUTE #

PEEL OFF HERE

9 TRACKING NUMBER 107158268

ORC

**GSO**  
GOLDEN STATE OVERNIGHT  
1-800-322-5555  
www.gso.com

GARDEN GROVE  
92841

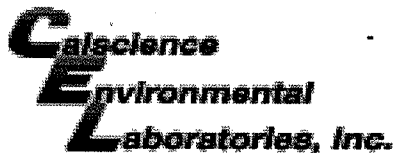
19 lb 1/L05

**D**

91273288 1105192058

D92843A

CSL-06



WORK ORDER #: 11-05-1318

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Broadbent

DATE: 05/20/11

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.6 °C + 0.5 °C (CF) = 3.1 °C  Blank  Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air  Filter Initial: PT

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A Initial: PT

Sample  \_\_\_\_\_  No (Not Intact)  Not Present Initial: PT

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours...	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve (\_\_\_\_)  EnCores®  TerraCores®  \_\_\_\_\_

**Water:**  VOA  VOA<sup>6</sup>  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBp  1AGB  1AGBna<sub>2</sub>  1AGBs

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

250PB  250PBn  125PB  125PBz<sub>nna</sub>  100PJ  100PJna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

**Air:**  Tedlar®  Summa® **Other:**  \_\_\_\_\_ **Trip Blank Lot#:** 110425A **Labeled/Checked by:** PT

**Container:** C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** PT

**Preservative:** h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> z<sub>nna</sub>: ZnAc<sub>2</sub>+NaOH f: Field-filtered **Scanned by:** PT

**APPENDIX D**

**GEOTRACKER UPLOAD CONFIRMATION RECEIPTS**

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STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_WELL FILE

**SUCCESS**

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

<b><u>Submittal Type:</u></b>	GEO_WELL
<b><u>Submittal Title:</u></b>	2Q11 GEO_WELL 6113
<b><u>Facility Global ID:</u></b>	T0600100111
<b><u>Facility Name:</u></b>	ARCO #06113
<b><u>File Name:</u></b>	GEO_WELL.zip
<b><u>Organization Name:</u></b>	Broadbent & Associates, Inc.
<b><u>Username:</u></b>	BROADBENT-C
<b><u>IP Address:</u></b>	67.118.40.90
<b><u>Submittal Date/Time:</u></b>	6/7/2011 3:58:23 PM
<b><u>Confirmation Number:</u></b>	3782136321



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STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A EDF FILE

**SUCCESS**

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

<b><u>Submittal Type:</u></b>	EDF - Monitoring Report - Semi-Annually
<b><u>Submittal Title:</u></b>	2Q11 GW Monitoring
<b><u>Facility Global ID:</u></b>	T0600100111
<b><u>Facility Name:</u></b>	ARCO #06113
<b><u>File Name:</u></b>	11051318.zip
<b><u>Organization Name:</u></b>	Broadbent & Associates, Inc.
<b><u>Username:</u></b>	BROADBENT-C
<b><u>IP Address:</u></b>	67.118.40.90
<b><u>Submittal Date/Time:</u></b>	6/7/2011 4:00:20 PM
<b><u>Confirmation Number:</u></b>	2439492762

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[VIEW DETECTIONS REPORT](#)