Atlantic Richfield Company

Chuck Carmel
Remediation Management Project Manager

PO Box 1257
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July 31, 2014

Re: Second Quarter 2014 Semi-Annual Groundwater Monitoring Report
Atlantic Richfield Company Station #2162
15135 Hesperian Boulevard, San Leandro, California
ACEH Case #RO0000190

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

Submitted by,

Chuck Carmel
Remediation Management Project Manager

Attachment

BROADBENT
875 Cotting Ln., Suite G, Vacaville, CA 95688
[T] 707-455-7290 [F] 707-455-7295
broadbentinc.com

Creating Solutions. Building Trust.

July 31, 2014

Project No. 06-88-620

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

Attn.: Mr. Chuck Carmel

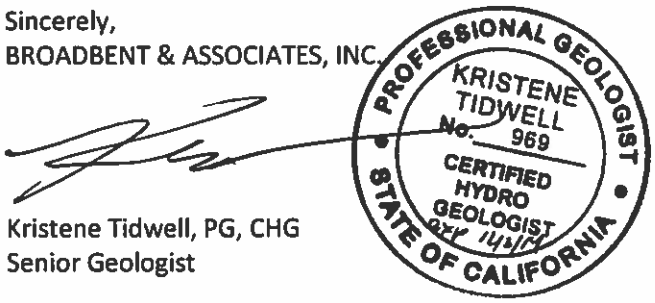
Re: Second Quarter 2014 Semi-Annual Groundwater Monitoring Report,
Atlantic Richfield Company Station No.2162, 15135 Hesperian Boulevard,
San Leandro, California; ACEH LUFT Case #RO0000190

Dear Mr. Carmel:

Attached is the Second Quarter 2014 Monitoring Report for Atlantic Richfield Company Station No. 2162 located at 15135 Hesperian Boulevard in San Leandro, Alameda County, California. This report presents the observations and results of semi-annual groundwater monitoring and sampling conducted during the Second Quarter of 2014, and a summary of recent developments at the Site.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact me at 707-455-7290.

Sincerely,
BROADBENT & ASSOCIATES, INC.



Kristene Tidwell, PG, CHG
Senior Geologist

Enclosures

cc: Mr. Keith Nowell, Alameda County Environmental Health (submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

SECOND QUARTER 2014
MONITORING REPORT
ARCO STATION No. 2162, SAN LEANDRO, CALIFORNIA

Broadbent & Associates, Inc. (Broadbent) is pleased to present this *Fourth Quarter 2014 Monitoring Report* on behalf of Atlantic Richfield Company (a BP affiliated company) for ARCO Station No. 2162 located in San Leandro, Alameda County, California. Quarterly reporting is being submitted to the Alameda County Environmental Health Services Agency (ACEH) consistent with their requirements under the legal authority of the California Regional Water Quality Control Board, as codified by the California Code of Regulations Title 23, Section 2652(d). Details of work performed, discussion of results, and recommendations are provided below.

Facility Name / Address:	ARCO Station No. 2162 / 15135 Hesperian Boulevard, San Leandro
Client Project Manager / Title:	Mr. Chuck Carmel / Remediation Management Project Manager
Broadbent Contact:	Ms. Kristene Tidwell, PG, CHG / (707) 455-7290
Broadbent Project No.:	06-88-620
Primary Regulatory Agency / ID No.:	ACEH, Case #RO0000190
Current phase of project:	Closure Evaluation
List of Acronyms / Abbreviations:	See end of report text for list of acronyms/abbreviations used in report.

WORK PERFORMED THIS QUARTER (Second Quarter 2014):

1. Submitted *First Quarter 2014 Status Report* on April 30, 2014.
2. Conducted groundwater monitoring/sampling for Second Quarter 2014 on May 27, 2014.

WORK SCHEDULED FOR NEXT QUARTER (Third Quarter 2014):

1. Submit *Second Quarter 2014 Monitoring Report* (contained herein).
2. No other

GROUNDWATER MONITORING PLAN SUMMARY:

Groundwater level gauging:	MW-1 through MW-6	(2Q & 4Q)
Groundwater sample collection:	MW-1, MW-2	(2Q)
	MW-3, MW-4, MW-5, MW-6	(2Q & 4Q)
Biodegradation indicator parameter monitoring:	NA	

QUARTERLY RESULTS SUMMARY:

LNAPL

LNAPL observed this quarter:	No	(yes\no)
LNAPL recovered this quarter:	None	(gal)
Cumulative LNAPL recovered:	N/A	(gal)

Groundwater Elevation and Gradient:

Depth to groundwater:	8.19 (MW-2) to 9.63 (MW-4)	(ft below TOC)
Gradient direction:	Southwest	(compass direction)
Gradient magnitude:	0.003	(ft/ft)
Average change in elevation:	-0.42	(ft since last measurement)

Laboratory Analytical Data

Summary: Analytical results are as follows:

- GRO was detected in two wells with a maximum concentration of 2,000 µg/L in well MW-6
- Benzene was detected in MW-6 with a concentration of 1.8 µg/L

- Ethylbenzene was detected in MW-6 with a concentration of 3.0µg/L
- MTBE was detected in MW-6 with a concentration of 82 µg/L
- TAME was detected in MW-6 with a concentration of 6.1 µg/L
- Toluene was detected in MW-6 with a concentration of 0.64 µg/L
- No other petroleum compounds were reported in any groundwater sample collected

ACTIVITIES CONDUCTED & RESULTS:

Second Quarter 2014 semi-annual groundwater monitoring was conducted at wells MW-1 through MW-6 on May 27, 2014 by Broadbent personnel. 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 8.19 ft bgs at MW-2 to 9.63 ft bgs at MW-4. Resulting groundwater surface elevations ranged from 24.34 ft above msl at MW-4 to 24.76 ft above msl at well MW-2. Groundwater elevations are summarized in Table 1. Water level elevations yielded a potentiometric horizontal groundwater gradient to the Southwest at approximately 0.003 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.

Consistent with the current program, groundwater samples were collected from wells MW-1 through MW-6 on May 27, 2014. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to TestAmerica Laboratories, Inc. (Irvine, 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 8260. No significant irregularities were encountered during analysis of the groundwater. The laboratory analytical report, including chain-of-custody documentation, is provided in Appendix C.

Results of this sampling event are included in the laboratory analytical data summary presented above. The results indicate the highest overall petroleum hydrocarbon concentrations present in well MW-6, with no analytes being detected in any other well sampled with the exception of GRO slightly above reporting limits in well MW-2. 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. Further discussion of the results is presented below.

DISCUSSION:

Review of historic groundwater gradient data indicates that the gradient calculated based on the measurements collected during the Second Quarter 2014 monitoring is consistent with historical measurement. Groundwater levels were between historic minimum and maximum elevations for the monitoring wells associated with ARCO Station No. 2162. During the Fourth Quarter 2013, groundwater elevations increased an average of 0.40 ft above msl across the Site relative to the Fourth Quarter 2014. Groundwater elevations yielded a horizontal potentiometric groundwater gradient to the Southwest at approximately 0.003 ft/ft, generally consistent with the historic groundwater gradient and magnitude data presented in Table 3.

Review of historical groundwater analytical results indicate that well MW-6 contains the highest and only remaining residual concentrations of petroleum hydrocarbons. Current results are consistent with previous sampling. Historically, MW-6 has contained the highest residual concentrations of petroleum hydrocarbons at the Site. Residual petroleum hydrocarbons in well MW-5, which is located approximately 10 feet southwest of the existing Underground Storage Tanks (USTs) were not detected during recently. Based on the apparent decreasing petroleum hydrocarbon trends in well MW-6 and the lack of impacts in any other Site well, it appears that the residual hydrocarbon plume at the Site is decreasing and shrinking in size due to natural attenuation.

RECOMMENDATIONS:

The Site is currently being evaluated for Case Closure by the ACEH. Once the ACEH approves the Site for Closure, a 60-day public comment period will be initiated. Closure activities including well decommissioning will be carried out following the comment period and approval by the ACEH. Since the Site is currently being evaluated for Closure, it is recommended that groundwater monitoring activities be ceased at the Site.

LIMITATIONS:

The findings presented in this report are based upon: observations of Broadbent field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by TestAmerica. Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company (a BP affiliated 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 27, 2014
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
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
ACPWA:	Alameda County Public Works Agency
BGS	Below ground surface
BTEX:	Benzene, Toluene, Ethylbenzene, Total Xylenes
1,2-DCA:	1,2-Dichloroethane
DIPE:	Di-Isopropyl Ether
DO:	Dissolved Oxygen
DRO:	Diesel-Range Organics
EDB:	1,2-Dibromomethane
Eh:	Oxidation Reduction Potential
EPA:	Environmental Protection Agency
ETBE:	Ethyl Tertiary Butyl Ether
Fe^{2+}:	Ferrous Iron
ft/ft:	feet per foot
ft	Feet
gal:	Gallons
GRO:	Gasoline-Range Organics
LNAPL:	Light Non-Aqueous Phase Liquid
MSL	Mean Sea Level
MTBE:	Methyl Tertiary Butyl Ether
NO_3:	Nitrate as Nitrogen
ppb:	parts per billion
SO_4:	Sulfate
TAME:	Tert-Amyl Methyl Ether
TBA:	Tertiary Butyl Ether
TOC:	Top of Casing
µg/L:	micrograms per liter

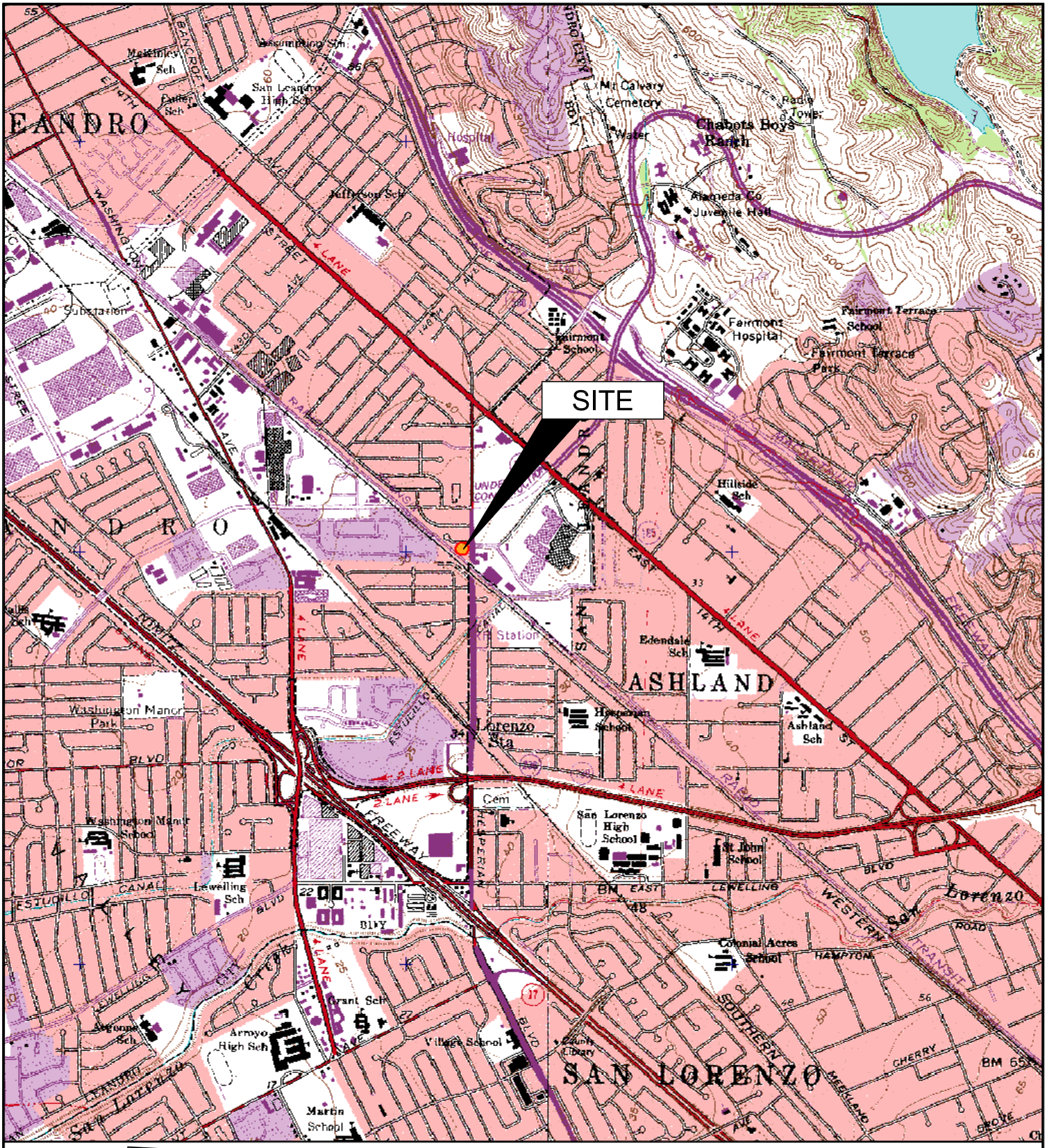


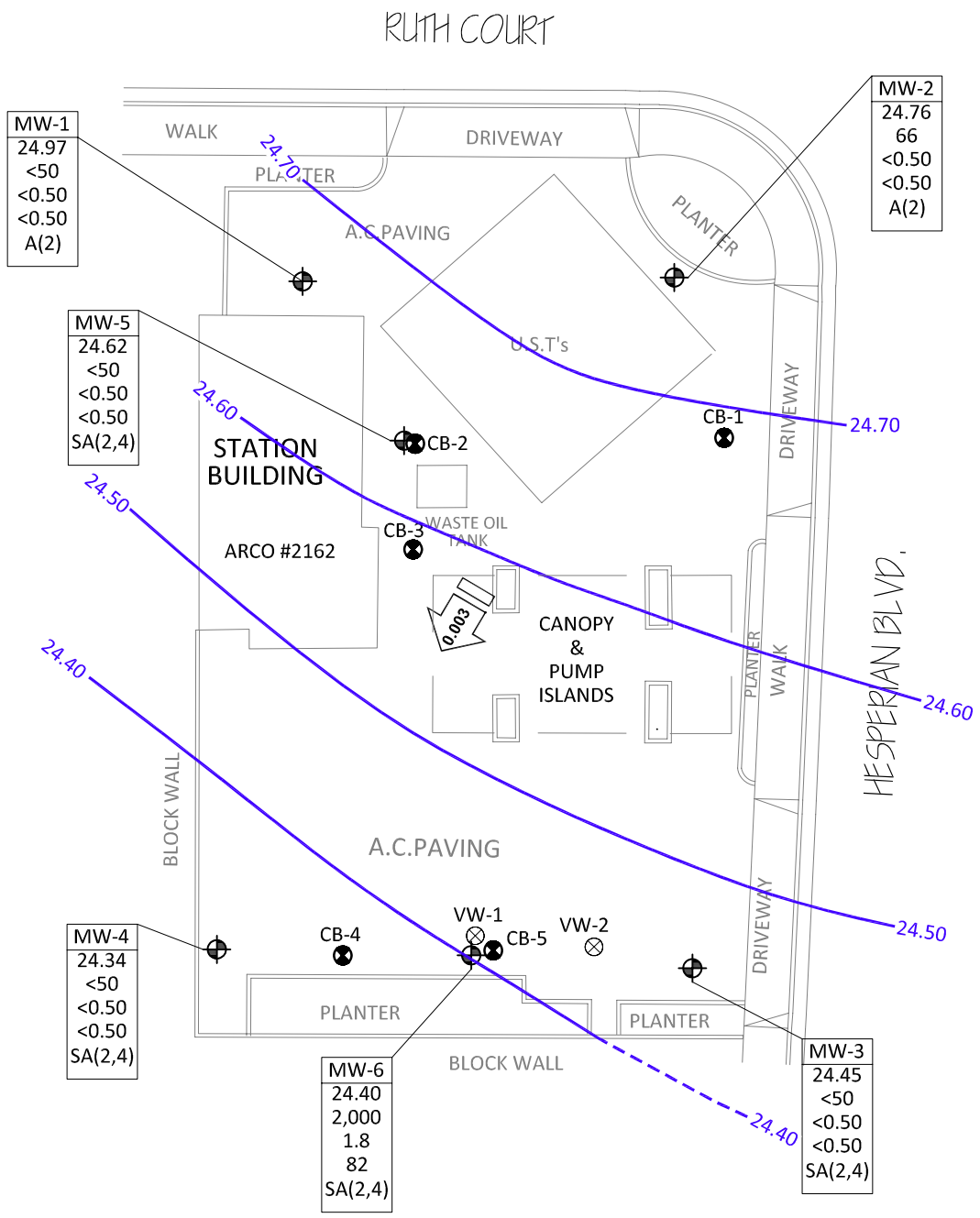
IMAGE SOURCE: USGS

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

Station #2162
15135 Hesperian Boulevard
San Leandro, California

Site Location Map

Drawing
1



LEGEND

⊕	Groundwater Monitoring Well Location	SA	Sampled Semi-Annually
⊗	Vapor Extraction Well Location	*	Data Not Used for Contouring
⊗	Soil Boring Location	<	Not Detected at or above Laboratory Reporting Limits
24.50	Groundwater Elevation Contour (Feet Above Site Datum)		
0.003	Approximate Groundwater Flow Direction and Gradient (ft/ft)		

WELL	Well Designation
ELEV	Groundwater Elevation (ft)
GRO BZ MTBE	GRO, Benzene, and MTBE Concentrations (µg/L)
A/SA/Q	Sampling Frequency

N

0 30 60

SCALE (ft)

NOTE: SITE MAP ADAPTED FROM WOOD RODGERS SURVEYING.

BROADBENT
1370 Ridgewood Dr., Suite 5
Chico, California 95973
Project No.: 06-88-620 Date: 7/26/2014

Station #2162
15135 Hesperian Boulevard
San Leando, California

Groundwater Elevation Contours and Analytical Summary Map
May 27, 2014

Drawing
2

1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

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

Well ID and Date Monitored	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			
MW-1															
6/20/2000	--	31.19	8.00	16.00	8.33	22.86	<50	<0.5	0.8	<0.5	<1.0	<10	--	--	
9/29/2000	--		8.00	16.00	9.07	22.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/17/2000	--		8.00	16.00	8.69	22.50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/23/2001	--		8.00	16.00	8.19	23.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/20/2001	--		8.00	16.00	8.97	22.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
9/22/2001	--		8.00	16.00	9.56	21.63	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/28/2001	--		8.00	16.00	8.40	22.79	<50	<0.5	<0.5	<0.5	0.63	<2.5	--	--	
3/14/2002	--		8.00	16.00	8.05	23.14	<50	<0.5	<0.5	<0.5	<0.5	170	--	--	
4/18/2002	--		8.00	16.00	8.27	22.92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
7/19/2002	NP		8.00	16.00	8.88	22.31	<50	<0.5	<0.5	<0.5	<0.5	11	1.0	8.2	
10/09/02	NP		8.00	16.00	--	--	--	--	--	--	--	--	--	--	a
03/28/2003	NP		8.00	16.00	--	--	--	--	--	--	--	--	--	--	a, c
4/7/2003	NP		8.00	16.00	8.28	22.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.9	
7/9/2003	NP		8.00	16.00	8.62	22.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	7.2	
10/08/2003	--	31.13	8.00	16.00	9.19	21.94	--	--	--	--	--	--	--	--	d, e
01/13/2004	--		8.00	16.00	8.35	22.78	--	--	--	--	--	--	--	--	
04/05/2004	--	33.70	8.00	16.00	7.29	26.41	--	--	--	--	--	--	--	--	
07/12/2004	NP		8.00	16.00	9.00	24.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	7.0	
10/19/2004	--		8.00	16.00	9.47	24.23	--	--	--	--	--	--	--	--	
01/11/2005	--		8.00	16.00	7.64	26.06	--	--	--	--	--	--	--	--	
04/14/2005	--		8.00	16.00	7.35	26.35	--	--	--	--	--	--	--	--	
08/01/2005	--		8.00	16.00	8.21	25.49	--	--	--	--	--	--	--	--	
7/31/2006	--		8.00	16.00	8.10	25.60	--	--	--	--	--	--	--	--	
6/12/2009	P		8.00	16.00	8.93	24.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	7.40	
11/6/2009	--		8.00	16.00	9.18	24.52	--	--	--	--	--	--	--	--	
6/4/2010	P		8.00	16.00	8.13	25.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.31	7.2	
11/19/2010	--		8.00	16.00	9.28	24.42	--	--	--	--	--	--	--	--	
5/19/2011	P		8.00	16.00	7.76	25.94	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.36	6.8	
12/1/2011	--		8.00	16.00	8.40	25.30	--	--	--	--	--	--	--	--	
6/21/2012	P		8.00	16.00	8.49	25.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.73	7.39	

1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

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

Well ID and Date Monitored	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			
MW-1 Cont.															
12/20/2012	--	33.70	8.00	16.00	8.09	25.61	--	--	--	--	--	--	--	--	
6/13/2013	P		8.00	16.00	8.94	24.76	<50	<0.50	<0.50	<0.50	<1.0	<0.50	2.08	6.76	
12/2/2013	--		8.00	16.00	9.54	24.16	--	--	--	--	--	--	--	--	
5/27/2014	**P**		**8.00**	**16.00**	**9.03**	**24.67**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**2.82**	**7.02**	
MW-2															
6/20/2000	--	30.38	8.00	16.00	7.38	23.00	--	--	--	--	--	--	--	--	
9/29/2000	--		8.00	16.00	8.08	22.30	266	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/17/2000	--		8.00	16.00	7.80	22.58	175	<0.5	<0.5	0.659	<0.5	<2.5	--	--	
3/23/2001	--		8.00	16.00	7.23	23.15	351	<0.5	<0.5	0.912	<0.5	<2.5	--	--	
6/20/2001	--		8.00	16.00	7.98	22.40	360	<0.5	<0.5	0.74	<0.5	<2.5	--	--	
9/22/2001	--		8.00	16.00	8.55	21.83	190	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/28/2001	--		8.00	16.00	7.53	22.85	130	<0.5	0.93	<0.5	0.51	<2.5	--	--	
3/14/2002	--		8.00	16.00	7.17	23.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
4/18/2002	--		8.00	16.00	7.31	23.07	74	<0.5	<0.5	<0.5	<0.5	--	--	--	
7/19/2002	P		8.00	16.00	7.93	22.45	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	7.6	
10/9/2002	P		8.00	16.00	8.55	21.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	0.7	7.3	
03/28/2003	P		8.00	16.00	7.30	23.08	<50	<0.50	0.83	<0.50	<0.50	<0.50	1.48	7.7	c
4/7/2003	P		8.00	16.00	7.36	23.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.0	
7/9/2003	P		8.00	16.00	7.71	22.67	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	7.6	
10/08/2003	--		8.00	16.00	8.25	22.13	--	--	--	--	--	--	--	--	
01/13/2004	--		8.00	16.00	7.55	22.83	--	--	--	--	--	--	--	--	
04/05/2004	--	32.97	8.00	16.00	7.29	25.68	--	--	--	--	--	--	--	--	
07/12/2004	NP		8.00	16.00	8.09	24.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.2	
10/19/2004	--		8.00	16.00	8.29	24.68	--	--	--	--	--	--	--	--	
01/11/2005	--		8.00	16.00	6.81	26.16	--	--	--	--	--	--	--	--	
04/14/2005	--		8.00	16.00	6.69	26.28	--	--	--	--	--	--	--	--	
08/01/2005	--		8.00	16.00	7.40	25.57	--	--	--	--	--	--	--	--	
7/31/2006	--		8.00	16.00	7.22	25.75	--	--	--	--	--	--	--	--	
6/12/2009	P	32.95	8.00	16.00	8.18	24.77	51	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	7.55	
11/6/2009	--		8.00	16.00	8.32	24.63	--	--	--	--	--	--	--	--	

1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

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

Well ID and Date Monitored	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			
MW-2 Cont.															
6/4/2010	P	32.95	8.00	16.00	7.24	25.71	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.33	
11/19/2010	--		8.00	16.00	8.38	24.57	--	--	--	--	--	--	--	--	
5/19/2011	P		8.00	16.00	7.12	25.83	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.24	9.0	
12/1/2011	--		8.00	16.00	7.57	25.38	--	--	--	--	--	--	--	--	
6/21/2012	P		8.00	16.00	7.63	25.32	62	<0.50	<0.50	<0.50	<0.50	<0.50	1.47	7.42	lw
12/20/2012	--		8.00	16.00	7.22	25.73	--	--	--	--	--	--	--	--	
6/13/2013	P		8.00	16.00	8.10	24.85	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.41	7.0	
12/2/2013	--		8.00	16.00	8.70	24.25	--	--	--	--	--	--	--	--	
5/27/2014	**P**		**8.00**	**16.00**	**8.19**	**24.76**	**55**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**1.24**	**7.14**	
MW-3															
6/20/2000	--	30.30	8.00	15.00	7.75	22.55	--	--	--	--	--	--	--	--	
9/29/2000	--		8.00	15.00	8.46	21.84	<50	<0.5	<0.5	<0.5	<0.5	128	--	--	
12/17/2000	--		8.00	15.00	8.01	22.29	<50	<0.5	<0.5	<0.5	<0.5	46.7	--	--	
3/23/2001	--		8.00	15.00	7.70	22.60	<50	<0.5	<0.5	<0.5	<0.5	26.8	--	--	
6/20/2001	--		8.00	15.00	8.23	22.07	<50	<0.5	<0.5	<0.5	<0.5	30	--	--	
9/22/2001	--		8.00	15.00	8.89	21.41	<50	<0.5	<0.5	<0.5	<0.5	12	--	--	
12/28/2001	--		8.00	15.00	7.83	22.47	<50	<0.5	<0.5	<0.5	<0.5	6.2	--	--	
3/14/2002	--		8.00	15.00	7.48	22.82	<50	<0.5	<0.5	<0.5	<0.5	47	--	--	
4/18/2002	--		8.00	15.00	7.62	22.68	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
7/19/2002	P		8.00	15.00	8.23	22.07	100	<1.0	<1.0	<1.0	<1.0	330	0.9	7.6	b (TPH-g)
10/9/2002	P		8.00	15.00	8.83	21.47	<50	<0.5	<0.5	<0.5	<0.5	61	0.5	7.4	
03/28/2003	P		8.00	15.00	7.85	22.45	52	<0.50	1.2	<0.50	<0.50	45	1.42	7.6	c
4/7/2003	P		8.00	15.00	7.71	22.59	56	<0.50	<0.50	<0.50	<0.50	56	1.1	6.8	
7/9/2003	P		8.00	15.00	8.00	22.30	<500	<5.0	<5.0	<5.0	<5.0	87	1.6	7.4	
10/08/2003	P		8.00	15.00	8.59	21.71	<50	<0.50	<0.50	<0.50	<0.50	25	0.9	--	
01/15/2004	P		8.00	15.00	7.90	22.40	<50	<0.50	<0.50	<0.50	<0.50	9.8	2.9	7.3	
04/05/2004	P	32.89	8.00	15.00	7.61	25.28	<50	<0.50	<0.50	<0.50	<0.50	15	1.5	7.0	
07/12/2004	P		8.00	15.00	8.45	24.44	<50	<0.50	<0.50	<0.50	<0.50	7.3	1.6	6.9	
10/19/2004	P		8.00	15.00	8.95	23.94	<50	<0.50	<0.50	<0.50	<0.50	5.0	0.96	7.1	
01/11/2005	P		8.00	15.00	7.27	25.62	<50	<0.50	<0.50	<0.50	<0.50	2.3	--	7.2	

1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

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

Well ID and Date Monitored	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			
MW-3 Cont.															
04/14/2005	P	32.89	8.00	15.00	7.10	25.79	<50	<0.50	<0.50	<0.50	1.5	5.6	2.0	7.2	
08/01/2005	P		8.00	15.00	7.71	25.18	<50	<0.50	<0.50	<0.50	<0.50	5.2	1.18	7.0	
7/31/2006	P		8.00	15.00	7.64	25.25	<50	<0.50	<0.50	<0.50	<0.50	4.3	--	6.8	
6/12/2009	P	32.88	8.00	15.00	8.36	24.52	<50	0.75	<0.50	<0.50	<0.50	0.53	0.61	7.45	
11/6/2009	P		8.00	15.00	8.58	24.30	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	7.17	
6/4/2010	P		8.00	15.00	7.60	25.28	<50	<0.50	<0.50	<0.50	<0.50	1.9	0.69	7.4	
11/19/2010	NP		8.00	15.00	8.63	24.25	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.69	7.0	
5/19/2011	P		8.00	15.00	7.22	25.66	56	<0.50	<0.50	<0.50	<0.50	2.1	0.83	9.2	lw
12/1/2011	P		8.00	15.00	8.00	24.88	<50	<0.50	<0.50	<0.50	<0.50	0.50	3.15	7.8	
6/21/2012	P		8.00	15.00	7.90	24.98	<50	<0.50	<0.50	<0.50	<0.50	1.4	1.24	7.33	
12/20/2012	p		8.00	15.00	7.53	25.35	<50	<0.50	<0.50	<0.50	<1.0	<0.50	3.62	8.17	
6/13/2013	P		8.00	15.00	8.39	24.49	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.22	7.07	
12/2/2013	P		8.00	15.00	8.89	23.99	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.32	6.81	
5/27/2014	**P**		**8.00**	**15.00**	**8.43**	**24.45**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**1.20**	**7.23**	
MW-4															
6/20/2000	--	30.39	10.00	18.00	8.87	21.52	--	--	--	--	--	--	--	--	
9/29/2000	--		10.00	18.00	9.61	20.78	<50	1.02	<0.5	<0.5	<0.5	12.2	--	--	
12/17/2000	--		10.00	18.00	9.17	21.22	<50	<0.5	<0.5	<0.5	<0.5	5.81	--	--	
3/23/2001	--		10.00	18.00	8.70	21.69	<50	<0.5	<0.5	<0.5	<0.5	3.04	--	--	
6/20/2001	--		10.00	18.00	9.51	20.88	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
9/22/2001	--		10.00	18.00	10.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	5.2	--	--	
12/28/2001	--		10.00	18.00	8.86	21.53	<50	<0.5	<0.5	<0.5	<0.5	4.3	--	--	
3/14/2002	--		10.00	18.00	8.52	21.87	<50	<0.5	<0.5	<0.5	<0.5	5.1	--	--	
4/18/2002	--		10.00	18.00	8.76	21.63	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	
7/19/2002	NP		10.00	18.00	9.39	21.00	<50	<0.5	<0.5	<0.5	<0.5	30	1.8	7.8	
10/9/2002	NP		10.00	18.00	10.08	20.31	<50	<0.5	<0.5	<0.5	<0.5	28	1.0	8.0	
03/28/2003	NP		10.00	18.00	8.88	21.51	<50	<0.50	1.3	<0.50	<0.50	4.4	0.98	7.2	c
4/7/2003	NP		10.00	18.00	8.78	21.61	<50	<0.50	<0.50	<0.50	<0.50	14	1.1	7.0	
7/9/2003	NP		10.00	18.00	9.14	21.25	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.6	7.4	
10/08/2003	NP		10.00	18.00	9.77	20.62	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.6	6.4	

1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

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

Well ID and Date Monitored	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			
MW-4 Cont.															
01/15/2004	P	30.39	10.00	18.00	8.68	21.71	<50	1.4	0.84	<0.50	1.5	6.6	2.9	7.1	
04/05/2004	NP	33.97	10.00	18.00	8.77	25.20	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	7.0	
07/12/2004	NP		10.00	18.00	9.46	24.51	<50	<0.50	<0.50	<0.50	<0.50	1.0	2.5	6.6	
10/19/2004	NP		10.00	18.00	9.91	24.06	<50	<0.50	<0.50	<0.50	<0.50	4.4	1.21	7.9	
01/11/2005	P		10.00	18.00	7.80	26.17	59	2.0	<0.50	<0.50	<0.50	11	0.9	7.1	
04/14/2005	NP		10.00	18.00	8.07	25.90	<50	<0.50	<0.50	<0.50	<0.50	0.64	2.8	7.4	
08/01/2005	NP		10.00	18.00	8.58	25.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.48	5.7	
7/31/2006	P		10.00	18.00	8.75	25.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.7	
6/12/2009	P		10.00	18.00	9.51	24.46	<50	0.68	<0.50	<0.50	<0.50	<0.50	0.70	7.51	
11/6/2009	P		10.00	18.00	9.74	24.23	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.15	7.15	
6/4/2010	P		10.00	18.00	8.71	25.26	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.70	7.24	
11/19/2010	P		10.00	18.00	9.83	24.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.09	7.1	
5/19/2011	P		10.00	18.00	8.24	25.73	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.88	7.5	
12/1/2011	P		10.00	18.00	9.11	24.86	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.09	7.6	
6/21/2012	P		10.00	18.00	9.07	24.90	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.64	7.31	
12/20/2012	P		10.00	18.00	8.61	25.36	<50	<0.50	<0.50	<0.50	<1.0	<0.50	3.90	7.99	
6/13/2013	P		10.00	18.00	9.56	24.41	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.53	6.85	
12/2/2013	P		10.00	18.00	10.10	23.87	<50	<0.50	<0.50	<0.50	<1.0	<0.50	2.07	6.74	
5/27/2014	**P**		**10.00**	**18.00**	**9.63**	**24.34**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**1.27**	**7.22**	
MW-5															
6/12/2009	NP	33.96	8.00	16.00	9.25	24.71	85	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	7.50	
11/6/2009	P		8.00	16.00	9.49	24.47	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	7.1	
6/4/2010	NP		8.00	16.00	8.42	25.54	67	<0.50	<0.50	<0.50	<0.50	<0.50	1.24	7.65	
11/19/2010	NP		8.00	16.00	9.58	24.38	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.72	7.3	
5/19/2011	NP		8.00	16.00	8.02	25.94	52	<0.50	<0.50	<0.50	<0.50	<0.50	2.17	9.1	lw
12/1/2011	P		8.00	16.00	8.87	25.09	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	7.5	
6/21/2012	P		8.00	16.00	8.76	25.20	55	<0.50	<0.50	<0.50	<0.50	<0.50	1.58	7.24	lw
12/20/2012	P		8.00	16.00	8.35	25.61	84	0.52	<0.50	<0.50	<1.0	<0.50	3.74	7.97	
6/13/2013	P		8.00	16.00	9.27	24.69	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.53	6.83	
12/2/2013	P		8.00	16.00	9.85	24.11	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.86	6.71	

1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

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

Well ID and Date Monitored	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			
MW-5 Cont.															
5/27/2014	**P**	**33.96**	**8.00**	**16.00**	**9.34**	**24.62**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**0.69**	**7.13**	
MW-6															
6/12/2009	NP	33.48	8.00	16.00	9.02	24.46	1,800	4.9	<0.50	2.8	<0.50	59	0.68	7.39	
11/6/2009	P		8.00	16.00	9.21	24.27	880	1.7	<0.50	0.77	<0.50	37	0.43	6.9	
6/4/2010	NP		8.00	16.00	8.22	25.26	6,200	15	1.6	8.2	1.2	190	0.87	7.16	
11/19/2010	NP		8.00	16.00	9.30	24.18	5,600	8.0	1.2	9.9	<1.0	130	0.78	6.8	
5/19/2011	P		8.00	16.00	7.77	25.71	7,100	4.0	<2.0	7.9	<2.0	76	1.40	8.2	
12/1/2011	P		8.00	16.00	8.56	24.92	4,100	9.3	1.3	8.5	<1.0	180	0.53	7.3	lw
6/21/2012	P		8.00	16.00	8.56	24.92	5,000	4.6	<2.5	3.6	<2.5	120	1.38	6.97	lw
12/20/2012	P		8.00	16.00	8.13	25.35	2,400	4.1	0.91	5.0	<1.0	110	2.96	7.84	
6/13/2013	P		8.00	16.00	9.03	24.45	2,300	3.1	0.93	4.9	<1.0	94	1.05	6.80	
12/2/2013	P		8.00	16.00	9.53	23.95	1,400	1.9	0.50	2.3	<1.0	88	1.46	6.55	
5/27/2014	**P**		**8.00**	**16.00**	**9.08**	**24.40**	**2,000**	**1.6**	**0.64**	**3.0**	**<1.0**	**82**	**0.93**	**6.94**	

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

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

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

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

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

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

Values for DO and pH were obtained through field measurements

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

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

2. Summary of Fuel Additives Analytical Data

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

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
6/20/2000	--	--	<10	--	--	--	--	--	
9/29/2000	--	--	<2.5	--	--	--	--	--	
12/17/2000	--	--	<2.5	--	--	--	--	--	
3/23/2001	--	--	<2.5	--	--	--	--	--	
6/20/2001	--	--	<2.5	--	--	--	--	--	
9/22/2001	--	--	<2.5	--	--	--	--	--	
12/28/2001	--	--	<2.5	--	--	--	--	--	
3/14/2002	--	--	170	--	--	--	--	--	
7/19/2002	--	--	11	--	--	--	--	--	
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/19/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/21/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/13/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/27/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-2									
9/29/2000	--	--	<2.5	--	--	--	--	--	
12/17/2000	--	--	<2.5	--	--	--	--	--	
3/23/2001	--	--	<2.5	--	--	--	--	--	
6/20/2001	--	--	<2.5	--	--	--	--	--	
9/22/2001	--	--	<2.5	--	--	--	--	--	
12/28/2001	--	--	<2.5	--	--	--	--	--	
3/14/2002	--	--	<2.5	--	--	--	--	--	
7/19/2002	--	--	<2.5	--	--	--	--	--	
10/9/2002	--	--	<2.5	--	--	--	--	--	
03/28/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

2. Summary of Fuel Additives Analytical Data

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

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-2 Cont.									
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/19/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/21/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/13/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/27/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-3									
9/29/2000	--	--	128	--	--	--	--	--	
12/17/2000	--	--	46.7	--	--	--	--	--	
3/23/2001	--	--	26.8	--	--	--	--	--	
6/20/2001	--	--	30	--	--	--	--	--	
9/22/2001	--	--	12	--	--	--	--	--	
12/28/2001	--	--	6.2	--	--	--	--	--	
3/14/2002	--	--	47	--	--	--	--	--	
7/19/2002	--	--	330	--	--	--	--	--	
10/9/2002	--	--	61	--	--	--	--	--	
03/28/2003	<100	<20	45	<0.50	<0.50	0.73	<0.50	<0.50	
4/7/2003	<100	<20	56	<0.50	<0.50	0.72	<0.50	<0.50	
7/9/2003	<1,000	<200	87	<5.0	<5.0	<5.0	<5.0	<5.0	
10/08/2003	<100	<20	25	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	9.8	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	15	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	7.3	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	c
6/12/2009	<300	<10	0.53	<0.50	<0.50	<0.50	<0.50	<0.50	
11/6/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

2. Summary of Fuel Additives Analytical Data

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

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
6/4/2010	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/19/2011	<300	<10	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
12/1/2011	<300	<10	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/21/2012	<300	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
12/20/2012	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/13/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/2/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/27/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-4									
9/29/2000	--	--	12.2	--	--	--	--	--	
12/17/2000	--	--	5.81	--	--	--	--	--	
3/23/2001	--	--	3.04	--	--	--	--	--	
6/20/2001	--	--	<2.5	--	--	--	--	--	
9/22/2001	--	--	5.2	--	--	--	--	--	
12/28/2001	--	--	4.3	--	--	--	--	--	
3/14/2002	--	--	5.1	--	--	--	--	--	
7/19/2002	--	--	30	--	--	--	--	--	
10/9/2002	--	--	28	--	--	--	--	--	
03/28/2003	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/08/2003	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	c

2. Summary of Fuel Additives Analytical Data

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

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/6/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/19/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/1/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/21/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/20/2012	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/13/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/2/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/27/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-5									
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/6/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/19/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/1/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/21/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/20/2012	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/13/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
12/2/2013	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/27/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-6									
6/12/2009	<300	<10	59	<0.50	<0.50	5.2	<0.50	<0.50	
11/6/2009	<300	24	37	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	17	190	<0.50	<0.50	17	<0.50	<0.50	
11/19/2010	<600	<20	130	<1.0	<1.0	<1.0	<1.0	<1.0	
5/19/2011	<1,200	<40	76	<2.0	<2.0	6.1	<2.0	<2.0	
12/1/2011	<600	31	180	<1.0	<1.0	18	<1.0	<1.0	

2. Summary of Fuel Additives Analytical Data

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

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-6 Cont.									
6/21/2012	<1,500	<50	120	<2.5	<2.5	9.1	<2.5	<2.5	
12/20/2012	<150	12	110	<0.50	<0.50	9.2	<0.50	<0.50	
6/13/2013	<150	13	94	<0.50	<0.50	7.5	<0.50	<0.50	
12/2/2013	<150	11	88	<0.50	<0.50	6.2	<0.50	<0.50	
5/27/2014	**<150**	**<10**	**82**	**<0.50**	**<0.50**	**6.1**	**<0.50**	**<0.50**	

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

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

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

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

3. Summary of Groundwater Gradient - Direction and Magnitude

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

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
3/23/2001	Southwest	0.011
6/20/2001	Southwest	0.013
9/22/2001	Southwest	0.012
12/28/2001	Southwest	0.010
3/14/2002	Southwest	0.011
4/18/2002	Southwest	0.012
7/19/2002	Southwest	0.012
10/9/2002	Southwest	0.013
3/28/2003	Southwest	0.013
4/7/2003	Southwest	0.011
7/9/2003	Southwest	0.010
10/8/2003	Southwest	0.010
1/15/2004	Southwest	0.008
4/5/2004	South-Southwest	0.004
7/12/2004	South and Southwest	0.003 and 0.005
10/19/2004	Southwest	0.004
1/11/2005	Southwest (a) to Southeast (b)	0.005 to 0.004
4/14/2005	Southeast	0.004
8/1/2005	Southwest	0.002
7/31/2006	South-Southwest	0.003
6/12/2009	South	0.003
11/6/2009	South-Southwest	0.003
6/4/2010	South-Southwest	0.004
11/19/2010	South-Southwest	0.003
5/19/2011	South-Southeast	0.003
12/1/2011	South-Southwest	0.001
6/21/2012	South-Southwest	0.003
12/20/2012	South-Southwest	0.003
6/13/2013	South-Southwest	0.003
12/2/2013	Southwest	0.003
5/27/2014	**Southwest**	**0.003**

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

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

QUALITY ASSURANCE/QUALITY CONTROL
FIELD METHODS

Field methods discussed herein were implemented to provide for accuracy and reliability of field activities, data collection, sample collection, and handling. Discussion of these methods is provided below.

1.0 Equipment Calibration

Equipment calibration was performed per equipment manufacturer specifications before use.

2.0 Depth to Groundwater and Light Non-Aqueous Phase Liquid Measurement

Depth to groundwater was measured in wells identified for gauging in the scope of work using a decontaminated water level indicator. The depth to water measurement was taken from a cut notch or permanent mark at the top of the well casing to which the well head elevation was originally surveyed.

Once depth to water was measured, an oil/water interface meter or a new disposable bailer was utilized to evaluate the presence and, if present, to measure the "apparent" thickness of light non-aqueous phase liquid (LNAPL) in the well. If LNAPL was present in the well, groundwater purging and sampling were not performed, unless sampling procedures in the scope of work specified collection of samples in the presence of LNAPL. Otherwise, time allowing, LNAPL was bailed from the well using either a new disposable bailer, or the disposal bailer previously used for initial LNAPL assessment. Bailing of LNAPL continued until the thickness of LNAPL (or volume) stabilized in each bailer pulled from the well, or LNAPL was no longer present. After LNAPL thickness either stabilized or was eliminated, periodic depth to water and depth to LNAPL measurements were collected as product came back into the well to evaluate product recovery rate and to aid in further assessment of LNAPL in the subsurface. LNAPL thickness measurements were recorded as "apparent." If a bailer was used for LNAPL thickness measurement, the field sampler noted the bailer entry diameter and chamber diameter to enable correction of thickness measurements. Recovered LNAPL was stored on-site in a labeled steel drum(s) or other appropriate container(s) prior to disposal.

3.0 Well Purging and Groundwater Sample Collection

Well purging and groundwater sampling were performed in wells specified in the scope of work after measuring depth to groundwater and evaluating the presence of LNAPL. Purging and sampling were performed using one of the methods detailed below. The method used was noted in the field records. Purge water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal or on-site treatment (in cases where treatment using an on-site system is authorized).

3.1 Purging a Predetermined Well Volume

Purging a predetermined well volume is performed per ASTM International (ASTM) D4448-01. This purging method has the objective of removing a predetermined volume of stagnant water from the well prior to sampling. The volume of stagnant water is defined as either the volume of water contained within the well casing, or the volume within the well casing and sand/gravel in the annulus if natural flow through these is deemed insufficient to keep them flushed out.

This purging method involves removal of a minimum of three stagnant water volumes from the well using a decontaminated pump with new disposable plastic discharge or suction tubing, dedicated well tubing, or using a new disposable or decontaminated reusable bailer. If a new disposable bailer was used for assessment of LNAPL, that bailer may be used for purging. The withdrawal rate used is one that minimizes drawdown while satisfying time constraints.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity[1]. Parameters are considered stable when two (2) consecutive readings recorded three (3) minutes apart fall within ranges provided below in Table 1. In the event that the parameters have not stabilized and five (5) well casing volumes have been removed, purging activities will cease and be considered complete. Once the well is purged, a groundwater sample(s) is collected from the well using a new disposable bailer. If a new disposable bailer was used for purging, that bailer may be used to collect the sample(s). A sample is not collected if the well is inadvertently purged dry.

Table 1. Criteria for Defining Stabilization of Water-Quality Indicator Parameters

Parameter	Stabilization Criterion
Temperature	± 0.2ºC (± 0.36ºF)
pH	± 0.1 standard units
Conductivity	± 3%
Dissolved oxygen	± 10%
Oxidation reduction potential	± 10 mV
Turbidity[1]	± 10% or 1.0 NTU (whichever is greater)

3.2 Low-Flow Purging and Sampling

“Low-Flow”, “Minimal Drawdown”, or "Low-Stress” purging is performed per ASTM D6771-02. It is a method of groundwater removal from within a well’s screened interval that is intended to

[1] As stated in ASTM D6771-02, turbidity is not a chemical parameter and not indicative of when formation-quality water is being purged; however, turbidity may be helpful in evaluating stress on the formation during purging. Turbidity measurements are taken at the same time that stabilization parameter measurements are made, or, at a minimum, once when purging is initiated and again just prior to sample collection, after stabilization parameters have stabilized. To avoid artifacts in sample analysis, turbidity should be as low as possible when samples are collected. If turbidity values are persistently high, the withdrawal rate is lowered until turbidity decreases. If high turbidity persists even after lowering the withdrawal rate, the purging is stopped for a period of time until turbidity settles, and the purging process is then restarted. If this fails to solve the problem, the purging/sampling process for the well is ceased, and well maintenance or redevelopment is considered.

minimize drawdown and mixing of the water column in the well casing. This is accomplished by pumping the well using a decontaminated pump with new disposable plastic discharge or suction tubing or dedicated well tubing at a low flow rate while evaluating the groundwater elevation during pumping.

The low flow pumping rate is well specific and is generally established at a volume that is less than or equal to the natural recovery rate of the well. A pump with adjustable flow rate control is positioned with the intake at or near the mid-point of the submerged well screen. The pumping rate used during low-flow purging is low enough to minimize mobilization of particulate matter and drawdown (stress) of the water column. Low-flow purging rates will vary based on the individual well characteristics; however, the purge rate should not exceed 1.0 Liter per minute (L/min) or 0.25 gallon per minute (gal/min). Low-flow purging should begin at a rate of approximately 0.1 L/min (0.03 gal/min)[2], or the lowest rate possible, and be adjusted based on an evaluation of drawdown. Water level measurements should be recorded at approximate one (1) to two (2) minute intervals until the low-flow rate has been established, and drawdown is minimized. As a general rule, drawdown should not exceed 25% of the distance between the top of the water column and the pump in-take.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity[1]. The frequency between measurements will be at an interval of one (1) to three (3) minutes; however, if a flow cell is used, the frequency will be determined based on the time required to evacuate one cell volume. Stabilization is defined as three (3) consecutive readings recorded several minutes apart falling within ranges provided in Table 1. Samples will be collected by filling appropriate containers from the pump discharge tubing at a rate not to exceed the established pumping rate.

3.3 Minimal Purge, Discrete Depth, and Passive Sampling

Per ASTM D4448-01, sampling techniques that do not rely on purging, or require only minimal purging, may be used if a particular zone within a screened interval is to be sampled or if a well is not capable of yielding sufficient groundwater for purging. To properly use these sampling techniques, a water sample is collected within the screened interval with little or no mixing of the water column within the casing. These techniques include minimal purge sampling which uses a dedicated sampling pump capable of pumping rates of less than 0.1 L/min (0.03 gal/min)[2], discrete depth sampling using a bailer that allows groundwater entry at a controlled depth (e.g. differential pressure bailer), or passive (diffusion) sampling. These techniques are based on certain studies referenced in ASTM D4448-01 that indicate that under certain conditions, natural groundwater flow is laminar and horizontal with little or no mixing within the well screen.

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[2] According to ASTM D4448-01, studies have indicated that at flow rates of 0.1 L/min, low-density polyethylene (LDPE) and plasticized polypropylene tubing materials are prone to sorption. Therefore, TFE-fluorocarbon or other appropriate tubing material is used, particularly when tubing lengths of 50 feet or longer are used.

4.0 Decontamination

Reusable groundwater sampling equipment were cleaned using a solution of Alconox or other acceptable detergent, rinsed with tap water, and finally rinsed with distilled water prior to use in each well. Decontamination water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal.

5.0 Sample Containers, Labeling, and Storage

Samples were collected in laboratory prepared containers with appropriate preservative (if preservative was required). Samples were properly labeled (site name, sample I.D., sampler initials, date, and time of collection) and stored chilled (refrigerator or ice chest with ice) until delivery to a certified laboratory, under chain of custody procedures.

6.0 Chain of Custody Record and Procedure

The field sampler was personally responsible for care and custody of the samples collected until they were properly transferred to another party. To document custody and transfer of samples, a Chain of Custody Record was prepared. The Chain of Custody Record provided identification of the samples corresponding to sample labels and specified analyses to be performed by the laboratory. The original Chain of Custody Record accompanied the shipment, and a copy of the record was stored in the project file. When the samples were transferred, the individuals relinquishing and receiving them signed, dated, and noted the time of transfer on the record.

7.0 Field Records

Daily Report and data forms were completed by staff personnel to provide daily record of significant events, observations, and measurements. Field records were signed, dated, and stored in the project file.

APPENDIX B

FIELD DATA SHEETS

BROADBENT

DAILY REPORT

Page ____ of ____

Project: BP 2162 Project No.: 06-57-620

Field Representative(s): A. Martinez / S. Jones Day: Tuesday Date: 5/27/14

Time Onsite: From: 0900 To: 1230; From: _____ To: _____; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest

✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves

✓ Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Sunny

Equipment In Use: Peristaltic pump, H_2O meter, UST meter

Visitors: None.

TIME:	WORK DESCRIPTION:
0900	Arrived onsite and conducted tailgate.
0935	Set up @ MW-4
1005	Set up @ MW-3
1035	Set up @ MW-1
1055	Set up @ MW-2
1115	Set up @ MW-6
1145	Set up @ MW-5
1230	Completed fieldwork & offsite.

Signature: _____

Revision: 1/24/2012

BROADBENT

GROUNDWATER MONITORING SITE SHEET

Page _____ of _____

Project: BP 2167 Project No.: _____ Date: _____

Field Representative: _____ Elevation: _____

Formation recharge rate is historically: High Low *(circle one)*

W. L. Indicator ID #: _____ Oil/Water Interface ID #: _____ *(List #s of all equip used.)*

WELL ID RECORD					WELL GAUGING RECORD					NOTES
Well ID	Well Sampling Order	As-Built Well Diameter (inches)	As-Built Well Screen Interval (ft)	Previous Depth to Water (ft)	Time (24:00)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)*	Depth to Water (ft)	Well Total Depth (ft)	
MW-1					1034			9.03	15.93	
MW-2					1057			8.19	16.02	
MW-3					1009			8.43	15.03	
MW-4					0941			9.63	17.77	
MW-5					1147			9.34	16.14	
MW-6					1120			9.08	16.15	

* Device used to measure LNAPL thickness: Bailer Oil/Water Interface Meter *(circle one)*

If bailer used, note bailer dimensions (inches): Entry Diameter _____ Chamber Diameter _____

Signature: _____

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP 2162 Project No.: 06-88-620 Date: 5/27/14

Field Representative: SJ/AM

Well ID: MW-1 Start Time: _____ End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT ~~Disp. Bailer~~ ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
Good X Improvement Needed *(circle one)*

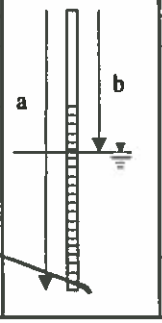
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow X Other: *(circle one)*

PREDETERMINED WELL VOLUME

~~Casing Diameter~~ | Unit Volume (gal/ft) *(circle one)*

1" | (0.04)	1.25" | (0.08)	2" | (0.17)	3" | (0.38)	Other:
4" | (0.66)	6" | (1.50)	8" | (2.60)	12" | (5.81)	___" | (___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 15.13 (ft)
Initial Depth to Water (b): 9.03 (ft)
Pump In-take Depth = b + (a-b)/2: 12.48 (ft)
Maximum Allowable Drawdown = (a-b)/8: 0.86 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1040	0.0	25.64	7.13	0.792	3.99	127	0.0	
1042	0.5	25.61	7.13	0.793	3.63	125	0.0	
1044	1.0	24.78	7.11	0.804	3.01	125	0.0	
1046	1.5	24.05	7.08	0.816	2.90	125	0.0	
1048	2.0	23.66	7.07	0.821	2.82	130	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 9.09 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: MW-1 Sample Collection Time: 1050 (24:00)
Containers (#): X VOA (6 preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: TT 2162 Project No.: 06-88-620 Date: 5/27/14

Field Representative: SJ/AM

Well ID: MW-2 Start Time: _____ End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
Good Improvement Needed *(circle one)*

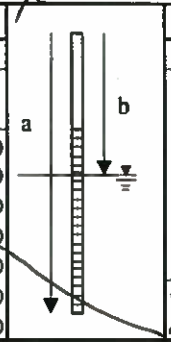
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04)	1.25" | (0.08)	2" | (0.17)	3" | (0.38)	Other:
4" | (0.66)	6" | (1.50)	8" | (2.60)	12" | (5.81)	___" | (___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 16.02 (ft)
Initial Depth to Water (b): 8.19 (ft)
Pump In-take Depth = b + (a-b)/2: 12.105 (ft)
Maximum Allowable Drawdown = (a-b)/8: 0.98 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1101	0.0	22.83	7.25	0.773	2.77	129	0.0	
1103	0.5	22.50	7.22	0.775	1.85	130	0.0	
1105	1.0	22.28	7.18	0.776	1.49	130	0.0	
1107	1.5	22.15	7.15	0.777	1.32	130	0.0	
1109	2.0	22.08	7.14	0.777	1.24	130	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 8.23 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: MW-2 Sample Collection Time: 1110 (24:00)
Containers (#): X VOA (6 preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP 2162 Project No.: 06-88620 Date: 5/27/14

Field Representative: SJ/AM

Well ID: MW-3 Start Time: _____ End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump ✓ Flow Cell
___ Disp. Tubing ___ 12V Pump ✓ Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
✓ Good Improvement Needed *(circle one)*

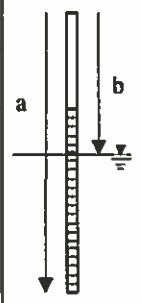
PURGING/SAMPLING METHOD Predetermined Well Volume Low Flow ✓ Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04) 1.25" | (0.08) 2" | (0.17) 3" | (0.38) Other:
4" | (0.66) 6" | (1.50) 8" | (2.60) 12" | (5.81) ___" | (___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 15.03 (ft)
Initial Depth to Water (b): 8.43 (ft)
Pump In-take Depth = b + (a-b)/2: 11.73 (ft)
Maximum Allowable Drawdown = (a-b)/8: 0.83 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments: _____

**Low flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or (mS)	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1012	0.0	23.19	7.15	0.707	3.63	106	0.0	
1014	0.5	23.18	7.18	0.705	2.34	107	0.0	
1016	1.0	23.19	7.22	0.705	1.52	108	0.0	
1018	1.5	23.20	7.23	0.702	1.30	109	0.0	
1020	2.0	23.25	7.23	0.700	1.20	110	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD ✓ Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 8.47 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
✓ Disp. Pump Tubing Other:
Sample ID: MW-3 Sample Collection Time: 1020 (24:00)
Containers (#): 6 VOA (6 preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP 2162 Project No.: 06-88-620 Date: 5/27/14

Field Representative: SD/AM

Well ID: MW-4 Start Time: _____ End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
Good Improvement Needed *(circle one)*

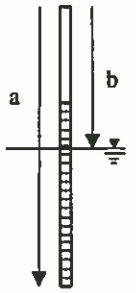
PURGING/SAMPLING METHOD Predetermined Well Volume Low Flow Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04) 1.25" | (0.08) 2" | (0.17) 3" | (0.38) Other:
4" | (0.66) 6" | (1.50) 8" | (2.60) 12" | (5.81) ___" | (___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 17.77 (ft)
Initial Depth to Water (b): 9.63 (ft)
Pump In-take Depth = b + (a-b)/2: 13.7 (ft)
Maximum Allowable Drawdown = (a-b)/8: 1.02 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0949	0.0	22.56	8.13	0.864	2.75	61	0.0	
0951	0.5	22.39	7.64	0.860	1.90	72	0.0	
0953	1.0	22.32	7.41	0.863	1.56	77	0.0	
0955	1.5	22.28	7.28	0.859	1.37	79	0.0	
0957	2.0	22.26	7.22	0858	1.27	82	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 9.63 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
___ Disp. Pump Tubing Other:
Sample ID: _____ Sample Collection Time: 1600 (24:00)
Containers (#): ___ VOA (___ preserved or ___ unpreserved) ___ Liter Amber
___ Other: _____ ___ Other: _____
___ Other: _____ ___ Other: _____

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP 2162 Project No.: 06-88-620 Date: 5/27/14

Field Representative: _____

Well ID: MW-5 Start Time: _____ End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments: _____
Good Improvement Needed *(circle one)*

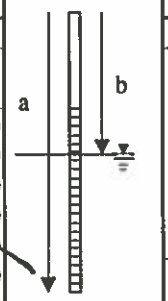
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1"|(0.04) 1.25"|(0.08) 2"|(0.17) 3"|(0.38) Other:
4"|(0.66) 6"|(1.50) 8"|(2.60) 12"|(5.81) ___"|(___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 16.14 (ft)
Initial Depth to Water (b): 9.34 (ft)
Pump In-take Depth = b + (a-b)/2: 12.74 (ft)
Maximum Allowable Drawdown = (a-b)/8: 0.85 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments: _____

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1152	0.0	25.56	7.27	0.755	1.86	52	0.0	
1154	0.5	23.72	7.22	0.779	1.05	49	0.0	
1156	1.0	23.54	7.18	0.782	0.81	43	0.0	
1158	1.5	23.11	7.15	0.788	0.72	38	0.0	
1200	2.0	22.83	7.13	0.793	0.69	33	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 9.38 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: MW-5 Sample Collection Time: 1200 (24:00)
Containers (#): X VOA (6 preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ ___ Other: ___
___ Other: ___ ___ Other: ___

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Page ____ of ____

Project: BP 2162 Project No.: 06-88-620 Date: 5/27/14

Field Representative: SS/AM

Well ID: MW-6 Start Time: _____ End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
X Good ___ Improvement Needed *(circle one)*

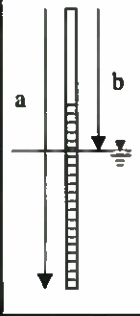
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow X Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04) 1.25" | (0.08) 2" | (0.17) 3" | (0.38) Other:
4" | (0.66) 6" | (1.50) 8" | (2.60) 12" | (5.81) ___" | (___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 16.15 (ft)
Initial Depth to Water (b): 9.08 (ft)
Pump In-take Depth = b + (a-b)/2: 12.62 (ft)
Maximum Allowable Drawdown = (a-b)/8: 0.88 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1124	0.0	25.60	7.06	0.911	3.48	28	0.0	
1126	0.5	25.54	6.99	0.908	1.96	-66	0.0	
1128	1.0	25.30	6.94	0.906	1.25	-124	0.0	
1130	1.5	25.24	6.93	0.900	1.02	-138	0.0	
1132	2.0	25.09	6.94	0.893	0.93	-146	0.0	Moderate Hydrocarbon ODOR
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 9.10 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: MW-6 Sample Collection Time: 1135 (24:00)
Containers (#): X VOA (6 preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

Revision: 3/15/2013

APPENDIX C

LABORATORY REPORT
AND CHAIN-OF-CUSTODY DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

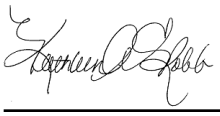
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-79383-1
Client Project/Site: ARCO 2162, San Leandro

For:
Broadbent & Associates, Inc.
875 Cotting Lane
Suite G
Vacaville, California 95688

Attn: Kristene Tidwell



Authorized for release by:
6/6/2014 1:57:09 PM

Kathleen Robb, Project Manager II
(949)261-1022
kathleen.robb@testamericainc.com

Table of Contents

Sample Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-79383-1	MW-1	Water	05/27/14 10:50	05/28/14 11:10
440-79383-2	MW-2	Water	05/27/14 11:10	05/28/14 11:10
440-79383-3	MW-3	Water	05/27/14 10:20	05/28/14 11:10
440-79383-4	MW-4	Water	05/27/14 10:00	05/28/14 11:10
440-79383-5	MW-5	Water	05/27/14 12:00	05/28/14 11:10
440-79383-6	MW-6	Water	05/27/14 11:35	05/28/14 11:10

Job ID: 440-79383-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-79383-1

Comments
No additional comments.

Receipt
The samples were received on 5/28/2014 11:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

Except:

The following sample (TB-2162-05272014) was received at the laboratory without a sample collection time documented on the chain of custody: TB-2162-05272014 (440-79383-7). The sample was logged in with a sampling time of 12:01AM.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-1
Date Collected: 05/27/14 10:50
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-1
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 15:22	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 15:22	1
Benzene	ND		0.50		ug/L			06/03/14 15:22	1
Ethanol	ND		150		ug/L			06/03/14 15:22	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 15:22	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 15:22	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 15:22	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 15:22	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 15:22	1
o-Xylene	ND		0.50		ug/L			06/03/14 15:22	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 15:22	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 15:22	1
Toluene	ND		0.50		ug/L			06/03/14 15:22	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/03/14 15:22*	*1*
Dibromofluoromethane (Surr)	*113*		*76 - 132*		*06/03/14 15:22*	*1*
Toluene-d8 (Surr)	*97*		*80 - 128*		*06/03/14 15:22*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			06/03/14 06:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*65 - 140*		*06/03/14 06:42*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-2
Date Collected: 05/27/14 11:10
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-2
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 13:42	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 13:42	1
Benzene	ND		0.50		ug/L			06/03/14 13:42	1
Ethanol	ND		150		ug/L			06/03/14 13:42	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 13:42	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 13:42	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 13:42	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 13:42	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 13:42	1
o-Xylene	ND		0.50		ug/L			06/03/14 13:42	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 13:42	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 13:42	1
Toluene	ND		0.50		ug/L			06/03/14 13:42	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/03/14 13:42*	*1*
Dibromofluoromethane (Surr)	*96*		*76 - 132*		*06/03/14 13:42*	*1*
Toluene-d8 (Surr)	*104*		*80 - 128*		*06/03/14 13:42*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**55**		50		ug/L			06/03/14 07:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*65 - 140*		*06/03/14 07:07*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-3
Date Collected: 05/27/14 10:20
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-3
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 04:13	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 04:13	1
Benzene	ND		0.50		ug/L			06/03/14 04:13	1
Ethanol	ND		150		ug/L			06/03/14 04:13	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 04:13	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 04:13	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 04:13	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 04:13	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 04:13	1
o-Xylene	ND		0.50		ug/L			06/03/14 04:13	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 04:13	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 04:13	1
Toluene	ND		0.50		ug/L			06/03/14 04:13	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 04:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/03/14 04:13*	*1*
Dibromofluoromethane (Surr)	*97*		*76 - 132*		*06/03/14 04:13*	*1*
Toluene-d8 (Surr)	*102*		*80 - 128*		*06/03/14 04:13*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			06/03/14 07:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*65 - 140*		*06/03/14 07:33*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-4
Date Collected: 05/27/14 10:00
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-4
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 04:41	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 04:41	1
Benzene	ND		0.50		ug/L			06/03/14 04:41	1
Ethanol	ND		150		ug/L			06/03/14 04:41	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 04:41	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 04:41	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 04:41	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 04:41	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 04:41	1
o-Xylene	ND		0.50		ug/L			06/03/14 04:41	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 04:41	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 04:41	1
Toluene	ND		0.50		ug/L			06/03/14 04:41	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 04:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/03/14 04:41*	*1*
Dibromofluoromethane (Surr)	*98*		*76 - 132*		*06/03/14 04:41*	*1*
Toluene-d8 (Surr)	*102*		*80 - 128*		*06/03/14 04:41*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			06/03/14 07:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*65 - 140*		*06/03/14 07:59*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-5
Date Collected: 05/27/14 12:00
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-5
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 15:03	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 15:03	1
Benzene	ND		0.50		ug/L			06/03/14 15:03	1
Ethanol	ND		150		ug/L			06/03/14 15:03	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 15:03	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 15:03	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 15:03	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 15:03	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 15:03	1
o-Xylene	ND		0.50		ug/L			06/03/14 15:03	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 15:03	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 15:03	1
Toluene	ND		0.50		ug/L			06/03/14 15:03	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/03/14 15:03*	*1*
Dibromofluoromethane (Surr)	*96*		*76 - 132*		*06/03/14 15:03*	*1*
Toluene-d8 (Surr)	*104*		*80 - 128*		*06/03/14 15:03*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			06/04/14 00:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*65 - 140*		*06/04/14 00:39*	*1*

Client Sample ID: MW-6
Date Collected: 05/27/14 11:35
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-6
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/04/14 23:33	1
1,2-Dichloroethane	ND		0.50		ug/L			06/04/14 23:33	1
Benzene	**1.6**		0.50		ug/L			06/04/14 23:33	1
Ethanol	ND		150		ug/L			06/04/14 23:33	1
Ethylbenzene	**3.0**		0.50		ug/L			06/04/14 23:33	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/04/14 23:33	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/04/14 23:33	1
m,p-Xylene	ND		1.0		ug/L			06/04/14 23:33	1
Methyl-t-Butyl Ether (MTBE)	**82**		0.50		ug/L			06/04/14 23:33	1
o-Xylene	**0.61**		0.50		ug/L			06/04/14 23:33	1
Tert-amyl-methyl ether (TAME)	**6.1**		0.50		ug/L			06/04/14 23:33	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/04/14 23:33	1
Toluene	**0.64**		0.50		ug/L			06/04/14 23:33	1
Xylenes, Total	ND		1.0		ug/L			06/04/14 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*06/04/14 23:33*	*1*
Dibromofluoromethane (Surr)	*98*		*76 - 132*		*06/04/14 23:33*	*1*
Toluene-d8 (Surr)	*112*		*80 - 128*		*06/04/14 23:33*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**2000**		500		ug/L			06/04/14 01:07	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*65 - 140*		*06/04/14 01:07*	*10*

Method Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Method	Method Description	Protocol	Laboratory
8260B/5030B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B/5030B	Gasoline Range Organics (GC)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-1

Lab Sample ID: 440-79383-1

Date Collected: 05/27/14 10:50

Matrix: Water

Date Received: 05/28/14 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	186335	06/03/14 15:22	SS	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	186306	06/03/14 06:42	IM	TAL IRV

Client Sample ID: MW-2

Lab Sample ID: 440-79383-2

Date Collected: 05/27/14 11:10

Matrix: Water

Date Received: 05/28/14 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	186336	06/03/14 13:42	SS	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	186306	06/03/14 07:07	IM	TAL IRV

Client Sample ID: MW-3

Lab Sample ID: 440-79383-3

Date Collected: 05/27/14 10:20

Matrix: Water

Date Received: 05/28/14 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	186254	06/03/14 04:13	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	186306	06/03/14 07:33	IM	TAL IRV

Client Sample ID: MW-4

Lab Sample ID: 440-79383-4

Date Collected: 05/27/14 10:00

Matrix: Water

Date Received: 05/28/14 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	186254	06/03/14 04:41	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	186306	06/03/14 07:59	IM	TAL IRV

Client Sample ID: MW-5

Lab Sample ID: 440-79383-5

Date Collected: 05/27/14 12:00

Matrix: Water

Date Received: 05/28/14 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	186336	06/03/14 15:03	SS	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	186379	06/04/14 00:39	IM	TAL IRV

Client Sample ID: MW-6

Lab Sample ID: 440-79383-6

Date Collected: 05/27/14 11:35

Matrix: Water

Date Received: 05/28/14 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	186773	06/04/14 23:33	WC	TAL IRV

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Client Sample ID: MW-6
Date Collected: 05/27/14 11:35
Date Received: 05/28/14 11:10

Lab Sample ID: 440-79383-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015B/5030B		10	10 mL	10 mL	186379	06/04/14 01:07	IM	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-186254/4
Matrix: Water
Analysis Batch: 186254

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/02/14 19:25	1
1,2-Dichloroethane	ND		0.50		ug/L			06/02/14 19:25	1
Benzene	ND		0.50		ug/L			06/02/14 19:25	1
Ethanol	ND		150		ug/L			06/02/14 19:25	1
Ethylbenzene	ND		0.50		ug/L			06/02/14 19:25	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/02/14 19:25	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/02/14 19:25	1
m,p-Xylene	ND		1.0		ug/L			06/02/14 19:25	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/02/14 19:25	1
o-Xylene	ND		0.50		ug/L			06/02/14 19:25	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/02/14 19:25	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/02/14 19:25	1
Toluene	ND		0.50		ug/L			06/02/14 19:25	1
Xylenes, Total	ND		1.0		ug/L			06/02/14 19:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/02/14 19:25*	*1*
Dibromofluoromethane (Surr)	*93*		*76 - 132*		*06/02/14 19:25*	*1*
Toluene-d8 (Surr)	*103*		*80 - 128*		*06/02/14 19:25*	*1*

Lab Sample ID: LCS 440-186254/5
Matrix: Water
Analysis Batch: 186254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	24.8		ug/L		99	70 - 130		
1,2-Dichloroethane			25.0	23.2		ug/L		93	57 - 138		
Benzene			25.0	25.2		ug/L		101	68 - 130		
Ethanol			250	225		ug/L		90	50 - 149		
Ethylbenzene			25.0	26.9		ug/L		108	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	23.1		ug/L		92	60 - 136		
Isopropyl Ether (DIPE)			25.0	23.7		ug/L		95	58 - 139		
m,p-Xylene			50.0	51.2		ug/L		102	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	25.5		ug/L		102	63 - 131		
o-Xylene			25.0	25.1		ug/L		101	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	23.1		ug/L		92	57 - 139		
tert-Butyl alcohol (TBA)			125	128		ug/L		102	70 - 130		
Toluene			25.0	25.8		ug/L		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*76 - 132*
Toluene-d8 (Surr)	*101*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-79574-A-10 MS
Matrix: Water
Analysis Batch: 186254

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	25.6		ug/L		102	70 - 131
1,2-Dichloroethane	ND		25.0	24.0		ug/L		96	56 - 146
Benzene	ND		25.0	25.2		ug/L		101	66 - 130
Ethanol	ND		250	223		ug/L		89	54 - 150
Ethylbenzene	ND		25.0	27.2		ug/L		109	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	23.6		ug/L		94	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	23.2		ug/L		93	64 - 138
m,p-Xylene	ND		50.0	51.8		ug/L		104	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	25.3		ug/L		101	70 - 130
o-Xylene	ND		25.0	25.3		ug/L		101	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	24.3		ug/L		97	68 - 133
tert-Butyl alcohol (TBA)	ND		125	132		ug/L		105	70 - 130
Toluene	ND		25.0	25.8		ug/L		103	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*76 - 132*
Toluene-d8 (Surr)	*103*		*80 - 128*

Lab Sample ID: 440-79574-A-10 MSD
Matrix: Water
Analysis Batch: 186254

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	24.4		ug/L		98	70 - 131	5	25
1,2-Dichloroethane	ND		25.0	23.1		ug/L		92	56 - 146	4	20
Benzene	ND		25.0	25.1		ug/L		100	66 - 130	0	20
Ethanol	ND		250	224		ug/L		89	54 - 150	0	30
Ethylbenzene	ND		25.0	27.0		ug/L		108	70 - 130	1	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	22.9		ug/L		92	70 - 130	3	25
Isopropyl Ether (DIPE)	ND		25.0	23.2		ug/L		93	64 - 138	0	25
m,p-Xylene	ND		50.0	51.2		ug/L		102	70 - 133	1	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	24.9		ug/L		100	70 - 130	1	25
o-Xylene	ND		25.0	25.4		ug/L		101	70 - 133	0	20
Tert-amyl-methyl ether (TAME)	ND		25.0	23.1		ug/L		93	68 - 133	5	30
tert-Butyl alcohol (TBA)	ND		125	131		ug/L		105	70 - 130	0	25
Toluene	ND		25.0	25.6		ug/L		103	70 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*76 - 132*
Toluene-d8 (Surr)	*103*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-186335/5
Matrix: Water
Analysis Batch: 186335

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 08:27	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 08:27	1
Benzene	ND		0.50		ug/L			06/03/14 08:27	1
Ethanol	ND		150		ug/L			06/03/14 08:27	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 08:27	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 08:27	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 08:27	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 08:27	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 08:27	1
o-Xylene	ND		0.50		ug/L			06/03/14 08:27	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 08:27	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 08:27	1
Toluene	ND		0.50		ug/L			06/03/14 08:27	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 08:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/03/14 08:27*	*1*
Dibromofluoromethane (Surr)	*109*		*76 - 132*		*06/03/14 08:27*	*1*
Toluene-d8 (Surr)	*97*		*80 - 128*		*06/03/14 08:27*	*1*

Lab Sample ID: LCS 440-186335/6
Matrix: Water
Analysis Batch: 186335

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	24.7		ug/L		99	70 - 130		
1,2-Dichloroethane			25.0	26.2		ug/L		105	57 - 138		
Benzene			25.0	20.3		ug/L		81	68 - 130		
Ethanol			250	164		ug/L		66	50 - 149		
Ethylbenzene			25.0	22.7		ug/L		91	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	26.1		ug/L		104	60 - 136		
Isopropyl Ether (DIPE)			25.0	24.7		ug/L		99	58 - 139		
m,p-Xylene			50.0	44.6		ug/L		89	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	24.9		ug/L		100	63 - 131		
o-Xylene			25.0	23.2		ug/L		93	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	24.9		ug/L		99	57 - 139		
tert-Butyl alcohol (TBA)			125	129		ug/L		103	70 - 130		
Toluene			25.0	22.3		ug/L		89	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*107*		*76 - 132*
Toluene-d8 (Surr)	*99*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-79285-F-20 MS
Matrix: Water
Analysis Batch: 186335

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	27.9		ug/L		112	70 - 131
1,2-Dichloroethane	ND		25.0	27.4		ug/L		110	56 - 146
Benzene	37		25.0	57.1		ug/L		82	66 - 130
Ethanol	ND		250	212		ug/L		85	54 - 150
Ethylbenzene	15		25.0	40.3		ug/L		100	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	27.0		ug/L		108	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	25.8		ug/L		103	64 - 138
m,p-Xylene	ND		50.0	51.2		ug/L		101	70 - 133
Methyl-t-Butyl Ether (MTBE)	1.3		25.0	27.8		ug/L		106	70 - 130
o-Xylene	ND		25.0	25.5		ug/L		102	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	26.1		ug/L		104	68 - 133
tert-Butyl alcohol (TBA)	ND		125	142		ug/L		109	70 - 130
Toluene	ND		25.0	24.0		ug/L		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*76 - 132*
Toluene-d8 (Surr)	*95*		*80 - 128*

Lab Sample ID: 440-79285-F-20 MSD
Matrix: Water
Analysis Batch: 186335

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	27.5		ug/L		110	70 - 131	1	25
1,2-Dichloroethane	ND		25.0	26.8		ug/L		107	56 - 146	2	20
Benzene	37		25.0	55.7		ug/L		77	66 - 130	2	20
Ethanol	ND		250	207		ug/L		83	54 - 150	2	30
Ethylbenzene	15		25.0	38.1		ug/L		91	70 - 130	6	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	26.6		ug/L		107	70 - 130	1	25
Isopropyl Ether (DIPE)	ND		25.0	25.6		ug/L		102	64 - 138	1	25
m,p-Xylene	ND		50.0	48.4		ug/L		96	70 - 133	6	25
Methyl-t-Butyl Ether (MTBE)	1.3		25.0	26.9		ug/L		103	70 - 130	3	25
o-Xylene	ND		25.0	25.0		ug/L		100	70 - 133	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	26.0		ug/L		104	68 - 133	1	30
tert-Butyl alcohol (TBA)	ND		125	140		ug/L		107	70 - 130	2	25
Toluene	ND		25.0	22.8		ug/L		90	70 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*76 - 132*
Toluene-d8 (Surr)	*97*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-186336/5
Matrix: Water
Analysis Batch: 186336

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/03/14 08:19	1
1,2-Dichloroethane	ND		0.50		ug/L			06/03/14 08:19	1
Benzene	ND		0.50		ug/L			06/03/14 08:19	1
Ethanol	ND		150		ug/L			06/03/14 08:19	1
Ethylbenzene	ND		0.50		ug/L			06/03/14 08:19	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/03/14 08:19	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/03/14 08:19	1
m,p-Xylene	ND		1.0		ug/L			06/03/14 08:19	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/03/14 08:19	1
o-Xylene	ND		0.50		ug/L			06/03/14 08:19	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/03/14 08:19	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/03/14 08:19	1
Toluene	ND		0.50		ug/L			06/03/14 08:19	1
Xylenes, Total	ND		1.0		ug/L			06/03/14 08:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/03/14 08:19*	*1*
Dibromofluoromethane (Surr)	*88*		*76 - 132*		*06/03/14 08:19*	*1*
Toluene-d8 (Surr)	*102*		*80 - 128*		*06/03/14 08:19*	*1*

Lab Sample ID: LCS 440-186336/6
Matrix: Water
Analysis Batch: 186336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	24.9		ug/L		100	70 - 130		
1,2-Dichloroethane			25.0	21.4		ug/L		85	57 - 138		
Benzene			25.0	23.1		ug/L		92	68 - 130		
Ethanol			250	235		ug/L		94	50 - 149		
Ethylbenzene			25.0	26.7		ug/L		107	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	19.6		ug/L		79	60 - 136		
Isopropyl Ether (DIPE)			25.0	20.1		ug/L		80	58 - 139		
m,p-Xylene			50.0	52.6		ug/L		105	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	20.3		ug/L		81	63 - 131		
o-Xylene			25.0	26.2		ug/L		105	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	20.5		ug/L		82	57 - 139		
tert-Butyl alcohol (TBA)			125	115		ug/L		92	70 - 130		
Toluene			25.0	24.3		ug/L		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*86*		*76 - 132*
Toluene-d8 (Surr)	*103*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-79416-D-1 MS
Matrix: Water
Analysis Batch: 186336

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	28.6		ug/L		114	70 - 131
1,2-Dichloroethane	ND		25.0	24.8		ug/L		99	56 - 146
Benzene	ND		25.0	24.6		ug/L		98	66 - 130
Ethanol	ND		250	271		ug/L		108	54 - 150
Ethylbenzene	ND		25.0	27.5		ug/L		110	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.3		ug/L		101	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	25.2		ug/L		101	64 - 138
m,p-Xylene	ND		50.0	55.5		ug/L		111	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.2		ug/L		105	70 - 130
o-Xylene	ND		25.0	27.9		ug/L		112	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	27.1		ug/L		109	68 - 133
tert-Butyl alcohol (TBA)	ND		125	131		ug/L		105	70 - 130
Toluene	ND		25.0	26.6		ug/L		106	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*76 - 132*
Toluene-d8 (Surr)	*103*		*80 - 128*

Lab Sample ID: 440-79416-D-1 MSD
Matrix: Water
Analysis Batch: 186336

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	27.8		ug/L		111	70 - 131	3	25
1,2-Dichloroethane	ND		25.0	25.1		ug/L		101	56 - 146	1	20
Benzene	ND		25.0	25.0		ug/L		100	66 - 130	2	20
Ethanol	ND		250	259		ug/L		104	54 - 150	4	30
Ethylbenzene	ND		25.0	27.9		ug/L		112	70 - 130	1	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	24.1		ug/L		96	70 - 130	5	25
Isopropyl Ether (DIPE)	ND		25.0	24.4		ug/L		98	64 - 138	3	25
m,p-Xylene	ND		50.0	55.6		ug/L		111	70 - 133	0	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	25.1		ug/L		100	70 - 130	4	25
o-Xylene	ND		25.0	28.5		ug/L		114	70 - 133	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	26.1		ug/L		104	68 - 133	4	30
tert-Butyl alcohol (TBA)	ND		125	127		ug/L		102	70 - 130	3	25
Toluene	ND		25.0	26.5		ug/L		106	70 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*76 - 132*
Toluene-d8 (Surr)	*104*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-186773/3
Matrix: Water
Analysis Batch: 186773

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			06/04/14 17:58	1
1,2-Dichloroethane	ND		0.50		ug/L			06/04/14 17:58	1
Benzene	ND		0.50		ug/L			06/04/14 17:58	1
Ethanol	ND		150		ug/L			06/04/14 17:58	1
Ethylbenzene	ND		0.50		ug/L			06/04/14 17:58	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			06/04/14 17:58	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			06/04/14 17:58	1
m,p-Xylene	ND		1.0		ug/L			06/04/14 17:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			06/04/14 17:58	1
o-Xylene	ND		0.50		ug/L			06/04/14 17:58	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			06/04/14 17:58	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			06/04/14 17:58	1
Toluene	ND		0.50		ug/L			06/04/14 17:58	1
Xylenes, Total	ND		1.0		ug/L			06/04/14 17:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*06/04/14 17:58*	*1*
Dibromofluoromethane (Surr)	*93*		*76 - 132*		*06/04/14 17:58*	*1*
Toluene-d8 (Surr)	*108*		*80 - 128*		*06/04/14 17:58*	*1*

Lab Sample ID: LCS 440-186773/4
Matrix: Water
Analysis Batch: 186773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	27.0		ug/L		108	70 - 130		
1,2-Dichloroethane			25.0	25.7		ug/L		103	57 - 138		
Benzene			25.0	26.4		ug/L		106	68 - 130		
Ethanol			250	264		ug/L		106	50 - 149		
Ethylbenzene			25.0	26.9		ug/L		108	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	25.4		ug/L		102	60 - 136		
Isopropyl Ether (DIPE)			25.0	26.5		ug/L		106	58 - 139		
m,p-Xylene			50.0	53.2		ug/L		106	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	25.9		ug/L		104	63 - 131		
o-Xylene			25.0	27.3		ug/L		109	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	26.2		ug/L		105	57 - 139		
tert-Butyl alcohol (TBA)			125	129		ug/L		103	70 - 130		
Toluene			25.0	26.2		ug/L		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*76 - 132*
Toluene-d8 (Surr)	*109*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-79587-D-1 MS
Matrix: Water
Analysis Batch: 186773

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	26.7		ug/L		107	70 - 131
1,2-Dichloroethane	ND		25.0	26.1		ug/L		104	56 - 146
Benzene	ND		25.0	25.0		ug/L		100	66 - 130
Ethanol	ND		250	272		ug/L		109	54 - 150
Ethylbenzene	ND		25.0	25.6		ug/L		103	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.2		ug/L		101	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	25.9		ug/L		103	64 - 138
m,p-Xylene	ND		50.0	51.1		ug/L		102	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	25.3		ug/L		101	70 - 130
o-Xylene	ND		25.0	26.8		ug/L		107	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	25.5		ug/L		102	68 - 133
tert-Butyl alcohol (TBA)	ND		125	124		ug/L		99	70 - 130
Toluene	ND		25.0	25.2		ug/L		101	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*76 - 132*
Toluene-d8 (Surr)	*108*		*80 - 128*

Lab Sample ID: 440-79587-D-1 MSD
Matrix: Water
Analysis Batch: 186773

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	26.3		ug/L		105	70 - 131	1	25
1,2-Dichloroethane	ND		25.0	25.5		ug/L		102	56 - 146	2	20
Benzene	ND		25.0	25.4		ug/L		101	66 - 130	2	20
Ethanol	ND		250	254		ug/L		102	54 - 150	7	30
Ethylbenzene	ND		25.0	25.4		ug/L		102	70 - 130	1	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	26.2		ug/L		105	70 - 130	4	25
Isopropyl Ether (DIPE)	ND		25.0	26.7		ug/L		107	64 - 138	3	25
m,p-Xylene	ND		50.0	51.0		ug/L		102	70 - 133	0	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.5		ug/L		106	70 - 130	4	25
o-Xylene	ND		25.0	26.4		ug/L		106	70 - 133	1	20
Tert-amyl-methyl ether (TAME)	ND		25.0	26.5		ug/L		106	68 - 133	4	30
tert-Butyl alcohol (TBA)	ND		125	129		ug/L		103	70 - 130	4	25
Toluene	ND		25.0	25.1		ug/L		100	70 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*76 - 132*
Toluene-d8 (Surr)	*108*		*80 - 128*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-186306/30
Matrix: Water
Analysis Batch: 186306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			06/02/14 22:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*65 - 140*		*06/02/14 22:59*	*1*

Lab Sample ID: LCS 440-186306/29
Matrix: Water
Analysis Batch: 186306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	745		ug/L		93	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*65 - 140*

Lab Sample ID: 440-79285-A-10 MS
Matrix: Water
Analysis Batch: 186306

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	ND		800	720		ug/L		90	65 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*65 - 140*

Lab Sample ID: 440-79285-A-10 MSD
Matrix: Water
Analysis Batch: 186306

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		800	714		ug/L		89	65 - 140	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*65 - 140*

Lab Sample ID: MB 440-186379/4
Matrix: Water
Analysis Batch: 186379

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			06/03/14 11:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*65 - 140*		*06/03/14 11:03*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC) (Continued)

Lab Sample ID: LCS 440-186379/3
Matrix: Water
Analysis Batch: 186379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	804		ug/L		101	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*65 - 140*

Lab Sample ID: 440-79286-A-30 MS
Matrix: Water
Analysis Batch: 186379

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	ND		800	777		ug/L		97	65 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*65 - 140*

Lab Sample ID: 440-79286-A-30 MSD
Matrix: Water
Analysis Batch: 186379

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		800	786		ug/L		98	65 - 140	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*65 - 140*

GC/MS VOA

Analysis Batch: 186254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79383-3	MW-3	Total/NA	Water	8260B/5030B	
440-79383-4	MW-4	Total/NA	Water	8260B/5030B	
440-79574-A-10 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-79574-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-186254/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-186254/4	Method Blank	Total/NA	Water	8260B/5030B	

Analysis Batch: 186335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79285-F-20 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-79285-F-20 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
440-79383-1	MW-1	Total/NA	Water	8260B/5030B	
LCS 440-186335/6	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-186335/5	Method Blank	Total/NA	Water	8260B/5030B	

Analysis Batch: 186336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79383-2	MW-2	Total/NA	Water	8260B/5030B	
440-79383-5	MW-5	Total/NA	Water	8260B/5030B	
440-79416-D-1 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-79416-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-186336/6	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-186336/5	Method Blank	Total/NA	Water	8260B/5030B	

Analysis Batch: 186773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79383-6	MW-6	Total/NA	Water	8260B/5030B	
440-79587-D-1 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-79587-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-186773/4	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-186773/3	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 186306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79285-A-10 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-79285-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-79383-1	MW-1	Total/NA	Water	8015B/5030B	
440-79383-2	MW-2	Total/NA	Water	8015B/5030B	
440-79383-3	MW-3	Total/NA	Water	8015B/5030B	
440-79383-4	MW-4	Total/NA	Water	8015B/5030B	
LCS 440-186306/29	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-186306/30	Method Blank	Total/NA	Water	8015B/5030B	

Analysis Batch: 186379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79286-A-30 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-79286-A-30 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-79383-5	MW-5	Total/NA	Water	8015B/5030B	

GC VOA (Continued)

Analysis Batch: 186379 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-79383-6	MW-6	Total/NA	Water	8015B/5030B	
LCS 440-186379/3	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-186379/4	Method Blank	Total/NA	Water	8015B/5030B	

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-79383-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14 *
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14 *
Guam	State Program	9	Cert. No. 12.002r	01-23-15
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.

Laboratory Management Program LaMP Chain of Custody Record

BP Site Node Path: 06-88-620 | Req Due Date (mm/dd/yy): | Rush TAT: Yes ___ No X

BP Facility No: 2162 | Lab Work Order Number:

Lab Name: Test America	Facility Address: 15135 Hesperian Boulevard	Consultant/Contractor: Broadbent and Associates, Inc.
Lab Address: 17461 Derian Avenue Suite #100, Irvine, CA 92614	City, State, ZIP Code: San Leandro, California	Consultant/Contractor Project No: 06-88-620
Lab PM: Kathleen Robb	Lead Regulatory Agency: Alameda County Environmental Health	Address: 875 Cotting Lane, Suite G, Vacaville, CA 95688
Lab Phone: 949-261-1022	California Global ID No.: T0600100084	Consultant/Contractor PM: Kristene Tidwell
Lab Shipping Accnt: 1103-6633-7	Enfos Proposal No: 00604-0002/WR245682	Phone: 707-455-7290 Fax: 707-455-7295
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: ktidwell@broadbentinc.com and to lab.enfosdoc@bp.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP X Contractor ___
BP Project Manager (PM): chuck Carmel		
BP PM Phone: 925-275-3804		
BP PM Email: chuck.carmel@bp.com		

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix: Is this location a well?	No. Containers / Preservative: Total Number of Container	Unpreserved	H2SO4	HNO3	HCl	Methanol	Requested Analyses: GRO by 8015M	BTEX, 5 FO + EDB by 8260	Ethanol & 1,2-DCA by 8260
	MW-1	5/27/2014	1050		x		y	6				x		x	x	x
	MW-2	5/27/2014	1110		x		y	6				x		x	x	x
	MW-3	5/27/2014	1020		x		y	6				x		x	x	x
	MW-4	5/27/2014	1000		x		y	6				x		x	x	x
	MW-5	5/27/2014	1200		x		y	6				x		x	x	x
	MW-6	5/27/2014	1135		x		y	6				x		x	x	x
	TB-2162-05272014	–	–		x		n	2				x				

440-79383 Chain of Custody

Report Type & QC Level: Standard X; Full Data Package ___

Comments

Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

On Hold

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Alex Martinez						
Sampler's Company: Broadbent and Associates	BAP	5/27/14	1700	VuBanh TAI	5/28/14	1110
Shipment Method: Fed Ex Ship Date: 5/27/14						
Shipment Tracking No: 8037 8050 3228						

Special Instructions:

Fed: 8037 8050 3228

THIS LINE - LAB USE ONLY: Custody Seals in Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 4.1/3.8 °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

IR: 59

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-79383-1

Login Number: 79383

List Source: TestAmerica Irvine

List Number: 1

Creator: Freitag, Kevin R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	TB missing date and time.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	EDF
Report Title:	Second Quarter Groundwater Monitoring Report
Report Type:	Monitoring Report - Semi-Annually
Facility Global ID:	T0600100084
Facility Name:	ARCO #2162
File Name:	440-79383-1_06 Jun 14 1456_EDF.zip
Organization Name:	Broadbent & Associates, Inc.
Username:	BROADBENT-C
IP Address:	69.170.11.178
Submittal Date/Time:	7/28/2014 11:34:59 AM
Confirmation Number:	5227683365

VIEW QC REPORT

VIEW DETECTIONS REPORT

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

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

Submittal Type:	**GEO_WELL**
Report Title:	**Second Quarter Groundwater Monitoring Report**
Facility Global ID:	**T0600100084**
Facility Name:	**ARCO #2162**
File Name:	**geo_well.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**69.170.11.178**
Submittal Date/Time:	**7/28/2014 12:01:12 PM**
Confirmation Number:	**9646521866**