ARCADIS Design & Consultancy for natural and built assets

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By Alameda County Environmental Health 5:07 pm, Oct 30, 2017

Ms. Karel Detterman
Alameda County Environmental Health
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Alameda, CA 94602
Oakland, California 94609

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ENVIRONMENT

Subject:
Third Quarter 2017 Groundwater Monitoring Report
Former BP Facility No. 0374
6407 Telegraph Avenue, Oakland, California 94609
Alameda County LOP Case #RO0000078
SF-RWQCB Case #01-0114

Date:
October 30, 2017

Contact:
James M. Jacobsen, P.G.

Phone:
916 865 3144

Email:
james.jacobsen@arcadis.com

Our ref:
GP16BPNA.CA01.40000

Dear Ms. Detterman:

"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."

Sincerely,

Arcadis U.S., Inc.

James M. Jacobsen, P.G.
Project Manager

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Our ref:
GP16BPNA.CA01.40000

Dear Ms. Detterman:

On behalf of BP West Coast Products, LLC (BP), Arcadis U.S., Inc. (Arcadis) is submitting the enclosed Semi-Annual Monitoring Report for the Third Quarter 2017. The enclosed quarterly report was prepared for the above-referenced case number.

“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.”

If you have any questions, please contact the undersigned.

Sincerely,

Arcadis U.S., Inc.

James M. Jacobsen, P.G.
Project Manager

Copies:
San Francisco Regional Water Quality Control Board - GeoTracker

SEMI-ANNUAL MONITORING AND STATUS REPORT
Third Quarter 2017
October 31, 2017

Station No:	0374	Address:	6407 Telegraph Avenue, Oakland, CA 94609

Arcadis Contact/Phone No.:	James Jacobsen / 916.865.3144
Arcadis Project No.:	GP16BPNA.CA01.40000
Primary Agency/Regulatory ID No.:	Alameda County Local Oversight Program / Karel Detterman / Case No. RO0000078
Other Agencies to Receive Copies:	San Francisco Regional Water Quality Control Board / Case No. 01-0114

WORK PERFORMED DURING THIRD QUARTER 2017:

1. Submitted the Shallow Soil Assessment and Monitoring Well Installation Work Plan on August 23, 2017.
2. Conducted semi-annual groundwater sampling on September 19 and September 20, 2017. The following summarizes the Third Quarter 2017 event:
    - Prior to gauging, all monitoring wells were left open for at least 15 minutes for the water column to equilibrate with atmospheric pressure.
    - Gauged and sampled monitoring wells MW-1 through MW-9. A copy of the field notes for the August 23, 2017 groundwater monitoring event are provided as **Attachment 1**.
    - Monitoring wells were sampled for the analysis of Gasoline Range Organics (GRO), benzene, toluene, ethylbenzene, total xylenes (BTEX), fuel oxygenates including methyl tert butyl ether (MTBE), tert butyl alcohol (TBA), diisopropyl ether (DIPE), and ether tert butyl ether (ETBE), and lead scavengers including 1,2-Dichloroethane (1,2-DCA), ethylene dibromide (EDB), and ethanol according to United States Environmental Protection Agency (USEPA) Method 8260B. A copy of the laboratory analytical report is provided as **Attachment 2**.
3. A review of the analytical laboratory results, summarized in **Table 1** and **Table 2**, indicates the following:
    - GRO concentrations were detected exceeding the San Francisco Bay Regional Water Quality Control Board (SF-RWQCB) Environmental Screening Level (ESL) at well MW-4 and MW-8. GRO concentrations at MW-1 through MW-3, MW-5 through MW-7, and MW-9 were not detected above the LRL.
    - Benzene concentrations were detected exceeding the SF-RWQCB ESL at well MW-4 and MW-8. Benzene concentrations at MW-1 through MW-3, MW-5 through MW-7, and MW-9 were not detected above the LRL.
    - Toluene concentrations were detected exceeding the SF-RWQCB ESL at well MW-4. Toluene concentrations at MW-1 through MW-3 and MW-5 through MW-9 were not detected above the LRL.

- Xylenes (total) concentrations were detected exceeding the SF-RWQCB ESL at well MW-4. Xylenes (total) concentrations at MW-1 through MW-3 and MW-5 through MW-9 were not detected above the LRL.
- MTBE concentrations were detected exceeding the SF-RWQCB ESL at wells MW-1, MW-2, MW-7, MW-8, and MW-9. MTBE concentrations at MW-3 through MW-6 were not detected above the LRL.

4. Prepared the Third Quarter 2017 Groundwater Monitoring Report.

PROPOSED WORK:

1. Conduct shallow soil assessment and monitoring well installation, pending Alameda County Environmental Health approval.
2. Prepare and submit Additional Assessment and Monitoring Well Installation Report.
3. Evaluate the case against the SF-RWQCB ESLs and the State Water Resource Control Board's Low Threat Closure Policy Criteria (SWRCB 2012).
4. Conduct semi-annual groundwater monitoring and sampling in the First Quarter 2018.
5. Prepare the First Quarter 2018 Groundwater Monitoring Report.

Current Phase of Project:	Monitoring
Frequency of Monitoring/Sampling:	Semi-annual
Is Light Non-Aqueous Phase Liquid (LNAPL) Present On-site:	No
LNAPL Detected During the current quarter (thickness in feet):	NA
Approximate Depth to Groundwater (feet below top of casing):	Range: 5.40 (MW-6) to 8.48 (MW-8)
Groundwater Flow Direction:	Southwest
Groundwater Flow Magnitude (foot/foot):	0.03
Agency Directive Requirements:	Semi-annual monitoring and reporting

DISCUSSION

The Third Quarter 2017 gradient magnitude and direction is generally consistent with previous monitoring events. In general, depth-to-groundwater decreased on average of 2.98-feet. A figure illustrating the potentiometric surface, as determined from the September 20, 2017 monitoring data, is provided as **Figure 3**.

The most elevated GRO and benzene concentrations continue to be detected at monitoring well MW-4; however, concentrations are within the historical range of detections. While concentrations of benzene continue to exceed the SF-RWQCB ESL in MW-4 and MW-8, the groundwater benzene concentrations

are below the Groundwater Specific Criteria of the State Water Resources Control Board's Low Threat Closure Policy (SWRCB 2012). Current groundwater monitoring and analytical data are summarized in **Table 1** and **Table 2**. Historic groundwater monitoring and analytical data are summarized in **Table 3**. Hydrographs for select monitoring which have historically contained concentrations of COCs are presented in **Attachment 3**.

Arcadis has submitted a work plan to reassess historic soil analytical data and further delineate the groundwater plume. The Shallow Soil Assessment and Monitoring Well Installation Work Plan was submitted to Alameda County Department of Environmental Health on August 23, 2017. The data will be used to evaluate the current soil concentrations of benzene, ethylbenzene, and naphthalene against the Direct Contact and Outdoor Air Exposure Criteria of the State Water Resources Control Board's Low Threat Closure Policy (SWRCB 2012). The scope-of-work outlined in the Shallow Soil Assessment and Monitoring Well Installation Work Plan will be implemented upon receiving concurrence from Alameda County Department of Environmental Health.

Bi-annual groundwater monitoring will also continue, as required, on the current schedule. The next groundwater monitoring event scheduled to occur during the First Quarter of 2018.

ENCLOSURES:

Tables

Table 1 – Current Groundwater Monitoring and Analytical Data – GRO/BTEX
Table 2 – Current Analytical Data - Oxygenates
Table 3 – Historical Groundwater Monitoring and Analytical Data

Figures

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevation Contour Map September 19, 2017
Figure 4 – Groundwater Flow Direction Rose Diagram
Figure 5 – Groundwater Analysis Concentration Map September 19-21, 2017
Figure 6 – GRO Concentration Map September 19-21, 2017
Figure 7 – Benzene Concentration Map September 19-21, 2017
Figure 8 – MTBE Concentration Map September 19-21, 2017

Attachments

Attachment 1 – Groundwater Monitoring Field Forms
Attachment 2 – Groundwater Analytical Laboratory Report
Attachment 3 – Hydrographs

TABLES

Table 1
Current Groundwater Monitoring and Analytical Data - GRO/BTEX
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	DO (mg/l)	Notes
MW-1	9/19/2017	164.45	8.21	--	156.24	<50	<0.50	<0.50	<0.50	<1.0	0.51	
MW-2	9/19/2017	163.49	8.38	--	155.11	<50	<0.50	<0.50	<0.50	<1.0	0.15	
MW-3	9/19/2017	166.80	6.64	--	160.16	<50	<0.50	<0.50	<0.50	<1.0	0.19	
MW-4	9/19/2017	162.48	8.10	--	154.38	**6,900**	**1,100**	**61**	27	**130**	0.36	
MW-5	9/21/2017	156.90	5.75	--	151.15	<50	<0.50	<0.50	<0.50	<1.0	0.13	
MW-6	9/19/2017	159.41	5.40	--	154.01	<50	<0.50	<0.50	<0.50	<1.0	0.30	
MW-7	9/19/2017	164.80	8.00	--	156.80	<50	<0.50	<0.50	<0.50	<1.0	0.18	
MW-8	9/19/2017	164.14	8.48	--	155.66	**370**	**19**	<0.50	1.3	<1.0	0.11	
MW-9	9/19/2017	163.77	8.10	--	155.67	<50	<0.50	<0.50	<0.50	<1.0	0.21	
					SF-RWQCB ESLs	**220**	**1**	**40**	**30**	**20**		

Notes:

TOC = top of casing measured
DTW = depth to water
LNAPL = light non-aqueous phase liquid
GW Elev = groundwater elevation
GRO = gasoline range organics
B = benzene
T = toluene
E = ethylbenzene
X = total xylenes
DO = dissolved oxygen

BOLD = concentration exceeds SF-RWQCB ESLs
SF-RWQCB ESLs - San Francisco Regional Water Quality Control Board Envrionmental Screening Level - Direct Exposure Human Health Risk levels - MCL Priority
ft msl = feet above mean sea level
-- = not analyzed/applicable/measured/available
< = not detected at or above specified laboratory reporting limit
µg/L = micrograms per liter
mg/L = milligrams per liter
Values for DO were obtained through field measurements

Table 2
Current Analytical Data - Oxygenates
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Notes
MW-1	**39**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
MW-2	**18**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
MW-3	1.1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
MW-4	<10	<200	<10	<10	<10	<10	<10	<3,000	
MW-5	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
MW-6	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
MW-7	**42**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
MW-8	**64**	<10	<0.50	<0.50	<0.50	<0.50	0.85	<150	
MW-9	**84**	17 ID	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
SF-RWQCB ESLs	**5**	**12**	**0.5**	**0.05**	--	--	--	--	--

Notes:

MTBE = methyl tert-butyl ether
TBA = tert-butyl alcohol
1,2-DCA = 1,2-dichloroethane
EDB = 1,2-dibromoethane
DIPE = di-isopropyl ether
ETBE = ethyl tert-butyl ether
TAME= tert-Amyl methyl ether

BOLD = concentration exceeds SF-RWQCB ESLs
SF-RWQCB ESLs = San Francisco Regional Water Quality Control Board Environmental Screening Levels - Direct Exposure Human Health Risk levels - MCL Priority
-- = not analyzed/applicable/measured/available
< = not detected at or above specified laboratory reporting limit
µg/L = micrograms per liter
ID= Analyte identified by RT & presence of single mass ion

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

ARCADIS Design & Consultancy for natural and built assets

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-1	6/20/2000	158.91	6.86	--	152.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/28/2000	158.91	7.50	--	151.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/17/2000	158.91	7.49	--	151.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/23/2001	158.91	5.90	--	153.01	<50	<0.5	<0.5	<0.5	<0.5	2,710	--	--	--	--	--	--	--	--	
	6/21/2001	158.91	7.45	--	151.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/23/2001	158.91	8.46	--	150.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/31/2001	158.91	5.50	--	153.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/21/2002	158.91	4.71	--	154.20	<5,000	<50	<50	<50	<50	2,000	--	--	--	--	--	--	--	--	
	4/17/2002	158.91	5.54	--	153.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/8/2002	158.91	7.77	--	151.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/12/2002	158.91	7.65	--	151.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	1/29/2003	158.91	5.88	--	153.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	158.91	5.62	--	153.29	<10,000	<100	<100	<100	<100	1,600	<4,000	--	<100	<100	--	<100	<20,000	1.30	
	4/9/2003	158.91	7.85	--	151.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/20/2003	158.91	8.17	--	150.74	1,600	<10	<10	<10	<10	1,500	<400	--	<10	<10	--	<10	<2,000	1.70	a2
	2/2/2004	164.57	6.71	--	157.86	--	--	--	--	--	--	--	--	--	--	--	--	--	1.00	f
	5/14/2004	164.57	7.08	--	157.49	<2,500	<25	<25	<25	<25	1,200	<1,000	<25	<25	<25	<25	<25	<5,000	1.40	
	2/9/2004	164.57	8.12	--	156.45	580	<5.0	<5.0	<5.0	<5.0	660	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<1,000	3.80	
	4/11/2004	164.57	7.38	--	157.19	1,700	<10	<10	<10	<10	580	<400	<10	<10	<10	<10	<10	<2,000	6.00	
	8/2/2005	164.57	6.60	--	157.97	<1,000	<10	<10	<10	<10	610	<400	<10	<10	<10	<10	<10	<2,000	0.71	
	9/5/2005	164.57	6.84	--	157.73	540	<5.0	<5.0	<5.0	6	620	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<1,000	3.12	a2
	11/8/2005	164.57	7.36	--	157.21	540	<2.5	<2.5	<2.5	4	390	250	<2.5	<2.5	<2.5	<2.5	2.60	<500	0.80	a2
	11/18/2005	164.57	8.02	--	156.55	350	<2.5	<2.5	<2.5	<2.5	340	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<500	2.60	a2, e
	2/16/2006	164.57	6.44	--	158.13	350	<2.5	<2.5	<2.5	<2.5	340	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	1.60	e
	5/30/2006	164.57	6.87	--	157.70	270	<2.5	<2.5	<2.5	<2.5	420	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	4.73	a2
	8/24/2006	164.57	7.75	--	156.82	95	<5.0	<5.0	<5.0	<5.0	180	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	0.65	
	1/11/2006	164.57	8.28	--	156.29	120	<5.0	<5.0	<5.0	<5.0	220	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	1.65	a2
	7/2/2007	164.57	7.40	--	157.17	120	<5.0	<5.0	<5.0	<5.0	190	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	1.88	e
	8/5/2007	164.57	6.50	--	158.07	<500	<5.0	<5.0	<5.0	<5.0	420	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	1.21	
	8/8/2007	164.57	8.17	--	156.40	82	<0.50	<0.50	<0.50	<0.50	110	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.16	e
	11/14/2007	164.57	8.01	--	156.56	170	<2.5	<2.5	<2.5	<2.5	210	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	1.92	
	2/22/2008	164.57	6.00	--	158.57	<50	<0.50	<0.50	<0.50	<0.50	250	<10	<0.50	<0.50	<0.50	<0.50	1.50	<300	2.57	
	5/24/2008	164.57	7.58	--	156.99	<50	<5.0	<5.0	<5.0	<5.0	380	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	2.28	
	8/21/2008	164.57	8.60	--	155.97	<50	<2.5	<2.5	<2.5	<2.5	170	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	2.16	
	11/19/2008	164.57	8.88	--	155.69	<50	<0.50	<0.50	<0.50	<0.50	30	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.12	
	2/23/2009	164.57	6.40	--	158.17	78	<2.5	<2.5	<2.5	<2.5	240	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	2.19	
	5/14/2009	164.57	6.67	--	157.90	53	<0.50	<0.50	<0.50	<0.50	200	<10	<0.50	<0.50	<0.50	<0.50	1.30	<300	1.75	
	8/20/2009	164.57	8.25	--	156.32	150	<2.0	<2.0	<2.0	<2.0	170	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<1200	2.14	l (GRO)
	2/19/2010	164.57	6.07	--	158.50	<50	<0.50	<0.50	<0.50	<0.50	170	<10	<0.50	<0.50	<0.50	<0.50	1.20	<300	0.92	
	10/8/2010	164.57	7.58	--	156.99	<50	<2.5	<2.5	<2.5	<2.5	230	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	3.86	
	12/16/2010	164.45	6.64	--	157.81	<50	<2.0	<2.0	<2.0	<2.0	140	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<1,200	1.20	j
	2/14/2011	164.45	7.10	--	157.35	<50	<2.5	<2.5	<2.5	<2.5	170	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	1.18	
	5/20/2011	164.45	6.38	--	158.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2011	164.45	7.24	--	157.21	<50	<2.5	<2.5	<2.5	<2.5	130	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	2.54	
	2/2/2012	164.45	7.32	--	157.13	<50	<1.0	<1.0	<1.0	<1.0	66	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<600	1.01	
	9/8/2012	164.45	6.69	--	157.76	<50	<0.50	<0.50	<0.50	<1.0	170	<10	<0.50	<0.50	<0.50	<0.50	0.78	<150	1.65	
	2/14/2013	164.45	5.97	--	158.48	<50	<0.50	<0.50	<0.50	<1.0	140	<10	<0.50	<0.50	<0.50	<0.50	0.58	<150	1.74	
	8/22/2013	164.45	7.87	--	156.58	<50	<0.50	<0.50	<0.50	<1.0	91	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	5.69	
	11/2/2014	164.45	7.75	--	156.70	<50	<0.50	<0.50	<0.50	<1.0	26	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	2.02	
	8/15/2014	164.45	8.51	--	155.94	<50	<0.50	<0.50	<0.50	<1.0	120	<10	<0.50	<0.50	<0.50	<0.50	0.61	<150	1.82	

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-1(Continued)	12/2/2015	164.45	6.57	--	157.88	<50	<0.50	<0.50	<0.50	<1.0	130	<10	<0.50	<0.50	<0.50	<0.50	0.57	<150	1.00	
	8/31/2015	164.45	8.88	--	155.57	<50	<0.50	<0.50	<0.50	<1.0	110	<10	<0.50	<0.50	<0.50	<0.50	0.63	<150	1.32	
	3/17/2016	164.45	4.82	--	159.63	<50	<0.50	<0.50	<0.50	<1.0	140	<10	<0.50	<0.50	<0.50	<0.50	0.68	<150	11.94	
	9/9/2016	164.45	8.97	--	155.48	<50	<0.50	<0.50	<0.50	<1.0	110	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--	
	3/14/2017	164.45	4.24	--	160.21	<50	<0.50	<0.50	<0.50	<1.0	98	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.59	
	9/19/2017	164.45	8.21	--	156.24	<50	<0.50	<0.50	<0.50	<1.0	39	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.51	
MW-2	6/20/2000	157.92	7.67	--	150.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/28/2000	157.92	8.51	--	149.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/17/2000	157.92	8.14	--	149.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/23/2001	157.92	7.21	--	150.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	6/21/2001	157.92	7.99	--	149.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/23/2001	157.92	8.52	--	149.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/31/2001	157.92	6.01	--	151.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/21/2002	157.92	5.95	--	151.97	<50	<0.5	<0.5	<0.5	<0.5	45	--	--	--	--	--	--	--	--	
	4/17/2002	157.92	6.45	--	151.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/8/2002	157.92	8.08	--	149.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/12/2002	157.92	8.29	--	149.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	1/29/2003	157.92	7.22	--	150.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	157.92	6.85	--	151.07	<50	<0.50	<0.50	<0.50	<0.50	55	<20	--	<0.50	<0.50	--	0.53	<100	1.40	
	4/9/2003	157.92	7.94	--	149.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/20/2003	157.92	8.05	--	149.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/2/2004	163.46	7.00	--	156.46	74	<0.50	<0.50	<0.50	<0.50	37	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	1.10	f
	5/14/2004	163.46	7.97	--	155.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/9/2004	163.46	8.19	--	155.27	<250	<2.5	<2.5	<2.5	<2.5	67	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<500	2.70	
	4/11/2004	163.46	7.54	--	155.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/2/2005	163.46	6.72	--	156.74	<50	<0.50	<0.50	<0.50	<0.50	30	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	0.86	
	9/5/2005	163.46	7.16	--	156.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/8/2005	163.46	7.85	--	155.61	<50	<0.50	<0.50	<0.50	<0.50	35	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	1.00	a
	11/18/2005	163.46	8.23	--	155.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/16/2006	163.46	6.82	--	156.64	<50	<0.50	<0.50	<0.50	<0.50	39	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.30	
	5/30/2006	163.46	7.23	--	156.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/24/2006	163.46	8.00	--	155.46	60	<0.50	<0.50	<0.50	<0.50	25	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.90	
	1/11/2006	163.46	8.38	--	155.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/2/2007	163.46	7.88	--	155.58	<50	0.5	<0.50	<0.50	<0.50	7	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.94	
	8/5/2007	163.46	7.28	--	156.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/8/2007	163.46	8.38	--	155.08	88	3.2	<0.50	<0.50	<0.50	7	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.94	
	11/14/2007	163.46	8.10	--	155.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2008	163.46	6.75	--	156.71	<50	<0.50	<0.50	<0.50	<0.50	24	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.18	
	5/24/2008	163.46	7.98	--	155.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/21/2008	163.46	8.58	--	154.88	<50	2.6	<0.50	<0.50	<0.50	5	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.20	
	11/19/2008	163.46	8.66	--	154.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/23/2009	163.46	6.67	--	156.79	74	1	<0.50	<0.50	<0.50	24	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.25	
	5/14/2009	163.46	7.02	--	156.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/20/2009	163.46	8.41	--	155.05	82	2.4	<0.50	<0.50	<0.50	8	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.19	
	2/19/2010	163.46	7.36	--	156.10	<50	<0.50	<0.50	<0.50	<0.50	22	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.81	
	10/8/2010	163.46	7.69	--	155.77	<50	<0.50	<0.50	<0.50	<0.50	23	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.40	
	12/16/2010	163.49	7.12	--	156.37	<50	<0.50	<0.50	<0.50	<0.50	17	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.69	j
	2/14/2011	163.49	7.35	--	156.14	<50	<0.50	<0.50	<0.50	<0.50	11	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.87	
	5/20/2011	163.49	7.02	--	156.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-2(Continued)	8/15/2011	163.49	7.62	--	155.87	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.45	
	2/2/2012	163.49	7.56	--	155.93	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.85	
	9/8/2012	163.49	6.31	--	157.18	<50	<0.50	<0.50	<0.50	<1.0	73	<10	<0.50	<0.50	<0.50	<0.50	0.61	<150	1.28	
	2/14/2013	163.49	6.03	--	157.46	<50	<0.50	<0.50	<0.50	<1.0	46	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.71	
	8/22/2013	163.49	7.79	--	155.70	<50	<0.50	<0.50	<0.50	<1.0	82	<10	<0.50	<0.50	<0.50	<0.50	1.10	<150	4.16	
	11/2/2014	163.49	7.12	--	156.37	<50	<0.50	<0.50	<0.50	<1.0	8	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	2.32	
	8/15/2014	163.49	8.53	--	154.96	<50	<0.50	<0.50	<0.50	<1.0	61	<10	<0.50	<0.50	<0.50	<0.50	0.73	<150	2.90	
	12/2/2015	163.49	6.98	--	156.51	<50	<0.50	<0.50	<0.50	<1.0	57	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.78	
	8/31/2015	163.49	8.77	--	154.72	<50	<0.50	<0.50	<0.50	<1.0	40	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.90	
	3/17/2016	163.49	5.54	--	157.95	<50	<0.50	<0.50	<0.50	<1.0	49	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.00	
	9/9/2016	163.49	9.02	--	154.47	<50	<0.50	<0.50	<0.50	<1.0	20	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--	
	3/14/2017	163.49	6.24	--	157.25	<50	<0.50	<0.50	<0.50	<1.0	45	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.70	
	9/20/2017	163.49	8.38	--	155.11	<50	<0.50	<0.50	<0.50	<1.0	18	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.15	
MW-3	6/20/2000	153.64	6.42	--	147.22	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--	--	--	--	--	--	--	
	9/28/2000	153.64	7.31	--	146.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/17/2000	153.64	6.45	--	147.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	3/23/2001	153.64	6.01	--	147.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/21/2001	153.64	6.80	--	146.84	110	5.5	<0.5	5	4	3	--	--	--	--	--	--	--	--	
	9/23/2001	153.64	7.32	--	146.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/31/2001	153.64	4.48	--	149.16	<50	<0.5	<0.5	<0.5	<0.5	5	--	--	--	--	--	--	--	--	
	3/21/2002	153.64	4.36	--	149.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4/17/2002	153.64	5.31	--	148.33	<50	<0.5	<0.5	<0.5	<0.5	9	--	--	--	--	--	--	--	--	
	12/8/2002	153.64	7.00	--	146.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/12/2002	153.64	7.32	--	146.32	<50	<0.5	<0.5	<0.5	<0.5	6	--	--	--	--	--	--	--	1.40	
	1/29/2003	153.64	6.07	--	147.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	153.64	6.45	--	147.19	<50	<0.50	<0.50	<0.50	<0.50	2	<20	--	<0.50	<0.50	--	<0.50	<100	0.90	
	4/9/2003	153.64	6.93	--	146.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c
	11/20/2003	153.64	7.04	--	146.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c
	2/2/2004	159.21	5.92	--	153.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	f
	5/14/2004	159.21	7.52	--	151.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/9/2004	159.21	7.19	--	152.02	<50	<0.50	<0.50	<0.50	<0.50	7	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	9.30	
	4/11/2004	159.21	6.40	--	152.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/2/2005	159.21	6.01	--	153.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/5/2005	159.21	6.74	--	152.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/8/2005	159.21	6.77	--	152.44	<50	<0.50	<0.50	<0.50	<0.50	11	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	1.90	a
	11/18/2005	159.21	7.83	--	151.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/16/2006	159.21	7.26	--	151.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/30/2006	159.21	5.82	--	153.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/24/2006	159.21	7.00	--	152.21	<50	<0.50	<0.50	<0.50	<0.50	8	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.15	
	1/11/2006	159.21	7.50	--	151.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/2/2007	159.21	6.90	--	152.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/5/2007	159.21	5.95	--	153.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/8/2007	159.21	7.47	--	151.74	<50	<0.50	<0.50	<0.50	<0.50	1	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.21	
	11/14/2007	159.21	7.05	--	152.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2008	159.21	5.50	--	153.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/24/2008	159.21	7.03	--	152.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/21/2008	159.21	7.80	--	151.41	<50	<0.50	<0.50	<0.50	<0.50	3	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.11	
	11/19/2008	159.21	7.69	--	151.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/23/2009	159.21	7.28	--	151.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-3(Continued)	5/14/2009	159.21	6.17	--	153.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/20/2009	159.21	7.38	--	151.83	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.05	
	2/19/2010	159.21	5.31	--	153.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	10/8/2010	159.21	7.12	--	152.09	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.27	
	12/16/2010	159.21	5.65	--	153.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	j
	2/14/2011	159.21	6.20	--	153.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/20/2011	159.21	5.77	--	153.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2011	159.21	6.41	--	152.80	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.04	
	2/2/2012	159.21	6.34	--	152.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2012	159.21	6.62	--	152.59	<50	<0.50	<0.50	<0.50	<1.0	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.16	
	2/14/2013	159.21	6.09	--	153.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/22/2013	159.21	7.15	--	152.06	<50	<0.50	<0.50	<0.50	<1.0	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	4.35	
	11/2/2014	159.21	5.79	--	153.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2014	159.21	6.30	--	152.91	<50	<0.50	<0.50	<0.50	<1.0	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.15	
	12/2/2015	159.21	3.41	--	155.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/31/2015	159.21	7.30	--	151.91	<50	<0.50	<0.50	<0.50	<1.0	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.90	
	3/16/2016	159.21	2.50	--	156.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2016	166.80	7.56	--	159.24	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--	
	3/14/2017	166.80	2.70	--	164.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2017	166.80	6.64	--	160.16	<50	<0.50	<0.50	<0.50	<1.0	1.1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.19	
MW-4	6/20/2000	156.53	7.50	--	149.03	20,000	5,100	440	1,000	1,700	<250	--	--	--	--	--	--	--	--	c
	9/28/2000	156.53	8.20	--	148.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/17/2000	156.53	8.11	--	148.42	4,320	1,240	<20	27	249	<100	--	--	--	--	--	--	--	--	
	3/23/2001	156.53	6.69	--	149.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/21/2001	156.53	8.01	--	148.52	2,800	470	16	19	160	130	--	--	--	--	--	--	--	--	
	9/23/2001	156.53	8.91	--	147.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/31/2001	156.53	4.42	--	152.11	4,600	1,500	100	160	210	160	--	--	--	--	--	--	--	--	
	3/21/2002	156.53	4.98	--	151.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4/17/2002	156.53	6.23	--	150.30	7,100	2,200	110	290	450	<250	--	--	--	--	--	--	--	--	
	12/8/2002	156.53	8.24	--	148.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/12/2002	156.53	8.42	--	148.11	1,500	410	7	20	29	43	--	--	--	--	--	--	--	1.10	a
	1/29/2003	156.53	7.20	--	149.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	156.53	7.18	--	149.35	<5,000	1,300	89	210	260	<50	<2,000	--	<50	<50	--	<50	<10,000	1.40	
	4/9/2003	156.53	8.15	--	148.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c
	11/20/2003	156.53	8.73	--	147.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c
	2/2/2004	163.25	6.25	--	157.00	980	280	21	29	38	29	<100	<2.5	<2.5	<2.5	<2.5	2.60	<500	1.40	c, f, g
	5/14/2004	163.25	8.38	--	154.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	g
	2/9/2004	163.25	8.36	--	154.89	260	11	<1.0	6	14	28	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<200	2.40	g
	4/11/2004	163.25	7.71	--	155.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c, g
	8/2/2005	163.25	6.27	--	156.98	7,500	1,700	320	480	920	45	<1,000	<25	<25	<25	<25	<25	<5,000	0.65	g
	9/5/2005	163.25	5.90	--	157.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	g
	11/8/2005	163.25	7.96	--	155.29	3,100	1,100	41	160	110	32	<400	<10	<10	<10	<10	<10	<2,000	0.60	g
	11/18/2005	163.25	8.57	--	154.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	g
	2/16/2006	163.25	6.28	--	156.97	9,400	1,800	130	600	420	35	<400	<10	<10	<10	<10	<10	<6,000	0.50	g
	5/30/2006	162.47	7.02	--	155.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	g
	8/24/2006	162.47	8.26	--	154.21	3,600	1,400	21	110	70	39	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<1,500	1.00	
	1/11/2006	162.47	8.67	--	153.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/2/2007	162.47	8.02	--	154.45	3,100	570	17	170	110	67	<400	<10	<10	<10	<10	<10	<6,000	0.95	
	8/5/2007	162.47	7.03	--	155.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

ARCADIS Design & Consultancy for natural and built assets

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-4(Continued)	8/8/2007	162.47	8.60	--	153.87	2,900	630	22	67	57	72	<400	<10	<10	<10	<10	<10	<6,000	0.93	
	11/14/2007	162.47	8.53	--	153.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2008	162.47	6.25	--	156.22	3,900	880	39	180	92	70	<200	<10	<10	<10	<10	<10	<6,000	2.31	
	5/24/2008	162.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	8/21/2008	162.47	8.96	--	153.51	3,700	1,100	26	85	130	53	<400	<20	<20	<20	<20	<20	<12,000	2.26	
	11/19/2008	162.47	9.20	--	153.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/23/2009	162.47	6.35	--	156.12	3,000	220	9	23	19	39	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	2.21	
	5/14/2009	162.47	7.00	--	155.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/20/2009	162.47	8.05	--	154.42	5,700	1,100	35	110	100	23	<400	<20	<20	<20	<20	<20	<12,000	2.17	
	2/19/2010	162.47	5.71	--	156.76	12,000	1,200	120	230	390	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<3,000	0.81	i
	10/8/2010	162.47	7.59	--	154.88	9,700	1,500	120	400	400	<20	<400	<20	<20	<20	<20	<20	<12,000	3.81	
	12/16/2010	162.48	6.83	--	155.65	15,000	1,800	82	270	210	<25	<500	<25	<25	<25	<25	<25	<15,000	0.49	j
	2/14/2011	162.48	7.33	--	155.15	260	<0.50	<0.50	3	11	13	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.80	
	5/20/2011	162.48	6.89	--	155.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2011	162.48	7.59	--	154.89	8,600	2,100	86	250	210	<12	<250	<12	<12	<12	<12	<12	<7,500	1.02	l
	2/2/2012	162.48	7.71	--	154.77	4,600	1,000	34	23	33	<12	<250	<12	<12	<12	<12	<12	<7,500	0.60	
	9/8/2012	162.48	6.57	--	155.91	3,200	660	44	53	57	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	1.09	
	2/14/2013	162.48	6.26	--	156.22	7,200	1,400	150	390	700	<10	<200	<10	<10	<10	<10	<10	<3,000	1.20	
	8/22/2013	162.48	7.59	--	154.89	6,900	1,600	100	120	330	<10	<200	<10	<10	<10	<10	<10	<3,000	4.50	
	11/2/2014	162.48	7.13	--	155.35	140	800	80	84	230	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	1.03	
	8/15/2014	162.48	8.33	--	154.15	6,300	900	45	38	92	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	0.21	
	12/2/2015	162.48	5.98	--	156.50	7,000	120	8	31	22	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1,500	0.61	
	8/31/2015	162.48	8.66	--	153.82	6,300	570	43	27	52	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	0.88	
	3/17/2016	162.48	3.25	--	159.23	8,700	1,100	160	870	560	<10	<200	<10	--	<10	<10	<10	<3,000	0.00	
	9/9/2016	162.48	8.80	--	153.68	4,400	1,100	51	14	61	<10	<400	<10	<10	<10	<10	<10	<10,000	--	
	3/14/2017	162.48	3.75	--	158.73	6,800	770	97	650	420	<10	<400	<10	<10	<10	<10	<10	<10,000	0.57	
	9/20/2017	162.48	8.10	--	154.38	6,900	1,100	61	27	130	<10	<200	<10	<10	<10	<10	<10	<3,000	0.36	
MW-5	6/20/2000	151.33	7.84	--	143.49	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--	--	--	--	--	--	--	
	9/28/2000	151.33	8.37	--	142.96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	12/17/2000	151.33	8.36	--	142.97	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	3/23/2001	151.33	7.55	--	143.78	<50	<0.5	<0.5	<0.5	<0.5	<2.5									
	6/21/2001	151.33	8.20	--	143.13	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	9/23/2001	151.33	8.68	--	142.65	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	12/31/2001	151.33	7.57	--	143.76	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	3/21/2002	151.33	6.12	--	145.21	<50	<0.5	<0.5	<0.5	<0.5	3	--	--	--	--	--	--	--	--	
	4/17/2002	151.33	6.61	--	144.72	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	12/8/2002	151.33	8.14	--	143.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	4.10	
	6/12/2002	151.33	8.65	--	142.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	1.10	
	1/29/2003	151.33	7.22	--	144.11	<50	<0.5	<0.5	<0.5	<0.5	<0.50	<20	--	<0.50	<0.50	--	<0.50	<40	1.00	b
	5/23/2003	151.33	7.31	--	144.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	--	<0.50	<0.50	--	<0.50	<100	1.10	
	4/9/2003	151.33	9.50	--	141.83	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	3.20	
	11/20/2003	151.33	8.31	--	143.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/2/2004	151.33	6.92	--	144.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c, f, h
	5/14/2004	151.33	8.56	--	142.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	h
	2/9/2004	151.33	8.79	--	142.54	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	3.50	h
	4/11/2004	151.33	8.33	--	143.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	c, h
	8/2/2005	151.33	7.28	--	144.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	h
	9/5/2005	151.33	8.19	--	143.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	h
	11/8/2005	151.33	8.39	--	142.94	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	1.20	h

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-5(Continued)	11/18/2005	151.33	11.25	--	140.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	h
	2/16/2006	151.33	9.22	--	142.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	h
	5/30/2006	151.33	7.52	--	143.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	h
	8/24/2006	151.33	7.95	--	143.38	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.60	
	1/11/2006	151.33	8.32	--	143.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/2/2007	151.33	8.25	--	143.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/5/2007	151.33	7.60	--	143.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/8/2007	151.33	8.12	--	143.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	3.26	
	11/14/2007	151.33	9.10	--	142.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2008	151.33	7.48	--	143.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/24/2008	151.33	8.12	--	143.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/21/2008	151.33	8.65	--	142.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.14	
	11/19/2008	151.33	11.86	--	139.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/23/2009	151.33	10.20	--	141.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/14/2009	151.33	9.63	--	141.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/20/2009	151.33	8.52	--	142.81	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.01	
	2/19/2010	151.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	10/8/2010	156.90	8.05	--	148.85	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.15	
	12/16/2010	156.90	8.10	--	148.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	j
	2/14/2011	156.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	5/20/2011	156.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	8/15/2011	156.90	7.91	--	148.99	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.46	
	2/2/2012	156.90	8.08	--	148.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2012	156.90	8.02	--	148.88	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.25	
	2/14/2013	156.90	7.54	--	149.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/22/2013	156.90	8.34	--	148.56	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	4.33	
	11/2/2014	156.90	7.61	--	149.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2014	156.90	8.06	--	148.84	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	2.33	
	12/2/2015	156.90	5.32	--	151.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/31/2015	156.90	7.78	--	149.12	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.83	
	3/17/2016	156.90	3.75	--	153.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2016	156.90	7.29	--	149.61	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--	
	3/14/2017	156.90	4.29	--	152.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/21/2017	156.90	5.75	--	151.15	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.13	
MW-6	6/20/2000	153.84	4.79	--	149.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/28/2000	153.84	5.39	--	148.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/17/2000	153.84	4.71	--	149.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/23/2001	153.84	4.69	--	149.15	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	6/21/2001	153.84	5.22	--	148.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/23/2001	153.84	5.40	--	148.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/31/2001	153.84	3.95	--	149.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/21/2002	153.84	2.94	--	150.90	<50	<0.5	<0.5	<0.5	<0.5	5	--	--	--	--	--	--	--	--	
	4/17/2002	153.84	5.11	--	148.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/8/2002	153.84	5.23	--	148.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/6/2002	153.84	5.29	--	148.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	1/29/2003	153.84	4.79	--	149.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	153.84	4.31	--	149.53	<50	<0.50	<0.50	<0.50	<0.50	9	<20	--	<0.50	<0.50	--	<0.50	<100	1.00	
	4/9/2003	153.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	11/20/2003	153.84	6.31	--	147.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-6(Continued)	2/2/2004	159.41	4.78	--	154.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	f
	5/14/2004	159.41	6.29	--	153.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/9/2004	159.41	5.79	--	153.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	4/11/2004	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	8/2/2005	159.41	5.13	--	154.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/5/2005	159.41	4.52	--	154.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/8/2005	159.41	5.02	--	154.39	<50	<0.50	<0.50	<0.50	<0.50	8	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<100	2.10	a2
	11/18/2005	159.41	6.31	--	153.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/16/2006	159.41	4.24	--	155.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/30/2006	159.41	4.45	--	154.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/24/2006	159.41	5.18	--	154.23	<50	<0.50	<0.50	<0.50	<0.50	12	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	3.40	
	1/11/2006	159.41	6.05	--	153.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/2/2007	159.41	5.00	--	154.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/5/2007	159.41	4.30	--	155.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/8/2007	159.41	5.51	--	153.90	<50	<0.50	<0.50	<0.50	<0.50	1	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<300	2.94	
	11/14/2007	159.41	5.38	--	154.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2008	159.41	4.70	--	154.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/24/2008	159.41	5.25	--	154.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/21/2008	159.41	6.14	--	153.27	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.99	
	11/19/2008	159.41	5.94	--	153.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/23/2009	159.41	5.00	--	154.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/14/2009	159.41	4.60	--	154.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/20/2009	159.41	5.65	--	153.76	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.98	
	2/19/2010	159.41	7.28	--	152.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	10/8/2010	159.41	5.02	--	154.39	<50	<0.50	<0.50	<0.50	<0.50	4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.99	
	12/16/2010	159.41	4.50	--	154.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	j
	2/14/2011	159.41	4.80	--	154.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/20/2011	159.41	4.29	--	155.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2011	159.41	4.52	--	154.89	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.55	
	2/2/2012	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	9/8/2012	159.41	4.65	--	154.76	<50	<0.50	<0.50	<0.50	<1.0	4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.14	
	2/14/2013	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	8/22/2013	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	11/2/2014	159.41	4.67	--	154.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2014	159.41	2.84	--	156.57	<50	<0.50	<0.50	<0.50	<1.0	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.08	
	12/2/2015	159.41	1.40	--	158.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/31/2015	159.41	5.19	--	154.22	<50	<0.50	<0.50	<0.50	<1.0	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.05	
	3/17/2016	159.41	1.32	--	158.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2016	159.41	5.97	--	153.44	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--	
	3/14/2017	159.41	1.34	--	158.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/19/2017	159.41	5.40	--	154.01	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.30	
MW-7	12/16/2010	164.80	6.52	--	158.28	700	<0.50	<0.50	15	32	62	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	--	j
	2/14/2011	164.80	6.77	--	158.03	7,100	1,700	98	260	210	<20	<400	<20	<20	<20	<20	<20	<12,000	1.02	
	5/20/2011	164.80	5.84	--	158.96	570	<0.50	<0.50	37	25	5	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1.66	l (GRO)
	8/15/2011	164.80	6.96	--	157.84	420	<1.0	<1.0	49	7	14	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<600	0.58	
	2/2/2012	164.80	7.15	--	157.65	<50	<0.50	<0.50	<0.50	<0.50	6	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.45	
	9/8/2012	164.80	5.05	--	159.75	85	<0.50	<0.50	6	1	7	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.04	
	2/14/2013	164.80	4.38	--	160.42	310	1	<0.50	2	6	5	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.31	
	8/22/2013	164.80	7.39	--	157.41	78	<0.50	<0.50	4	<1.0	3	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	4.01	
	11/2/2014	164.80	7.37	--	157.43	<50	<0.50	<0.50	<0.50	<1.0	12	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.90	
	8/15/2014	164.80	8.39	--	156.41	<50	<0.50	<0.50	<0.50	<1.0	50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.14	

Table 3
Historical Groundwater Monitoring and Analytical Data
Former BP Service Station No. 0374
6407 Telegraph Avenue
Oakland, California

ARCADIS Design & Consultancy for natural and built assets

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
MW-7(Continued)	12/2/2015	164.80	6.76	--	158.04	<50	<0.50	<0.50	<0.50	<1.0	4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.65	
	8/31/2015	164.80	8.50	--	156.30	<50	<0.50	<0.50	<0.50	<1.0	27	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.80	
	3/17/2016	164.80	5.03	--	159.77	<50	<0.50	<0.50	<0.50	<1.0	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.32	
	9/9/2016	164.80	8.69	--	156.11	<50	<0.50	<0.50	<0.50	<1.0	72	<20	<0.50	<0.50	<0.50	<0.50	0.52	<500	--	
	3/14/2017	164.80	4.97	--	159.83	<50	1.8	<0.50	1.3	1.0	1.3	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.55	
	9/20/2017	164.80	8.00	--	156.80	<50	<0.50	<0.50	<0.50	<1.0	42	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.18	
MW-8	12/16/2010	164.14	6.85	--	157.29	520	43	<0.50	4	21	150	<10	<0.50	<0.50	<0.50	<0.50	1.70	<300	0.46	j
	2/14/2011	164.14	7.30	--	156.84	<50	<2.0	<2.0	<2.0	<2.0	110	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<1,200	1.07	
	5/20/2011	164.14	6.88	--	157.26	<50	<2.0	<2.0	<2.0	<2.0	88	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<1,200	1.35	
	8/15/2011	164.14	6.00	--	158.14	<50	5.2	<1.0	10	<1.0	57	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<600	0.51	
	2/2/2012	164.14	7.57	--	156.57	<50	<0.50	<0.50	<0.50	<0.50	4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.68	
	9/8/2012	164.14	6.08	--	158.06	110	67	<0.50	<0.50	<1.0	150	31	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.16	
	2/14/2013	164.14	5.70	--	158.44	720	350	<2.0	<2.0	<4.0	240	150	<2.0	<2.0	<2.0	<2.0	5.20	<600	1.23	
	8/22/2013	164.14	7.95	--	156.19	<50	1.5	<0.50	<0.50	<1.0	180	39	<0.50	<0.50	<0.50	<0.50	2.80	<150	3.96	
	11/2/2014	164.14	7.56	--	156.58	<50	<0.50	<0.50	<0.50	<1.0	78	<10	<0.50	<0.50	<0.50	<0.50	0.83	<150	1.93	
	8/15/2014	164.14	8.65	--	155.49	<50	<0.50	<0.50	<0.50	<1.0	21	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.92	
	12/2/2015	164.14	7.13	--	157.01	<50	<0.50	<0.50	<0.50	<1.0	47	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	6.27	
	8/31/2015	164.14	8.83	--	155.31	230	57	<0.50	<0.50	<1.0	110	<10	<0.50	<0.50	<0.50	<0.50	2.30	<150	1.15	
	3/17/2016	164.14	5.86	--	158.28	<50	6.1	<0.50	<0.50	<1.0	69	<10	<0.50	<0.50	<0.50	<0.50	0.52	<150	0.47	
	9/9/2016	164.14	9.14	--	155.00	75	37	<0.50	<0.50	<1.0	67	<20	<0.50	<0.50	<0.50	<0.50	1.20	<500	--	
	3/14/2017	164.14	6.30	--	157.84	270	10	<0.50	1.1	<1.0	45	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.55	
	9/21/2017	164.14	8.48	--	155.66	370	19	<0.50	1.3	<1.0	64	<10	<0.50	<0.50	<0.50	<0.50	0.85	<150	0.11	
MW-9	12/16/2010	163.77	6.63	--	157.14	330	18	<0.50	11	38	390	40	<0.50	<0.50	<0.50	<0.50	4.10	<300	0.57	j
	2/14/2011	163.77	6.85	--	156.92	<50	<4.0	<4.0	<4.0	<4.0	270	<80	<4.0	<4.0	<4.0	<4.0	<4.0	<2,400	0.98	
	5/20/2011	163.77	6.39	--	157.38	66	<4.0	<4.0	<4.0	<4.0	280	<80	<4.0	<4.0	<4.0	<4.0	<4.0	<2,400	1.64	l (GRO)
	8/15/2011	163.77	7.09	--	156.68	<50	<2.0	<2.0	<2.0	<2.0	120	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<1,200	0.88	
	2/2/2012	163.77	7.18	--	156.59	<50	<0.50	<0.50	<0.50	<0.50	34	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.65	
	9/8/2012	163.77	5.68	--	158.09	82	1.9	<0.50	<0.50	<1.0	19	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.61	
	2/14/2013	163.77	5.27	--	158.50	250	5.2	<0.50	<0.50	1	25	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.23	
	8/22/2013	163.77	7.46	--	156.31	290	0.71	<0.50	<0.50	1	31	<10	<0.50	<0.50	<0.50	<0.50	0.55	<150	4.71	
	11/2/2014	163.77	7.07	--	156.70	250	<0.50	<0.50	<0.50	<1.0	39	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.12	
	8/15/2014	163.77	8.27	--	155.50	180	<0.50	<0.50	<0.50	<1.0	68	<10	<0.50	<0.50	<0.50	<0.50	0.67	<150	0.10	
	12/2/2015	163.77	6.63	--	157.14	<50	<0.50	<0.50	<0.50	<1.0	90	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.61	
	8/31/2015	163.77	8.50	--	155.27	<50	<0.50	<0.50	<0.50	<1.0	62	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.78	
	3/17/2016	163.77	4.82	--	158.95	76	0.97	<0.50	<0.50	<1.0	18	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.00	
	9/9/2016	163.77	8.94	--	154.83	<50	<0.50	<0.50	<0.50	<1.0	79	<20	<0.50	<0.50	<0.50	<0.50	0.61	<500	--	
	3/14/2017	163.77	4.98	--	158.79	190	9.7	<0.50	0.88	<1.0	23	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.56	
	9/20/2017	163.77	8.10	--	155.67	<50	<0.50	<0.50	<0.50	<1.0	84	17 ID	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.21	

Notes:

TOC = top of casing measured
DTW = depth to water
LNAPL = light non-aqueous phase liquid
GW Elev = groundwater elevation
GRO = gasoline range organics
B = benzene
T = toluene
E = ethylbenzene
X = total xylenes
MTBE = methyl tert-butyl ether
TBA = tert-butyl alcohol

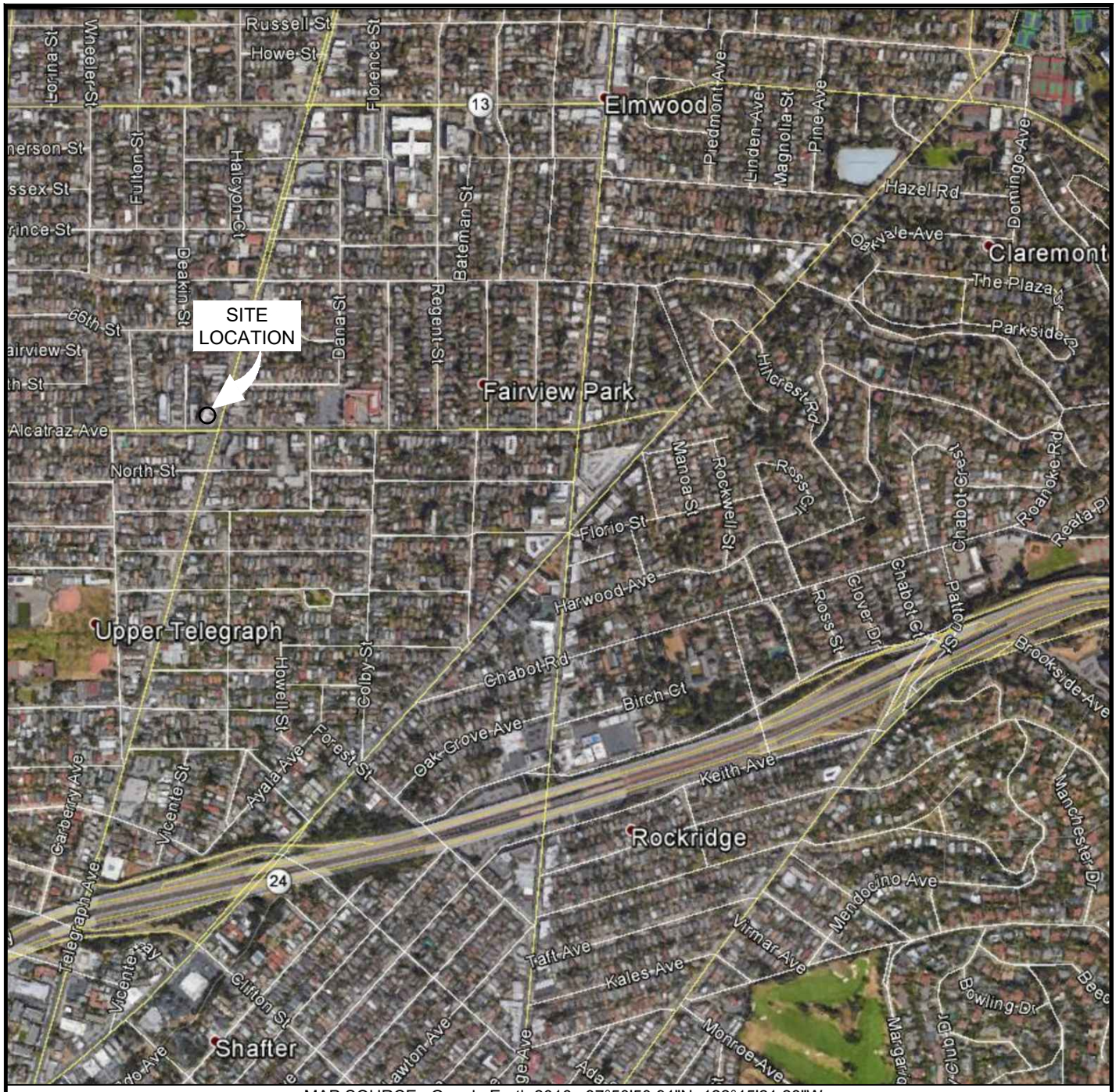
1,2-DCA = 1,2-dichloroethane
DIPE = di-isopropyl ether
ETBE = ethyl tert-butyl ether
EDB = 1,2-dibromoethane
TAME= tert-Amyl methyl ether
DO = dissolved oxygen

ft msl = feet above mean sea level
-- = not analyzed/applicable/measured/available
< = not detected at or above specified laboratory reporting limit
mg/L = milligrams per liter
µg/L = micrograms per liter
Values for DO were obtained through field measurements
ID= Analyte identified by RT & presence of single mass ion

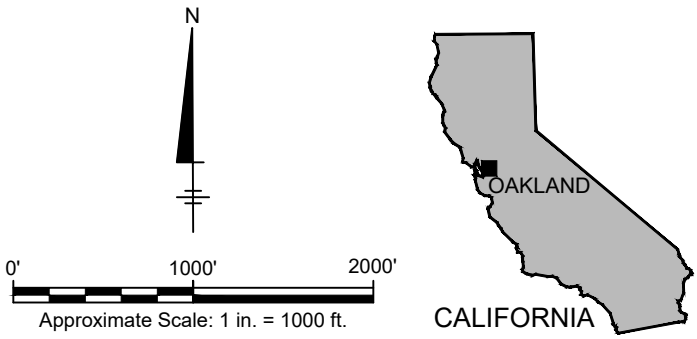
a = Chromatogram pattern: Gasoline C6-C10 for GRO/TPH-goxygenates
b = Beginning this quarter, groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, and fuel
c = Wells gauged with ORC sock in well
d = Well inaccessible
e = The hydrocarbon result for GRO was partly due to individual peaks in the quantitative range
f = Well resurveyed on 1/27/2004 to NAVD88
g = Upon review of survey data (1/27/2004), TOC elevation for MW-4 is actually 162.47 ft.
h = Upon review of survey data (1/27/2004), MW-5 was not surveyed from the TOC. MW-5 was surveyed from the pavement due to inaccessibility to the TOC. Therefore, survey data for MW-5 from the TOC is unavailable. Historic data prior to 5/30/2006 (change in consultant) not modified

i = Quantitation of unknown hydrocarbon(s) in sample based on gasoline
j = Surveyed 12/9/2010
k = Grab groundwater sample
l = Quantitated against gasoline
a2 = The continuing calibration verification for ethanol was outside of client contractual limits, however, it was within method acceptance limits. The data should still be useful for its intended purpose

FIGURES



MAP SOURCE: Google Earth 2016, 37°50'50.91"N, 122°15'21.28"W

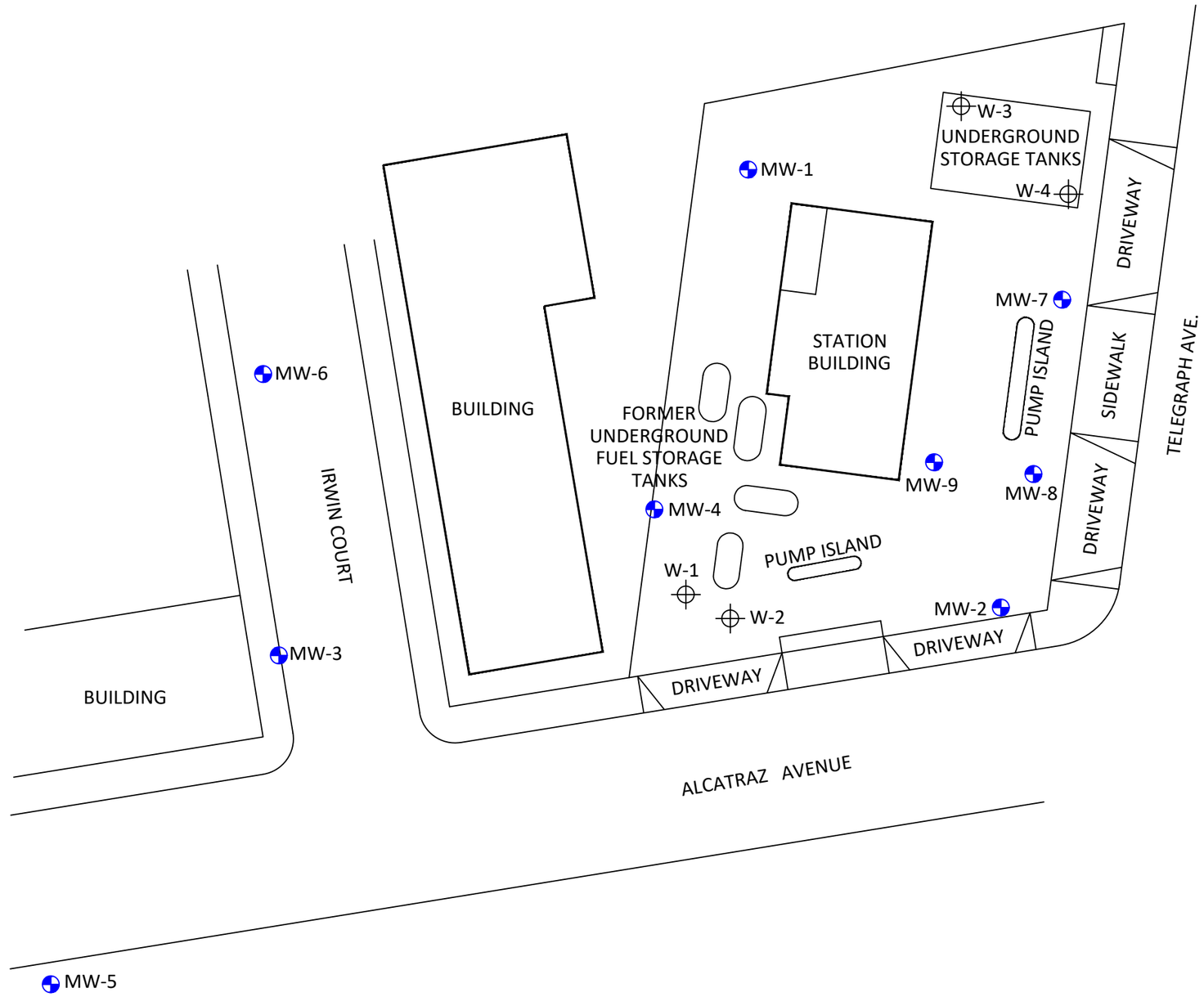


FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1



N

LEGEND:

- MONITORING WELL LOCATION
- TANK PIT MONITORING WELL LOCATION

NOTES:

1) SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
2) SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

0' 30' 60'

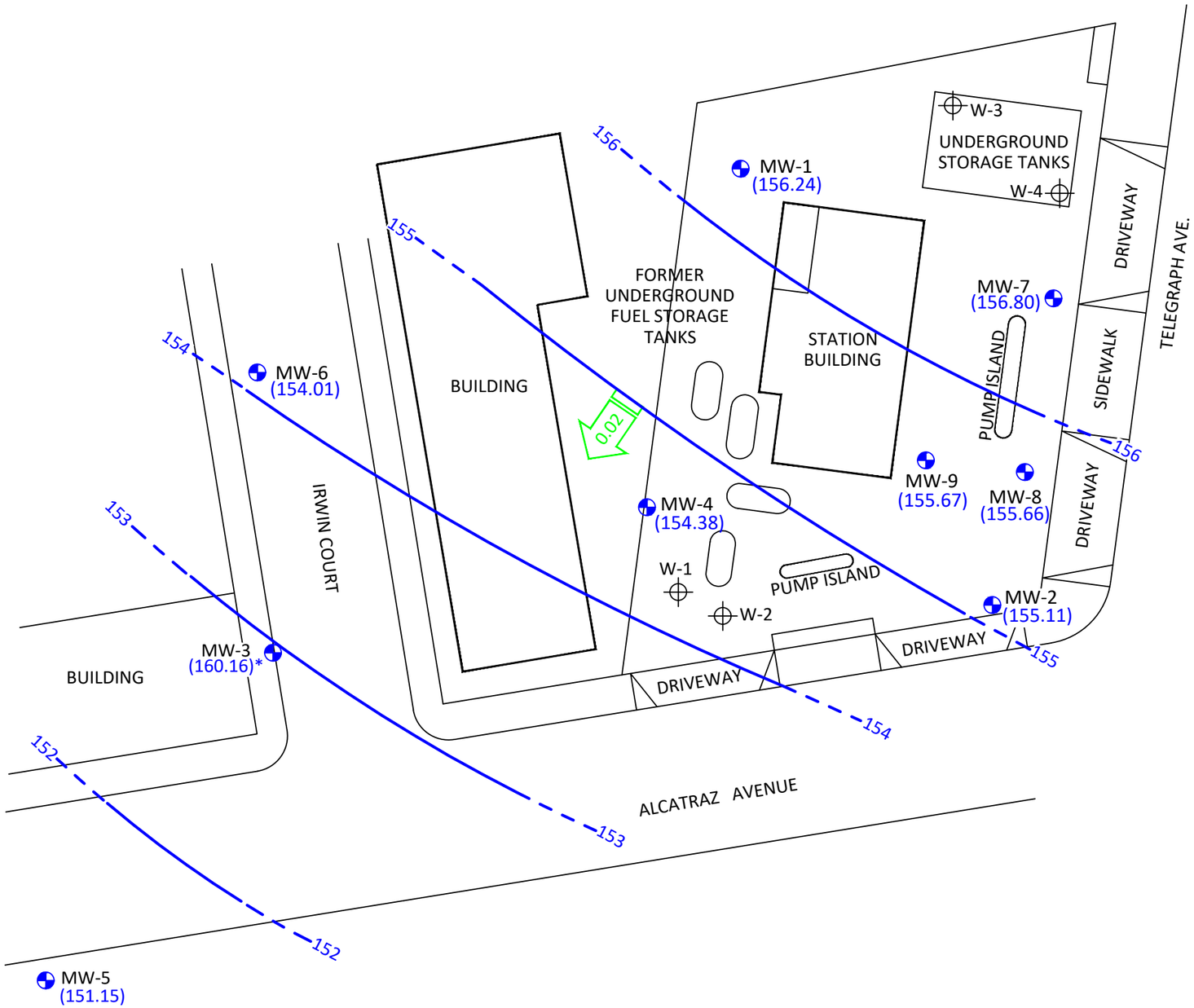
SCALE IN FEET

FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2



N

LEGEND:

- MONITORING WELL LOCATION
- TANK PIT MONITORING WELL LOCATION
- 156 — GROUNDWATER ELEVATION CONTOUR (FEET ABOVE SITE DATUM; DASHED WHERE INFERRED)
- 0.02 — GROUNDWATER GRADIENT (FT/FT)
- (156.80) — GROUNDWATER ELEVATION (FEET RELATIVE TO DATUM)
- * — WELL NOT USED IN CONTOURING

NOTES:

1) SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
2) SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
3) GROUNDWATER MONITORING WELLS GAUGED AND SAMPLED ON SEPTEMBER 19-21, 2017.

0 30' 60'

GRAPHIC SCALE

FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

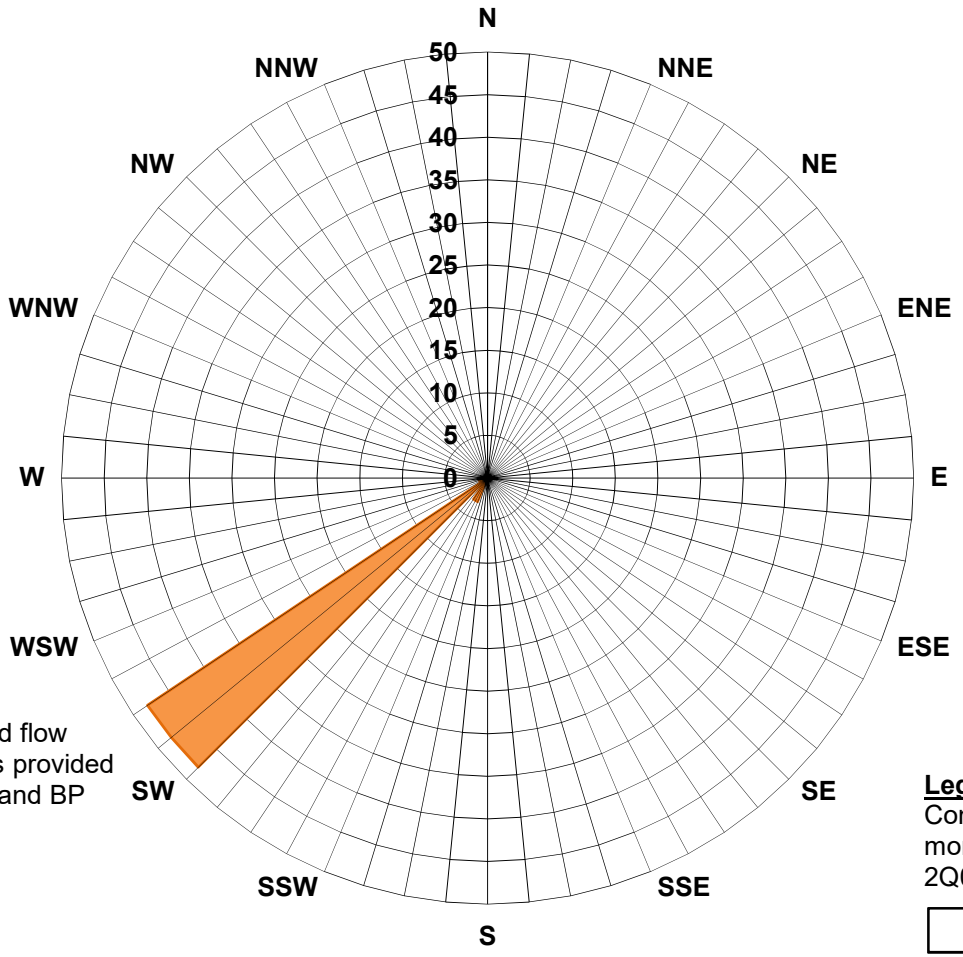
GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 19, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

Figure 4
GROUNDWATER FLOW DIRECTION ROSE DIAGRAM

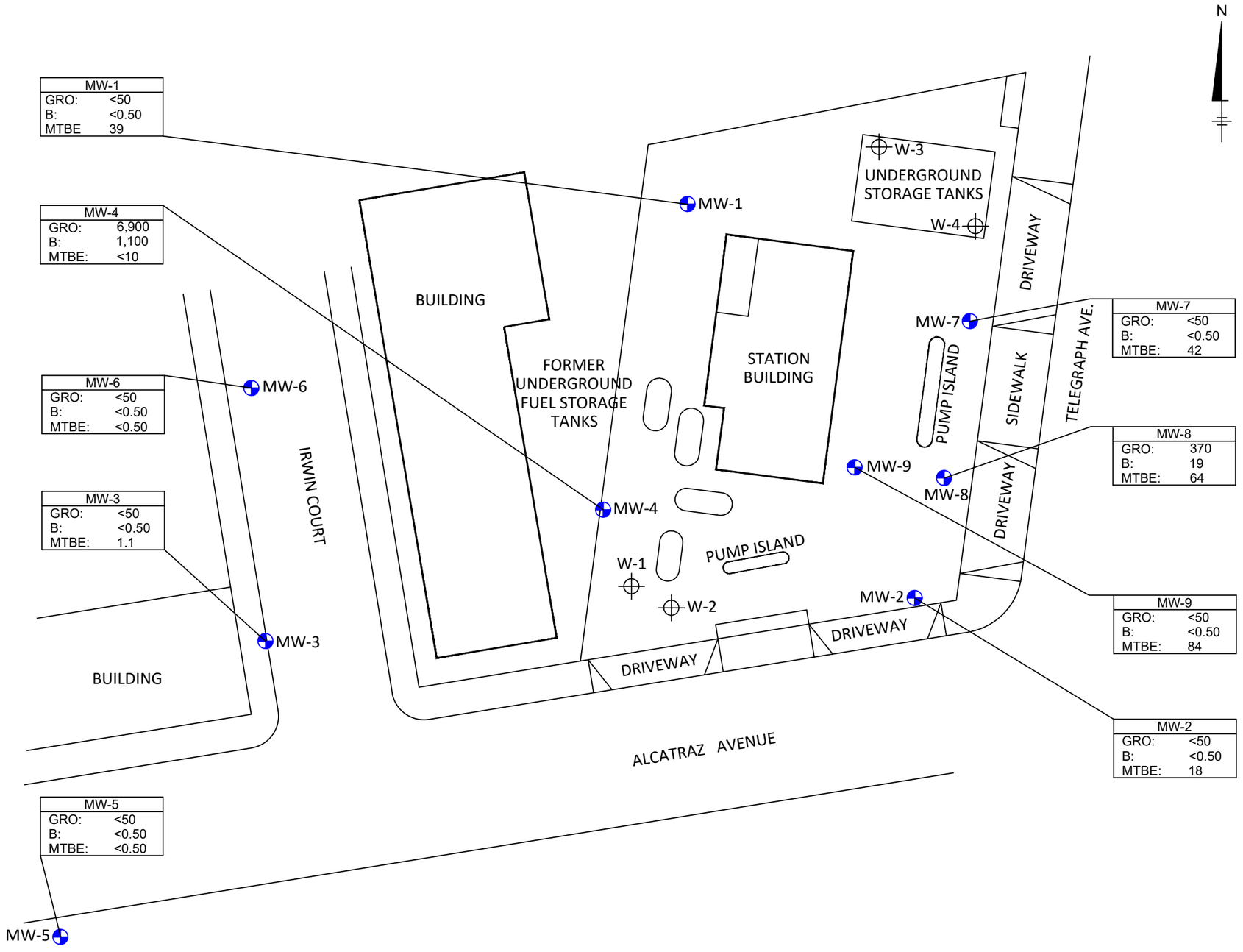
CA BP-0374
6407 Telegraph Avenue
Oakland, California 94619



Note
Historic groundwater gradient and flow direction data, prior to 3Q16, was provided by Broadbent & Associates, Inc. and BP West Coast Products, LLC.

Legend
Concentric circles represent 52 monitoring events beginning 2Q00 through 3Q17.

Groundwater Flow Direction



LEGEND:

- MONITORING WELL LOCATION
- TANK PIT MONITORING WELL LOCATION
- < LESS THAN LABORATORY REPORTING LIMIT

MW-4	
GRO:	6,900
B:	1,100
MTBE:	<10

- SAMPLE LOCATION ID
- CONCENTRATIONS (µg/L)
- GRO: GASOLINE RANGE ORGANICS
- B: BENZENE
- MTBE: METHYL TERT BUTYL ETHER

NOTES:

1) SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
2) SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
3) GROUNDWATER MONITORING WELLS GAUGED AND SAMPLED ON SEPTEMBER 19-21, 2017.

0 30' 60'

GRAPHIC SCALE

FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

GROUNDWATER ANALYSIS CONCENTRATION MAP SEPTEMBER 19-21, 2017

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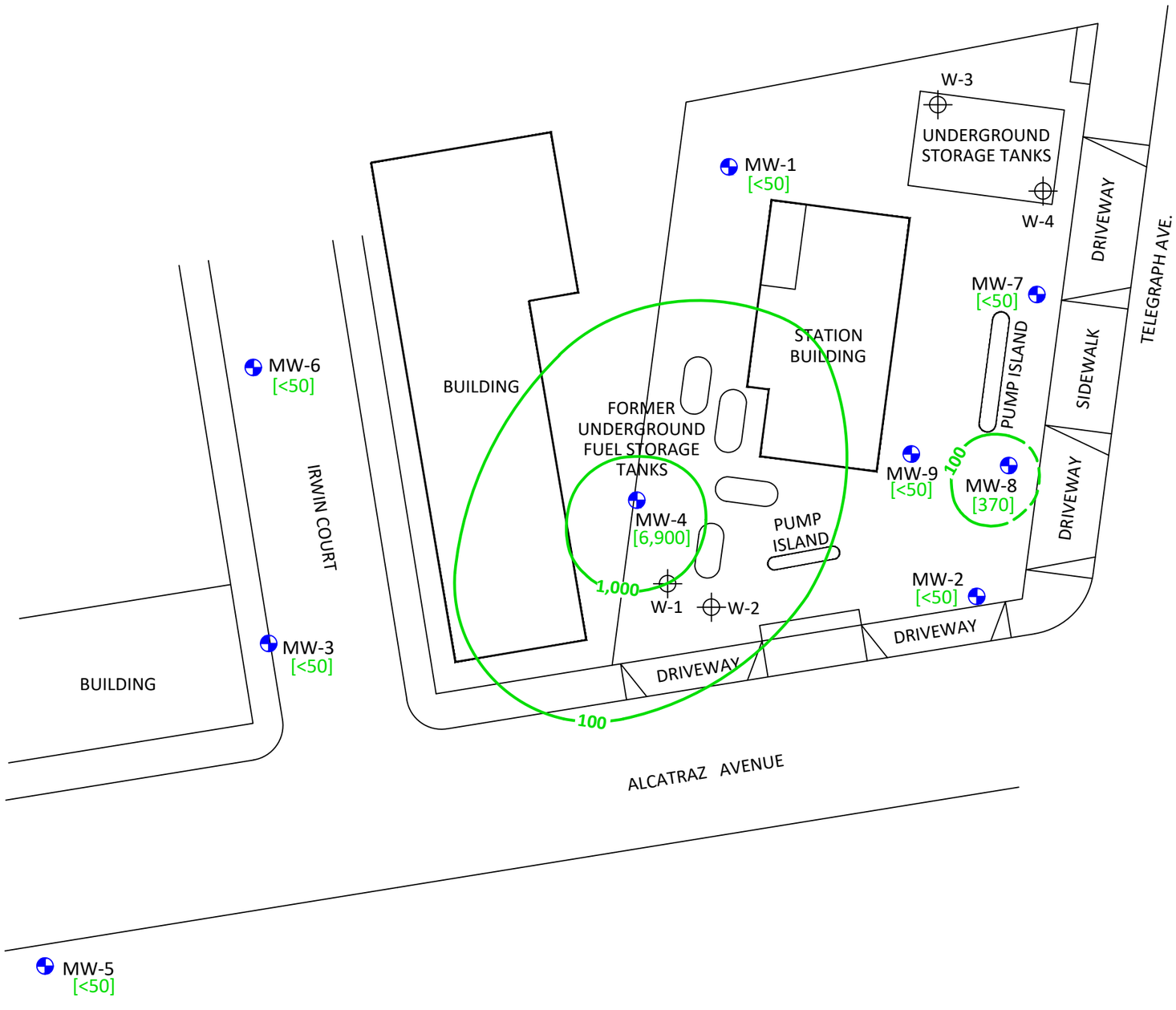
FIGURE 5



N

LEGEND:

- MONITORING WELL LOCATION
- TANK PIT MONITORING WELL LOCATION
- [6,900] GASOLINE RANGE ORGANICS CONCENTRATION (µg/L)
- 1,000 GRO CONCENTRATION CONTOUR (µg/L; DASHED WHERE INFERRED)
- < LESS THAN LABORATORY REPORTING LIMIT

NOTES:

1) SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
2) SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
3) GROUNDWATER MONITORING WELLS GAUGED AND SAMPLED ON SEPTEMBER 19-21, 2017.

0 30' 60'

GRAPHIC SCALE

FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

GRO CONCENTRATION MAP
SEPTEMBER 19-21, 2017

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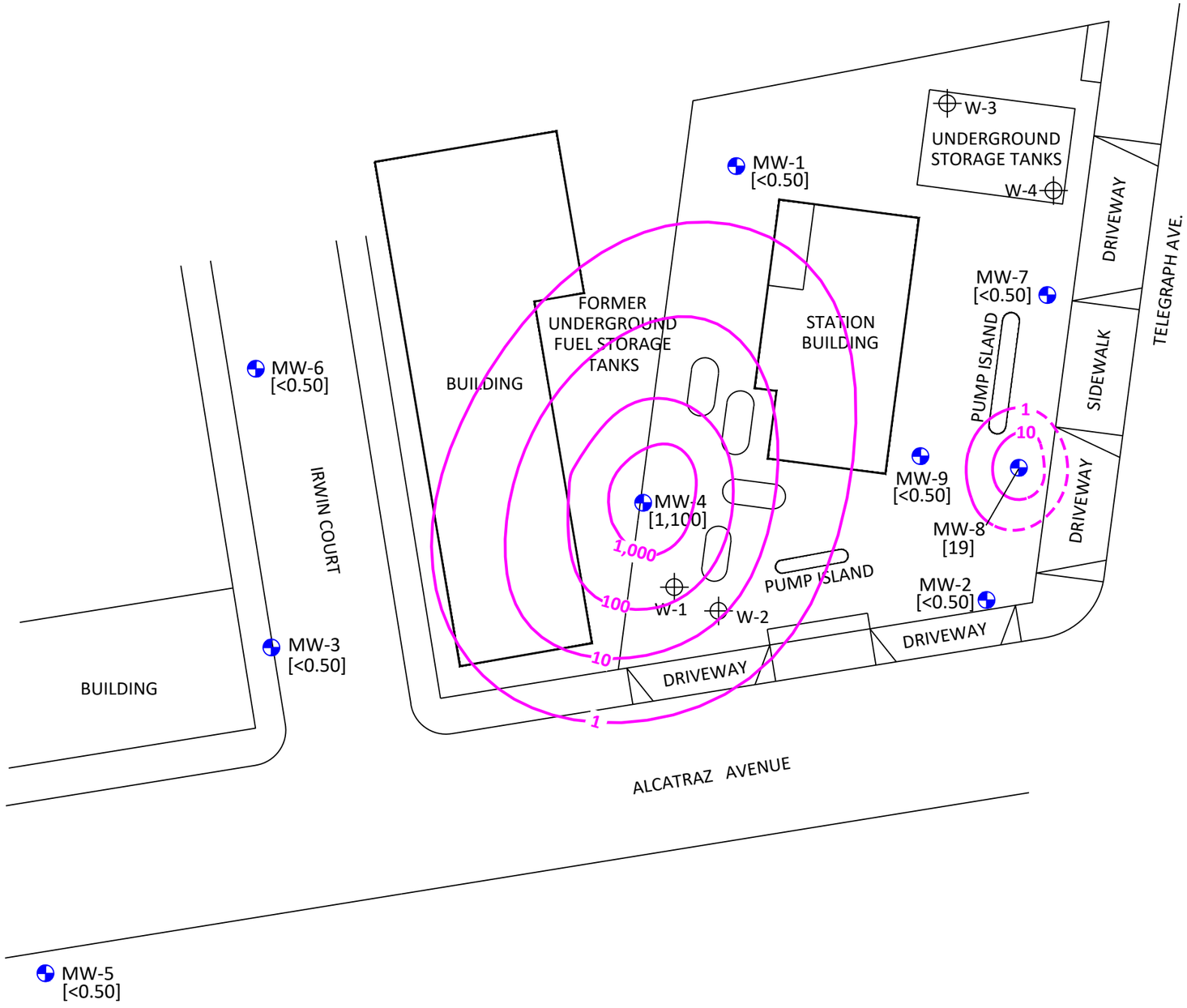
FIGURE
6



N

LEGEND:

- MONITORING WELL LOCATION
- TANK PIT MONITORING WELL LOCATION
- [1,100] BENZENE CONCENTRATION (µg/L)
- 1,000 BENZENE CONCENTRATION CONTOUR (µg/L; DASHED WHERE INFERRED)
- < LESS THAN LABORATORY REPORTING LIMIT

NOTES:

1) SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
2) SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
3) GROUNDWATER MONITORING WELLS GAUGED AND SAMPLED ON SEPTEMBER 19-21, 2017.

0 30' 60'

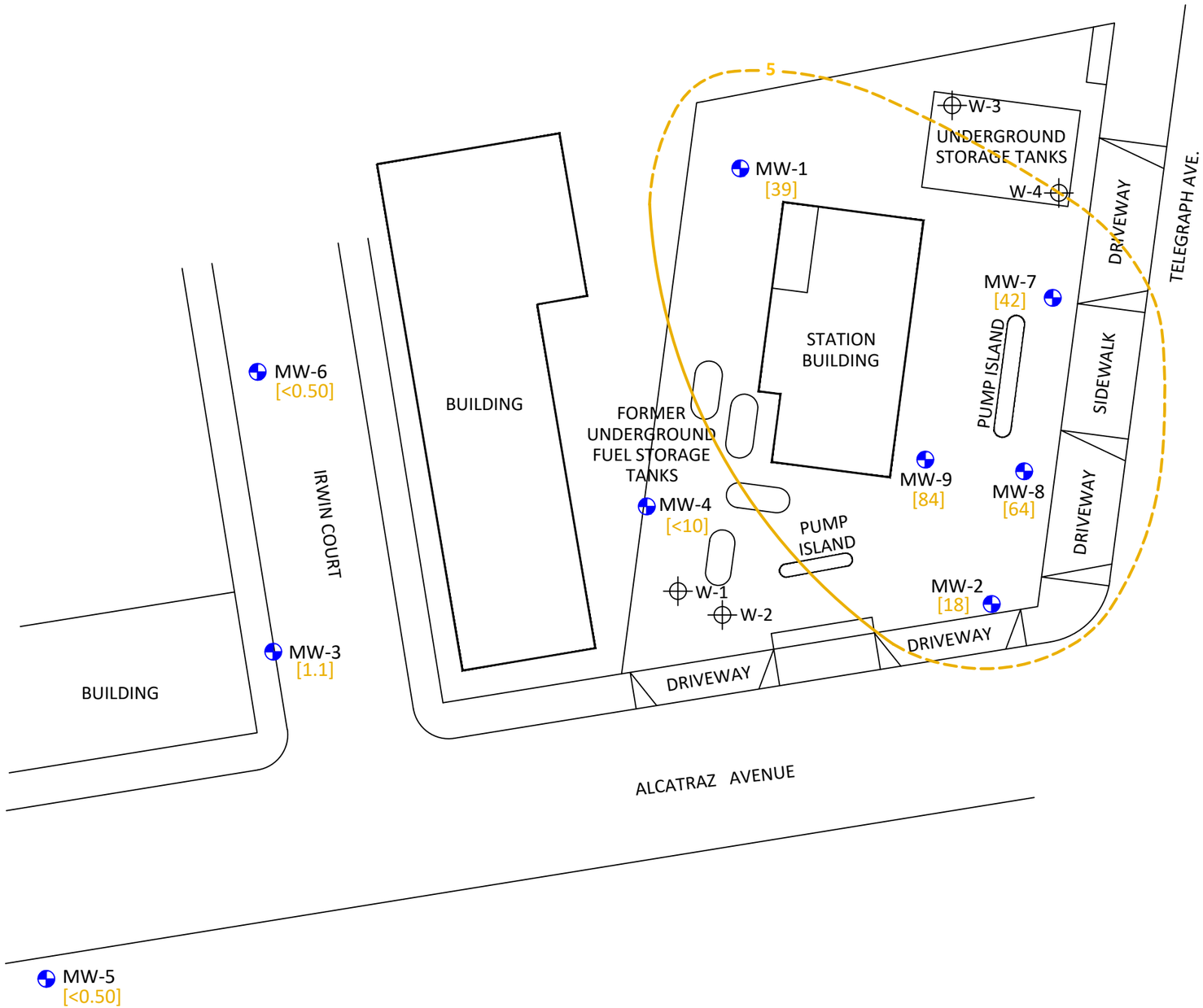
GRAPHIC SCALE

FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

BENZENE CONCENTRATION MAP
SEPTEMBER 19-21, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE
7



N

LEGEND:

- MONITORING WELL LOCATION
- TANK PIT MONITORING WELL LOCATION
- [84] MTBE CONCENTRATION (µg/L)
- 5 MTBE CONCENTRATION CONTOUR (µg/L; DASHED WHERE INFERRED)
- < LESS THAN LABORATORY REPORTING LIMIT

NOTES:

1) SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
2) SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
3) GROUNDWATER MONITORING WELLS GAUGED AND SAMPLED ON SEPTEMBER 19-21, 2017.

0 30' 60'

GRAPHIC SCALE

FORMER BP SERVICE STATION NO. 0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

MTBE CONCENTRATION MAP
SEPTEMBER 19-21, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE
8

ATTACHMENT 1

Groundwater Monitoring Field Forms

ARCADIS

Water-Level Measurement Form

Project No: GP16BPNA.CA01.40000
Location: Oakland, CA

Date: 9/19/2017
Recorded By: Nicholas Vadpey

Well Number	Time	Static Depth to Water (ft btoc)	Duplicate Reading (ft btoc)	Total Depth (ft btoc)	Comments
MW-1	12:57	6.21	6.21	26.86	missing bolts
MW-2	13:45	6.38	6.38	26.38	missing bolts
MW-3	14:19	6.64	6.64	26.88	missing bolts
MW-4	14:10	6.10	6.10	27.03	
MW-5	(9/21) 10:05	5.75	5.75	23.13	
MW-6	14:35	5.40	5.40	14.70	
MW-7	13:10	6.00	6.00	19.82	rusty bolts; well box bolt ring broken
MW-8	13:15	6.48	6.48	19.42	odor; rusty bolts
MW-9	13:27	6.10	6.10	19.40	rusty bolts

ft btoc Feet below top of casing.

ARCADIS

Water-Level Measurement Form

Project No: GP16BPNA.CA01.40000
Location: Oakland, CA

Date: 9/19/2017
Recorded By: Nicholas Vadpey

Well Number	Time	Static Depth to Water (ft btoc)	Duplicate Reading (ft btoc)	Total Depth (ft btoc)	Comments
MW-1	12:57	6.21	6.21	26.86	missing bolts
MW-2	13:45	6.38	6.38	26.38	missing bolts
MW-3	14:19	6.64	6.64	26.88	missing bolts
MW-4	14:10	6.10	6.10	27.03	
MW-5	(9/21) 10:05	5.75	5.75	23.13	
MW-6	14:35	5.40	5.40	14.70	
MW-7	13:10	6.00	6.00	19.82	rusty bolts; well box bolt ring broken
MW-8	13:15	6.48	6.48	19.42	odor; rusty bolts
MW-9	13:27	6.10	6.10	19.40	rusty bolts

ft btoc Feet below top of casing.

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. GP16BPNA.CA01.40000 Well ID MW-1 Date 9/19/17

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather Partly cloudy

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material / PVC ___ SS

Static Water Level (ft-bmp) 8.21 Total Depth (ft-bmp) 26.86 Water Column/ Gallons in Well 18.65

MP Elevation _____ Pump Intake (ft-bmp) _____ Purge Method: Peristaltic Centrifugal ___ Submersible ___ Other ___ Sample Method Low-flow

Pump On/Off 16:50/18:10 Volumes Purged _____

Sample Time: Label 18:03 Start 18:05 End 18:10 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
16:50	0	0	8.21	0	—	—	—	—	—	—		
16:53	3	125	8.31		6.47	825	8.89	0.66	19.1	317.8	clear	none
16:56	6	125	8.41		6.46	824	17.0	0.57	19.1	308.1		
16:58	8	125	8.50		6.46	824	14.3	0.53	19.1	300.2		
17:00	10	125	8.54		6.45	825	13.8	0.51	19.1	293.8		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL vial	6	HCl

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: Yes / (No)

Condition of Well: Missing bolts (~~check~~ clean wrench) Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up Key Number To Well: _____

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GROUNDWATER SAMPLING LOG

Project No. GP16BPNA.CA01.40000 | Well ID MW-2 | Date 9/20/11

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland | Weather clear

Measuring Pt. Description | Screen Setting (ft-bmp) | Casing Diameter (in.) 4 | Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 6.38 | Total Depth (ft-bmp) 26.38 | Water Column/ Gallons in Well 18.00

MP Elevation | Pump Intake (ft-bmp) | Purge Method: Peristaltic / Centrifugal / Submersible / Other | Sample Method Low-Flow

Pump On/Off 10:51/11:20 | Volumes Purged

Sample Time: Label 11:03 | Start 11:10 | End 11:20 | Replicate/ Code No.

Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
10:51	0	0	6.38	0	—	—	—	—	—	—		
10:53	2	350	6.45		6.91	596	16.9	0.26	23.5	211.9	clear	none
10:55	4	350	6.61		6.86	596	8.67	0.19	23.5	202.6		
10:57	6	350	6.69		6.84	597	8.71	0.20	23.6	195.7		
10:59	8	350	6.73		6.83	594	7.71	0.15	23.3	192.6		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40mL vial	6	HCl

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: | Well Locked at Arrival: Yes / (No)

Condition of Well: missing bolts (allen wrench) | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well:

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Project No. GP16BPNA.CA01.40000 Well ID MW-3 Date 9/20/17

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather Partly cloudy

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) _____ Well Material ___ PVC ___ SS

Static Water Level (ft-bmp) 6.64 Total Depth (ft-bmp) 26.88 Water Column/ Gallons in Well 20.24

MP Elevation _____ Pump Intake (ft-bmp) 10 Purge Method: Peristaltic Centrifugal Submersible Other Sample Method Low-flow

Pump On/Off 8:45 / 9:10 Volumes Purged _____

Sample Time: Label 8:55 Start 9:00 End 9:10 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
8:45	0	0	6.64	0	—	—	—	—	—	—		
8:46	1	150	6.86		5.60	551	7.35	0.31	19.6	100.3	clear	none
8:48	3	300	7.09		6.51	556	5.29	0.20	19.5	51.6		
8:50	5	300	7.21		6.47	555	5.91	0.19	19.5	41.8		
8:52	7	300	7.31		6.44	554	5.12	0.19	19.5	39.2		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL vials	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: Yes / (No)

Condition of Well: missing bolts (allen wrench) Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up Key Number To Well: _____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. GP16BPNA.CA01.40000 Well ID MW-4 Date 9/20/19

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather clear

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 8.10 Total Depth (ft-bmp) 27.03 Water Column/ Gallons in Well 18.93

MP Elevation _____ Pump Intake (ft-bmp) _____ Purge Method: Peristaltic Centrifugal ___ Submersible ___ Other ___ Sample Method Low-flow

Pump On/Off 14:10/14:45 Volumes Purged _____

Sample Time: Label 14:30 Start 14:35 End 14:45 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
14:10	0	0	8.10	0	—	—	—	—	—	—		
14:12	2	400	8.27		6.71	836	3.28	0.30	19.0	13.0	clear	strong
14:14	4	400	8.38		6.68	836	1.84	0.24	19.0	-28.0		
14:16	6	400	8.50		6.66	837	1.75	0.23	19.0	-40.8		
14:18	8	400	8.63		6.63	819	2.00	0.36	19.4	-52.9		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL ● vials	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: (Yes) / No

Condition of Well: Bolts securing metal hatch loose Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up Key Number To Well: _____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. GP16BPNA.CA01.40000 Well ID MW-5 Date 9/21/17

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 5.75 Total Depth (ft-bmp) 23.13 Water Column/ Gallons in Well 17.38

MP Elevation _____ Pump Intake (ft-bmp) _____ Purge Method: Peristaltic / Centrifugal / Submersible / Other _____ Sample Method Low-flow

Pump On/Off 10:10/10:30 Volumes Purged _____

Sample Time: Label 10:15 Start 10:20 End 10:30 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
10:10	0	0	5.75	0	—	—	—	—	—	—		
10:12	2	400	6.10		6.89	589	11.3	0.25	21.4	238.7	clear	none
10:14	4	400	6.26		6.76	587	9.76	0.18	21.3	225.3		
10:16	6	400	6.43		6.72	586	9.36	0.15	21.3	218.2		
10:18	8	400	6.60		6.71	585	9.67	0.13	21.4	212.2		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL vials	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No

Condition of Well: Fair; loose bolts Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Project No. GP16BPNA.CA01.40000 Well ID MW-6 Date 9/19/17

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather Partly cloudy

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 5.40 Total Depth (ft-bmp) 14.70 Water Column/ Gallons in Well 1.30

MP Elevation _____ Pump Intake (ft-bmp) 10 Purge Method: Peristaltic / Centrifugal / Submersible / Other _____ Sample Method Low-flow

Pump On/Off 15:38/16:10 Volumes Purged _____

Sample Time: Label 13:54 Start 16:00 End 16:10 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
15:38	0	0	5.40	0	–	–	–	–	–	–		
15:40	2	150	5.79		6.71	401.1	0.80	0.30	21.4	289.4	clear	none
15:43	5	150	5.83		6.56	400.5	0.76	0.30	21.3	284.7		
15:45	7	150	5.85		6.50	400.8	1.53	0.32	21.4	278.8		
15:47	9	150	5.90		6.41	401.5	2.37	0.30	21.4	275.5		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOAs	40 mL vials	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No

Condition of Well: Fair Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Project No. GP16BPNA.CA01.40000 Well ID MW-7 Date 9/20/17

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather Partly cloudy

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 8.00 Total Depth (ft-bmp) 19.82 Water Column/ Gallons in Well 11.82

MP Elevation _____ Pump Intake (ft-bmp) _____ Purge Method: Peristaltic Centrifugal Submersible Other _____ Sample Method Low-flow

Pump On/Off 8:10/8:32 Volumes Purged _____

Sample Time: Label 8:20 Start 8:25 End 8:32 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance	
											Color	Odor
8:10	0	0	8.00	0	—	—	—	—	—	—		
8:12	2	200	8.13		6.72	815	14.9	0.15	21.7	44.4	clear	none
8:14	4	200	8.18		6.73	805	13.6	0.15	21.6	30.0		
8:15	5	200	8.20		6.73	802	12.6	0.17	21.6	29.5		
8:17	7	200	8.22		6.74	796	11.4	0.18	21.6	32.4		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL vial	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: (Yes) / No

Condition of Well: rusty bolts; well box bolt fitting broken Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up Key Number To Well: _____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Project No. GP16BPNA.CA01.40000 Well ID MW-6 Date 9/21/2017

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather Clear

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 8.48 Total Depth (ft-bmp) 19.42 Water Column/ Gallons in Well 10.94

MP Elevation _____ Pump Intake (ft-bmp) _____ Purge Method: Peristaltic / Centrifugal / Submersible / Other _____ Sample Method Low-Flow

Pump On/Off 11:39/12:05 Volumes Purged _____

Sample Time: Label 11:50 Start 11:55 End 12:05 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
11:39	0	0	8.46	0	—	—	—	—	—	—		
11:43	4	400	8.60		6.78	565	9.21	0.19	22.8	195.6	clear	none
11:44	5	400	8.72		6.70	564	6.99	0.14	22.8	186.3		
11:46	7	400	8.76		6.65	564	8.07	0.12	22.9	177.9		
11:48	9	400	8.85		6.63	564	10.9	0.11	22.9	167.7		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL vials	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: (Yes) / No

Condition of Well: rusty bolts Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up Key Number To Well: _____

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER SAMPLING LOG

Project No. GP16BPNA.CA01.40000 Well ID MW-9 Date 9/20/2017

Project Name/Location BP 0374 / 6407 Telegraph Avenue, Oakland Weather clear

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 4 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 8.10 Total Depth (ft-bmp) 19.40 Water Column/ Gallons in Well 11.30

MP Elevation _____ Pump Intake (ft-bmp) _____ Purge Method: PERISTALTIC Centrifugal Submersible Other Sample Method Low-flow

Pump On/Off 9:50 / 10:17 Volumes Purged _____

Sample Time: Label 10:02 Start 10:07 End 10:17 Replicate/ Code No. _____ Sampled by NAV

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (mMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
9:50	0	0	8.10	0	–	–	–	–	–	–		
9:52	2	300	8.22		6.86	664	340	0.22	20.8	75.6	white	none
9:54	4	300	8.26		6.86	629	259	0.20	20.8	25.0		
9:56	6	300	8.32		6.85	615	138	0.21	20.9	24.5	clear	none
9:58	8	300	8.35		6.85	609	152	0.21	20.9	26.0		
Stabilization Parameters (3 readings):					±0.1	3%	10%	10%	3%	±10 mv		

Constituents Sampled	Container	Number	Preservative
VOCs	40mL vial	6	HCl

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: _____ Well Locked at Arrival: (Yes) / No

Condition of Well: rusty bolts Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up Key Number To Well: _____

ATTACHMENT 2

Groundwater Analytical Laboratory Report

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: 440-192802-1
Client Project/Site: ARCO 0374, Oakland

For:
ARCADIS U.S. Inc
101 Creekside Ridge Court
2nd Floor
Roseville, California 95678

Attn: Melanie Wong

Authorized for release by:
9/29/2017 4:49:20 PM

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

Table of Contents

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-192802-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-192802-1	MW-5	Water	09/21/17 10:26	09/22/17 09:25
440-192802-2	MW-6	Water	09/19/17 16:00	09/22/17 09:25
440-192802-3	MW-3	Water	09/20/17 09:00	09/22/17 09:25
440-192802-4	MW-7	Water	09/20/17 08:25	09/22/17 09:25
440-192802-5	MW-2	Water	09/20/17 11:00	09/22/17 09:25
440-192802-6	MW-1	Water	09/19/17 15:05	09/22/17 09:25
440-192802-7	MW-8	Water	09/21/17 11:55	09/22/17 09:25
440-192802-8	MW-9	Water	09/20/17 10:07	09/22/17 09:25
440-192802-9	MW-4	Water	09/20/17 14:35	09/22/17 09:25

Job ID: 440-192802-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-192802-1

Comments
No additional comments.

Receipt
The samples were received on 9/22/2017 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1º C.

Receipt Exceptions
The following sample was received at the laboratory without a sample collection time documented on the chain of custody: Trip Blank (440-192802-10). The default date and time of 9/21/17, 00:01 were used for login.

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 Sample ID: MW-5

Date Collected: 09/21/17 10:26
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-1
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			09/28/17 14:53	1
1,2-Dichloroethane	ND		0.50		ug/L			09/28/17 14:53	1
Benzene	ND		0.50		ug/L			09/28/17 14:53	1
Ethanol	ND		150		ug/L			09/28/17 14:53	1
Ethylbenzene	ND		0.50		ug/L			09/28/17 14:53	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			09/28/17 14:53	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			09/28/17 14:53	1
m,p-Xylene	ND		1.0		ug/L			09/28/17 14:53	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			09/28/17 14:53	1
o-Xylene	ND		0.50		ug/L			09/28/17 14:53	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			09/28/17 14:53	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			09/28/17 14:53	1
Toluene	ND		0.50		ug/L			09/28/17 14:53	1
Xylenes, Total	ND		1.0		ug/L			09/28/17 14:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/28/17 14:53*	*1*
Dibromofluoromethane (Surr)	*119*		*76 - 132*		*09/28/17 14:53*	*1*
Toluene-d8 (Surr)	*105*		*80 - 128*		*09/28/17 14:53*	*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			09/28/17 17:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*65 - 140*		*09/28/17 17:51*	*1*

Client Sample ID: MW-6

Date Collected: 09/19/17 16:00
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-2
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			09/28/17 15:23	1
1,2-Dichloroethane	ND		0.50		ug/L			09/28/17 15:23	1
Benzene	ND		0.50		ug/L			09/28/17 15:23	1
Ethanol	ND		150		ug/L			09/28/17 15:23	1
Ethylbenzene	ND		0.50		ug/L			09/28/17 15:23	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			09/28/17 15:23	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			09/28/17 15:23	1
m,p-Xylene	ND		1.0		ug/L			09/28/17 15:23	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			09/28/17 15:23	1
o-Xylene	ND		0.50		ug/L			09/28/17 15:23	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			09/28/17 15:23	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			09/28/17 15:23	1
Toluene	ND		0.50		ug/L			09/28/17 15:23	1
Xylenes, Total	ND		1.0		ug/L			09/28/17 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*09/28/17 15:23*	*1*

Client Sample ID: MW-6

Lab Sample ID: 440-192802-2
Date Collected: 09/19/17 16:00
Matrix: Water
Date Received: 09/22/17 09:25

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 132*		*09/28/17 15:23*	*1*
Toluene-d8 (Surr)	*106*		*80 - 128*		*09/28/17 15:23*	*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			09/28/17 19:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*65 - 140*		*09/28/17 19:14*	*1*

Client Sample ID: MW-3

Lab Sample ID: 440-192802-3
Date Collected: 09/20/17 09:00
Matrix: Water
Date Received: 09/22/17 09:25

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			09/28/17 15:52	1
1,2-Dichloroethane	ND		0.50	ug/L			09/28/17 15:52	1
Benzene	ND		0.50	ug/L			09/28/17 15:52	1
Ethanol	ND		150	ug/L			09/28/17 15:52	1
Ethylbenzene	ND		0.50	ug/L			09/28/17 15:52	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/28/17 15:52	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/28/17 15:52	1
m,p-Xylene	ND		1.0	ug/L			09/28/17 15:52	1
Methyl-t-Butyl Ether (MTBE)	**1.1**		0.50	ug/L			09/28/17 15:52	1
o-Xylene	ND		0.50	ug/L			09/28/17 15:52	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/28/17 15:52	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/28/17 15:52	1
Toluene	ND		0.50	ug/L			09/28/17 15:52	1
Xylenes, Total	ND		1.0	ug/L			09/28/17 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/28/17 15:52*	*1*
Dibromofluoromethane (Surr)	*117*		*76 - 132*		*09/28/17 15:52*	*1*
Toluene-d8 (Surr)	*108*		*80 - 128*		*09/28/17 15:52*	*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			09/28/17 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*65 - 140*		*09/28/17 19:42*	*1*

Client Sample ID: MW-7

Lab Sample ID: 440-192802-4
Date Collected: 09/20/17 08:25
Matrix: Water
Date Received: 09/22/17 09:25

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			09/28/17 16:22	1
1,2-Dichloroethane	ND		0.50	ug/L			09/28/17 16:22	1

Client Sample ID: MW-7

Lab Sample ID: 440-192802-4

Date Collected: 09/20/17 08:25

Matrix: Water

Date Received: 09/22/17 09:25

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50	ug/L			09/28/17 16:22	1
Ethanol	ND		150	ug/L			09/28/17 16:22	1
Ethylbenzene	ND		0.50	ug/L			09/28/17 16:22	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/28/17 16:22	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/28/17 16:22	1
m,p-Xylene	ND		1.0	ug/L			09/28/17 16:22	1
Methyl-t-Butyl Ether (MTBE)	**42**		0.50	ug/L			09/28/17 16:22	1
o-Xylene	ND		0.50	ug/L			09/28/17 16:22	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/28/17 16:22	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/28/17 16:22	1
Toluene	ND		0.50	ug/L			09/28/17 16:22	1
Xylenes, Total	ND		1.0	ug/L			09/28/17 16:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*09/28/17 16:22*	*1*
Dibromofluoromethane (Surr)	*113*		*76 - 132*		*09/28/17 16:22*	*1*
Toluene-d8 (Surr)	*105*		*80 - 128*		*09/28/17 16:22*	*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			09/28/17 20:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*65 - 140*		*09/28/17 20:09*	*1*

Client Sample ID: MW-2

Lab Sample ID: 440-192802-5

Date Collected: 09/20/17 11:00

Matrix: Water

Date Received: 09/22/17 09:25

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			09/28/17 16:51	1
1,2-Dichloroethane	ND		0.50	ug/L			09/28/17 16:51	1
Benzene	ND		0.50	ug/L			09/28/17 16:51	1
Ethanol	ND		150	ug/L			09/28/17 16:51	1
Ethylbenzene	ND		0.50	ug/L			09/28/17 16:51	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/28/17 16:51	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/28/17 16:51	1
m,p-Xylene	ND		1.0	ug/L			09/28/17 16:51	1
Methyl-t-Butyl Ether (MTBE)	**18**		0.50	ug/L			09/28/17 16:51	1
o-Xylene	ND		0.50	ug/L			09/28/17 16:51	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/28/17 16:51	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/28/17 16:51	1
Toluene	ND		0.50	ug/L			09/28/17 16:51	1
Xylenes, Total	ND		1.0	ug/L			09/28/17 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*09/28/17 16:51*	*1*
Dibromofluoromethane (Surr)	*116*		*76 - 132*		*09/28/17 16:51*	*1*
Toluene-d8 (Surr)	*108*		*80 - 128*		*09/28/17 16:51*	*1*

Client Sample ID: MW-2

Lab Sample ID: 440-192802-5
Date Collected: 09/20/17 11:00
Matrix: Water
Date Received: 09/22/17 09:25

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			09/28/17 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*65 - 140*		*09/28/17 20:37*	*1*

Client Sample ID: MW-1

Lab Sample ID: 440-192802-6
Date Collected: 09/19/17 15:05
Matrix: Water
Date Received: 09/22/17 09:25

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			09/28/17 17:21	1
1,2-Dichloroethane	ND		0.50		ug/L			09/28/17 17:21	1
Benzene	ND		0.50		ug/L			09/28/17 17:21	1
Ethanol	ND		150		ug/L			09/28/17 17:21	1
Ethylbenzene	ND		0.50		ug/L			09/28/17 17:21	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			09/28/17 17:21	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			09/28/17 17:21	1
m,p-Xylene	ND		1.0		ug/L			09/28/17 17:21	1
Methyl-t-Butyl Ether (MTBE)	**39**		0.50		ug/L			09/28/17 17:21	1
o-Xylene	ND		0.50		ug/L			09/28/17 17:21	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			09/28/17 17:21	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			09/28/17 17:21	1
Toluene	ND		0.50		ug/L			09/28/17 17:21	1
Xylenes, Total	ND		1.0		ug/L			09/28/17 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*09/28/17 17:21*	*1*
Dibromofluoromethane (Surr)	*119*		*76 - 132*		*09/28/17 17:21*	*1*
Toluene-d8 (Surr)	*105*		*80 - 128*		*09/28/17 17:21*	*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			09/28/17 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*65 - 140*		*09/28/17 21:05*	*1*

Client Sample ID: MW-8

Lab Sample ID: 440-192802-7
Date Collected: 09/21/17 11:55
Matrix: Water
Date Received: 09/22/17 09:25

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			09/28/17 17:50	1
1,2-Dichloroethane	ND		0.50		ug/L			09/28/17 17:50	1
Benzene	**19**		0.50		ug/L			09/28/17 17:50	1
Ethanol	ND		150		ug/L			09/28/17 17:50	1
Ethylbenzene	**1.3**		0.50		ug/L			09/28/17 17:50	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			09/28/17 17:50	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			09/28/17 17:50	1

Client Sample ID: MW-8

Lab Sample ID: 440-192802-7

Date Collected: 09/21/17 11:55

Matrix: Water

Date Received: 09/22/17 09:25

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		1.0	ug/L			09/28/17 17:50	1
Methyl-t-Butyl Ether (MTBE)	**64**		0.50	ug/L			09/28/17 17:50	1
o-Xylene	ND		0.50	ug/L			09/28/17 17:50	1
Tert-amyl-methyl ether (TAME)	**0.85**		0.50	ug/L			09/28/17 17:50	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/28/17 17:50	1
Toluene	ND		0.50	ug/L			09/28/17 17:50	1
Xylenes, Total	ND		1.0	ug/L			09/28/17 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/28/17 17:50*	*1*
Dibromofluoromethane (Surr)	*112*		*76 - 132*		*09/28/17 17:50*	*1*
Toluene-d8 (Surr)	*109*		*80 - 128*		*09/28/17 17:50*	*1*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**370**		50	ug/L			09/28/17 21:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*65 - 140*		*09/28/17 21:33*	*1*

Client Sample ID: MW-9

Lab Sample ID: 440-192802-8

Date Collected: 09/20/17 10:07

Matrix: Water

Date Received: 09/22/17 09:25

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			09/28/17 18:20	1
1,2-Dichloroethane	ND		0.50	ug/L			09/28/17 18:20	1
Benzene	ND		0.50	ug/L			09/28/17 18:20	1
Ethanol	ND		150	ug/L			09/28/17 18:20	1
Ethylbenzene	ND		0.50	ug/L			09/28/17 18:20	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/28/17 18:20	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/28/17 18:20	1
m,p-Xylene	ND		1.0	ug/L			09/28/17 18:20	1
Methyl-t-Butyl Ether (MTBE)	**84**		0.50	ug/L			09/28/17 18:20	1
o-Xylene	ND		0.50	ug/L			09/28/17 18:20	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/28/17 18:20	1
tert-Butyl alcohol (TBA)	**17**	**ID**	10	ug/L			09/28/17 18:20	1
Toluene	ND		0.50	ug/L			09/28/17 18:20	1
Xylenes, Total	ND		1.0	ug/L			09/28/17 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*09/28/17 18:20*	*1*
Dibromofluoromethane (Surr)	*118*		*76 - 132*		*09/28/17 18:20*	*1*
Toluene-d8 (Surr)	*106*		*80 - 128*		*09/28/17 18:20*	*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			09/28/17 22:00	1

Client Sample ID: MW-9

Lab Sample ID: 440-192802-8
Date Collected: 09/20/17 10:07
Matrix: Water
Date Received: 09/22/17 09:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*65 - 140*		*09/28/17 22:00*	*1*

Client Sample ID: MW-4

Lab Sample ID: 440-192802-9
Date Collected: 09/20/17 14:35
Matrix: Water
Date Received: 09/22/17 09:25

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		10	ug/L			09/28/17 18:49	20
1,2-Dichloroethane	ND		10	ug/L			09/28/17 18:49	20
Benzene	**1100**		10	ug/L			09/28/17 18:49	20
Ethanol	ND		3000	ug/L			09/28/17 18:49	20
Ethylbenzene	**27**		10	ug/L			09/28/17 18:49	20
Ethyl-t-butyl ether (ETBE)	ND		10	ug/L			09/28/17 18:49	20
Isopropyl Ether (DIPE)	ND		10	ug/L			09/28/17 18:49	20
m,p-Xylene	**130**		20	ug/L			09/28/17 18:49	20
Methyl-t-Butyl Ether (MTBE)	ND		10	ug/L			09/28/17 18:49	20
o-Xylene	ND		10	ug/L			09/28/17 18:49	20
Tert-amyl-methyl ether (TAME)	ND		10	ug/L			09/28/17 18:49	20
tert-Butyl alcohol (TBA)	ND		200	ug/L			09/28/17 18:49	20
Toluene	**61**		10	ug/L			09/28/17 18:49	20
Xylenes, Total	**130**		20	ug/L			09/28/17 18:49	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*09/28/17 18:49*	*20*
Dibromofluoromethane (Surr)	*113*		*76 - 132*		*09/28/17 18:49*	*20*
Toluene-d8 (Surr)	*108*		*80 - 128*		*09/28/17 18:49*	*20*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**6900**		500	ug/L			09/28/17 23:37	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*		*65 - 140*		*09/28/17 23:37*	*10*

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-192802-1

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: ARCADIS U.S. Inc
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-192802-1

Client Sample ID: MW-5
Date Collected: 09/21/17 10:26
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-1
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 14:53	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 17:51	IM	TAL IRV

Client Sample ID: MW-6
Date Collected: 09/19/17 16:00
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-2
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 15:23	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 19:14	IM	TAL IRV

Client Sample ID: MW-3
Date Collected: 09/20/17 09:00
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-3
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 15:52	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 19:42	IM	TAL IRV

Client Sample ID: MW-7
Date Collected: 09/20/17 08:25
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-4
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 16:22	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 20:09	IM	TAL IRV

Client Sample ID: MW-2
Date Collected: 09/20/17 11:00
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-5
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 16:51	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 20:37	IM	TAL IRV

Client Sample ID: MW-1
Date Collected: 09/19/17 15:05
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-6
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 17:21	HR	TAL IRV

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-192802-1

Client Sample ID: MW-1
Date Collected: 09/19/17 15:05
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-6
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		1	10 mL	10 mL	431868	09/28/17 21:05	IM	TAL IRV

Client Sample ID: MW-8
Date Collected: 09/21/17 11:55
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-7
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 17:50	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 21:33	IM	TAL IRV

Client Sample ID: MW-9
Date Collected: 09/20/17 10:07
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-8
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	8260B/5030B		1	10 mL	10 mL	431832	09/28/17 18:20	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	431868	09/28/17 22:00	IM	TAL IRV

Client Sample ID: MW-4
Date Collected: 09/20/17 14:35
Date Received: 09/22/17 09:25

Lab Sample ID: 440-192802-9
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	8260B/5030B		20	10 mL	10 mL	431832	09/28/17 18:49	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		10	10 mL	10 mL	431868	09/28/17 23:37	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 440-431832/4
Matrix: Water
Analysis Batch: 431832

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			09/28/17 08:27	1
1,2-Dichloroethane	ND		0.50		ug/L			09/28/17 08:27	1
Benzene	ND		0.50		ug/L			09/28/17 08:27	1
Ethanol	ND		150		ug/L			09/28/17 08:27	1
Ethylbenzene	ND		0.50		ug/L			09/28/17 08:27	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			09/28/17 08:27	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			09/28/17 08:27	1
m,p-Xylene	ND		1.0		ug/L			09/28/17 08:27	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			09/28/17 08:27	1
o-Xylene	ND		0.50		ug/L			09/28/17 08:27	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			09/28/17 08:27	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			09/28/17 08:27	1
Toluene	ND		0.50		ug/L			09/28/17 08:27	1
Xylenes, Total	ND		1.0		ug/L			09/28/17 08:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*09/28/17 08:27*	*1*
Dibromofluoromethane (Surr)	*116*		*76 - 132*		*09/28/17 08:27*	*1*
Toluene-d8 (Surr)	*109*		*80 - 128*		*09/28/17 08:27*	*1*

Lab Sample ID: LCS 440-431832/5
Matrix: Water
Analysis Batch: 431832

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	23.8		ug/L		95	70 - 130		
1,2-Dichloroethane			25.0	29.0		ug/L		116	57 - 138		
Benzene			25.0	24.6		ug/L		98	68 - 130		
Ethanol			1000	984		ug/L		98	50 - 149		
Ethylbenzene			25.0	23.2		ug/L		93	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	25.2		ug/L		101	60 - 136		
Isopropyl Ether (DIPE)			25.0	24.3		ug/L		97	58 - 139		
m,p-Xylene			25.0	23.7		ug/L		95	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	27.2		ug/L		109	63 - 131		
o-Xylene			25.0	24.1		ug/L		96	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	25.5		ug/L		102	57 - 139		
tert-Butyl alcohol (TBA)			250	224		ug/L		90	70 - 130		
Toluene			25.0	23.2		ug/L		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*115*		*76 - 132*
Toluene-d8 (Surr)	*101*		*80 - 128*

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

Lab Sample ID: 440-192941-A-1 MS
Matrix: Water
Analysis Batch: 431832

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	24.0		ug/L		96	70 - 131
1,2-Dichloroethane	ND		25.0	28.8		ug/L		115	56 - 146
Benzene	ND		25.0	23.7		ug/L		95	66 - 130
Ethanol	ND		1000	1000		ug/L		100	54 - 150
Ethylbenzene	ND		25.0	23.5		ug/L		94	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	24.1		ug/L		97	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	24.0		ug/L		96	64 - 138
m,p-Xylene	ND		25.0	24.0		ug/L		96	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	25.8		ug/L		103	70 - 130
o-Xylene	ND		25.0	23.6		ug/L		94	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	23.7		ug/L		95	68 - 133
tert-Butyl alcohol (TBA)	ND		250	242		ug/L		97	70 - 130
Toluene	ND		25.0	22.8		ug/L		91	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*112*		*76 - 132*
Toluene-d8 (Surr)	*100*		*80 - 128*

Lab Sample ID: 440-192941-A-1 MSD
Matrix: Water
Analysis Batch: 431832

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	28.0		ug/L		112	70 - 131	15	25
1,2-Dichloroethane	ND		25.0	32.5		ug/L		130	56 - 146	12	20
Benzene	ND		25.0	26.3		ug/L		105	66 - 130	10	20
Ethanol	ND		1000	1020		ug/L		102	54 - 150	2	30
Ethylbenzene	ND		25.0	26.5		ug/L		106	70 - 130	12	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	27.0		ug/L		108	70 - 130	11	25
Isopropyl Ether (DIPE)	ND		25.0	26.2		ug/L		105	64 - 138	9	25
m,p-Xylene	ND		25.0	27.4		ug/L		110	70 - 133	13	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	30.3		ug/L		121	70 - 130	16	25
o-Xylene	ND		25.0	26.9		ug/L		108	70 - 133	13	20
Tert-amyl-methyl ether (TAME)	ND		25.0	27.1		ug/L		108	68 - 133	13	30
tert-Butyl alcohol (TBA)	ND		250	244		ug/L		98	70 - 130	1	25
Toluene	ND		25.0	26.0		ug/L		104	70 - 130	13	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*110*		*76 - 132*
Toluene-d8 (Surr)	*105*		*80 - 128*

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

Lab Sample ID: MB 440-431868/5
Matrix: Water
Analysis Batch: 431868

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			09/28/17 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*65 - 140*		*09/28/17 17:23*	*1*

Lab Sample ID: LCS 440-431868/4
Matrix: Water
Analysis Batch: 431868

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	752		ug/L		94	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*65 - 140*

Lab Sample ID: 440-192802-1 MS
Matrix: Water
Analysis Batch: 431868

Client Sample ID: MW-5
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	712		ug/L		89	65 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*65 - 140*

Lab Sample ID: 440-192802-1 MSD
Matrix: Water
Analysis Batch: 431868

Client Sample ID: MW-5
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	749		ug/L		94	65 - 140	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*65 - 140*

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-192802-1

GC/MS VOA

Analysis Batch: 431832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192802-1	MW-5	Total/NA	Water	8260B/5030B	
440-192802-2	MW-6	Total/NA	Water	8260B/5030B	
440-192802-3	MW-3	Total/NA	Water	8260B/5030B	
440-192802-4	MW-7	Total/NA	Water	8260B/5030B	
440-192802-5	MW-2	Total/NA	Water	8260B/5030B	
440-192802-6	MW-1	Total/NA	Water	8260B/5030B	
440-192802-7	MW-8	Total/NA	Water	8260B/5030B	
440-192802-8	MW-9	Total/NA	Water	8260B/5030B	
440-192802-9	MW-4	Total/NA	Water	8260B/5030B	
MB 440-431832/4	Method Blank	Total/NA	Water	8260B/5030B	
LCS 440-431832/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
440-192941-A-1 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-192941-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 431868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192802-1	MW-5	Total/NA	Water	8015B/5030B	
440-192802-2	MW-6	Total/NA	Water	8015B/5030B	
440-192802-3	MW-3	Total/NA	Water	8015B/5030B	
440-192802-4	MW-7	Total/NA	Water	8015B/5030B	
440-192802-5	MW-2	Total/NA	Water	8015B/5030B	
440-192802-6	MW-1	Total/NA	Water	8015B/5030B	
440-192802-7	MW-8	Total/NA	Water	8015B/5030B	
440-192802-8	MW-9	Total/NA	Water	8015B/5030B	
440-192802-9	MW-4	Total/NA	Water	8015B/5030B	
MB 440-431868/5	Method Blank	Total/NA	Water	8015B/5030B	
LCS 440-431868/4	Lab Control Sample	Total/NA	Water	8015B/5030B	
440-192802-1 MS	MW-5	Total/NA	Water	8015B/5030B	
440-192802-1 MSD	MW-5	Total/NA	Water	8015B/5030B	

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
ID	Analyte identified by RT & presence of single mass ion

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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-192802-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-18
Arizona	State Program	9	AZ0671	10-14-17 *
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-18
Nevada	State Program	9	CA015312018-1	07-31-18
New Mexico	State Program	6	N/A	01-29-18 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

ARCADIS
101 Creekside Ridge Ct, Suite 200
Roseville, CA 95678
Phone: 916-786-0320

440-192802 Chain of Custody

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): James.Jacobsen@arcadis.com; melanie.a.wong@arcadis.com

GeoTracker EDF Report? ☑ Yes ☐ No

Laboratory/Address: Test America, 17461 Derian Ave Suite 100, Irvine, CA 92614

Phone No.: 949-261-1022 | Fax No.: 949-260-3297

Project Number: GP16BPNA.CA01 | Phase Number: 40000

Project Name: ARCO #0374

Project Address: 6407 Telegraph Avenue, Oakland, CA

Recommended but not mandatory to complete this section:
Sampling Company Log Code:

Global ID: T0600100106

EDF Deliverable To (Email Address): melanie.a.wong@arcadis.com

Sampler: Nicholas Vadpey

Signature:

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: GLASS	Container: PLASTIC VIAL	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Preservative:	Matrix: WATER	Matrix: SOIL	Matrix: DUST	Analysis Request: GRO (EPA Method 8260B)	Analysis Request: BTEX, MTBE, TBA, 1,2-DCA, EDB, ETBE, DIPE, TAME, and ethanol (EPA Method 8260B)	TAT: 12 Hr	TAT: 24 Hr	TAT: 48 Hr	TAT: 72 Hr	TAT: 1 Wk	TAT: 2 Wk	For Lab Use Only
MW-5	9/21/17	10:26							X					X			X	X	Std					
MW-6	9/19/17	16:00							X					X			X	X	Std					
MW-3	9/20/17	9:00							X					X			X	X	Std					
MW-7	9/20/17	6:25							X					X			X	X	Std					
MW-2	9/20/17	11:10							X					X			X	X	Std					
MW-1	9/19/17	15:05							X					X			X	X	Std					
MW-8	9/21/17	11:55							X					X			X	X	Std					
MW-9	9/20/17	10:07							X					X			X	X	Std					
MW-4	9/20/17	14:35							X					X			X	X	Std					
TRIP BLANK									X					X			X	X	~~Std~~					

Relinquished by:	Date	Time	Received by:
Nicholas Vadpey	9/21/17	1455	
Relinquished by:	Date	Time	Received by:
	9-21-17	1630	9/22/17 0925

Remarks: Hold on TRIP BLANK until further notice.

VOA 9/22

3.3/3.1 SC6 QS NOS

4095-5407 7342

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9/29/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 440-192802-1

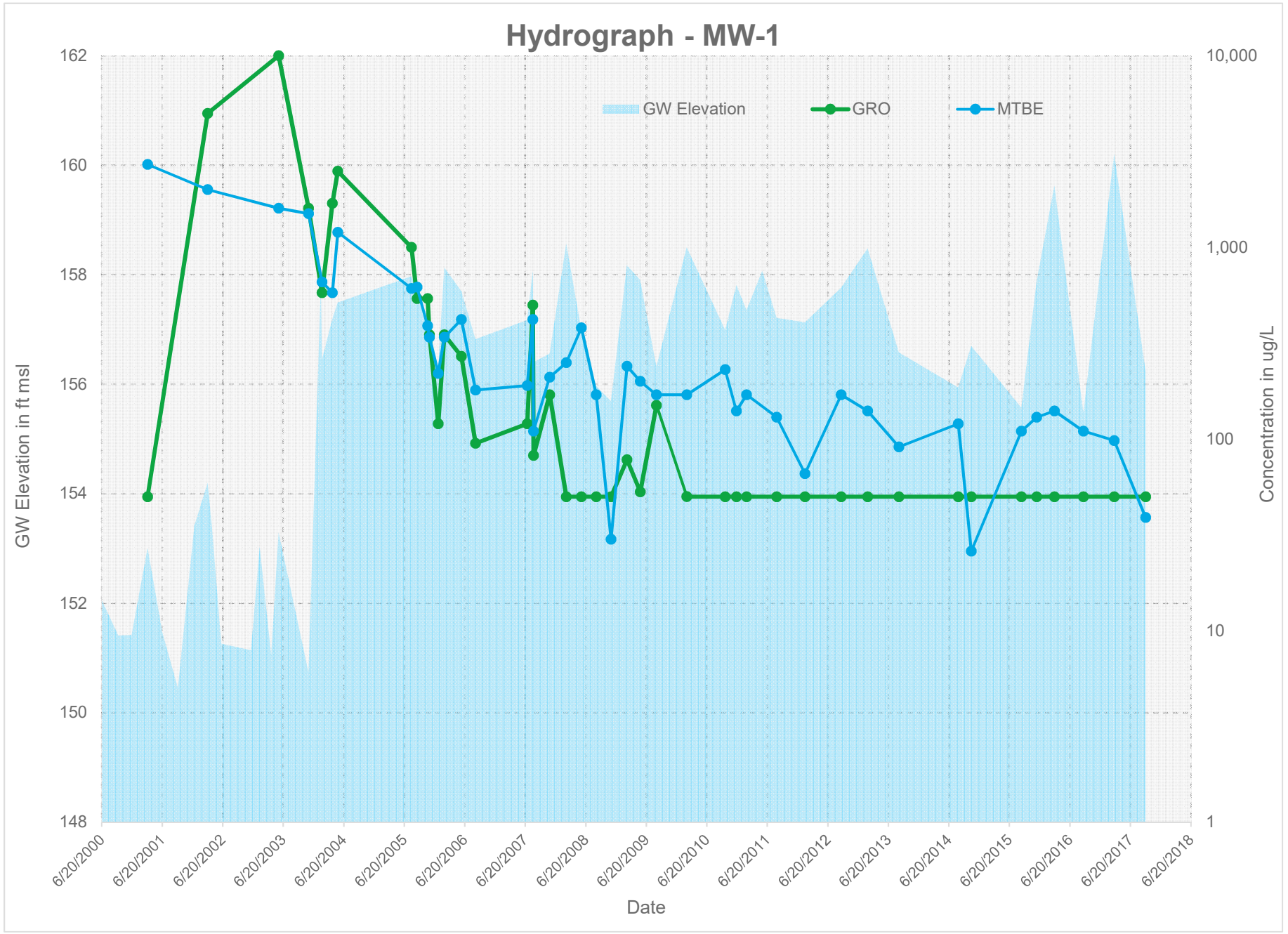
Login Number: 192802
List Number: 1
Creator: Garcia, Veronica G

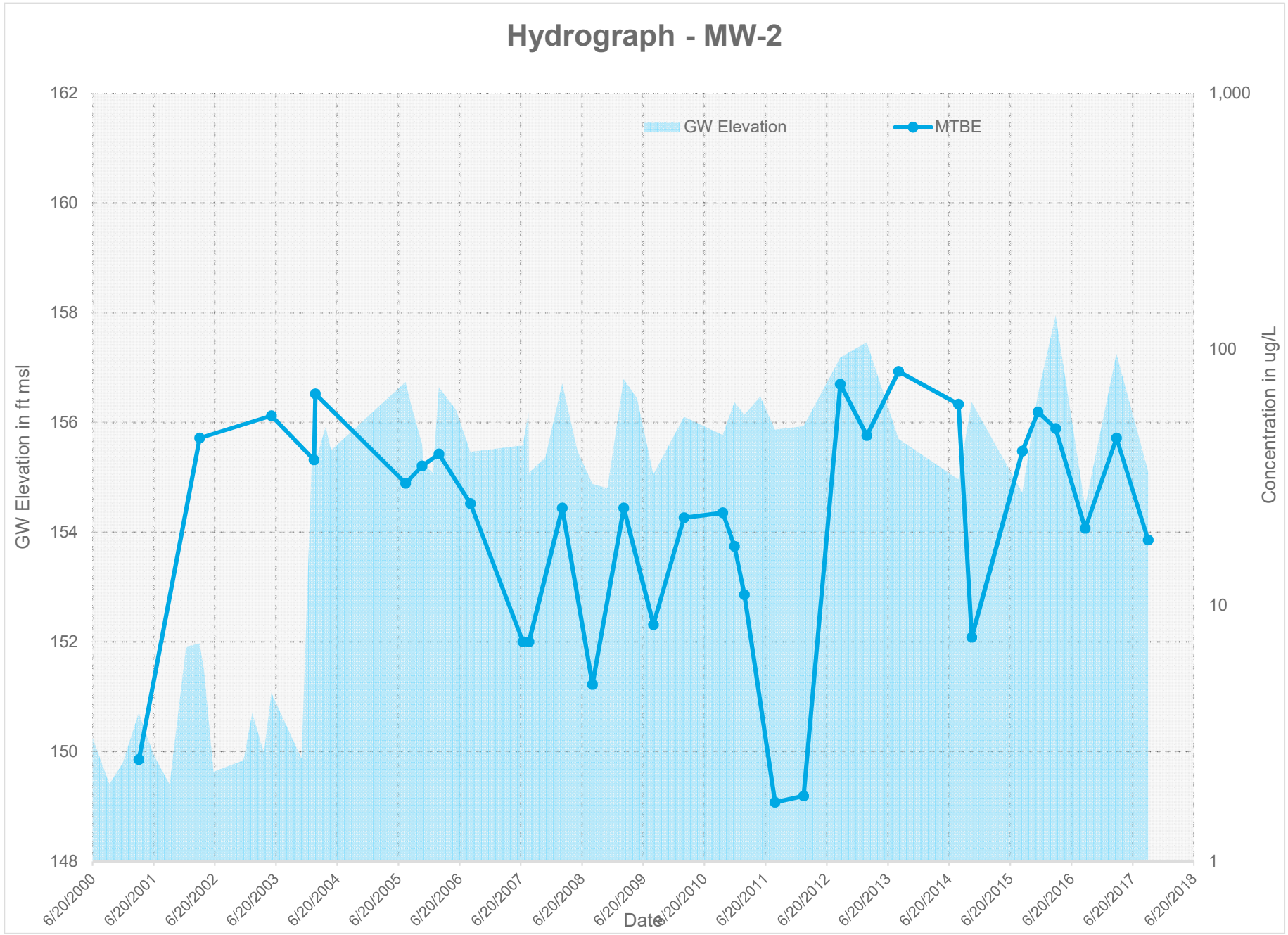
List Source: TestAmerica Irvine

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	Seals on cooler but date and time not filled out
Sample custody seals, if present, are intact.	N/A	Not Present
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 (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	Default login date and time for TB
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	

ATTACHMENT 3

Hydrographs


Hydrograph - MW-1
GW Elevation
GRO
MTBE
GW Elevation in ft msl
Concentration in ug/L
Date
162
160
158
156
154
152
150
148
10,000
1,000
100
10
1
6/20/2000
6/20/2001
6/20/2002
6/20/2003
6/20/2004
6/20/2005
6/20/2006
6/20/2007
6/20/2008
6/20/2009
6/20/2010
6/20/2011
6/20/2012
6/20/2013
6/20/2014
6/20/2015
6/20/2016
6/20/2017
6/20/2018


Hydrograph - MW-2
GW Elevation
MTBE
GW Elevation in ft msl
Concentration in ug/L
Date
162
160
158
156
154
152
150
148
1,000
100
10
1
6/20/2000
6/20/2001
6/20/2002
6/20/2003
6/20/2004
6/20/2005
6/20/2006
6/20/2007
6/20/2008
6/20/2009
6/20/2010
6/20/2011
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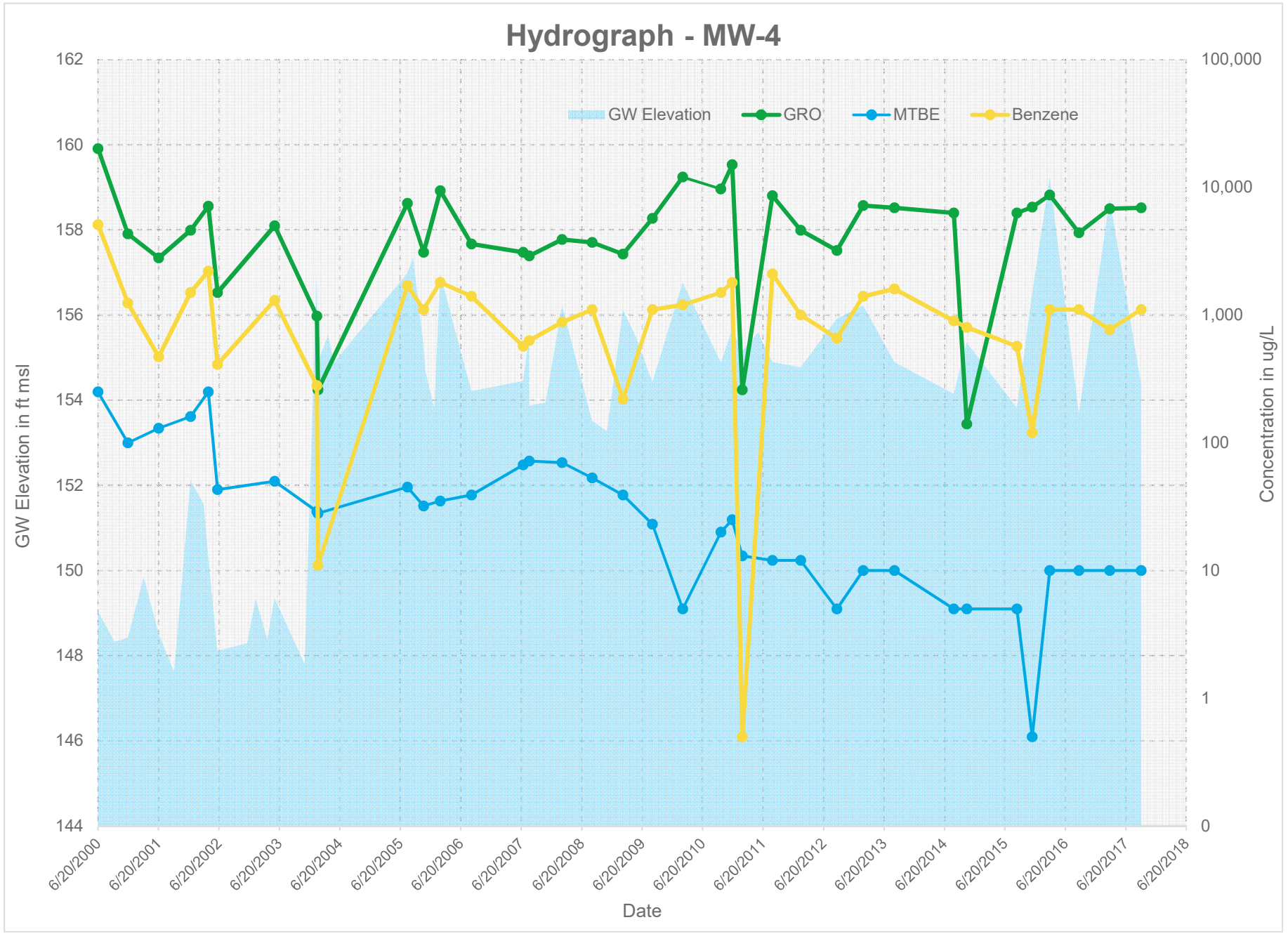
6/20/2013
6/20/2014
6/20/2015
6/20/2016
6/20/2017
6/20/2018


Hydrograph - MW-4
GW Elevation
GRO
MTBE
Benzene
GW Elevation in ft msl
Concentration in ug/L
Date
162
160
158
156
154
152
150
148
146
144
100,000
10,000
1,000
100
10
1
0
6/20/2000
6/20/2001
6/20/2002
6/20/2003
6/20/2004
6/20/2005
6/20/2006
6/20/2007
6/20/2008
6/20/2009
6/20/2010
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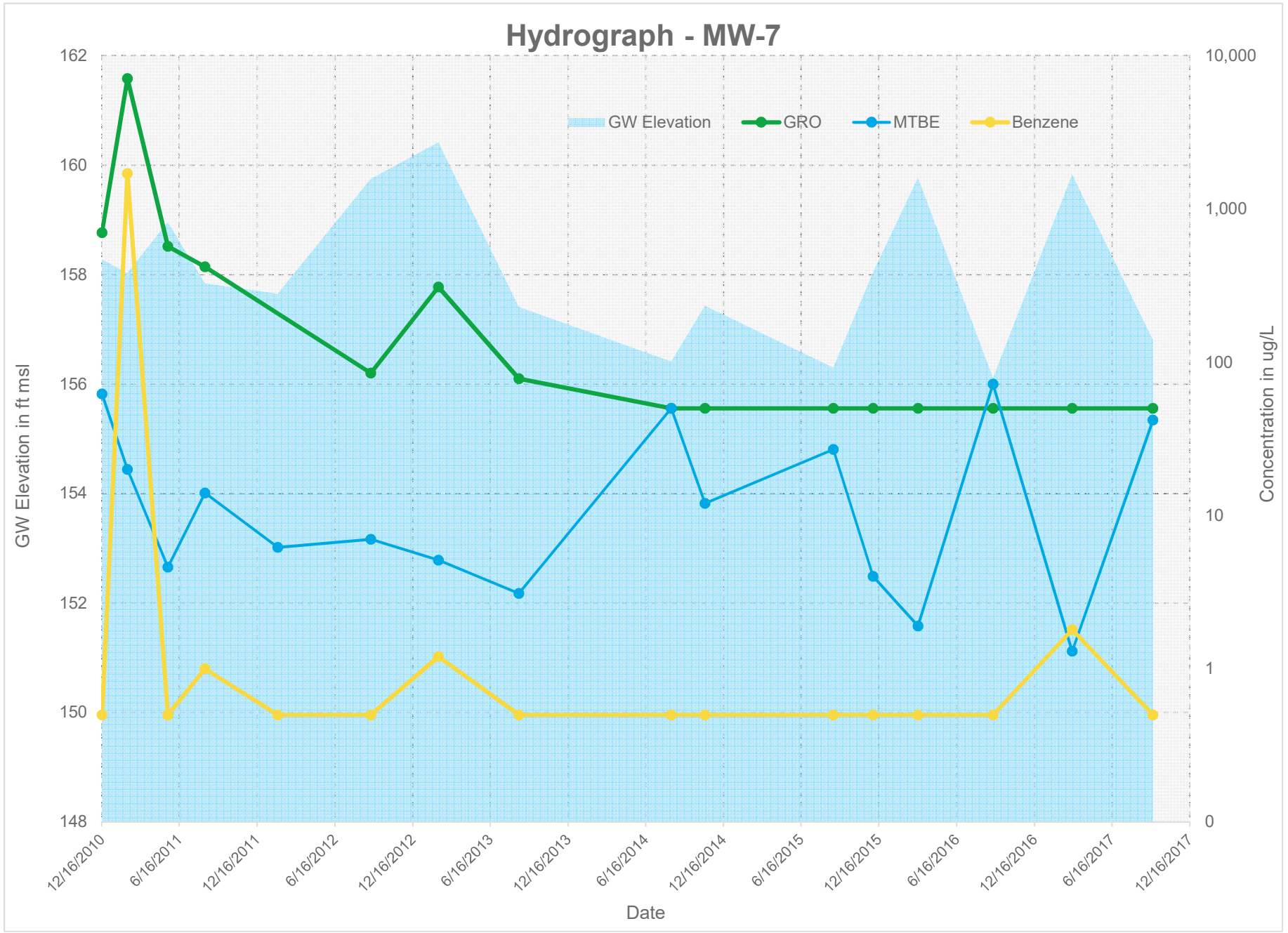
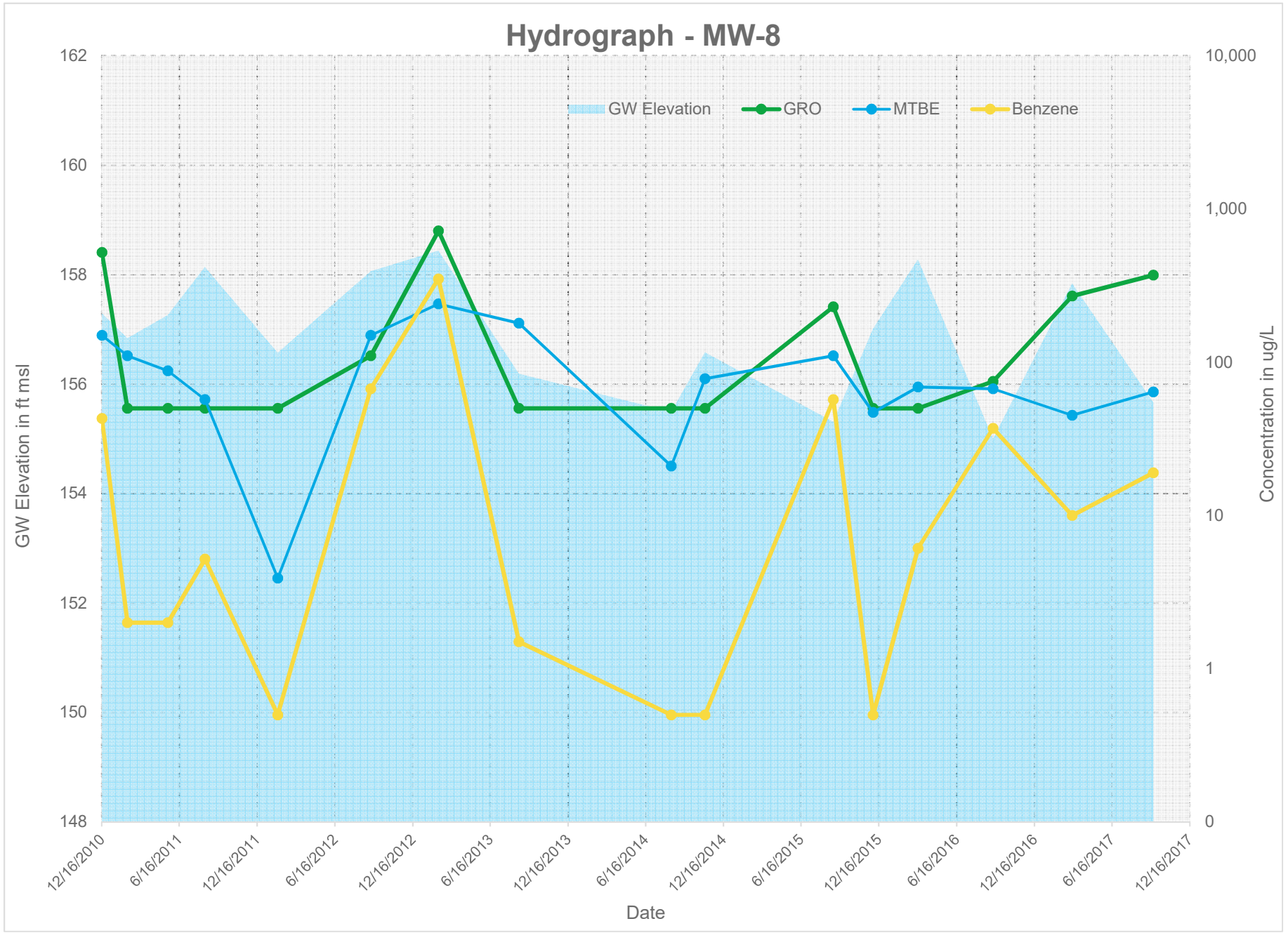
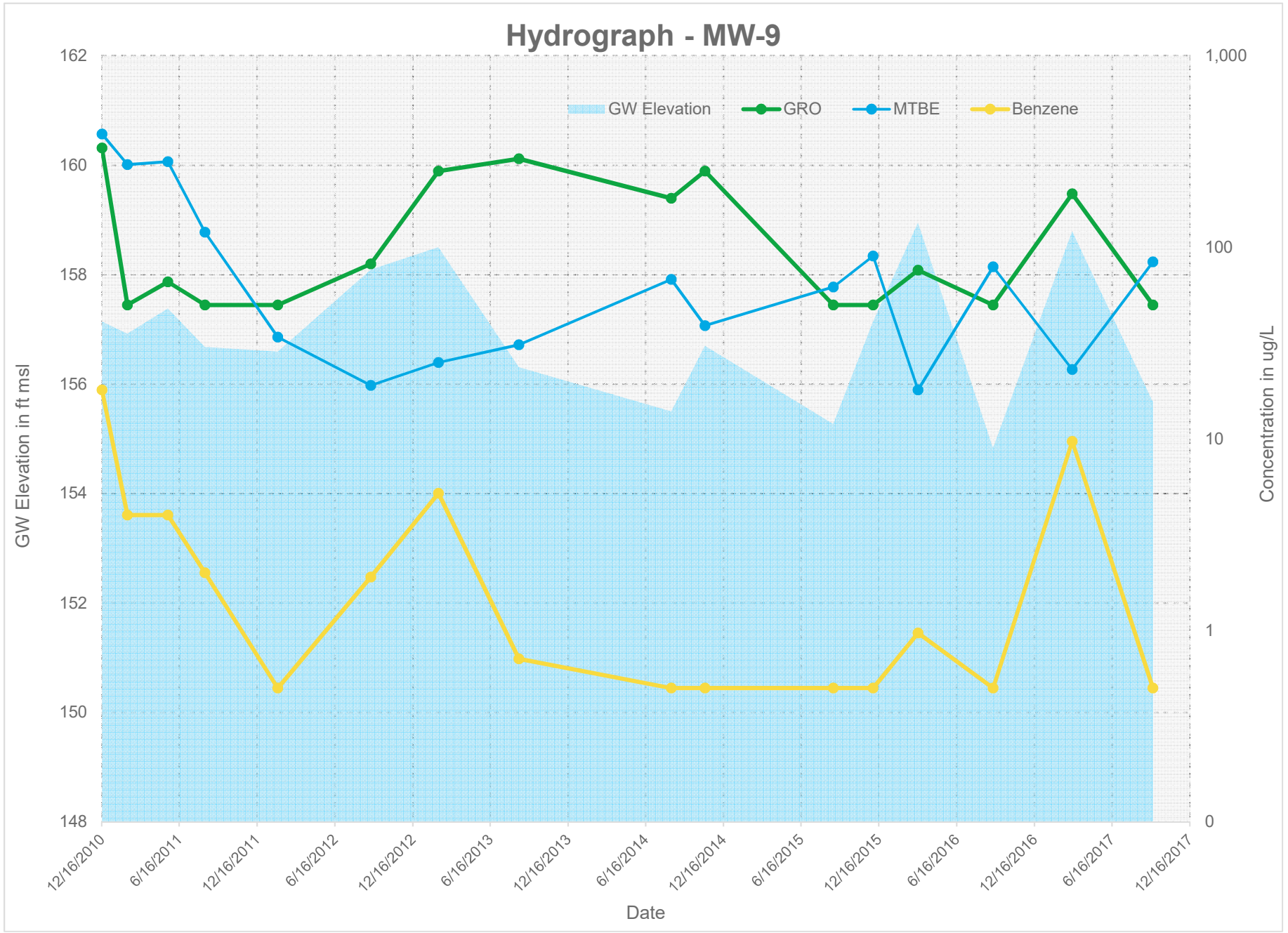
6/20/2016
6/20/2017
6/20/2018


Hydrograph - MW-7
GW Elevation
GRO
MTBE
Benzene
GW Elevation in ft msl
Concentration in ug/L
Date
162
160
158
156
154
152
150
148
10,000
1,000
100
10
1
0
12/16/2010
6/16/2011
12/16/2011
6/16/2012
12/16/2012
6/16/2013
12/16/2013
6/16/2014
12/16/2014
6/16/2015
12/16/2015
6/16/2016
12/16/2016
6/16/2017
12/16/2017


Hydrograph - MW-8
GW Elevation
GRO
MTBE
Benzene
GW Elevation in ft msl
Concentration in ug/L
Date
162
160
158
156
154
152
150
148
10,000
1,000
100
10
1
0
12/16/2010
6/16/2011
12/16/2011
6/16/2012
12/16/2012
6/16/2013
12/16/2013
6/16/2014
12/16/2014
6/16/2015
12/16/2015
6/16/2016
12/16/2016
6/16/2017
12/16/2017


Hydrograph - MW-9
GW Elevation
GRO
MTBE
Benzene
GW Elevation in ft msl
Concentration in ug/L
Date
162
160
158
156
154
152
150
148
1,000
100
10
1
0
12/16/2010
6/16/2011
12/16/2011
6/16/2012
12/16/2012
6/16/2013
12/16/2013
6/16/2014
12/16/2014
6/16/2015
12/16/2015
6/16/2016
12/16/2016
6/16/2017
12/16/2017