

Ms. Karel Detterman  
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 Oakland, California 94609

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Subject:  
**First Quarter 2018 Groundwater Monitoring Report**  
 Former BP Facility No. 0374  
 6407 Telegraph Avenue, Oakland, California 94609  
 Alameda County LOP Case #RO0000078  
 SF-RWQCB Case #01-0114

ENVIRONMENT

Dear Ms. Detterman:

Date:  
 April 30, 2018

On behalf of BP West Coast Products, LLC (BP), Arcadis U.S., Inc. (Arcadis) is submitting the enclosed Semi-Annual Monitoring Report for the First Quarter 2018. The enclosed quarterly report was prepared for the above-referenced case number.

Contact:  
 James M. Jacobsen, P.G.

"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."

Phone:  
 916.865.3144

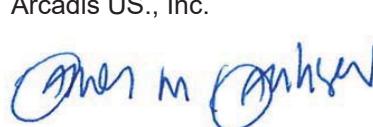
If you have any questions, please contact the undersigned.

Email:  
[james.jacobsen@arcadis.com](mailto:james.jacobsen@arcadis.com)

Sincerely,

Our ref:  
 GP16BPNA.CA01.40000

Arcadis US., Inc.

  
 James M. Jacobsen, P.G.

Project Manager



Copies:  
 San Francisco Regional Water Quality Control Board - GeoTracker

**SEMI-ANNUAL MONITORING AND STATUS REPORT**  
**First Quarter 2018**  
**April 30, 2018**

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 FIRST QUARTER 2018:**

1. Conducted semi-annual groundwater sampling on January 19, 2018. Figures illustrating the Site location and Site features are provided as **Figure 1** and **Figure 2**, respectively. The following summarizes the First Quarter 2018 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 monitoring wells MW-1 through MW-4 and MW-6 through MW-9. Sampled monitoring wells MW-1, MW-2, MW-4, and MW-6 through MW-9. Monitoring well MW-5 was not gauged or sampled because a vehicle was parked over the monitoring well. A copy of the field notes for the January 19, 2018 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 (collectively 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**.
2. 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 (SFB-RWQCB) Environmental Screening Level (ESL) at monitoring well MW-8. GRO concentrations at MW-1, MW-2, MW-4, MW-7, and MW-9 were not detected above the laboratory report limit (LRL).
  - Benzene concentrations were detected exceeding the SFB-RWQCB ESL at monitoring well MW-4 and MW-8. Benzene concentrations at MW-1, MW-2, MW-4, MW-7, and MW-9 were not detected above the LRL.

- Toluene concentrations were detected exceeding the SFB-RWQCB ESL at monitoring well MW-4. Toluene concentrations at MW-1, MW-2, MW-7, MW-8, and MW-9 were not detected above the LRL.
  - Ethylbenzene concentrations were detected exceeding the SFB-RWQCB ESL at monitoring well MW-4. Ethylbenzene was detected above the LRL in MW-8 but was below the ESL. The remaining monitoring wells did not have detections of ethylbenzene above the LRL.
  - Xylenes (total) concentrations were detected exceeding the SFB-RWQCB ESL at monitoring well MW-4. Xylenes (total) concentrations at MW-1, MW-2, MW-7, MW-8, and MW-9 were not detected above the LRL.
  - MTBE concentrations were detected exceeding the SFB-RWQCB ESL at wells MW-1, MW-2, MW-7, MW-8, and MW-9. The MTBE concentration at MW-4 was not detected above the LRL.
3. Prepared the First Quarter 2018 Groundwater Monitoring Report.
  4. Responded to Alameda County Environmental Health (ACEH) correspondence regarding revisions and additions to the work proposed in the shallow soil assessment and monitoring well installation work plan on February 6, 2018.

### **PROPOSED WORK:**

1. Conduct shallow soil and soil vapor assessment and monitoring well installation in accordance with ACEH correspondence, dated March 16, 2018.
2. Evaluate the case against the SFB-RWQCB ESLs and the State Water Resource Control Board's Low Threat Closure Policy Criteria (SWRCB 2012).
3. Conduct semi-annual groundwater monitoring and sampling in the Third Quarter 2018.
4. Prepare the Third 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: 2.16 (MW-6) to 7.10 (MW-8)
Groundwater Flow Direction:	Southwest
Groundwater Flow Magnitude (foot/foot):	0.02
Agency Directive Requirements:	Semi-annual monitoring and reporting Conduct shallow soil assessment and groundwater monitoring well installation

## DISCUSSION

The First Quarter 2018 gradient magnitude and direction is generally consistent with previous monitoring events. In general, depth-to-groundwater increased on average of 1.77-feet. A figure illustrating the potentiometric surface, as determined from the January 19, 2018 monitoring data, is provided as **Figure 3**. Groundwater flow is presented in a rose diagram in **Figure 4**.

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 SFB-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**, **Table 2**, and on **Figure 5**. Historic groundwater monitoring and analytical data are summarized in **Table 3**. Hydrographs for select monitoring wells are presented in **Attachment 3**. GRO, benzene, and MTBE concentrations maps are shown on **Figure 6** through **Figure 8**, respectively.

Arcadis submitted the *Shallow Soil Assessment and Monitoring Well Installation Work Plan*, dated August 23, 2017, to reassess historic soil analytical data and further delineate the groundwater plume. ACEH approved the work plan on November 16, 2017 with the following modifications: 1) soil vapor samples must be collected from the existing soil gas probes, 2) instead of reinstalling MW-4 a soil boring should be advanced instead, and 3) completion of an underground utility survey across Alcatraz Avenue. Arcadis responded with additional scope of work revisions and ACEH responded on March 16, 2018. The scope-of-work outlined in the *Shallow Soil Assessment and Monitoring Well Installation Work Plan*, the ACEH directive, dated November 16, 2017 correspondence, and the ACEH directive, dated March 16, 2018 will be implemented in May 2018.

Bi-annual groundwater monitoring will also continue, as required, on the current schedule. The next groundwater monitoring event is scheduled to occur during the Third 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 January 19, 2018

Figure 4 – Groundwater Flow Direction Rose Diagram

Figure 5 – Groundwater Analysis Concentration Map January 19, 2018

Figure 6 – GRO Concentration Map January 19, 2018

Figure 7 – Benzene Concentration Map January 19, 2018

Figure 8 – MTBE Concentration Map January 19, 2018

### **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 ( $\mu\text{g/L}$ )	B ( $\mu\text{g/L}$ )	T ( $\mu\text{g/L}$ )	E ( $\mu\text{g/L}$ )	X ( $\mu\text{g/L}$ )	DO ( $\text{mg/l}$ )	Notes
MW-1	1/19/2018	164.45	6.88	--	157.57	<50	<0.50	<0.50	<0.50	<1.0	0.28	
MW-2	1/19/2018	163.49	7.05	--	156.44	<50	<0.50	<0.50	<0.50	<1.0	0.11	
MW-3	1/19/2018	166.80	4.20	--	162.60	--	--	--	--	--	--	Not sampled
MW-4	1/19/2018	162.48	6.34	--	156.14	<5,000	<b>490</b>	<b>40</b>	<b>40</b>	<b>49</b>	0.10	
MW-5	1/19/2018	156.90	--	--	--	--	--	--	--	--	--	Not sampled
MW-6	1/19/2018	159.41	2.16	--	157.25	--	--	--	--	--	--	Not sampled
MW-7	1/19/2018	164.80	6.67	--	158.13	<50	<0.50	<0.50	<0.50	<1.0	0.12	
MW-8	1/19/2018	164.14	7.10	--	157.04	<b>830</b>	<b>73</b>	<b>&lt;0.50</b>	<b>3.9</b>	<1.0	0.21	
MW-9	1/19/2018	163.77	6.79	--	156.98	<50	<0.50	<0.50	<0.50	<1.0	0.09	
					<b>SF-RWQCB ESLs</b>	<b>220</b>	<b>1.0</b>	<b>40</b>	<b>30</b>	<b>20</b>		

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 Environmental 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

$\mu\text{g/L}$  = micrograms per liter

$\text{mg/L}$  = 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**



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 built assets

Well ID	MTBE ( $\mu\text{g/L}$ )	TBA ( $\mu\text{g/L}$ )	1,2-DCA ( $\mu\text{g/L}$ )	EDB ( $\mu\text{g/L}$ )	DIPÉ ( $\mu\text{g/L}$ )	ETBE ( $\mu\text{g/L}$ )	TAME ( $\mu\text{g/L}$ )	Ethanol ( $\mu\text{g/L}$ )	Notes
MW-1	<b>8.5</b>	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150
MW-2	<b>24</b>	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150
MW-3	--	--	--	--	--	--	--	--	--
MW-4	<10	<200	<10	<10	<10	<10	<10	<10	<3,000
MW-5	--	--	--	--	--	--	--	--	--
MW-6	--	--	--	--	--	--	--	--	--
MW-7	<b>36</b>	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150
MW-8	<b>57</b>	<10	<0.50	<0.50	<0.50	<0.50	<0.50	0.77	<150
MW-9	<b>61</b>	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150
<b>SF-RWQCB ESLs</b>	<b>5.0</b>	<b>12</b>	<b>0.5</b>	<b>0.05</b>	--	--	--	--	--

**Notes:**

MTBE = methyl tert-butyl ether

TBA = tert-butyl alcohol

1,2-DCA = 1,2-dichloroethane

EDB = 1,2-dibromoethane

DIPÉ = 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

$\mu\text{g/L}$  = 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

Well ID	Date	TOC (ft msl)	DTW (ft)	LNAPL Thickness (ft)	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)	DPE (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	--	155.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/28/2000	158.91	7.50	--	151.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/17/2000	158.91	7.49	--	151.42	--	--	<0.5	<0.5	<0.5	27/10	--	--	--	--	--	--	--	--
	3/23/2001	158.91	5.90	--	155.01	<50	<50	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
	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	--	155.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/21/2002	158.91	4.71	--	154.20	<50,000	<50	<50	<50	<50	2,000	--	--	--	--	--	--	--	--
	4/17/2002	158.91	5.54	--	155.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/18/2002	158.91	7.77	--	151.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/12/2002	158.91	7.65	--	151.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/29/2003	158.91	5.88	--	155.03	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	158.91	5.62	--	155.29	<100,000	<100	<100	<100	<100	16,000	<4,000	<100	<100	<100	<100	<100	<100	<100
	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	<10	<10	a2
	2/22/2004	164.57	6.71	--	157.86	--	--	--	--	--	--	--	--	--	--	--	--	1,00	f
	5/14/2004	164.57	7.08	--	157.49	<2,500	<25	<25	<25	<25	12,000	<1,000	<25	<25	<25	<25	<25	<25	<25
	2/9/2004	164.57	8.12	--	156.45	580	<50	<50	<50	<50	660	<200	<50	<50	<50	<50	<50	<50	<50
	4/11/2004	164.57	7.38	--	157.19	1,700	<10	<10	<10	<10	580	<400	<10	<10	<10	<10	<10	<10	<10
	8/22/2005	164.57	6.60	--	157.97	<1,000	<10	<10	<10	<10	610	<400	<10	<10	<10	<10	<10	<10	<10
	9/5/2005	164.57	6.84	--	157.73	540	<50	<50	<50	<50	620	<1,000	<50	<50	<50	<50	<50	<50	<50
	11/8/2005	164.57	7.36	--	157.21	540	<25	<25	<25	<25	250	<25	<25	<25	<25	<25	<25	<25	a2
	11/18/2005	164.57	8.02	--	156.55	350	<25	<25	<25	<25	340	<100	<25	<25	<25	<25	<25	<25	<25
	2/16/2006	164.57	6.44	--	158.13	350	<25	<25	<25	<25	340	<100	<25	<25	<25	<25	<25	<25	a2
	5/30/2006	164.57	6.87	--	157.70	270	<25	<25	<25	<25	420	<100	<25	<25	<25	<25	<25	<25	e
	8/24/2006	164.57	7.75	--	156.82	95	<50	<50	<50	<50	180	<200	<50	<50	<50	<50	<50	<50	a2
	1/11/2006	164.57	8.28	--	156.29	120	<50	<50	<50	<50	620	<200	<50	<50	<50	<50	<50	<50	a2
	7/22/2007	164.57	7.40	--	157.17	120	<50	<50	<50	<50	190	<200	<50	<50	<50	<50	<50	<50	e
	8/5/2007	164.57	6.50	--	155.07	<500	<50	<50	<50	<50	420	<200	<50	<50	<50	<50	<50	<50	a2
	8/8/2007	164.57	8.17	--	156.40	82	<50	<50	<50	<50	110	<50	<50	<50	<50	<50	<50	<50	a2
	11/14/2007	164.57	8.01	--	156.56	170	<25	<25	<25	<25	210	<100	<25	<25	<25	<25	<25	<25	e
	2/22/2008	164.57	6.00	--	155.57	<50	<50	<50	<50	<50	250	<10	<50	<50	<50	<50	<50	<50	a2
	5/24/2008	164.57	7.58	--	156.29	120	<50	<50	<50	<50	220	<200	<50	<50	<50	<50	<50	<50	a2
	8/21/2008	164.57	8.60	--	157.17	120	<50	<50	<50	<50	190	<200	<50	<50	<50	<50	<50	<50	e
	11/19/2008	164.57	8.88	--	156.69	<50	<50	<50	<50	<50	30	<10	<50	<50	<50	<50	<50	<50	a2
	2/23/2009	164.57	6.40	--	158.17	78	<25	<25	<25	<25	240	<50	<25	<25	<25	<25	<25	<25	a2
	5/14/2009	164.57	6.67	--	157.90	53	<50	<50	<50	<50	200	<10	<50	<50	<50	<50	<50	<50	a2
	8/20/2009	164.57	8.25	--	156.32	150	<20	<20	<20	<20	170	<40	<20	<20	<20	<20	<20	<20	a2
	2/19/2010	164.57	6.07	--	156.99	<50	<25	<25	<25	<25	380	<100	<50	<50	<50	<50	<50	<50	a2
	10/8/2010	164.57	7.58	--	156.99	<50	<25	<25	<25	<25	170	<50	<25	<25	<25	<25	<25	<25	a2
	12/16/2010	164.45	6.64	--	157.81	<50	<20	<20	<20	<20	140	<10	<20	<20	<20	<20	<20	<20	a2
	2/14/2011	164.45	7.10	--	157.35	<50	<25	<25	<25	<25	170	<50	<25	<25	<25	<25	<25	<25	a2
	5/20/2011	164.45	6.38	--	156.07	--	--	--	--	--	26	<10	<50	<50	<50	<50	<50	<50	a2
	8/15/2011	164.45	7.24	--	157.21	<50	<25	<25	<25	<25	130	<50	<25	<25	<25	<25	<25	<25	a2
	2/22/2012	164.45	7.32	--	157.13	<50	<10	<10	<10	<10	66	<20	<10	<10	<10	<10	<10	<10	a2
	9/8/2012	164.45	6.69	--	157.76	<50	<50	<50	<50	<50	170	<10	<50	<50	<50	<50	<50	<50	a2
	2/14/2013	164.45	5.97	--	156.48	<50	<50	<50	<50	<50	140	<10	<50	<50	<50	<50	<50	<50	a2
	8/22/2013	164.45	7.87	--	156.58	<50	<50	<50	<50	<50	91	<10	<50	<50	<50	<50	<50	<50	a2
	1/12/2014	164.45	7.75	--	156.70	<50	<50	<50	<50	<50	110	<10	<50	<50	<50	<50	<50	<50	a2
	8/15/2014	164.45	8.51	--	156.94	<50	<50	<50	<50	<50	120	<10	<50	<50	<50	<50	<50	<50	a2
	1/22/2015	164.45	6.57	--	157.88	<50	<50	<50	<50	<50	130	<10	<50	<50	<50	<50	<50	<50	a2
	8/31/2015	164.45	8.88	--	155.57	<50	<50	<50	<50	<50	110	<10	<50	<50	<50	<50	<50	<50	a2
	3/17/2016	164.45	4.82	--	156.63	<50	<50	<50	<50	<50	140	<10	<50	<50	<50	<50	<50	<50	a2
	9/9/2016	164.45	8.97	--	155.48	<50	<50	<50	<50	<50	110	<10	<50	<50	<50	<50	<50	<50	a2
	3/14/2017	164.45	4.24	--	160.21	<50	<50	<50	<50	<50	98	<20	<50	<50	<50	<50	<50	<50	a2
	9/19/2017	164.45	8.21	--	156.24	<50	<50	<50	<50	<50	110	<10	<50	<50	<50	<50	<50	<50	a2
	1/19/2018	164.45	6.88	--	157.57	<50	<50	<50	<50	<50	85	<10	<50	<50	<50	<50	<50	<50	a2

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)	LNAPL Thickness (ft)	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)	DPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
<b>MW-2</b>	6/20/2000	157.92	7.67	--	156.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/28/2000	157.92	8.51	--	148.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/17/2000	157.92	8.14	--	146.78	--	--	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--
	3/23/2001	157.92	7.21	--	150.71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	6/21/2001	157.92	7.99	--	149.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/23/2001	157.92	8.52	--	146.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	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	<0.5	45	--	--	--	--	--	--	--
	4/17/2002	157.92	6.45	--	151.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/8/2002	157.92	8.08	--	148.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/12/2002	157.92	8.29	--	148.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/29/2003	157.92	7.22	--	150.70	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	5/23/2003	157.92	6.85	--	150.07	<50	<0.50	<0.50	<0.50	<0.50	<0.50	55	<20	<0.50	<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	--	146.87	--	--	<0.50	<0.50	<0.50	<0.50	37	<20	<0.50	<0.50	<0.50	<0.50	<100	1.10
	2/22/2004	163.46	7.00	--	156.46	74	--	<0.50	<0.50	<0.50	<0.50	37	--	<0.50	<0.50	<0.50	<0.50	<100	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	<2.5	67	<100	<2.5	<2.5	<2.5	<2.5	<500	2.70
	4/11/2004	163.46	7.54	--	156.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/22/2005	163.46	6.72	--	156.74	<50	<0.50	<0.50	<0.50	<0.50	<0.50	30	<20	<0.50	<0.50	<0.50	<0.50	<100	0.86
	9/5/2005	163.46	7.16	--	156.30	--	--	<0.50	<0.50	<0.50	<0.50	35	<20	<0.50	<0.50	<0.50	<0.50	<100	a
	11/8/2005	163.46	7.85	--	156.61	<50	<0.50	<0.50	<0.50	<0.50	<0.50	35	<20	<0.50	<0.50	<0.50	<0.50	<100	1.00
	1/11/2005	163.46	8.23	--	155.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/16/2006	163.46	6.82	--	156.64	<50	<0.50	<0.50	<0.50	<0.50	<0.50	39	<20	<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	<0.50	25	<20	<0.50	<0.50	<0.50	<0.50	<300	0.90
	1/11/2006	163.46	8.38	--	156.08	--	--	<0.50	<0.50	<0.50	<0.50	7	<20	<0.50	<0.50	<0.50	<0.50	<300	0.94
	7/2/2007	163.46	7.88	--	156.58	<50	0.5	<0.50	<0.50	<0.50	<0.50	7	<20	<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	<0.50	7	<20	<0.50	<0.50	<0.50	<0.50	<300	0.94
	11/14/2007	163.46	8.10	--	156.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/22/2008	163.46	6.75	--	156.71	<50	<0.50	<0.50	<0.50	<0.50	<0.50	24	<10	<0.50	<0.50	<0.50	<0.50	<300	2.18
	5/24/2008	163.46	7.98	--	155.48	--	--	<0.50	<0.50	<0.50	<0.50	5	<10	<0.50	<0.50	<0.50	<0.50	<300	--
	8/21/2008	163.46	8.58	--	156.88	<50	2.6	<0.50	<0.50	<0.50	<0.50	5	<10	<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	<0.50	24	<10	<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	<0.50	8	<10	<0.50	<0.50	<0.50	<0.50	<300	2.19
	2/19/2010	163.46	7.36	--	156.17	<50	<0.50	<0.50	<0.50	<0.50	<0.50	22	<10	<0.50	<0.50	<0.50	<0.50	<300	0.81
	10/8/2010	163.46	7.69	--	155.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	23	<10	<0.50	<0.50	<0.50	<0.50	<300	2.40
	12/16/2010	163.46	7.12	--	156.37	<50	<0.50	<0.50	<0.50	<0.50	<0.50	17	<10	<0.50	<0.50	<0.50	<0.50	<300	0.69
	2/14/2011	163.46	7.35	--	156.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	11	<10	<0.50	<0.50	<0.50	<0.50	<300	0.87
	5/20/2011	163.46	7.02	--	156.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/2011	163.46	7.62	--	155.87	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<300	1.45
	2/22/2012	163.46	7.56	--	155.93	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<300	0.85
	9/8/2012	163.46	6.31	--	157.18	<50	<0.50	<0.50	<0.50	<0.50	<0.50	73	<10	<0.50	<0.50	<0.50	<0.50	<300	1.28
	2/14/2013	163.46	6.03	--	157.46	<50	<0.50	<0.50	<0.50	<0.50	<0.50	46	<10	<0.50	<0.50	<0.50	<0.50	<300	1.71
	8/22/2013	163.46	7.79	--	155.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	82	<10	<0.50	<0.50	<0.50	<0.50	<300	4.16
	11/20/2014	163.46	7.12	--	156.37	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<300	2.32
	8/15/2014	163.46	8.53	--	154.96	<50	<0.50	<0.50	<0.50	<0.50	<0.50	61	<10	<0.50	<0.50	<0.50	<0.50	<300	2.90
	12/22/2015	163.46	6.98	--	156.51	<50	<0.50	<0.50	<0.50	<0.50	<0.50	57	<10	<0.50	<0.50	<0.50	<0.50	<300	0.78
	8/31/2015	163.46	8.77	--	154.72	<50	<0.50	<0.50	<0.50	<0.50	<0.50	40	<10	<0.50	<0.50	<0.50	<0.50	<300	0.61
	3/17/2016	163.46	5.54	--	157.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50	49	<10	<0.50	<0.50	<0.50	<0.50	<300	0.90
	9/9/2016	163.46	9.02	--	154.47	<50	<0.50	<0.50	<0.50	<0.50	<0.50	20	<10	<0.50	<0.50	<0.50	<0.50	<300	0.00
	3/14/2017	163.46	6.24	--	157.25	<50	<0.50	<0.50	<0.50	<0.50	<0.50	45	<10	<0.50	<0.50	<0.50	<0.50	<300	0.70
	9/20/2017	163.46	8.38	--	156.11	<50	<0.50	<0.50	<0.50	<0.50	<0.50	18	<10	<0.50	<0.50	<0.50	<0.50	<300	0.15
	1/19/2018	163.46	7.05	--	156.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	24	<10	<0.50	<0.50	<0.50	<0.50	<300	0.11

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)	DPE (μg/L)	ETBE (μg/L)	EDB (μg/L)	TAME (μg/L)	Ethanol (μg/L)	DO (mg/l)	Notes
<b>MW-3</b>	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	--	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
	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	<0.5	5	4	3	--	--	--	--	--	--	--	--	--	
	9/23/2001	153.64	7.32	--	146.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/31/2001	153.64	4.48	--	145.16	<50	<0.5	<0.5	<0.5	<0.5	5	--	--	--	--	--	--	--	--	
	3/21/2002	153.64	4.36	--	145.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4/17/2002	153.64	5.31	--	145.33	<50	<0.5	<0.5	<0.5	<0.5	9	--	--	--	--	--	--	--	--	
	12/8/2002	153.64	7.00	--	146.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/12/2002	153.64	7.32	--	146.32	<50	<0.5	<0.5	<0.5	<0.5	6	--	--	--	--	--	--	--	--	
	1/29/2003	153.64	6.07	--	147.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	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	<0.50	<0.50	0.90	
	4/9/2003	153.64	6.93	--	146.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/20/2003	153.64	7.04	--	146.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2004	159.21	5.92	--	155.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/14/2004	159.21	7.52	--	151.69	--	--	--	--	--	--	--	--	--	--	--	--	--	1.40	
	2/9/2004	159.21	7.19	--	150.02	<50	<0.50	<0.50	<0.50	<0.50	7	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	9.30	
	4/11/2004	159.21	6.40	--	155.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/22/2005	159.21	6.01	--	153.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/5/2005	159.21	6.74	--	155.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/8/2005	159.21	6.77	--	156.44	<50	<0.50	<0.50	<0.50	<0.50	11	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.90	
	1/11/2005	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	<0.50	1.15	
	1/11/2006	159.21	7.50	--	155.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/2/2007	159.21	6.90	--	155.31	--	--	--	--	--	--	--	--	<0.50	<0.50	<0.50	<0.50	<0.50	1.90	
	8/5/2007	159.21	5.95	--	155.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	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	<0.50	1.21	
	11/14/2007	159.21	7.05	--	152.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/22/2008	159.21	5.50	--	155.21	<50	<0.50	<0.50	<0.50	<0.50	8	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	
	5/24/2008	159.21	7.03	--	155.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/21/2008	159.21	7.80	--	151.48	<50	<0.50	<0.50	<0.50	<0.50	3	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.11	
	11/19/2008	159.21	7.69	--	151.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/23/2009	159.21	7.28	--	151.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/14/2009	159.21	6.17	--	155.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/20/2009	159.21	7.38	--	155.83	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	
	2/19/2010	159.21	5.31	--	155.48	--	--	--	--	--	--	--	--	--	--	--	--	--	2.05	
	10/8/2010	159.21	7.12	--	155.09	<50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	
	12/16/2010	159.21	5.65	--	155.56	--	--	--	--	--	--	--	--	--	--	--	--	--	1.27	
	2/14/2011	159.21	6.20	--	153.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/20/2011	159.21	5.77	--	155.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2011	159.21	6.41	--	155.80	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.04	
	2/22/2012	159.21	6.34	--	155.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2012	159.21	6.62	--	155.59	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.16	
	2/14/2013	159.21	6.09	--	155.12	--	--	--	--	--	--	--	--	--	--	--	--	--	4.35	
	8/22/2013	159.21	7.15	--	155.06	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	
	11/22/2014	159.21	5.79	--	154.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/15/2014	159.21	6.30	--	155.91	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.15	
	12/22/2015	159.21	3.41	--	155.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/31/2015	159.21	7.30	--	151.91	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	
	3/16/2016	159.21	2.50	--	156.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/8/2016	166.80	7.56	--	155.24	<50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	
	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	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.19	
	1/19/2018	166.80	4.20	--	162.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

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)	GRO (μg/L)	GW Elev (ft msL)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	TBA (μg/L)	1,2-DCA (μg/L)	DPE (μg/L)	ETBE (μg/L)	EDB (μg/L)	TAME (μg/L)	Ethanol (μg/L)	DO (mg/l)	Notes
<b>MW-4</b>	6/20/2000	156.53	7.50	--	146.03	20,000	5,100	440	1,000	1,700	<250	--	--	--	--	--	--	--	c	
	9/28/2000	156.53	8.20	--	148.33	--	<20	1,240	27	249	<100	--	--	--	--	--	--	--	--	
	12/17/2000	156.53	8.11	--	148.42	4,320	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/23/2001	156.53	6.69	--	148.84	--	--	16	19	160	130	--	--	--	--	--	--	--	--	
	6/21/2001	156.53	8.01	--	148.82	2,800	470	--	--	--	--	--	--	--	--	--	--	--	--	
	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	--	--	--	--	--	--	--	--	
	12/18/2002	156.53	8.24	--	149.29	--	--	7	20	29	43	--	--	--	--	--	--	--	--	
	6/12/2002	156.53	8.42	--	148.11	1,500	410	--	--	--	--	--	--	--	--	--	--	--	a	
	1/29/2003	156.53	7.20	--	149.33	--	--	--	--	--	--	--	--	--	--	--	--	--	b	
	5/23/2003	156.53	7.18	--	146.35	<5,000	1,300	89	210	260	<50	<2,000	--	<50	<50	<50	<10,000	1,40	c	
	4/9/2003	156.53	8.15	--	148.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	11/20/2003	156.53	8.73	--	147.80	--	--	21	29	38	29	<100	<25	<2.5	<2.5	<2.5	<2.5	1,40	c	
	2/22/2004	163.25	6.25	--	150.00	980	280	--	--	--	--	--	--	--	--	--	--	<500	1,40	
	5/14/2004	163.25	8.38	--	154.87	--	--	--	--	--	--	--	--	--	--	--	--	--	f,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	<1.0	g	
	4/11/2004	163.25	7.71	--	156.54	--	--	--	--	--	--	--	--	--	--	--	--	<200	2,40	
	8/22/2005	163.25	6.27	--	156.98	7,500	1,700	320	480	920	45	<1,000	<25	<25	<25	<25	<25	<50,000	0.65	
	9/6/2005	163.25	7.96	--	157.39	--	--	--	--	--	--	--	--	--	--	--	--	--	g	
	11/18/2005	163.25	8.57	--	154.68	--	--	--	--	--	--	--	--	--	--	--	--	<20,000	0.60	
	2/16/2006	163.25	6.28	--	156.87	9,400	1,800	130	600	420	35	<400	<10	<10	<10	<10	<10	<60,000	0.50	
	5/30/2006	162.47	7.02	--	156.45	--	--	--	--	--	--	--	--	--	--	--	--	--	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	--	157.39	--	--	--	--	--	--	--	--	--	--	--	--	--	g	
	7/2/2007	162.47	8.02	--	154.45	3,100	570	17	170	110	67	<400	<10	<10	<10	<10	<10	<50,000	0.95	
	8/5/2007	162.47	7.03	--	155.44	--	--	--	--	--	--	--	--	--	--	--	--	<60,000	0.93	
	8/8/2007	162.47	8.60	--	153.87	2,900	630	22	67	72	57	<400	<10	<10	<10	<10	<10	<6,000	0.80	
	11/14/2007	162.47	8.53	--	155.94	--	--	--	--	--	--	--	--	--	--	--	--	--	g	
	2/22/2008	162.47	6.25	--	155.22	3,900	880	39	180	92	70	<200	<10	<10	<10	<10	<10	<40,000	2,31	
	5/24/2008	162.47	8.96	--	153.80	--	--	--	--	--	--	--	--	--	--	--	--	--	d	
	8/21/2008	162.47	9.20	--	154.45	3,100	570	17	170	110	67	<400	<10	<10	<10	<10	<10	<40,000	2,26	
	11/19/2008	162.47	6.35	--	155.27	--	--	--	--	--	--	--	--	--	--	--	--	<12,000	2,26	
	2/23/2009	162.47	7.00	--	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	8.05	--	154.42	5,700	1,100	35	110	100	23	<400	<20	<20	<20	<20	<20	<12,000	2,17	
	8/20/2009	162.47	7.71	--	155.51	3,700	1,100	26	85	130	53	<400	<20	<20	<20	<20	<20	<12,000	2,17	
	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	
	2/14/2011	162.48	7.33	--	155.15	260	<50	3	11	13	<10	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<300	0.80	
	5/20/2011	162.48	6.89	--	155.59	--	--	--	--	--	--	--	--	--	--	--	--	--	g	
	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	
	2/22/2012	162.48	7.71	--	154.77	4,600	1,000	34	33	33	<12	<250	<12	<12	<12	<12	<12	<7,500	1,02	
	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	320	120	<10	<200	<10	<10	<10	<10	<10	<4,50	1,03	
	1/12/2014	162.48	7.13	--	155.35	140	800	84	230	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	0.21	
	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	0.61	
	12/22/2014	162.48	5.98	--	156.50	12,000	1,200	8	31	27	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	0.88	
	8/31/2015	162.48	8.66	--	155.82	6,300	570	43	27	52	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<1,500	0.90	
	3/17/2016	162.48	3.25	--	156.23	1,100	1,100	160	870	560	<10	<200	<10	<10	<10	<10	<10	<3,000	0.80	
	9/9/2016	162.48	8.80	--	155.68	4,400	1,100	51	14	61	<10	<400	<10	<10	<10	<10	<10	<10,000	0.57	
	3/14/2017	162.48	3.75	--	156.73	6,800	770	97	650	420	<10	<400	<10	<10	<10	<10	<10	<10,000	0.36	
	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	0.1	
	1/19/2018	162.48	6.34	--	156.14	<5,000	490	40	49	49	<10	<200	<10	<10	<10	<10	<10	<3,000	0.1	

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)	LNAPL Thickness (ft)	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)	DPE (μg/L)	ETBE (μg/L)	EDB (μg/L)	TAME (μg/L)	Ethanol (μg/L)	DO (mg/l)	Notes
MW-5	6/20/2000	151.33	7.84	--	142.49	<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	--	142.76	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	
	3/21/2002	151.33	6.12	--	142.21	<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	--	--	--	--	--	--	--	
	12/18/2002	151.33	8.14	--	143.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	
	6/12/2002	151.33	8.65	--	142.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	4.10	
	1/29/2003	151.33	7.22	--	144.11	<50	<0.5	<0.5	<0.5	<0.5	<20	--	<0.50	--	<0.50	--	<40	1.10	
	5/23/2003	151.33	7.31	--	144.02	<50	<0.50	<0.50	<0.50	<0.50	<20	--	<0.50	<0.50	<0.50	<0.50	<100	b	
	4/9/2003	151.33	9.50	--	141.83	<50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<50	<100	1.10	
	11/20/2003	151.33	8.31	--	142.02	--	--	--	--	--	--	--	--	--	--	--	--	3.20	
	2/22/2004	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	<20	<0.50	<0.50	<0.50	<0.50	<100	3.50	h	
	4/11/2004	151.33	8.33	--	143.00	--	--	--	--	--	--	--	--	--	--	--	--	c, h	
	8/22/2005	151.33	7.28	--	144.05	--	--	--	--	--	--	--	--	--	--	--	--	h	
	9/6/2005	151.33	8.19	--	143.94	--	--	--	--	--	--	--	--	--	--	--	--	h	
	11/18/2005	151.33	8.39	--	142.50	<50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<100	1.20	h	
	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	9.10	--	142.81	--	--	--	--	--	--	--	--	--	--	--	--	h	
	8/24/2006	151.33	7.95	--	143.38	<50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<300	2.60	h	
	1/11/2006	151.33	8.32	--	143.94	--	--	--	--	--	--	--	--	--	--	--	--	h	
	7/2/2007	151.33	7.60	--	145.73	--	--	--	--	--	--	--	--	--	--	--	--	h	
	8/5/2007	151.33	8.12	--	142.11	--	--	--	--	--	--	--	--	--	--	--	--	h	
	11/14/2007	151.33	9.10	--	142.23	--	--	--	--	--	--	--	--	--	--	--	--	h	
	2/22/2008	151.33	7.48	--	142.81	--	--	--	--	--	--	--	--	--	--	--	--	h	
	5/24/2008	151.33	8.12	--	143.01	--	--	--	--	--	--	--	--	--	--	--	--	h	
	8/1/2008	151.33	8.65	--	142.08	--	--	--	--	--	--	--	--	--	--	--	--	h	
	11/19/2008	151.33	11.86	--	136.47	--	--	--	--	--	--	--	--	--	--	--	--	2.14	
	2/23/2009	151.33	10.20	--	141.13	--	--	--	--	--	--	--	--	--	--	--	--	h	
	5/14/2009	151.33	9.63	--	141.70	--	--	--	--	--	--	--	--	--	--	--	--	h	
	8/20/2009	151.33	8.52	--	142.81	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<300	2.01	d	
	2/19/2010	151.33	8.05	--	146.85	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<300	1.15	d	
	10/8/2010	156.90	8.05	--	146.68	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<300	1.25	d	
	12/16/2010	156.90	8.10	--	146.80	--	--	--	--	--	--	--	--	--	--	--	--	d	
	2/14/2011	156.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d	
	5/20/2011	156.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d	
	8/15/2011	156.90	7.91	--	146.99	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<300	2.46	d	
	2/22/2012	156.90	8.03	--	146.82	--	--	--	--	--	--	--	--	--	--	--	--	d	
	9/8/2012	156.90	8.02	--	146.88	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<150	0.83	d	
	2/14/2013	156.90	7.54	--	146.36	--	--	--	--	--	--	--	--	--	--	--	--	4.33	
	8/22/2013	156.90	8.34	--	146.56	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<150	0.83	d	
	1/12/2014	156.90	7.61	--	145.29	--	--	--	--	--	--	--	--	--	--	--	--	2.33	
	8/15/2014	156.90	8.06	--	146.84	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<150	0.13	d	
	12/22/2015	156.90	5.32	--	151.58	--	--	--	--	--	--	--	--	--	--	--	--	d	
	8/31/2015	156.90	7.78	--	149.12	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<150	0.83	d	
	3/17/2016	156.90	3.75	--	151.15	--	--	--	--	--	--	--	--	--	--	--	--	d	
	9/8/2016	156.90	14.61	--	146.61	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<150	0.83	d	
	3/14/2017	156.90	7.29	--	152.61	--	--	--	--	--	--	--	--	--	--	--	--	d	
	9/21/2017	156.90	5.75	--	151.15	<50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<150	0.13	d	
	1/19/2018	156.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d	

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)	LNAPL Thickness (ft)	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)	DPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes
<b>MW-6</b>	6/20/2000	153.84	4.79	--	146.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/28/2000	153.84	5.39	--	148.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/17/2000	153.84	4.71	--	149.13	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--
	3/23/2001	153.84	4.69	--	149.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	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	--	148.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/21/2002	153.84	2.94	--	150.90	<50	<0.5	<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	--	148.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/29/2003	153.84	4.79	--	146.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/23/2003	153.84	4.31	--	146.53	<50	<0.50	<0.50	<0.50	<0.50	<0.50	9	<20	--	<0.50	<0.50	<0.50	<100	1.00
	4/9/2003	153.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/20/2003	153.84	6.31	--	147.53	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	2/22/2004	159.41	4.78	--	156.63	--	--	--	--	--	--	--	--	--	--	--	--	--	f
	5/14/2004	159.41	6.29	--	153.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/9/2004	159.41	5.79	--	155.62	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	4/11/2004	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	b
	8/22/2005	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	<0.50	8	<20	<0.50	<0.50	<0.50	<0.50	<100	2.10
	11/18/2005	159.41	6.31	--	153.10	--	--	--	--	--	--	--	--	--	--	--	--	--	a2
	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	<0.50	12	<20	<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	--	--	--	--	--	--	--	--	<20	<0.50	<0.50	<0.50	<0.50	--
	8/5/2007	159.41	4.30	--	155.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/8/2007	159.41	5.51	--	159.30	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<20	<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	--	152.27	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<300	1.99
	11/19/2008	159.41	5.94	--	155.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	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	--	155.76	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<300	1.98
	2/19/2010	159.41	7.28	--	152.13	--	--	--	--	--	--	--	--	<10	<0.50	<0.50	<0.50	<0.50	--
	10/8/2010	159.41	5.02	--	154.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4	<10	<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	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<300	1.55
	2/22/2012	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	9/8/2012	159.41	4.65	--	154.76	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4	<10	<0.50	<0.50	<0.50	<0.50	<150	1.14
	2/14/2013	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	8/22/2013	159.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	d
	1/12/2014	159.41	4.67	--	154.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/2014	159.41	2.84	--	156.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<10	<0.50	<0.50	<0.50	<0.50	<150	1.08
	12/22/2015	159.41	1.40	--	156.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/31/2015	159.41	5.19	--	154.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<150	1.05
	3/17/2016	159.41	1.32	--	156.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/8/2016	159.41	5.97	--	155.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1	<10	<0.50	<0.50	<0.50	<0.50	<150	1.05
	3/14/2017	159.41	1.34	--	156.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/19/2017	159.41	5.40	--	154.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	10	<10	<0.50	<0.50	<0.50	<0.50	<150	0.30
	1/19/2018	159.41	2.16	--	157.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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)	DPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/l)	Notes		
<b>MW-7</b>	12/16/2010	164.80	6.52	--	156.28	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	--	156.03	7,100	1,700	98	260	210	<20	<400	<10	<0.50	<20	<20	<20	<20	<12,000	1,02		
	5/20/2011	164.80	5.84	--	156.96	570	<0.50	<0.50	37	25	5	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	1,56	I(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	<1.0	<600	0.58		
	2/22/2012	164.80	7.15	--	157.65	<50	<0.50	<0.50	<50	<0.50	6	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.45		
	9/8/2012	164.80	5.05	--	156.75	85	<0.50	<0.50	6	1	7	<10	<0.50	<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	<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	<0.50	<150	4.01		
	11/2/2014	164.80	7.37	--	157.43	<50	<0.50	<0.50	<50	<1.0	12	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.90		
	8/15/2014	164.80	8.39	--	156.50	<50	<0.50	<0.50	<50	<1.0	50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.14		
	12/2/2015	164.80	6.76	--	156.04	<50	<0.50	<0.50	<50	<1.0	4	<10	<0.50	<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	<50	<1.0	27	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.80		
	3/17/2016	164.80	5.03	--	156.77	<50	<0.50	<0.50	<50	<1.0	2	<10	<0.50	<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	<50	<1.0	72	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--		
	3/14/2017	164.80	4.97	--	156.83	<50	1.8	<0.50	1.3	<1.0	13	<20	<0.50	<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	<50	<1.0	42	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.18		
	1/19/2018	164.80	6.67	--	156.13	<50	<0.50	<0.50	<50	<1.0	36	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.12		
	12/16/2018	164.14	6.85	--	157.29	520	43	<0.50	4	21	150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.46		
	<b>MW-8</b>	12/16/2010	164.14	7.30	--	156.84	<50	<2.0	<2.0	<2.0	110	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1,200	1.07	
	2/14/2011	164.14	7.30	--	157.26	<50	<2.0	<2.0	<2.0	<2.0	88	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1,200	1.35	
	5/20/2011	164.14	6.88	--	156.83	<50	1.8	<0.50	1.3	<1.0	13	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--		
	8/15/2011	164.14	6.00	--	156.80	<50	<0.50	<0.50	<50	<1.0	42	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.51		
	2/22/2012	164.14	7.57	--	156.57	<50	<0.50	<0.50	<50	<1.0	4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<300	0.88		
	9/8/2012	164.14	6.08	--	156.06	110	67	<0.50	<0.50	<1.0	150	31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<500	1.16		
	2/14/2013	164.14	5.70	--	156.44	720	350	<2.0	<2.0	<4.0	240	150	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.50	<0.50	<300	3.96		
	1/12/2014	164.14	7.56	--	156.58	<50	<0.50	<0.50	<50	<1.0	78	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.83		
	8/15/2014	164.14	8.65	--	156.49	<50	<0.50	<0.50	<50	<1.0	21	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.92		
	1/22/2015	164.14	7.13	--	157.01	<50	<0.50	<0.50	<50	<1.0	47	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	6.27		
	8/3/2015	164.14	8.83	--	155.31	230	57	<0.50	<0.50	<1.0	110	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2,30	<150	1.15	
	3/17/2016	164.14	5.86	--	156.28	<50	6.1	<0.50	<0.50	<1.0	69	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.47		
	9/9/2016	164.14	9.14	--	156.00	75	37	<0.50	<0.50	<1.0	67	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.20		
	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	<0.50	<500	0.55		
	9/2/2017	164.14	8.48	--	155.66	370	19	<0.50	1.3	<1.0	64	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.11		
	1/19/2018	164.14	7.10	--	157.04	830	73	<0.50	3.9	<1.0	57	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.21		

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 ( $\mu\text{g/L}$ )	B ( $\mu\text{g/L}$ )	T ( $\mu\text{g/L}$ )	E ( $\mu\text{g/L}$ )	X ( $\mu\text{g/L}$ )	MTBE ( $\mu\text{g/L}$ )	TBA ( $\mu\text{g/L}$ )	1,2-DCA ( $\mu\text{g/L}$ )	DPE ( $\mu\text{g/L}$ )	ETBE ( $\mu\text{g/L}$ )	TAME ( $\mu\text{g/L}$ )	Ethanol ( $\mu\text{g/L}$ )	DO (mg/l)	Notes	
<b>MW-9</b>	12/16/2010	163.77	6.63	--	157.14	330	18	<50	11	38	390	40	<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	<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	<2,400	1.64	I(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	<1,200	0.88		
	2/22/2012	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	<300	0.65		
	9/8/2012	163.77	5.68	--	156.09	82	1.9	<0.50	<0.50	<1.0	19	<10	<0.50	<0.50	<0.50	<0.50	<150	1.61		
	2/14/2013	163.77	5.27	--	155.50	250	5.2	<0.50	<0.50	<0.50	1	25	<10	<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	<0.50	1	31	<10	<0.50	<0.50	<0.50	<0.50	<150	4.71	
	11/2/2014	163.77	7.07	--	156.70	250	<0.50	<0.50	<0.50	<0.50	39	<10	<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	<0.50	1.0	68	<10	<0.50	<0.50	<0.50	<0.50	<150	0.10	
	12/2/2015	163.77	6.63	--	157.14	<50	<0.50	<0.50	<0.50	<0.50	1.0	90	<10	<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	<0.50	1.0	62	<10	<0.50	<0.50	<0.50	<0.50	<150	0.78	
	3/17/2016	163.77	4.82	--	156.95	76	0.97	<0.50	<0.50	<0.50	1.0	18	<10	<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	<0.50	1.0	79	<20	<0.50	<0.50	<0.50	<0.50	<150	0.61	
	3/14/2017	163.77	4.98	--	156.79	190	9.7	<0.50	<0.50	<0.50	1.0	23	<20	<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	<0.50	1.0	84	17 ID	<0.50	<0.50	<0.50	<0.50	<150	0.21	
	1/19/2018	163.77	6.79	--	156.98	<50	<0.50	<0.50	<0.50	<0.50	1.0	61	<10	<0.50	<0.50	<0.50	<0.50	<150	0.09	

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

MTBE = methyl tert-butyl ether

TBA = tert-butyl alcohol

1,2-DCA = 1,2-dichloroethane

DPE = diisopropyl ether

ETBE = ethyl tert-butyl ether

FDB = 1,2-dibromoethane

TAME = tert-Amyl methyl ether

DO = dissolved oxygen

ft msl = feet above mean sea level

= not analyzed/applicable/reused/available

< = not detected at or above specified laboratory reporting limit

$\mu\text{g/L}$  = milligrams per liter

$\mu\text{g/L}$  = micrograms per liter

Values for DO were obtained through field measurements

ID= Analyte identified by RT & presence of single mass ion

a = Chromatogram pattern 1. Gasoline C6-C10 for GRO/GP hydrocarbons.

b = Beginning this quarter, groundwater samples were analyzed by EPA method 8260B for TPHg, BTEX, and fuel

c = Well 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), MW-4 is actually 162.47 ft.

h = Upon review of survey data (1/27/2004), MW-5 was not 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

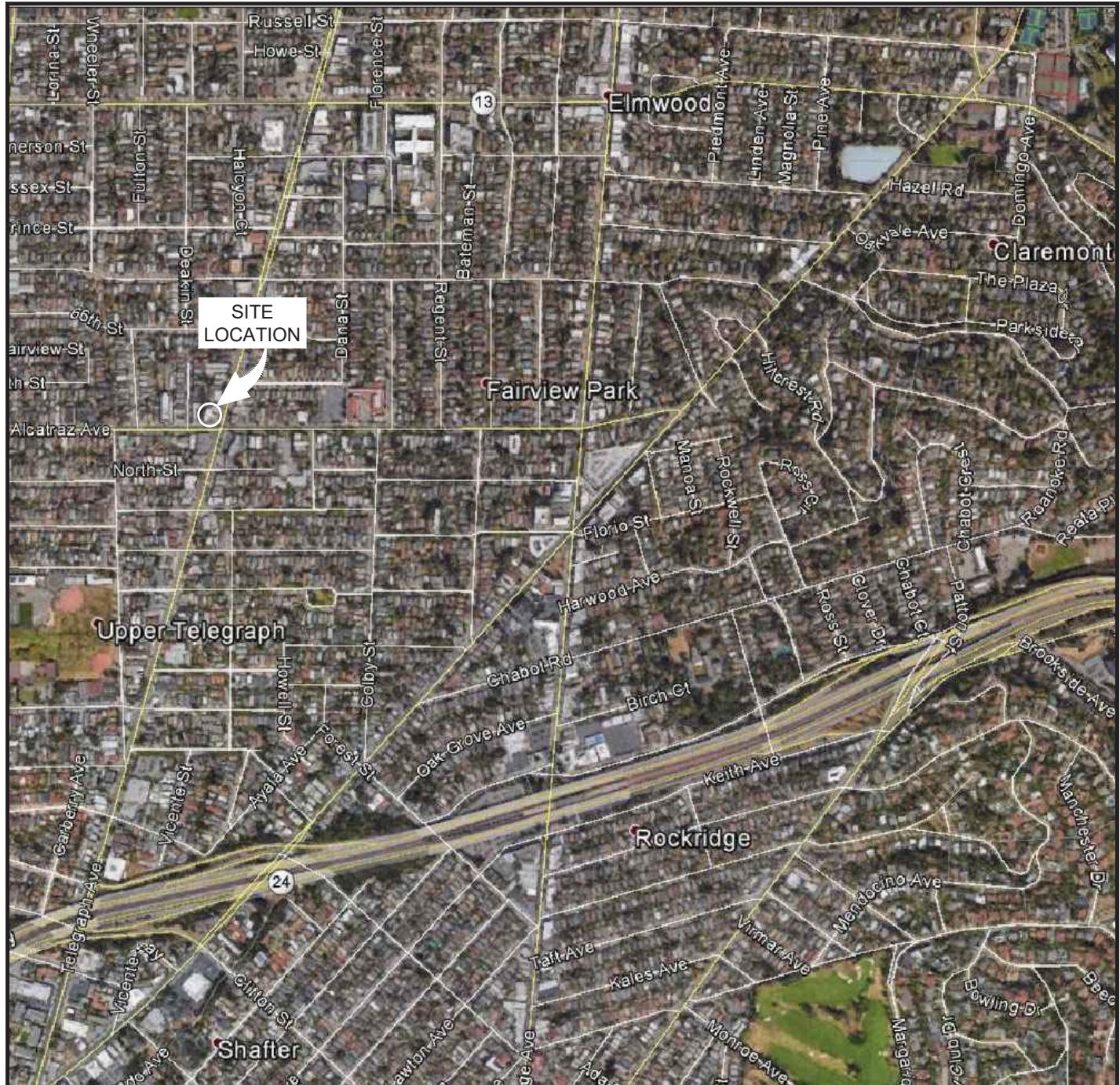
k = Grab groundwater sample

l = Quantitated against gasoline

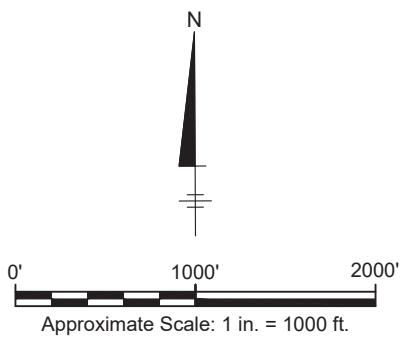
a2 = The continuing calibration verification for ethanol was outside of client contractual limits, however, it was within method acceptance limits. The data should still be useful for its intended purpose

## FIGURES





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



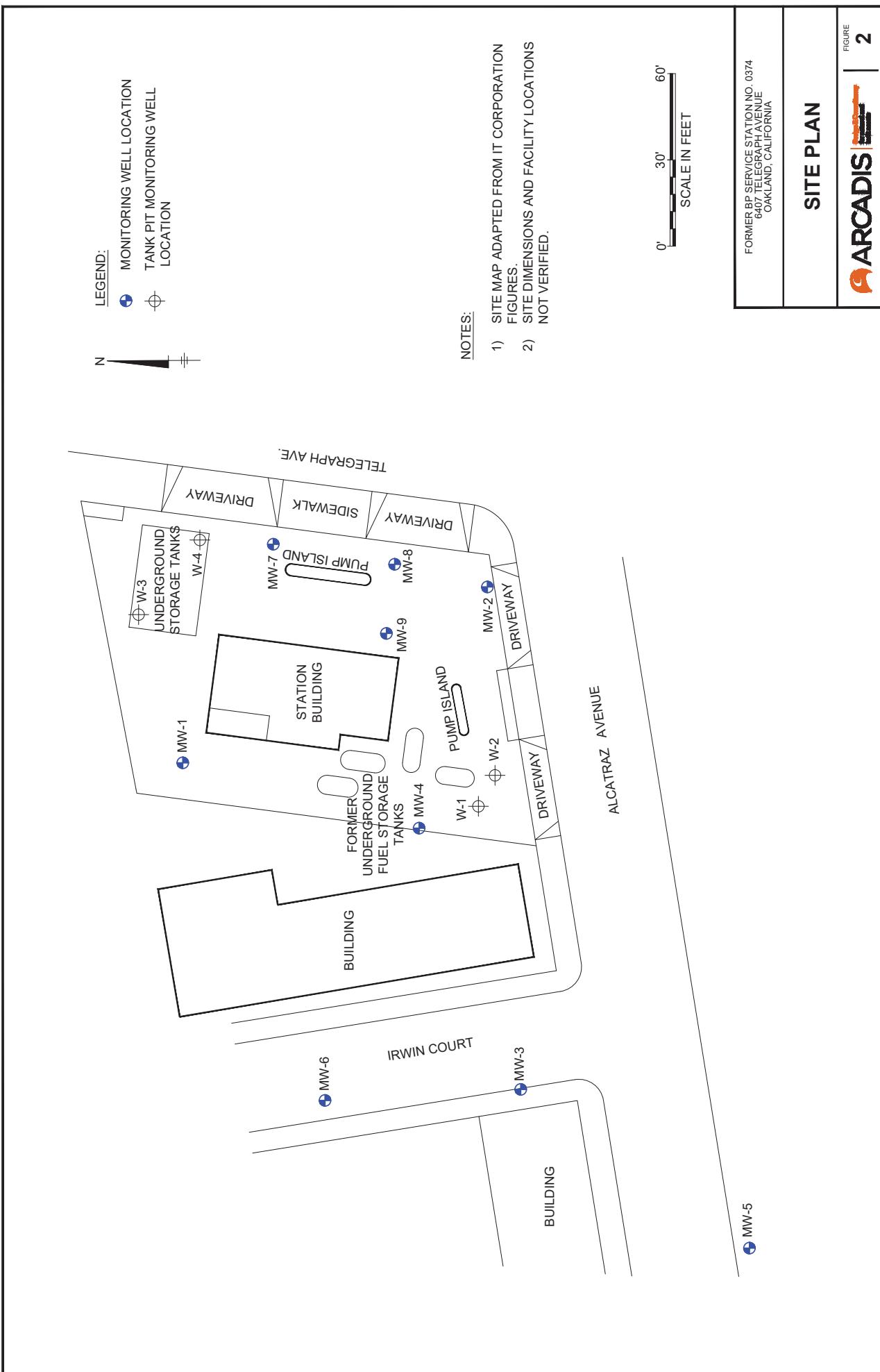
FORMER BP SERVICE STATION NO. 0374  
6407 TELEGRAPH AVENUE  
OAKLAND, CALIFORNIA

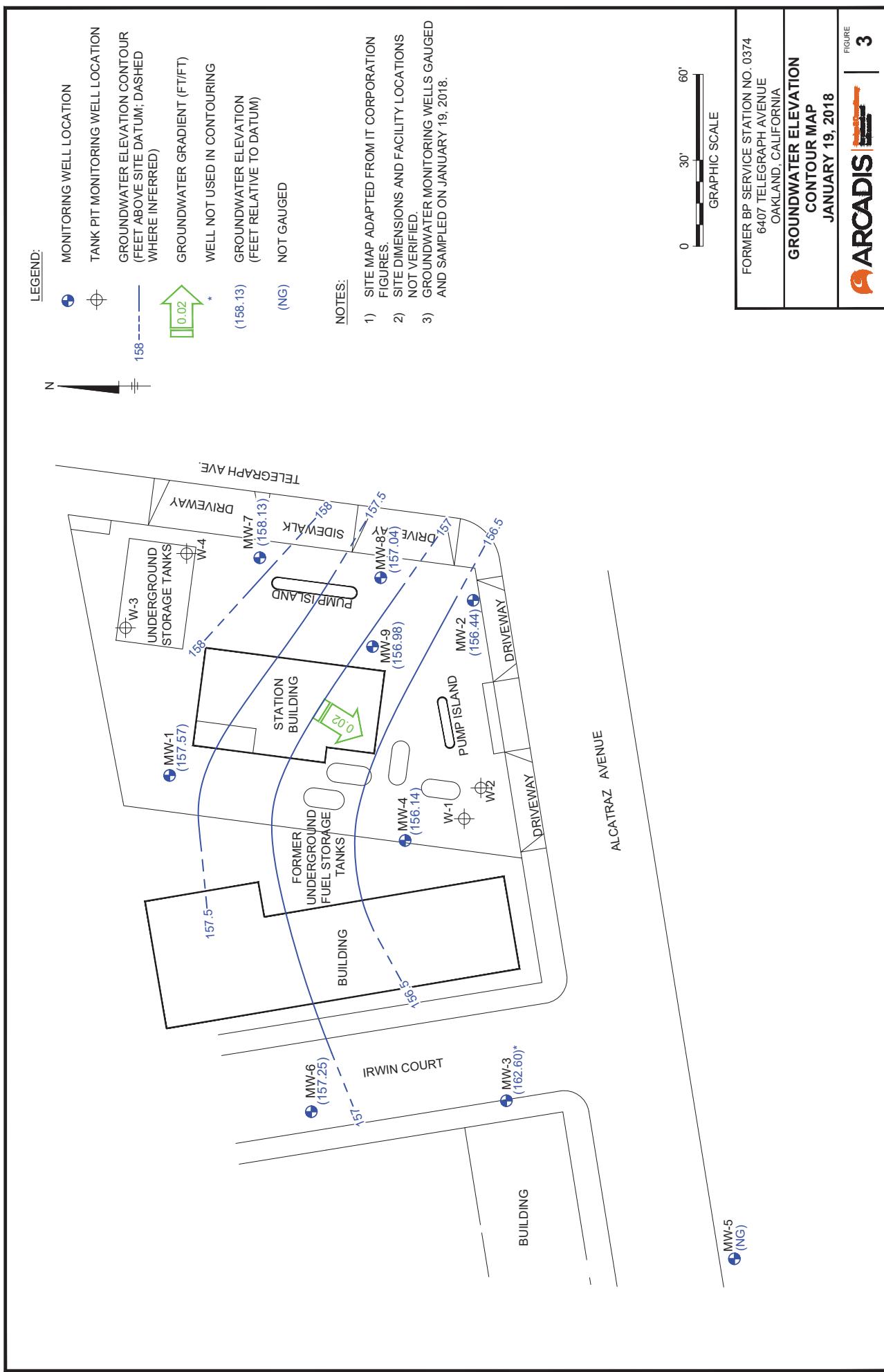
### SITE LOCATION MAP

**ARCADIS**

Design & Consultancy  
for natural and  
built assets

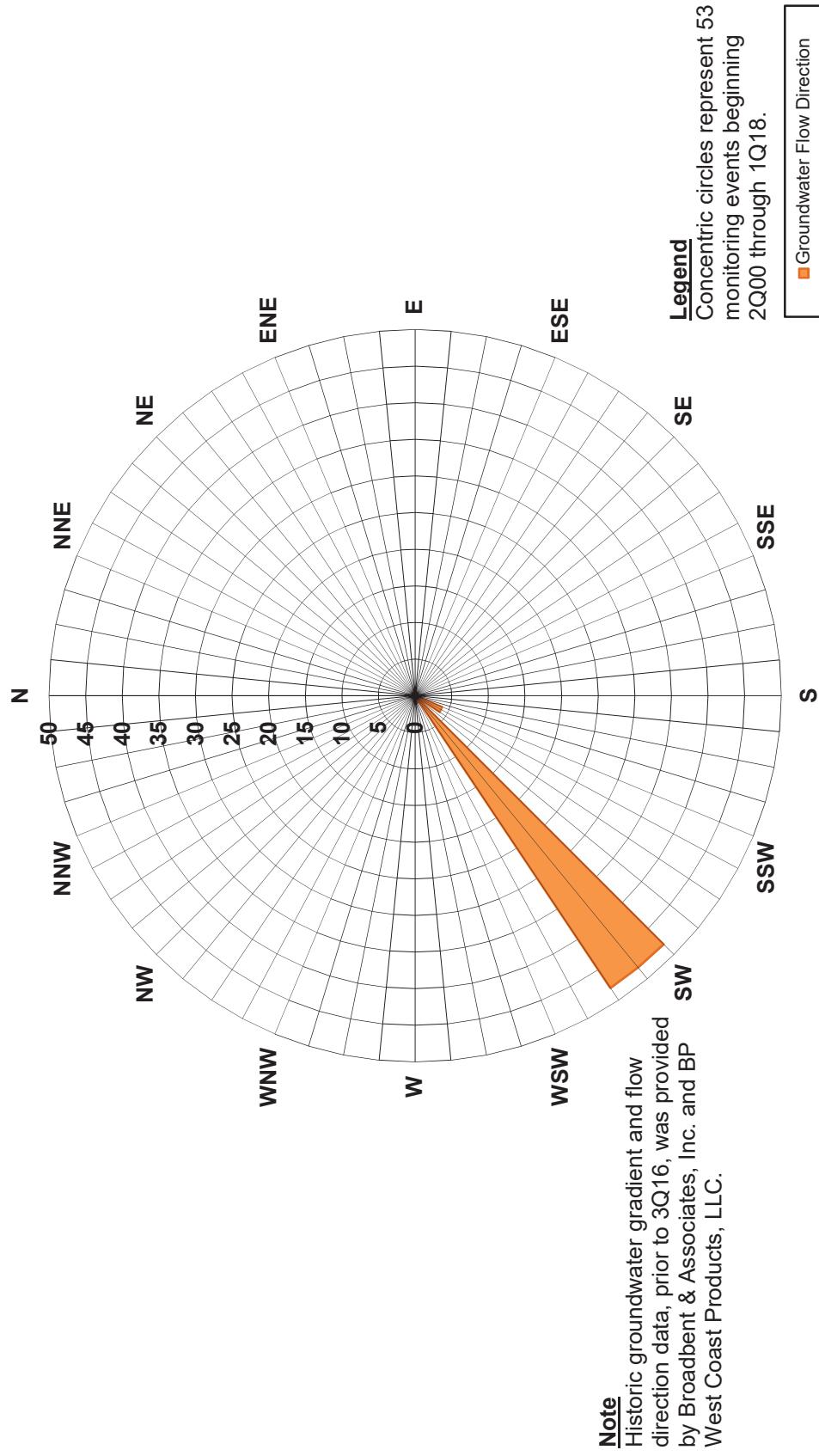
FIGURE  
1

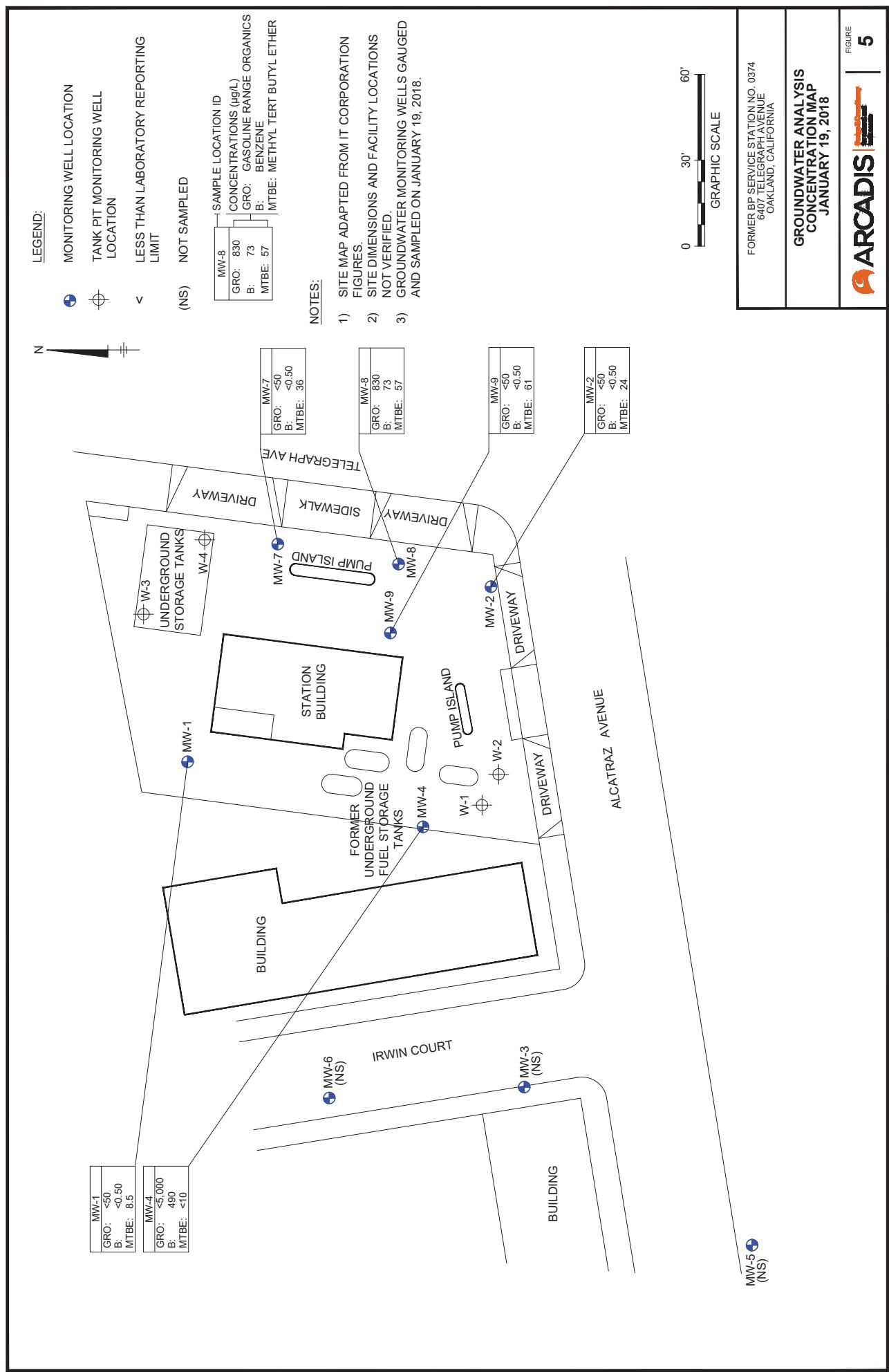




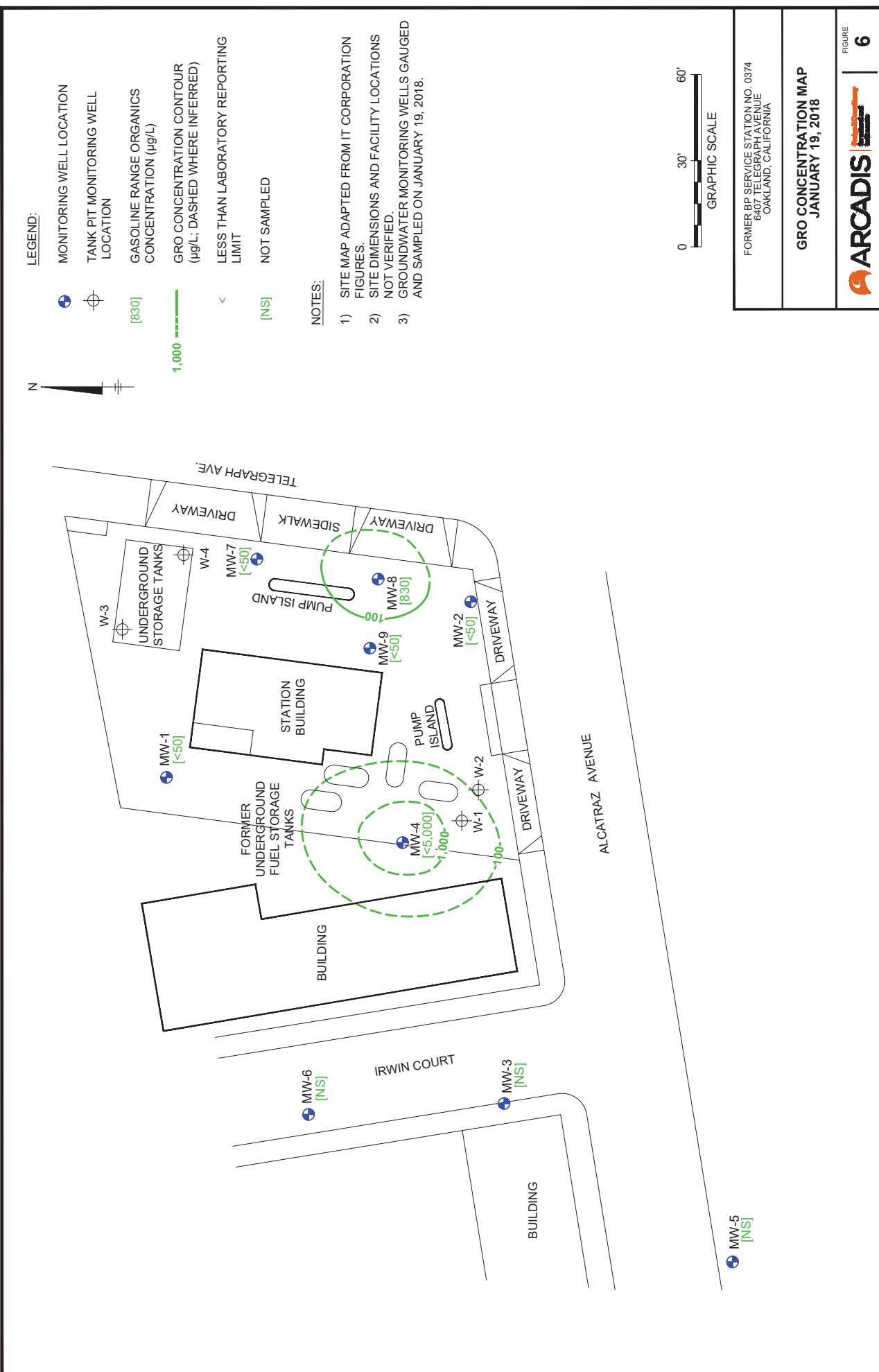
**Figure 4**  
**GROUNDWATER FLOW DIRECTION ROSE DIAGRAM**

CA BP-0374  
6407 Telegraph Avenue  
Oakland, California 94619

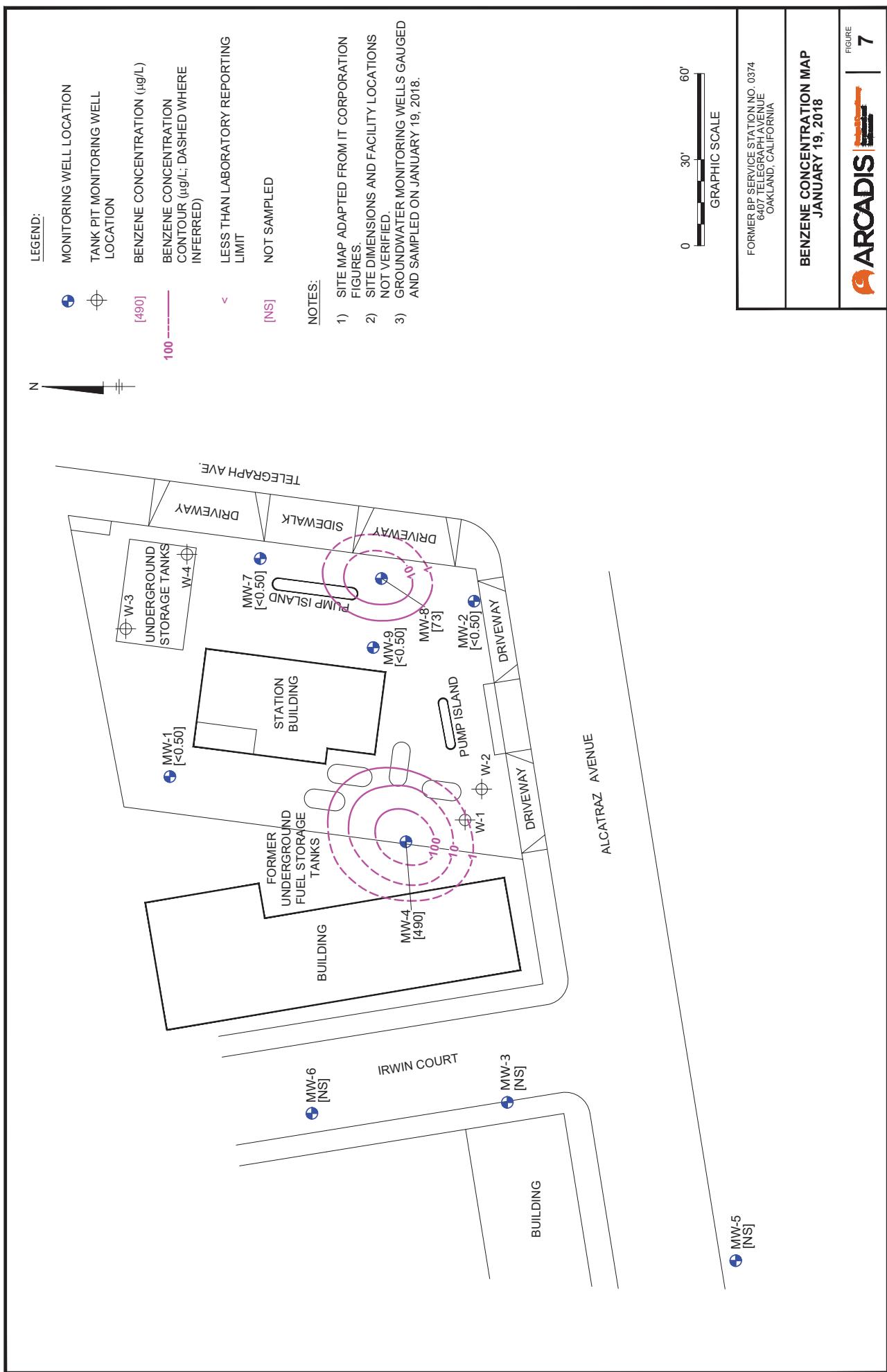


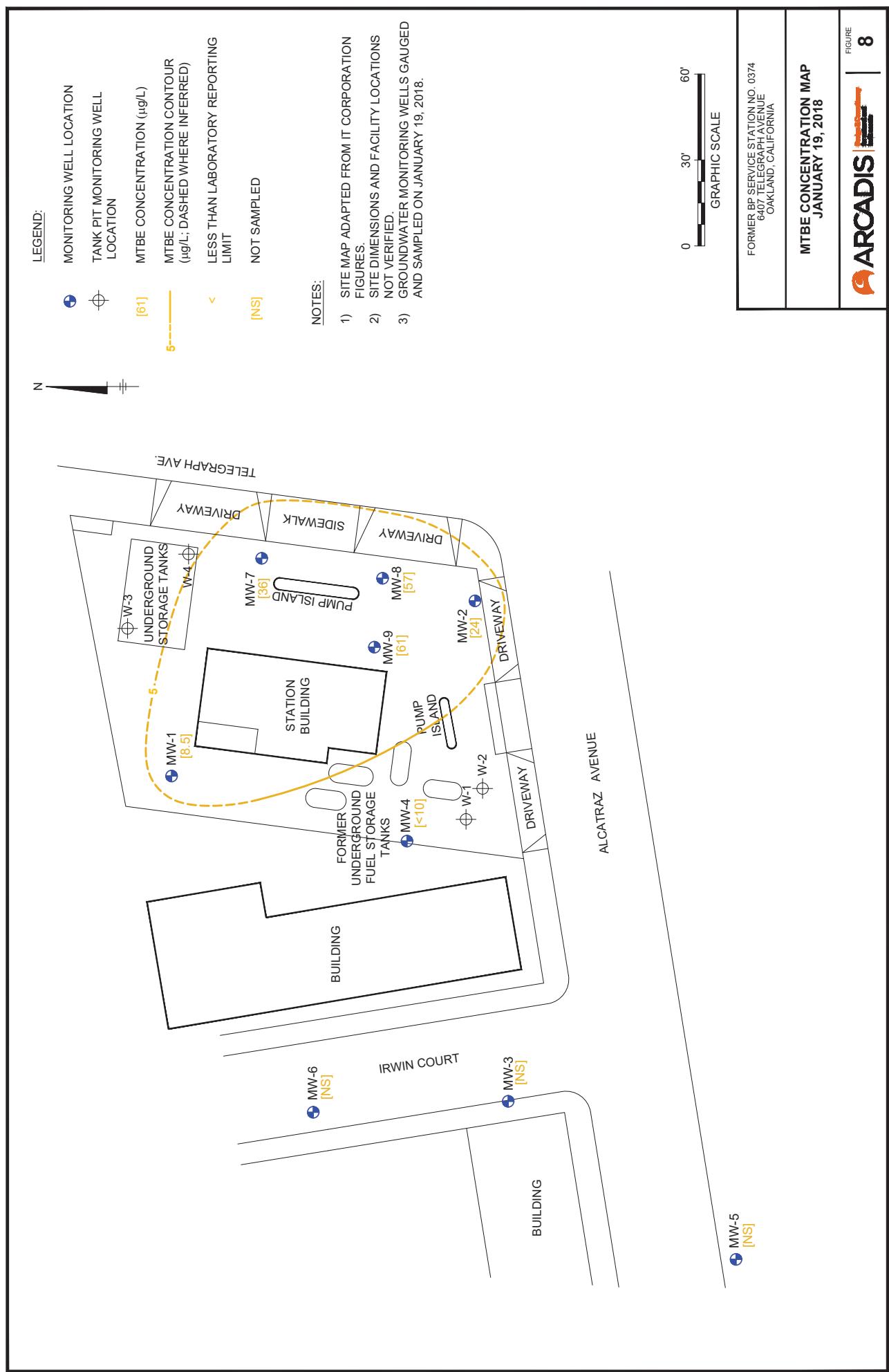


CTY MUNICIPALITY OF BAGUIO CITY, 2400 BAGUIO CITY, PHILIPPINES  
C/o: COUNCILOR JESUS S. GARCIA, BLDG. 68, 1ST FLOOR, BAGUIO CITY,  
PHILIPPINES 2900 BAGUIO CITY, TEL. NO. 442-1234  
FAX: 0743-442-1234  
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# **ATTACHMENT 1**

## **Groundwater Monitoring Field Forms**



ARCADIS

## Water-Level Measurement Form

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

Date: 1/19/18  
 Recorded By: Jan Weninger

Well Number	Time	Static Depth to Water (ft btoc)	Depth to Free Product (ft btoc)	Duplicate Reading (ft btoc)	Total Depth (ft btoc)	Comments
MW-1	0747	6.88	—		26.58	4" / tubing in well
MW-2	0758	7.05	—		26.12	4" / tubing in well
MW-3	0800	4.20	—		26.61	4" / on sidewalk close to stop sign
MW-4	0804	6.34			26.90	Well located in a steel box on the planter 4" / tubing in well
MW-5	—	—	—	—	—	in front of 533 Alcatraz Ave. Car over well
MW-6	0801	2.16	—		14.66	4" / well cap was next to well casing
MW-7	0752	6.67	—		19.73	4" / tubing in well
MW-8	0754	7.10	—		19.27	4" / Strong odor / tubing in well
MW-9	0756	6.79	—		19.35	4" / tubing in well

ft btoc      Feet below top of casing.

## **GROUNDWATER SAMPLING LOG**

Project No.: GP16BPNA-CH01.40000 Well ID: MW-1 Date: 1/19/18  
Project Name / Location: BP 0374 1Q GW Sampling / 6407 Telegraph Ave. Weather: sunny / 50°s  
Casing Diameter: 4 Well Material: PVC  
Total Depth: 26.58' Static Water Level: 6.89 Depth to Product: -  
(ft-btoc) (ft-btoc)  
Water Column: 19.69 Calculated Volume to be purged: \_\_\_\_\_ Actual Volume Purged: 2000 ML  
Gallons in Well: 12.82

#### Well Casing Volumes:

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

Purge Method: peri' pump

Pump on/off: 0836 / 0900

Sample Method: Low flow

Time sample collected at: 0850

Container: vial

# of containers: 4

Preservative: HCl

Condition of Well: good

Tubing Left in well: yes / peri pump tubing

14 "

### **Other issues:**

Sampled by:

ABB / JW

## **GROUNDWATER SAMPLING LOG**

Project No.: GP16 BP NA CA01.40000 Well ID: MW-2 Date: 1/19/18  
Project Name / Location: BP#0374 10 graywater sampling/6407 Tele Weather: sunny ~60°F  
Casing Diameter: 4" Well Material: PVC  
Total Depth: 26.12 Static Water Level: 7.05 Depth to Product: —  
(ft-btoc) (ft-btoc) (ft-btoc)  
Water Column: 19.07 ft Calculated Volume to be purged: \_\_\_\_\_ Actual Volume Purged: 3100 ml  
Gallons in Well: 12.40

#### **Well Casing Volumes:**

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

Purge Method: Peri Pump

Pump on/off: 1050 / 1109

Sample Method: slow flow

Pump on/off: 1050 / 1109

Time sample collected at: 1104

Container: vial # of containers: 6

Preservative: HCL

Condition of Well: good

Tubing Left in well: Yes

Size of tubing: 7/4" (peri pump)

#### Other issues:

Sampled by: AHB JW





## GROUNDWATER SAMPLING LOG

Project No.: 6P16 BP NA CA01.40000 Well ID: MW-P  
Project Name / Location: BP 0374 10' GW Sampling / 6407 Tolc-  
graph Ave.  
Casing Diameter: 4" Well Material: PVC  
Total Depth: 19.27 Static Water Level: 7.25 Depth to Product: —  
(ft-btoc) (ft-btoc)  
Water Column: 12.02 Calculated Volume to be purged: \_\_\_\_\_ Actual Volume Purged: 3000 mL  
Gallons in Well: 7.81

#### **Well Casing Volumes:**

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

Purge Method: Peri Pump  
Sample Method: low flow

Pump on/off: 100g / 102g

Time sample collected at: 10:25

Container: vial

# of containers: 6

Preservative: HCl

Condition of Well: good.

Tubing Left in well: Yes

Size of tubing: 1/4" (peri pump)

### **Other issues:**

Sampled by: JW / AAB

## **GROUNDWATER SAMPLING LOG**

Project No.: GP16 BP NA CA01.40000 Well ID: MW-9 Date: 1/19/18  
Project Name / Location: BP#0374 1Q groundwater sampling/6407 Weather: sunny, ~65°F  
Casing Diameter: 4" Well Material: PRC Telegraph Ave.  
Total Depth: 19.35 Static Water Level: 6.79 Depth to Product: —  
(ft-btoc) (ft-btoc)  
Water Column: 12.56 ft Calculated Volume to be purged: \_\_\_\_\_ Actual Volume Purged: 3700 ml  
Gallons in Well: 8.16

#### Well Casing Volumes:

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

Purge Method: Peri Pump

Pump on/off: 1132 / 1152

Sample Method: slow flow

Time sample collected at: 1146

Container: ice

# of containers: 6

Preservative: HCl

Condition of Well: good

Tubing Left in well: Yes

Size of tubing: 1/4" (peri pump)

### **Other issues:**

Sampled by: JW AB

## **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: 440-201565-1

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:

1/30/2018 9:40:10 AM

Kathleen Robb, Project Manager II

(949)261-1022

[kathleen.robb@testamericainc.com](mailto:kathleen.robb@testamericainc.com)

### LINKS

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The  
Expert

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

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

TestAmerica Job ID: 440-201565-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-201565-1	MW-1	Water	01/19/18 08:50	01/20/18 11:10
440-201565-2	MW-2	Water	01/19/18 11:04	01/20/18 11:10
440-201565-3	MW-4	Water	01/19/18 12:20	01/20/18 11:10
440-201565-4	MW-7	Water	01/19/18 09:40	01/20/18 11:10
440-201565-5	MW-8	Water	01/19/18 10:25	01/20/18 11:10
440-201565-6	MW-9	Water	01/19/18 11:46	01/20/18 11:10

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TestAmerica Irvine

# Case Narrative

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

TestAmerica Job ID: 440-201565-1

## Job ID: 440-201565-1

Laboratory: TestAmerica Irvine

### Narrative

#### Job Narrative 440-201565-1

### Comments

No additional comments.

### Receipt

The samples were received on 1/20/2018 11:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° C.

### Receipt Exceptions

The following sample was received at the laboratory without a sample collection date and time documented on the chain of custody: Trip Blank (440-201565-7). The sampling date and default time of 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

Method(s) 8015B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH of 7 was outside the required criteria when verified by the laboratory, and corrective action was not possible: MW-9 (440-201565-6). The sample was analyzed within 7 days per EPA recommendation.

No additional analytical or quality issues were noted, other than those described above or 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 Results

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

TestAmerica Job ID: 440-201565-1

**Client Sample ID: MW-1**

Date Collected: 01/19/18 08:50  
Date Received: 01/20/18 11:10

**Lab Sample ID: 440-201565-1**

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			01/23/18 01:08	1
1,2-Dichloroethane	ND		0.50	ug/L			01/23/18 01:08	1
Benzene	ND		0.50	ug/L			01/23/18 01:08	1
Ethanol	ND		150	ug/L			01/23/18 01:08	1
Ethylbenzene	ND		0.50	ug/L			01/23/18 01:08	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			01/23/18 01:08	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			01/23/18 01:08	1
m,p-Xylene	ND		1.0	ug/L			01/23/18 01:08	1
<b>Methyl-t-Butyl Ether (MTBE)</b>	<b>8.5</b>		0.50	ug/L			01/23/18 01:08	1
o-Xylene	ND		0.50	ug/L			01/23/18 01:08	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			01/23/18 01:08	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			01/23/18 01:08	1
Toluene	ND		0.50	ug/L			01/23/18 01:08	1
Xylenes, Total	ND		1.0	ug/L			01/23/18 01:08	1
<b>Surrogate</b>				<b>%Recovery</b>			<b>Prepared</b>	<b>Analyzed</b>
4-Bromofluorobenzene (Surr)			109	<b>Qualifier</b>				
				<b>Limits</b>				
				80 - 120				
Dibromofluoromethane (Surr)			98					
Toluene-d8 (Surr)			108					
				80 - 128				

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			01/26/18 15:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	98		65 - 140				01/26/18 15:05	1

**Client Sample ID: MW-2**

Date Collected: 01/19/18 11:04  
Date Received: 01/20/18 11:10

**Lab Sample ID: 440-201565-2**

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			01/23/18 01:34	1
1,2-Dichloroethane	ND		0.50	ug/L			01/23/18 01:34	1
Benzene	ND		0.50	ug/L			01/23/18 01:34	1
Ethanol	ND		150	ug/L			01/23/18 01:34	1
Ethylbenzene	ND		0.50	ug/L			01/23/18 01:34	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			01/23/18 01:34	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			01/23/18 01:34	1
m,p-Xylene	ND		1.0	ug/L			01/23/18 01:34	1
<b>Methyl-t-Butyl Ether (MTBE)</b>	<b>24</b>		0.50	ug/L			01/23/18 01:34	1
o-Xylene	ND		0.50	ug/L			01/23/18 01:34	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			01/23/18 01:34	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			01/23/18 01:34	1
Toluene	ND		0.50	ug/L			01/23/18 01:34	1
Xylenes, Total	ND		1.0	ug/L			01/23/18 01:34	1
<b>Surrogate</b>				<b>%Recovery</b>			<b>Prepared</b>	<b>Analyzed</b>
4-Bromofluorobenzene (Surr)			110	<b>Qualifier</b>				
				<b>Limits</b>				
				80 - 120				

TestAmerica Irvine

# Client Sample Results

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

TestAmerica Job ID: 440-201565-1

**Client Sample ID: MW-2**

**Lab Sample ID: 440-201565-2**

Matrix: Water

Date Collected: 01/19/18 11:04  
Date Received: 01/20/18 11:10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	97		76 - 132		01/23/18 01:34	1
Toluene-d8 (Surr)	108		80 - 128		01/23/18 01:34	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			01/26/18 16:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		65 - 140				01/26/18 16:26	1

**Client Sample ID: MW-4**

**Lab Sample ID: 440-201565-3**

Matrix: Water

Date Collected: 01/19/18 12:20  
Date Received: 01/20/18 11:10

## 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			01/23/18 02:01	20
1,2-Dichloroethane	ND		10	ug/L			01/23/18 02:01	20
<b>Benzene</b>	<b>490</b>		10	ug/L			01/23/18 02:01	20
Ethanol	ND		3000	ug/L			01/23/18 02:01	20
<b>Ethylbenzene</b>	<b>40</b>		10	ug/L			01/23/18 02:01	20
Ethyl-t-butyl ether (ETBE)	ND		10	ug/L			01/23/18 02:01	20
Isopropyl Ether (DIPE)	ND		10	ug/L			01/23/18 02:01	20
<b>m,p-Xylene</b>	<b>49</b>		20	ug/L			01/23/18 02:01	20
Methyl-t-Butyl Ether (MTBE)	ND		10	ug/L			01/23/18 02:01	20
o-Xylene	ND		10	ug/L			01/23/18 02:01	20
Tert-amyl-methyl ether (TAME)	ND		10	ug/L			01/23/18 02:01	20
tert-Butyl alcohol (TBA)	ND		200	ug/L			01/23/18 02:01	20
<b>Toluene</b>	<b>40</b>		10	ug/L			01/23/18 02:01	20
<b>Xylenes, Total</b>	<b>49</b>		20	ug/L			01/23/18 02:01	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		80 - 120				01/23/18 02:01	20
Dibromofluoromethane (Surr)	100		76 - 132				01/23/18 02:01	20
Toluene-d8 (Surr)	108		80 - 128				01/23/18 02:01	20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		5000	ug/L			01/26/18 17:47	100
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		65 - 140				01/26/18 17:47	100

**Client Sample ID: MW-7**

**Lab Sample ID: 440-201565-4**

Matrix: Water

Date Collected: 01/19/18 09:40  
Date Received: 01/20/18 11:10

## 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			01/23/18 02:27	1
1,2-Dichloroethane	ND		0.50	ug/L			01/23/18 02:27	1

TestAmerica Irvine

# Client Sample Results

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

TestAmerica Job ID: 440-201565-1

**Client Sample ID: MW-7**

**Lab Sample ID: 440-201565-4**

Matrix: Water

Date Collected: 01/19/18 09:40

Date Received: 01/20/18 11:10

## 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			01/23/18 02:27	1
Ethanol	ND		150	ug/L			01/23/18 02:27	1
Ethylbenzene	ND		0.50	ug/L			01/23/18 02:27	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			01/23/18 02:27	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			01/23/18 02:27	1
m,p-Xylene	ND		1.0	ug/L			01/23/18 02:27	1
<b>Methyl-t-Butyl Ether (MTBE)</b>	<b>36</b>		0.50	ug/L			01/23/18 02:27	1
o-Xylene	ND		0.50	ug/L			01/23/18 02:27	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			01/23/18 02:27	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			01/23/18 02:27	1
Toluene	ND		0.50	ug/L			01/23/18 02:27	1
Xylenes, Total	ND		1.0	ug/L			01/23/18 02:27	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	108		80 - 120				01/23/18 02:27	1
Dibromofluoromethane (Surr)	99		76 - 132				01/23/18 02:27	1
Toluene-d8 (Surr)	107		80 - 128				01/23/18 02:27	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			01/26/18 16:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	100		65 - 140				01/26/18 16:53	1

**Client Sample ID: MW-8**

**Lab Sample ID: 440-201565-5**

Matrix: Water

Date Collected: 01/19/18 10:25

Date Received: 01/20/18 11:10

## 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			01/23/18 02:53	1
1,2-Dichloroethane	ND		0.50	ug/L			01/23/18 02:53	1
<b>Benzene</b>	<b>73</b>		0.50	ug/L			01/23/18 02:53	1
Ethanol	ND		150	ug/L			01/23/18 02:53	1
<b>Ethylbenzene</b>	<b>3.9</b>		0.50	ug/L			01/23/18 02:53	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			01/23/18 02:53	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			01/23/18 02:53	1
m,p-Xylene	ND		1.0	ug/L			01/23/18 02:53	1
<b>Methyl-t-Butyl Ether (MTBE)</b>	<b>57</b>		0.50	ug/L			01/23/18 02:53	1
o-Xylene	ND		0.50	ug/L			01/23/18 02:53	1
<b>Tert-amyl-methyl ether (TAME)</b>	<b>0.77</b>		0.50	ug/L			01/23/18 02:53	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			01/23/18 02:53	1
Toluene	ND		0.50	ug/L			01/23/18 02:53	1
Xylenes, Total	ND		1.0	ug/L			01/23/18 02:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	108		80 - 120				01/23/18 02:53	1
Dibromofluoromethane (Surr)	97		76 - 132				01/23/18 02:53	1
Toluene-d8 (Surr)	108		80 - 128				01/23/18 02:53	1

TestAmerica Irvine

# Client Sample Results

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

TestAmerica Job ID: 440-201565-1

## Client Sample ID: MW-8

Date Collected: 01/19/18 10:25  
Date Received: 01/20/18 11:10

## Lab Sample ID: 440-201565-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	830		50	ug/L			01/26/18 17:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	136		65 - 140				01/26/18 17:20	1

## Client Sample ID: MW-9

Date Collected: 01/19/18 11:46  
Date Received: 01/20/18 11:10

## Lab Sample ID: 440-201565-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			01/23/18 03:20	1
1,2-Dichloroethane	ND		0.50	ug/L			01/23/18 03:20	1
Benzene	ND		0.50	ug/L			01/23/18 03:20	1
Ethanol	ND		150	ug/L			01/23/18 03:20	1
Ethylbenzene	ND		0.50	ug/L			01/23/18 03:20	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			01/23/18 03:20	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			01/23/18 03:20	1
m,p-Xylene	ND		1.0	ug/L			01/23/18 03:20	1
<b>Methyl-t-Butyl Ether (MTBE)</b>	<b>61</b>		0.50	ug/L			01/23/18 03:20	1
o-Xylene	ND		0.50	ug/L			01/23/18 03:20	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			01/23/18 03:20	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			01/23/18 03:20	1
Toluene	ND		0.50	ug/L			01/23/18 03:20	1
Xylenes, Total	ND		1.0	ug/L			01/23/18 03:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		80 - 120				01/23/18 03:20	1
Dibromofluoromethane (Surr)	100		76 - 132				01/23/18 03:20	1
Toluene-d8 (Surr)	107		80 - 128				01/23/18 03:20	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			01/26/18 19:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		65 - 140				01/26/18 19:08	1

## Method Summary

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

TestAmerica Job ID: 440-201565-1

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: 440-201565-1

## **Client Sample ID: MW-1**

**Date Collected:** 01/19/18 08:50

**Date Received:** 01/20/18 11:10

## **Lab Sample ID: 440-201565-1**

**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	453038	01/23/18 01:08	WC	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	453898	01/26/18 15:05	KGL	TAL IRV

## **Client Sample ID: MW-2**

**Date Collected:** 01/19/18 11:04

**Date Received:** 01/20/18 11:10

## **Lab Sample ID: 440-201565-2**

**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	453038	01/23/18 01:34	WC	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	453898	01/26/18 16:26	KGL	TAL IRV

## **Client Sample ID: MW-4**

**Date Collected:** 01/19/18 12:20

**Date Received:** 01/20/18 11:10

## **Lab Sample ID: 440-201565-3**

**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		20	10 mL	10 mL	453038	01/23/18 02:01	WC	TAL IRV
Total/NA	Analysis	8015B/5030B		100	10 mL	10 mL	453898	01/26/18 17:47	KGL	TAL IRV

## **Client Sample ID: MW-7**

**Date Collected:** 01/19/18 09:40

**Date Received:** 01/20/18 11:10

## **Lab Sample ID: 440-201565-4**

**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	453038	01/23/18 02:27	WC	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	453898	01/26/18 16:53	KGL	TAL IRV

## **Client Sample ID: MW-8**

**Date Collected:** 01/19/18 10:25

**Date Received:** 01/20/18 11:10

## **Lab Sample ID: 440-201565-5**

**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	453038	01/23/18 02:53	WC	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	453898	01/26/18 17:20	KGL	TAL IRV

## **Client Sample ID: MW-9**

**Date Collected:** 01/19/18 11:46

**Date Received:** 01/20/18 11:10

## **Lab Sample ID: 440-201565-6**

**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	453038	01/23/18 03:20	WC	TAL IRV

TestAmerica Irvine

# Lab Chronicle

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

TestAmerica Job ID: 440-201565-1

**Client Sample ID: MW-9**

**Date Collected: 01/19/18 11:46**

**Date Received: 01/20/18 11:10**

**Lab Sample ID: 440-201565-6**

**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	453898	01/26/18 19:08	KGL	TAL IRV

**Laboratory References:**

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

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TestAmerica Irvine

# QC Sample Results

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

TestAmerica Job ID: 440-201565-1

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

**Lab Sample ID:** MB 440-453038/9

**Matrix:** Water

**Analysis Batch:** 453038

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			01/22/18 21:33	1
1,2-Dichloroethane	ND		0.50	ug/L			01/22/18 21:33	1
Benzene	ND		0.50	ug/L			01/22/18 21:33	1
Ethanol	ND		150	ug/L			01/22/18 21:33	1
Ethylbenzene	ND		0.50	ug/L			01/22/18 21:33	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			01/22/18 21:33	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			01/22/18 21:33	1
m,p-Xylene	ND		1.0	ug/L			01/22/18 21:33	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			01/22/18 21:33	1
o-Xylene	ND		0.50	ug/L			01/22/18 21:33	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			01/22/18 21:33	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			01/22/18 21:33	1
Toluene	ND		0.50	ug/L			01/22/18 21:33	1
Xylenes, Total	ND		1.0	ug/L			01/22/18 21:33	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac		
	%Recovery	Qualifier						
4-Bromofluorobenzene (Surr)	110		98 - 108				8120219 01/33	1
i tbromofluoromethane (Surr)	:D		D6 - 130				8120219 01/33	1
Toluene-d9 (Surr)	18:		98 - 109				8120219 01/33	1

**Lab Sample ID:** LCS 440-453038/5

**Matrix:** Water

**Analysis Batch:** 453038

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

Analyte	Spikes	LCS	LCS	Unit	D	%Rec	Limits	%Rec.
	Added	Result	Qualifier					
1,2-Dibromoethane (EDB)	25.0	25.0		ug/L		100	70 - 130	
1,2-Dichloroethane	25.0	24.5		ug/L		G8	57 - 138	
Benzene	25.0	25.4		ug/L		102	68 - 130	
Ethanol	1000	1340		ug/L		134	50 - 14G	
Ethylbenzene	25.0	24.1		ug/L		G6	70 - 130	
Ethyl-t-butyl ether (ETBE)	25.0	25.4		ug/L		101	60 - 136	
Isopropyl Ether (DIPE)	25.0	32.1		ug/L		128	58 - 13G	
m,p-Xylene	25.0	24.0		ug/L		G6	70 - 130	
Methyl-t-Butyl Ether (MTBE)	25.0	23.3		ug/L		G3	63 - 131	
o-Xylene	25.0	24.3		ug/L		G7	70 - 130	
Tert-amyl-methyl ether (TAME)	25.0	22.1		ug/L		88	57 - 13G	
tert-Butyl alcohol (TBA)	250	274		ug/L		110	70 - 130	
Toluene	25.0	24.5		ug/L		G8	70 - 130	
Surrogate	LCS	LCS	Limits	Prepared	Analyzed	Dil Fac		
	%Recovery	Qualifier						
4-Bromofluorobenzene (Surr)	18:		98 - 108				8120219 01/33	1
i tbromofluoromethane (Surr)	188		D6 - 130				8120219 01/33	1
Toluene-d9 (Surr)	180		98 - 109				8120219 01/33	1

TestAmerica Irvine

# QC Sample Results

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

TestAmerica Job ID: 440-201565-1

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

**Lab Sample ID: 440-201594-E-1 MS**

**Matrix: Water**

**Analysis Batch: 453038**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	27.7		ug/L		111	70 - 131
1,2-Dichloroethane	ND		25.0	27.4		ug/L		110	56 - 146
Benzene	ND		25.0	27.0		ug/L		108	66 - 130
Ethanol	ND		1000	1330		ug/L		133	54 - 150
Ethylbenzene	ND		25.0	26.3		ug/L		105	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	27.G		ug/L		112	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	35.0	LM	ug/L		140	64 - 138
m,p-Xylene	ND		25.0	26.4		ug/L		106	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.0		ug/L		104	70 - 130
o-Xylene	ND		25.0	25.G		ug/L		104	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	24.6		ug/L		G8	68 - 133
tert-Butyl alcohol (TBA)	ND		250	287		ug/L		115	70 - 130
Toluene	ND		25.0	26.7		ug/L		107	70 - 130
<hr/>									
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	184			MS		MS		%Recovery	
				Qualifer		Limits			
				98 - 108					
i tbromofluoromethane (Surr)	181					D6 - 130			
Toluene-d9 (Surr)	183					98 - 109			

**Lab Sample ID: 440-201594-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 453038**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	27.6		ug/L		110	70 - 131	1	25
1,2-Dichloroethane	ND		25.0	26.7		ug/L		107	56 - 146	3	20
Benzene	ND		25.0	26.6		ug/L		106	66 - 130	2	20
Ethanol	ND		1000	1280		ug/L		128	54 - 150	4	30
Ethylbenzene	ND		25.0	25.7		ug/L		103	70 - 130	2	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	27.G		ug/L		112	70 - 130	0	25
Isopropyl Ether (DIPE)	ND		25.0	34.4		ug/L		138	64 - 138	2	25
m,p-Xylene	ND		25.0	25.G		ug/L		103	70 - 133	2	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.2		ug/L		105	70 - 130	1	25
o-Xylene	ND		25.0	25.4		ug/L		102	70 - 133	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	24.4		ug/L		G8	68 - 133	1	30
tert-Butyl alcohol (TBA)	ND		250	282		ug/L		113	70 - 130	2	25
Toluene	ND		25.0	26.1		ug/L		104	70 - 130	2	20
<hr/>											
<b>Surrogate</b>											
4-Bromofluorobenzene (Surr)	186			MSD		MSD		%Recovery			
				Qualifer		Limits					
				98 - 108							
i tbromofluoromethane (Surr)	188					D6 - 130					
Toluene-d9 (Surr)	183					98 - 109					

TestAmerica Irvine

# QC Sample Results

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

TestAmerica Job ID: 440-201565-1

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

**Lab Sample ID: MB 440-453898/5**

**Matrix: Water**

**Analysis Batch: 453898**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
9 RO (C6-C12)	ND		50	ug/L			01/26/18 13:42	1
<b>Surrogate</b>	<b>MB</b>	<b>MB</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits				81206219 13:40	1

**Lab Sample ID: LCS 440-453898/4**

**Matrix: Water**

**Analysis Batch: 453898**

Analyte	Spike Added	LC	LC	Unit	D	%Rec	%Rec.
		Result	Qualifier				
9 RO (C4-C12)	800	6G1		ug/L		86	80 - 120
<b>Surrogate</b>	<b>LCS</b>	<b>LCS</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits				

**Lab Sample ID: 440-201565-1 MS**

**Matrix: Water**

**Analysis Batch: 453898**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec
	Result	Qualifier	Added	Result	Qualifier			
9 RO (C4-C12)	ND		800	702		ug/L		88
<b>Surrogate</b>	<b>MS</b>	<b>MS</b>	<b>Limits</b>					
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits					

**Lab Sample ID: 440-201565-1 MSD**

**Matrix: Water**

**Analysis Batch: 453898**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec
	Result	Qualifier	Added	Result	Qualifier			
9 RO (C4-C12)	ND		800	6G5		ug/L		87
<b>Surrogate</b>	<b>MSD</b>	<b>MSD</b>	<b>Limits</b>					
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits					

**Client Sample ID: MW-1**

**Prep Type: Total/NA**

**Client Sample ID: MW-1**

**Prep Type: Total/NA**

# QC Association Summary

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

TestAmerica Job ID: 440-201565-1

## GC/MS VOA

### Analysis Batch: 453038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-201565-1	MW-1	Total/NA	Water	8260B/5030B	
440-201565-2	MW-2	Total/NA	Water	8260B/5030B	
440-201565-3	MW-4	Total/NA	Water	8260B/5030B	
440-201565-4	MW-7	Total/NA	Water	8260B/5030B	
440-201565-5	MW-8	Total/NA	Water	8260B/5030B	
440-201565-6	MW-9	Total/NA	Water	8260B/5030B	
MB 440-453038/9	Method Blank	Total/NA	Water	8260B/5030B	
LCS 440-453038/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
440-201594-E-1 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-201594-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	

## GC VOA

### Analysis Batch: 453898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-201565-1	MW-1	Total/NA	Water	8015B/5030B	
440-201565-2	MW-2	Total/NA	Water	8015B/5030B	
440-201565-3	MW-4	Total/NA	Water	8015B/5030B	
440-201565-4	MW-7	Total/NA	Water	8015B/5030B	
440-201565-5	MW-8	Total/NA	Water	8015B/5030B	
440-201565-6	MW-9	Total/NA	Water	8015B/5030B	
MB 440-453898/5	Method Blank	Total/NA	Water	8015B/5030B	
LCS 440-453898/4	Lab Control Sample	Total/NA	Water	8015B/5030B	
440-201565-1 MS	MW-1	Total/NA	Water	8015B/5030B	
440-201565-1 MSD	MW-1	Total/NA	Water	8015B/5030B	

# Definitions/Glossary

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

TestAmerica Job ID: 440-201565-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

## 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: 440-201565-1

## 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	10-14-18
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	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.

TestAmerica Irvine



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Project Contact (Hardcopy or PDF To): James.Jacobsen@arcadis.com melanie.a.wong@arcadis.com		GeoTracker EDF Report? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Chain-of-Custody Record and Analysis Request	
Analysis Request					
Laboratory/Address: Test America 17461 Derian Ave Suite 100 Irvine, CA 92614		Sampling Company Log Code:			
Phone No.:	Fax No.:	Global ID:	T0600100106		
Project Number:	Phase Number	EDF Deliverable To (Email Address):	/ melanie.a.wong@arcadis.com		
Project Name:	ARCO #0374	Sampler Angel.Torrens-Bonano <i>RMC</i>			
Project Address: 6407 Telegraph Avenue Oakland, CA		Sampling	Container	Preservative	Matrix
Sample Designation		Date	Time		
MW-1		1/19/18	0850	X	
MW-2		1/19/18	1104	X	
MW-4		1/19/18	1220	X	
MW-7		1/19/18	0940	X	
MW-8		1/19/18	1025	X	
MW-9		1/19/18	1146	X	
Trip Blank					
Please Hold					
Relinquished by: Angel.Torrens-Bonano ANA / RMC		Date	Time Received by:	Remarks:	
		1/19/18	16:00	T A - gAC 01/19/18 16:00	
Relinquished by: <i>EDM</i>		Date	Time Received by:	T A - gAC 1/19/18 16:00	
1/20/18 LB 20/1/5 /PSCE c/s					



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

Project Contact (Hardcopy or PDF To): <u>James.Jacobsen@arcadis.com</u> <u>melanie.a.wong@arcadis.com</u>		GeoTracker EDF Report? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Chain-of-Custody Record and Analysis Request															
Laboratory/Address: Test America 17461 Derran Ave Suite 100 Irvine, CA 92614		Sampling Company Log Code:		Analysis Request															
Phone No.:	Fax No.:	Global ID:	T0600100106	For Lab Use Only															
949-261-1022	949-260-3297	EDF Deliverable To (Email Address):	<u>melanie.a.wong@arcadis.com</u>	TAT															
Project Number:	Phase Number	12 HR 24 HR 48 HR 72 HR 1 WK 2 WK																	
GP16BPNA.CA01	40000	12/20/18																	
Project Name:	ARCO #3374	12/20/18																	
Project Address:	6407 Telegraph Avenue Oakland, CA	Sampling	Container	Preservative	Matrix	DUST	SOL	WATER	NONE	ICE	HNO <sub>3</sub>	HCl	PLASTIC VIAL	GRO (EPA Method 8260B)	BTEX, MTBE, TBA, 1,2-DCA, EDB, ETBE, DIPPE, TAME, and ethanol (EPA Method 8260B)				
Sample Designation	Date	Time																	
MW-1	1/19/18	0850		X											Std				
MW-2	1/19/18	1104		X											Std				
MW-4	1/19/18	1220		X											Std				
MW-7	1/19/18	0940		X											Std				
MW-8	1/19/18	1025		X											Std				
MW-9	1/19/18	1146		X											Std				
Trip Blank																			
															Please Hold				
Remarks: <i>12/20/18</i> <i>LB</i>																			
Relinquished by: <u>Angel.Torrens-Ronano</u> <u>ANR / ARB</u>	Date	Time Received by:	1/19/18	11:00	TA-SAC	1/19/18	16:00												
Relinquished by: <u>TA-SAC</u>	Date	Time Received by:	1/19/18	16:30	TA-SAC	1/20/18	11:10												
Tech # 4895 5/18/18 4/8/22 20/1/5 1/RSCE c/s																			

## Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 440-201565-1

**Login Number:** 201565

**List Source:** TestAmerica Irvine

**List Number:** 1

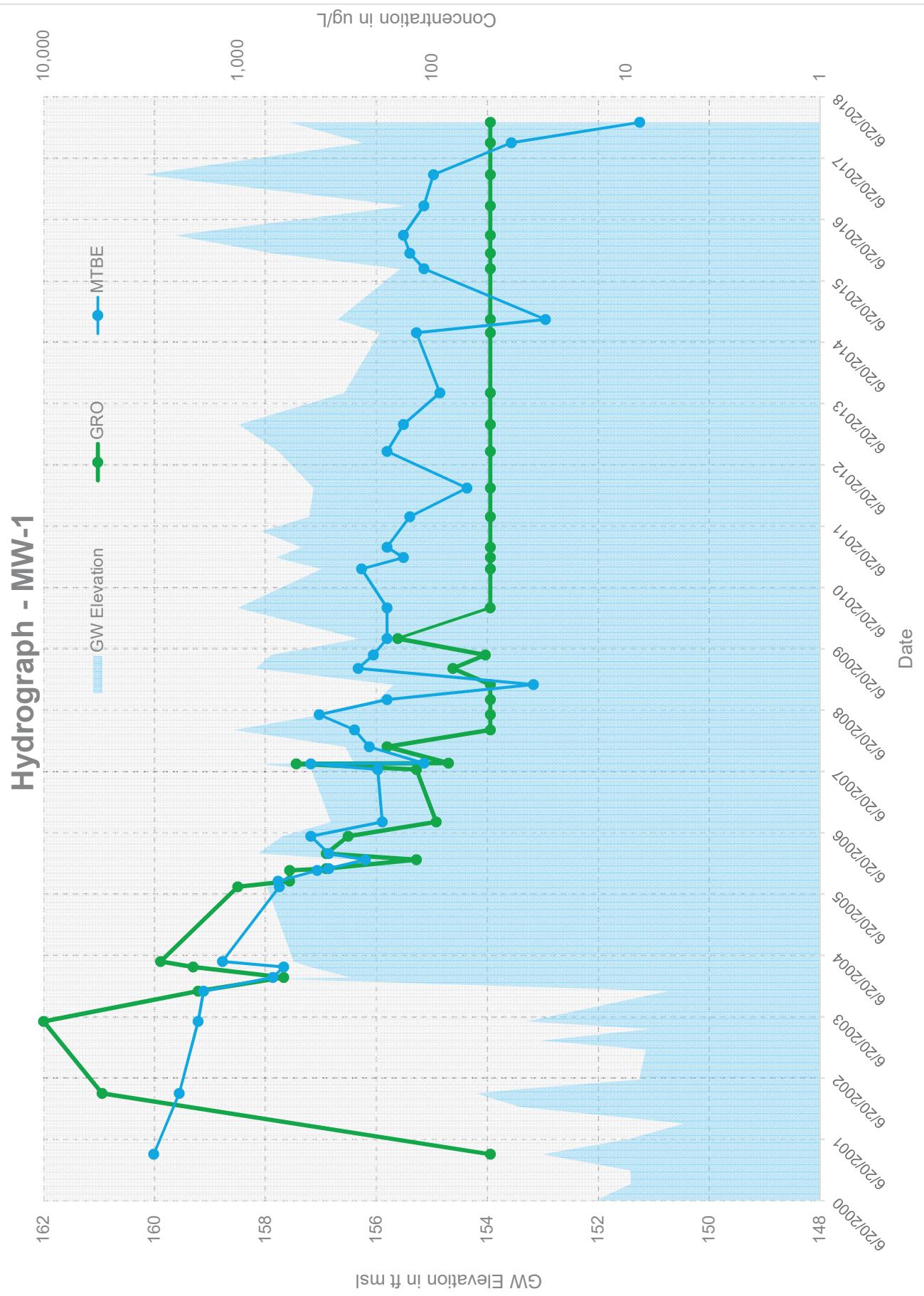
**Creator:** Bonta, Lucia F

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	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	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	

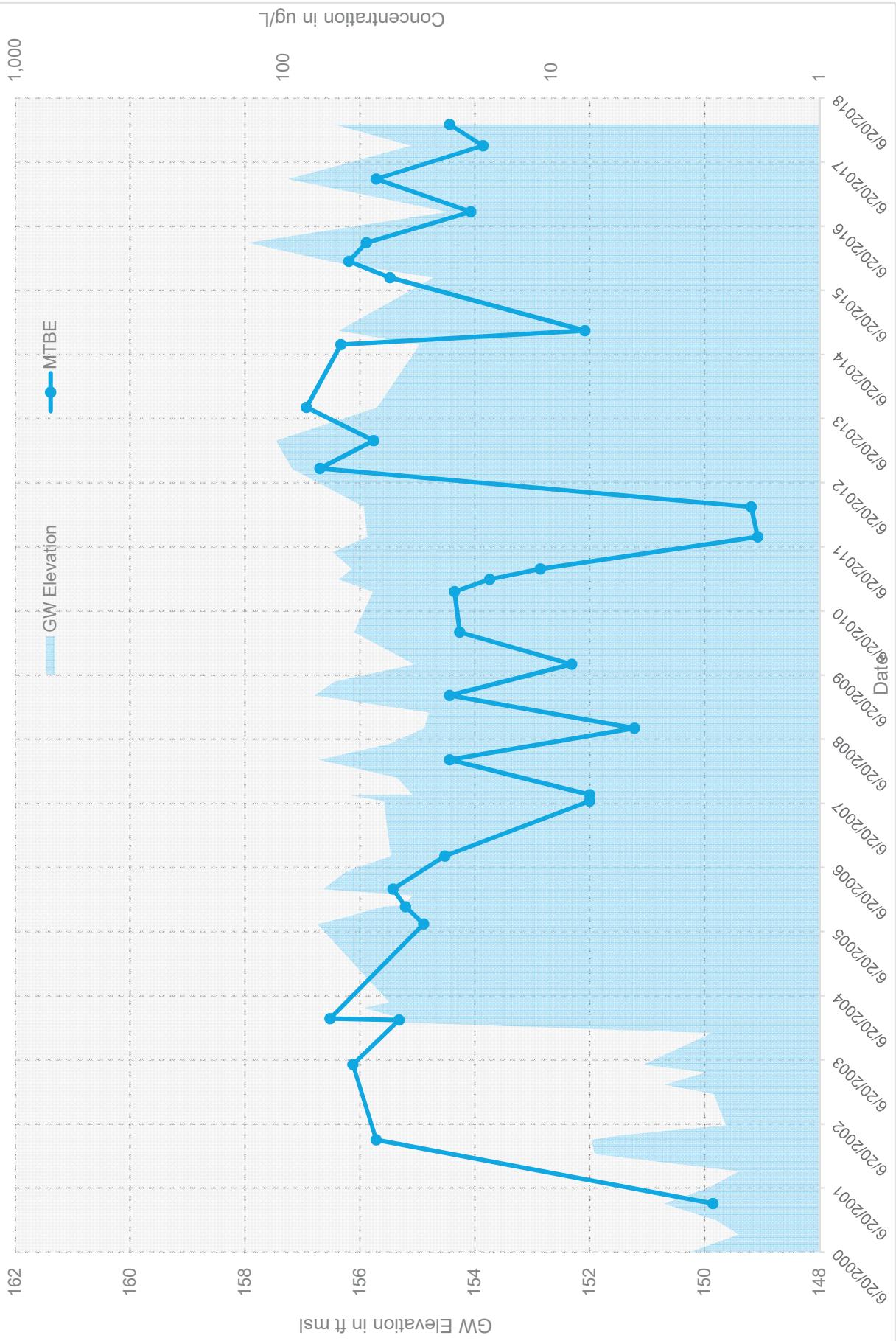
## ATTACHMENT 3

### Hydrographs

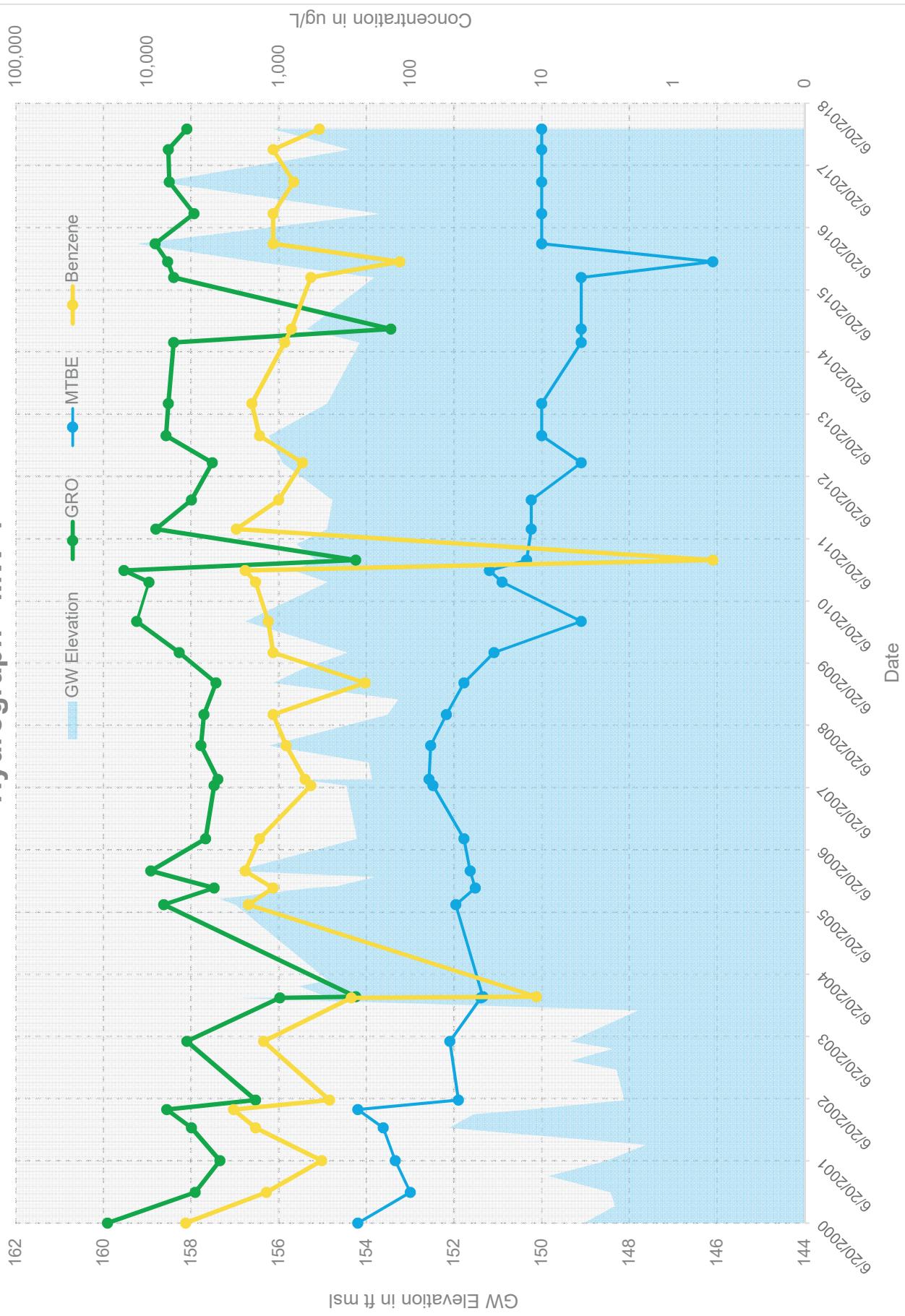




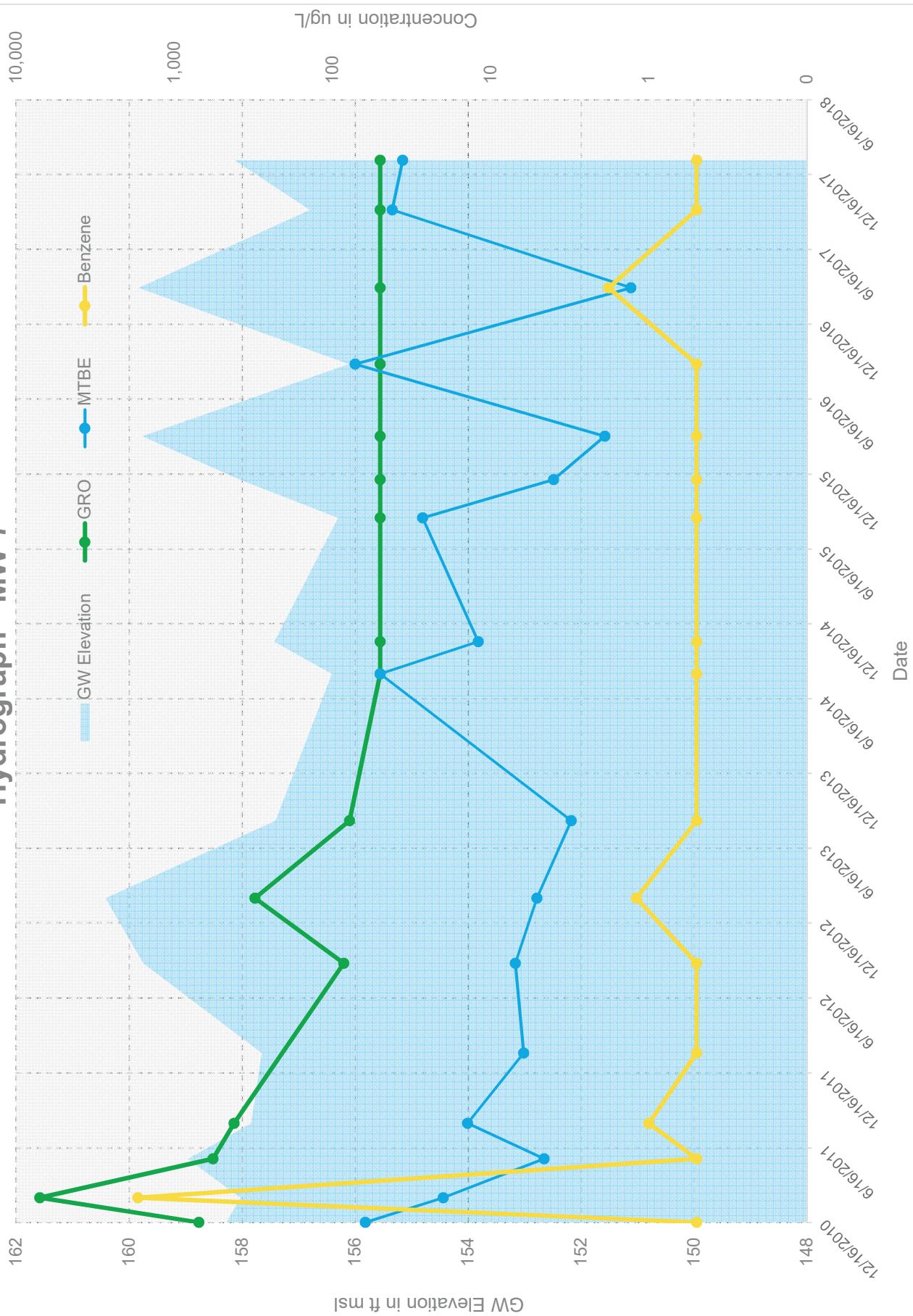
## Hydrograph - MW-2



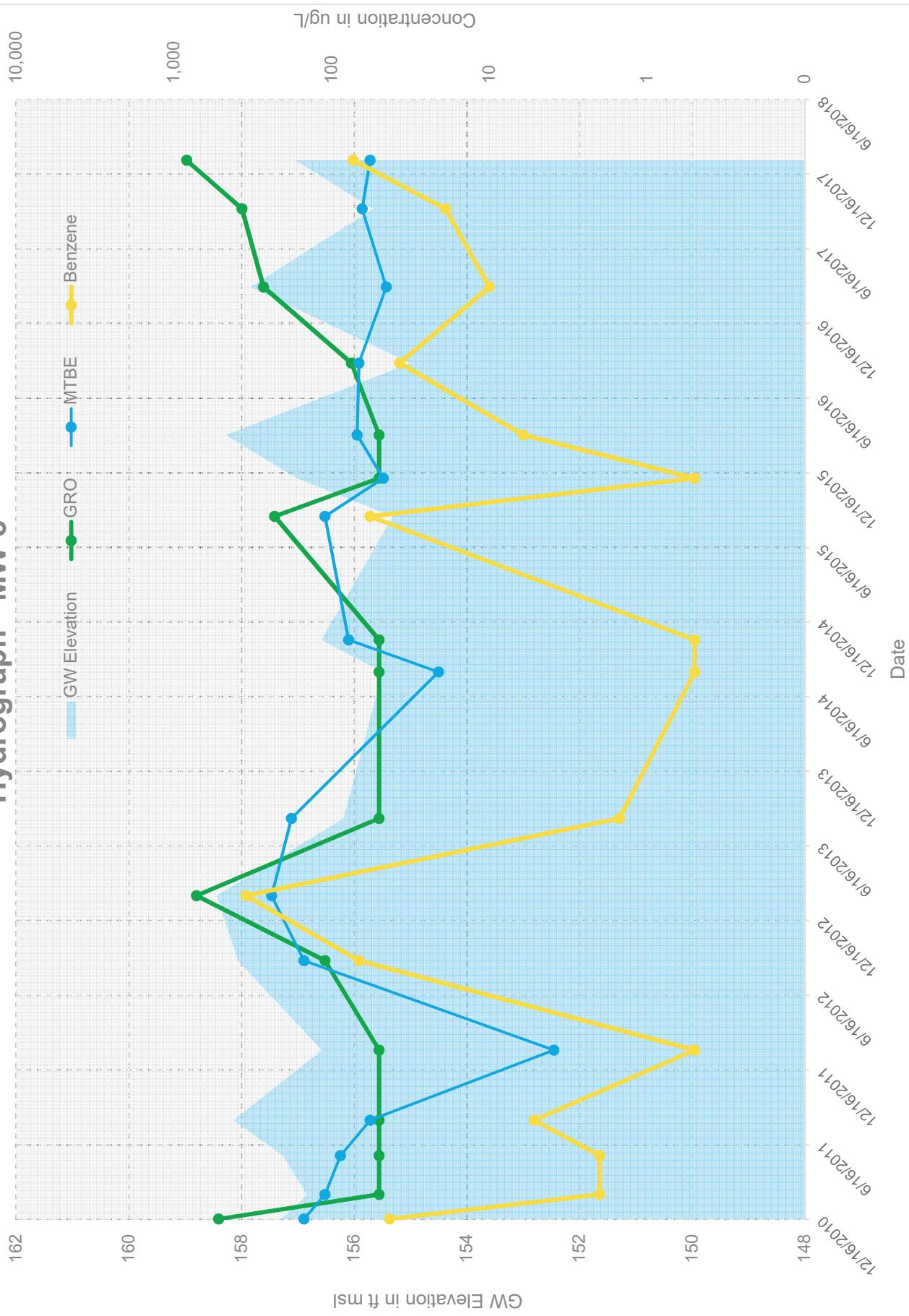
## Hydrograph - MW-4



## Hydrograph - MW-7



## Hydrograph - MW-8



## Hydrograph - MW-9

