



**Nicole M. Arceneaux**  
Project Manager  
Marketing Business Unit

**Chevron Environmental  
Management Company**  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
Tel (925) 790-6912  
Nicole.arceneaux@chevron.com

January 15, 2016

Alameda County Health Care Services Agency  
Environmental Health Services  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**RECEIVED**

By Alameda County Environmental Health 2:49 pm, Jan 15, 2016

**Re: Unocal #6129 (351639)  
Second Semi-Annual 2015 Groundwater Monitoring Report  
3420 35th Avenue, Oakland, California  
Fuel Leak Case #RO0000058  
GeoTracker Global ID #T0600101465**

I have reviewed the attached report dated January 15, 2016.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by AECOM, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13257(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Nicole Arceneaux  
Project Manager

Attachment: Second Semi-Annual 2015 Groundwater Monitoring Report by AECOM

January 15, 2016

Mr. Keith Nowell  
Alameda County Health Care Services Agency  
Environmental Health Services  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577  
(via internet upload)

**Subject: Second Semi-Annual 2015 Groundwater Monitoring Report  
Unocal #6129 (351639)  
3420 35th Avenue, Oakland, California  
Fuel Leak Case No. RO0000058  
GeoTracker Global ID T0600101465**

Dear Mr. Nowell,

On behalf of Chevron Environmental Management Company's (EMC's) affiliate, Union Oil Company of California ("Union Oil"), AECOM has prepared the second semi-annual 2015 groundwater monitoring report for the site located at 3420 35th Avenue in Oakland, California (site) (**Figure 1**). The locations of former and current site features are illustrated on **Figure 2**. Groundwater monitoring is conducted to evaluate the distribution of petroleum hydrocarbon constituents in groundwater beneath the site. Groundwater sampling was performed by Gettler-Ryan Inc. (Gettler-Ryan) of Dublin, California. This report summarizes results of the sampling event conducted on December 15, 2015.

#### **Groundwater Monitoring Field Data**

On December 15, 2015, the depth to groundwater was measured in three monitoring wells (MW-1 through MW-3) at the site. Groundwater measurements were converted to groundwater elevations (**Table 1**). The depth to groundwater at the site ranged from 30.45 to 31.76 feet below the top of well casings (159.03 to 159.83 feet above mean sea level). The groundwater flow direction was calculated to the northeast with an average hydraulic gradient of approximately 0.009 feet per foot (**Figure 2**). A copy of the groundwater gauging logs is included in **Attachment A**.

#### **Groundwater Sampling and Analytical Results**

On December 15, 2015, groundwater samples were collected from monitoring wells MW-1 through MW-3, after first purging a minimum of three well volumes at each well. Temperature, pH, oxidation-reduction potential, dissolved oxygen, and electrical conductivity readings were recorded during purging, and a copy of the purge logs is presented in **Attachment A**.

Laboratory analysis of the groundwater samples was performed by BC Laboratories, Inc. (BC Labs) of Bakersfield, California. The BC Labs analytical report dated December 28, 2015, is included as **Attachment B**. Groundwater samples were analyzed for the following, based on historical trends at each monitoring well:

- Total petroleum hydrocarbons as gasoline (TPH-g)<sup>1</sup> by Luft-GC/MS method;

---

<sup>1</sup> TPH-g was reported as total purgeable petroleum hydrocarbons in the laboratory analytical report.

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260B; and
- Fuel oxygenates, including Methyl t-butyl ether (MTBE), t-amyl methyl ether (TAME), t-butyl alcohol (TBA), Diisopropyl ether (DIPE), Ethyl t-butyl ether (ETBE), ethanol, 1,2-Dibromoethane (EDB), and 1,2-Dichloroethane (EDC) by EPA Method 8260B.

Analytical results for the second semi-annual 2015 groundwater monitoring event are consistent with previous reporting periods (**Tables 1 through 4**, and **Figure 3**). The following presents a brief summary of the analytical sample results:

- BTEX, ETBE, TAME, DIPE, EDB, EDC, TBA, and ethanol were not detected in the groundwater samples collected from MW-1, MW-2, and MW-3;
- TPH-g was detected in the groundwater samples collected from MW-1, MW-2, and MW-3 at 60 µg/L, 680 µg/L, and 220 micrograms per liter (µg/L), respectively;
- MTBE was detected in the groundwater samples collected from MW-1, MW-2, and MW-3 at 48 µg/L, 1,300 µg/L, and 240 µg/L, respectively.

A summary of historical groundwater analytical data is presented in **Tables 3 and 4**.

The purge water and decontamination water generated during sampling activities were transported by Clean Harbors Environmental Services to Seaport Environmental located in Redwood City, California.

### **Conclusions and Recommendations**

Based on the results of historical groundwater monitoring and analytical results of groundwater sampling conducted at the site, AECOM provides the following conclusions and recommendations:

- No BTEX was detected.
- Groundwater levels appear to fluctuate on a seasonal basis with the highest groundwater elevations generally recorded during the first and second quarters and the lowest elevations recorded during the third and fourth quarters.
- MTBE and oxygenate concentrations fluctuate seasonally, but are generally stable or declining.

### **Remarks/Signatures**

The interpretations in this report represent AECOM's professional opinions and are based, in part, on the information supplied by Gettler-Ryan and BC labs. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this project, please contact Chad Roper at (805) 764-4027.

Sincerely,

Chad Roper, PhD  
Project Manager



Dana Files, ~~BC~~ No. 8410  
Project Geologist

ccs: Nicole Arceneaux, EMC (via electronic copy)  
Son Nguyen & Le Pham, Nguyen/Pham Family Trust, property owner (via paper copy)

Enclosures:

**Tables**

- Table 1 - Current Groundwater Monitoring Data and Analytical Results
- Table 2 - Current Groundwater Analytical Results - Oxygenate Compounds
- Table 3 - Historical Groundwater Monitoring Data and Analytical Results
- Table 4 - Historical Groundwater Analytical Results - Oxygenate Compounds

**Figures**

- Figure 1 - Site Location Map
- Figure 2 - Second Semi-Annual 2015 Groundwater Elevation Map
- Figure 3 - Second Semi-Annual 2015 Groundwater Analytical Data Map

**Figures**

- Chart 1 - Hydrograph for MW-1
- Chart 2 - Hydrograph for MW-2
- Chart 3 - Hydrograph for MW-3

**Attachments**

- Attachment A - Groundwater Monitoring and Sampling Field Data Sheets
- Attachment B - BC Labs Analytical Report



1-15-16

## Tables

**Table 1**  
**Current Groundwater Monitoring Data and Analytical Results**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	TOC* (ft)	DATE	DTW (ft)	GWE* (ft)	LNAPL THICKNESS (ft)	TPH-g (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	COMMENTS
MW-1	190.79	12/15/2015	31.76	159.03	0	60	<0.50	<0.50	<0.50	<1.0	
MW-2	190.80	12/15/2015	31.71	159.09	0	680	<0.50	<0.50	<0.50	<1.0	
MW-3	188.58	12/15/2015	30.45	159.83	0	220	<0.50	<0.50	<0.50	<1.0	
QA	--	12/15/2015	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	

**NOTES:**

\* TOC and GWE are in feet above mean sea level.

BTEX compounds analyzed by Environmental Protection Agency Method 8260B

TPH-g analyzed by Luft-GC/MS method

µg/L = Micrograms per liter

<# = Analyte not detected at or above indicated laboratory practical quantitation limit

-- = Not available

B = Benzene

DTW = Depth to water below TOC

E = Ethylbenzene

ft = Feet

GWE = Groundwater elevation

ID = Identification

LNAPL = Light non-aqueous phase liquid

QA = Quality assurance/trip blank

T = Toluene

TOC = Top of casing

TPH-g = Total petroleum hydrocarbons as gasoline; reported as total purgeable petroleum hydrocarbons by the laboratory

X = Total Xylenes

**Table 2**  
**Current Groundwater Analytical Results - Oxygenate Compounds**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	DATE	MTBE (µg/L)	TBA (µg/L)	ETHANOL (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	EDC (µg/L)
MW-1	12/15/2015	48	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
MW-2	12/15/2015	1,300	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3	12/15/2015	240	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
QA	12/15/2015	<0.50	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50

**NOTES:**

Oxygenate compounds analyzed by Environmental Protection Agency Method 8260B

µg/L = Micrograms per liter

<# = Analyte not detected at or above indicated laboratory practical quantitation limit

ID = Identification

DIPE = Diisopropyl ether

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

ETBE = Ethyl t-butyl ether

MTBE = Methyl t-butyl ether

QA = Quality assurance/trip blank

TAME = T-amyl methyl ether

TBA = T-butyl alcohol

**Table 3**  
**Historical Groundwater Monitoring Data and Analytical Results**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	TOC* (ft)	DATE	DTW (ft)	GWE* (ft)	LNAPL THICKNESS (ft)	TPH-g (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	COMMENTS
<b>MW-1</b>	190.79	1/5/1990	32.80	157.99	--	<30	<0.30	<0.30	<0.30	<0.30	
<b>screened</b>	190.79	5/11/1990	31.80	158.99	--	<30	<0.30	7.1	<0.30	<0.30	
<b>24 to 44 ft bgs</b>	190.79	8/9/1990	32.37	158.42	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.79	11/14/1990	33.32	157.47	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.79	2/12/1991	33.02	157.77	--	<30	0.32	<0.30	<0.30	<0.30	
	190.79	5/9/1991	30.95	159.84	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.79	11/13/2003	--	--	--	180	<1.0	<1.0	<1.0	<2.0	
	190.79	8/27/2004	30.65	160.14	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	11/23/2004	29.35	161.44	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	2/9/2005	26.89	163.90	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	5/17/2005	26.56	164.23	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	7/27/2005	27.33	163.46	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	12/6/2005	29.59	161.20	0	<50	<0.50	0.93	<0.50	1.80	
	190.79	2/21/2006	28.27	162.52	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	6/8/2006	26.07	164.72	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	9/15/2006	28.86	161.93	0	<50	<0.50	<0.50	<0.50	<0.50	
	190.79	12/14/2006	29.49	161.30	0	<50	<0.50	<0.50	<0.50	<0.50	
	190.79	3/28/2007	27.24	163.55	0	<50	<0.50	<0.50	<0.50	<0.50	
	190.79	6/25/2007	28.30	162.49	0	<50	<0.50	<0.50	<0.50	<0.50	
	190.79	9/22/2007	30.61	160.18	0	<50	<0.50	<0.50	<0.50	<0.50	
	190.79	12/14/2007	30.30	160.49	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	3/17/2008	27.22	163.57	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	6/20/2008	30.10	160.69	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	9/11/2008	31.04	159.75	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	11/25/2008	30.88	159.91	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	3/9/2009	27.50	163.29	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	5/28/2009	28.25	162.54	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	12/11/2009	30.60	160.19	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	5/7/2010	26.06	164.73	0	67	<0.50	<0.50	<0.50	<1.0	
	190.79	11/1/2010	30.18	160.61	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.79	5/27/2011	26.87	163.92	0	110	<0.50	<0.50	<0.50	<1.0	
	190.79	11/23/2011	29.14	161.65	0	1,101	<0.50	<0.50	<0.50	<1.0	



**Table 3**  
**Historical Groundwater Monitoring Data and Analytical Results**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	TOC* (ft)	DATE	DTW (ft)	GWE* (ft)	LNAPL THICKNESS (ft)	TPH-g (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	COMMENTS
	190.79	5/24/2012	26.58	164.21	0	140	<0.50	<0.50	<0.50	<1.0	
	190.79	10/23/2012	30.51	160.28	0	130	<0.50	<0.50	<0.50	<1.0	
	190.79	5/2/2013	28.30	162.49	0	150	<0.50	<0.50	<0.50	<1.0	
	190.79	11/13/2013	31.65	159.14	0	240	<0.50	<0.50	<0.50	<1.0	
	190.79	5/12/2014	28.95	161.84	0	98	<0.50	<0.50	<0.50	<1.0	
	190.79	11/19/2014	31.50	159.29	0	130	<0.50	<0.50	<0.50	<1.0	
	190.79	6/17/2015	29.27	161.52	0	52	<0.50	<0.50	<0.50	<1.0	
	<b>190.79</b>	<b>12/15/2015</b>	<b>31.76</b>	<b>159.03</b>	<b>0</b>	<b>60</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	
<b>MW-2 screened 24 to 44 ft bgs</b>	190.80	1/5/1990	33.02	157.78	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.80	5/11/1990	31.98	158.82	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.80	8/9/1990	32.45	158.35	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.80	11/14/1990	33.47	157.33	--	<30	<0.30	<0.30	<0.30	<0.30	
	190.80	2/12/1991	33.15	157.65	--	<30	<0.30	0.42	<0.30	0.51	
	190.80	5/9/1991	30.88	159.92	--	<30	<0.30	<>0.30	<0.30	<0.30	
	190.80	11/13/2003	--	--	--	<2,000	<20	<20	<20	<40	
	190.80	8/27/2004	30.28	160.52	0	950	<5.0	<5.0	<5.0	<10	
	190.80	11/23/2004	28.75	162.05	0	53	<0.50	<0.50	<0.50	<1.0	
	190.80	2/9/2005	26.08	164.72	0	<500	<0.50	<0.50	<0.50	<1.0	
	190.80	5/17/2005	24.53	166.27	0	<50	<0.50	<0.50	<0.50	<1.0	
	190.80	7/27/2005	27.51	163.29	0	<500	<5.0	<5.0	<5.0	<10	
	190.80	12/6/2005	29.13	161.67	0	340	<0.50	<0.50	<0.50	<1.0	
	190.80	2/21/2006	29.23	161.57	0	190	<0.50	<0.50	<0.50	<1.0	
	190.80	6/8/2006	25.76	165.04	0	<500	<5.0	<5.0	<5.0	<10	
	190.80	9/15/2006	29.17	161.63	0	<500	<5.0	<5.0	<5.0	<5.0	
	190.80	12/14/2006	29.11	161.69	0	520	<0.50	<0.50	<0.50	<0.50	
	190.80	3/28/2007	26.68	164.12	0	290	<0.50	<0.50	<0.50	<0.50	
	190.80	6/25/2007	25.91	164.89	0	<50	<0.50	<0.50	<0.50	<0.50	
	190.80	9/22/2007	30.18	160.62	0	400	<0.50	<0.50	<0.50	<0.50	
190.80	12/14/2007	29.96	160.84	0	400	<0.50	<0.50	<0.50	<1.0		
190.80	3/17/2008	26.74	164.06	0	570	<5.0	<5.0	<5.0	<10		
190.80	6/20/2008	29.78	161.02	0	580	<0.50	<0.50	<0.50	<1.0		

**Table 3**  
**Historical Groundwater Monitoring Data and Analytical Results**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	TOC* (ft)	DATE	DTW (ft)	GWE* (ft)	LNAPL THICKNESS (ft)	TPH-g (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	COMMENTS
190.80		9/11/2008	30.62	160.18	0	220	<0.50	<0.50	<0.50	<1.0	
190.80		11/25/2008	30.48	160.32	0	500	<0.50	<0.50	<0.50	<1.0	
190.80		3/9/2009	25.75	165.05	0	910	<5.0	<5.0	<5.0	<10	
190.80		5/28/2009	27.71	163.09	0	460	<0.50	<0.50	<0.50	<1.0	
190.80		12/11/2009	29.80	161.00	0	640	<5.0	<5.0	<5.0	<10	
190.80		5/7/2010	25.11	165.69	0	600	<1.0	<1.0	<1.0	<2.0	
190.80		11/1/2010	29.90	160.90	0	140	<0.50	<0.50	<0.50	<1.0	
190.80		5/27/2011	26.44	164.36	0	560	<0.50	<0.50	<0.50	<1.0	
190.80		11/23/2011	28.53	162.27	0	830	<0.50	<0.50	<0.50	<1.0	
190.80		5/24/2012	25.97	164.83	0	1,000	<0.50	<0.50	<0.50	<1.0	
190.80		10/23/2012	30.14	160.66	0	750	<0.50	<0.50	<0.50	<1.0	
190.80		5/2/2013	27.14	163.66	0	290	<0.50	<0.50	<0.50	<1.0	
190.80		11/13/2013	31.37	159.43	0	1,200	<0.50	<0.50	<0.50	<1.0	
190.80		5/12/2014	28.49	162.31	0	260	<0.50	<0.50	<0.50	<1.0	
190.80		11/19/2014	31.46	159.34	0	430	<0.50	<0.50	<0.50	<1.0	
190.80		6/17/2015	29.70	161.10	0	<50	<0.50	<0.50	<0.50	<1.0	
<b>190.80</b>		<b>12/15/2015</b>	<b>31.71</b>	<b>159.09</b>	<b>0</b>	<b>680</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	
<b>MW-3</b>	188.58	1/5/1990	31.88	156.70	--	<30	<0.30	<0.30	<0.30	<0.30	
<b>screened</b>	188.58	5/11/1990	31.25	157.33	--	<30	<0.30	<0.30	<0.30	<0.30	
<b>23 to 43 ft bgs</b>	188.58	8/9/1990	31.53	157.05	--	<30	<0.30	<0.30	<0.30	<0.30	
	188.58	11/14/1990	33.30	155.28	--	<30	<0.30	<0.30	<0.30	<0.30	
	188.58	2/12/1991	32.05	156.53	--	<30	<0.30	<0.30	<0.30	<0.30	
	188.58	5/9/1991	30.37	158.21	--	<30	<0.30	<0.30	<0.30	<0.30	
	188.58	11/13/2003	--	--	--	2,600	<20	<20	<20	<40	
	188.58	8/27/2004	29.61	158.97	0	1,700	<10	<10	<10	<20	
	188.58	11/23/2004	28.48	160.10	0	1,500	<10	<10	<10	<20	
	188.58	2/9/2005	26.45	162.13	0	<1,000	<0.50	<0.50	<0.50	<1.0	
	188.58	5/17/2005	25.61	162.97	0	<1,000	<0.50	<0.50	<0.50	<1.0	
	188.58	7/27/2005	27.35	161.23	0	<1,000	<10	<10	<10	<20	
	188.58	12/6/2005	28.78	159.80	0	430	<0.50	1.6	<0.50	3.6	
	188.58	2/21/2006	28.91	159.67	0	420	<0.50	<0.50	<0.50	<1.0	

**Table 3**  
**Historical Groundwater Monitoring Data and Analytical Results**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	TOC* (ft)	DATE	DTW (ft)	GWE* (ft)	LNAPL THICKNESS (ft)	TPH-g (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	COMMENTS
188.58		6/8/2006	25.97	162.61	0	<1,200	<12	<12	<12	<25	
188.58		9/15/2006	28.73	159.85	0	<1,200	<12	<12	<12	<12	
188.58		12/14/2006	28.62	159.96	0	<1,000	<10	<10	<10	<10	
188.58		3/28/2007	26.69	161.89	0	500	<1.0	<1.0	<1.0	<1.0	
188.58		6/25/2007	26.74	161.84	0	270	<0.50	<0.50	<0.50	<0.50	
188.58		9/22/2007	29.57	159.01	0	500	<0.50	<0.50	<0.50	<0.50	
188.58		12/14/2007	29.30	159.28	0	270	<0.50	<0.50	<0.50	<1.0	
188.58		3/17/2008	26.82	161.76	0	220	<0.50	<0.50	<0.50	<1.0	
188.58		6/20/2008	29.10	159.48	0	490	<0.50	<0.50	<0.50	<1.0	
188.58		9/11/2008	29.89	158.69	0	630	<5.0	<5.0	<5.0	<10	
188.58		11/25/2008	29.74	158.84	0	380	<0.50	<0.50	<0.50	<1.0	
188.58		3/9/2009	25.56	163.02	0	310	<0.50	<0.50	<0.50	<1.0	
188.58		5/28/2009	27.55	161.03	0	410	<0.50	<0.50	<0.50	<1.0	
188.58		12/11/2009	29.10	159.48	0	220	<0.50	<0.50	<0.50	<1.0	
188.58		5/7/2010	25.72	162.86	0	360	<0.50	<0.50	<0.50	<1.0	
188.58		11/1/2010	29.29	159.29	0	120	<0.50	<0.50	<0.50	<1.0	
188.58		5/27/2011	26.53	162.05	0	340	<0.50	<0.50	<0.50	<1.0	
188.58		5/24/2012	25.95	162.63	0	660	<0.50	<0.50	<0.50	<1.0	
188.58		10/23/2012	29.39	159.19	0	480	<0.50	<0.50	<0.50	<1.0	
188.58		5/2/2013	26.98	161.60	0	130	<0.50	<0.50	<0.50	<1.0	
188.58		11/13/2013	30.28	158.30	0	110	<0.50	<0.50	<0.50	<1.0	
188.58		5/12/2014	27.93	160.65	0	98	<0.50	<0.50	<0.50	<1.0	
188.58		11/19/2014	30.22	158.36	0	180	<0.50	<0.50	<0.50	<1.0	
188.58		6/17/2015	28.75	159.83	0	220	<0.50	<0.50	<0.50	<1.0	
<b>188.58</b>		<b>12/15/2015</b>	<b>30.45</b>	<b>159.83</b>	<b>0</b>	<b>220</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	
<b>QA</b>	<b>--</b>	<b>12/15/2015</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	

**Table 3**  
**Historical Groundwater Monitoring Data and Analytical Results**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	TOC* (ft)	DATE	DTW (ft)	GWE* (ft)	LNAPL THICKNESS (ft)	TPH-g (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	COMMENTS
---------	--------------	------	-------------	--------------	----------------------------	-----------------	-------------	-------------	-------------	-------------	----------

**NOTES:**

\* TOC and GWE are in feet above mean sea level.

µg/L = Micrograms per liter

<# = Analyte not detected at or above indicated laboratory practical quantitation limit

-- = Not available

B = Benzene

bgs = Below ground surface

DTW = Depth to water below TOC

E = Ethylbenzene

ft = Feet

GWE = Groundwater elevation

ID = Identification

LNAPL = Light Non-Aqueous Phase Liquid

QA = Quality assurance/trip blank

T = Toluene

TOC = Top of casing

TPH-g = Total petroleum hydrocarbons as gasoline; reported as total purgeable petroleum hydrocarbons by the laboratory

X = Total Xylenes

**Table 4**  
**Historical Groundwater Analytical Results - Oxygenate Compounds**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	DATE	MTBE (µg/L)	TBA (µg/L)	ETHANOL (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	EDC (µg/L)
MW-1	1/5/1990	--	--	--	--	--	--	--	--
	5/11/1990	--	--	--	--	--	--	--	--
	8/9/1990	--	--	--	--	--	--	--	--
	11/14/1990	--	--	--	--	--	--	--	--
	2/12/1991	--	--	--	--	--	--	--	--
	5/9/1991	--	--	--	--	--	--	--	--
	11/13/2003	240	<200	<1,000	<4.0	<4.0	<4.0	<4.0	<4.0
	8/27/2004	<0.50	<5.0	<50	<0.50	<1.0	<0.50	<0.50	<0.50
	11/23/2004	<0.50	<5.0	<50	<0.50	<1.0	<0.50	<0.50	<0.50
	2/9/2005	9.3	<5.0	<50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/17/2005	1.9	<5.0	<50	<0.50	<0.50	<0.50	<0.50	<0.50
	7/27/2005	<0.50	<5.0	<50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/6/2005	<0.50	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	2/21/2006	2.6	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	6/8/2006	11	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	9/15/2006	1.4	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	12/14/2006	3.5	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	3/28/2007	0.64	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	6/25/2007	<0.50	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	9/22/2007	4.10	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	12/14/2007	0.65	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	3/17/2008	14	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	6/20/2008	11	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	9/11/2008	1.3	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/25/2008	5.8	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	3/9/2009	25	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
5/28/2009	17	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	
12/11/2009	18	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	
5/7/2010	64	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	
11/1/2010	92	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	

**Table 4**  
**Historical Groundwater Analytical Results - Oxygenate Compounds**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	DATE	MTBE (µg/L)	TBA (µg/L)	ETHANOL (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	EDC (µg/L)
	5/27/2011	220	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/23/2011	150	41	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/24/2012	190	66	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	10/23/2012	140	47	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/2/2013	270	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/13/2013	270	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/12/2014	170	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/2014	180	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	6/17/2015	100	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	<b>12/15/2015</b>	<b>48</b>	<b>&lt;10</b>	<b>&lt;250</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
<b>MW-2</b>	1/5/1990	--	--	--	--	--	--	--	--
	5/11/1990	--	--	--	--	--	--	--	--
	8/9/1990	--	--	--	--	--	--	--	--
	11/14/1990	--	--	--	--	--	--	--	--
	2/12/1991	--	--	--	--	--	--	--	--
	5/9/1991	--	--	--	--	--	--	--	--
	11/13/2003	2,100	<4,000	<20,000	<80	<80	<80	<80	<80
	8/27/2004	1,400	<5.0	<500	<5.0	24	<5.0	<5.0	<5.0
	11/23/2004	4.2	<5.0	<50	<0.50	18	<0.50	<0.50	<0.50
	2/9/2005	400	<5.0	<500	<5.0	19	<5.0	<5.0	<5.0
	5/17/2005	330	<5.0	<50	<0.50	12	<0.50	<0.50	<0.50
	7/27/2005	580	140	<500	<5.0	16	<5.0	<5.0	<5.0
	12/6/2005	780	61	<250	<0.50	15	<0.50	<0.50	<0.50
	2/21/2006	340	<10	<250	<0.50	18	<0.50	<0.50	<0.50
	6/8/2006	440	<100	<2,500	<5.0	14	<5.0	<5.0	<5.0
	9/15/2006	570	<100	<2,500	<5.0	17	<5.0	<5.0	<5.0
	12/14/2006	770	27	<250	<0.50	20	<0.50	<0.50	<0.50
	3/28/2007	460	260	<250	<0.50	23	<0.50	<0.50	<0.50
	6/25/2007	1.2	<10	<250	<0.50	23	<0.50	<0.50	<0.50

**Table 4**  
**Historical Groundwater Analytical Results - Oxygenate Compounds**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	DATE	MTBE (µg/L)	TBA (µg/L)	ETHANOL (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	EDC (µg/L)
	9/22/2007	530	<10	<250	<0.50	35	<0.50	<0.50	<0.50
	12/14/2007	930	48	<250	<0.50	24	<0.50	<0.50	<0.50
	3/17/2008	630	<100	<2,500	<5.0	18	<5.0	<5.0	<5.0
	6/20/2008	1,200	<10	<250	<0.50	16	<0.50	<0.50	<0.50
	9/11/2008	29	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/25/2008	1,500	<10	<250	<0.50	19	<0.50	<0.50	<0.50
	3/9/2009	1,400	<100	<2,500	<5.0	15	<5.0	<5.0	<5.0
	5/28/2009	740	<10	<250	<0.50	20	<0.50	<0.50	<0.50
	12/11/2009	1,300	<100	<2,500	<5.0	19	<5.0	<5.0	<5.0
	5/7/2010	940	<20	<500	<1.0	14	<1.0	<1.0	<1.0
	11/1/2010	730	<10	<250	<0.50	28	<0.50	<0.50	<0.50
	5/27/2011	1,100	210	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/23/2011	1,500	400	<250	<0.50	9.00	<0.50	<0.50	<0.50
	5/24/2012	1,200	430	<250	<0.50	8.8	<0.50	<0.50	<0.50
	10/23/2012	1,300	420	<250	<0.50	14	<0.50	<0.50	<0.50
	5/2/2013	460	<10	<250	6.2	<0.50	<0.50	<0.50	<0.50
	11/13/2013	1,300	<10	<250	17	<0.50	<0.50	<0.50	<0.50
	5/12/2014	510	44	<250	12	<0.50	<0.50	<0.50	<0.50
	11/19/2014	980	<10	<250	31	<0.50	<0.50	<0.50	<0.50
	6/17/2015	25	<10	<250	3.1	<0.50	<0.50	<0.50	<0.50
	<b>12/15/2015</b>	<b>1,300</b>	<b>&lt;10</b>	<b>&lt;250</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
<b>MW-3</b>	1/5/1990	--	--	--	--	--	--	--	--
	5/11/1990	--	--	--	--	--	--	--	--
	8/9/1990	--	--	--	--	--	--	--	--
	11/14/1990	--	--	--	--	--	--	--	--
	2/12/1991	--	--	--	--	--	--	--	--
	5/9/1991	--	--	--	--	--	--	--	--
	11/13/2003	3,700	<4,000	<20,000	<80	<80	<80	<80	<80
	8/27/2004	2,600	<100	<1,000	<10	<20	<10	<10	<10

**Table 4**  
**Historical Groundwater Analytical Results - Oxygenate Compounds**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	DATE	MTBE (µg/L)	TBA (µg/L)	ETHANOL (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	EDC (µg/L)
	11/23/2004	1,800	<100	<1,000	<10	<20	<10	<10	<10
	2/9/2005	2,100	130	<1,000	<10	<10	<10	<10	<10
	5/17/2005	1,200	<100	<1,000	<10	<10	<10	<10	<10
	7/27/2005	1,400	360	<1,000	<10	<10	<10	<10	<10
	12/6/2005	1,800	160	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	2/21/2006	1,100	88	<250	<0.50	<0.50	0.58	<0.50	<0.50
	6/8/2006	1,000	<250	<6,200	<12	<12	<12	<12	<12
	9/15/2006	1,200	<250	<6,200	<12	<12	<12	<12	<12
	12/14/2006	1,300	<200	<5,000	<10	<10	<10	<10	<10
	3/28/2007	860	500	<500	<1.0	<1.0	<1.0	<1.0	<1.0
	6/25/2007	570	11	<250	<0.50	<0.50	<0.50	<0.50	0.65
	9/22/2007	980	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	12/14/2007	570	26	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	3/17/2008	520	<10	<250	<0.50	<0.50	<0.50	<0.50	0.65
	6/20/2008	1,300	49	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	9/11/2008	1,200	<100	<2,500	<5.0	<5.0	<5.0	<5.0	<5.0
	11/25/2008	870	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	3/9/2009	720	15	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/28/2009	750	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	12/11/2009	620	63	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/7/2010	660	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/1/2010	490	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/27/2011	890	73	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/24/2012	1,100	300	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	10/23/2012	500	160	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/2/2013	220	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/13/2013	100	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	5/12/2014	160	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/2014	250	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
	6/17/2015	570	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50



**Table 4**  
**Historical Groundwater Analytical Results - Oxygenate Compounds**  
**Unocal #6129 (351639)**  
**3420 35th Avenue**  
**Oakland, California**

WELL ID	DATE	MTBE (µg/L)	TBA (µg/L)	ETHANOL (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDB (µg/L)	EDC (µg/L)
	12/15/2015	240	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50
QA	12/15/2015	<0.50	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50

**NOTES:**

µg/L = Micrograms per liter

<# = Analyte not detected at or above indicated laboratory practical quantitation limit

-- = Not available/not sampled

DIPE = Diisopropyl ether

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

ETBE = Ethyl t-butyl ether

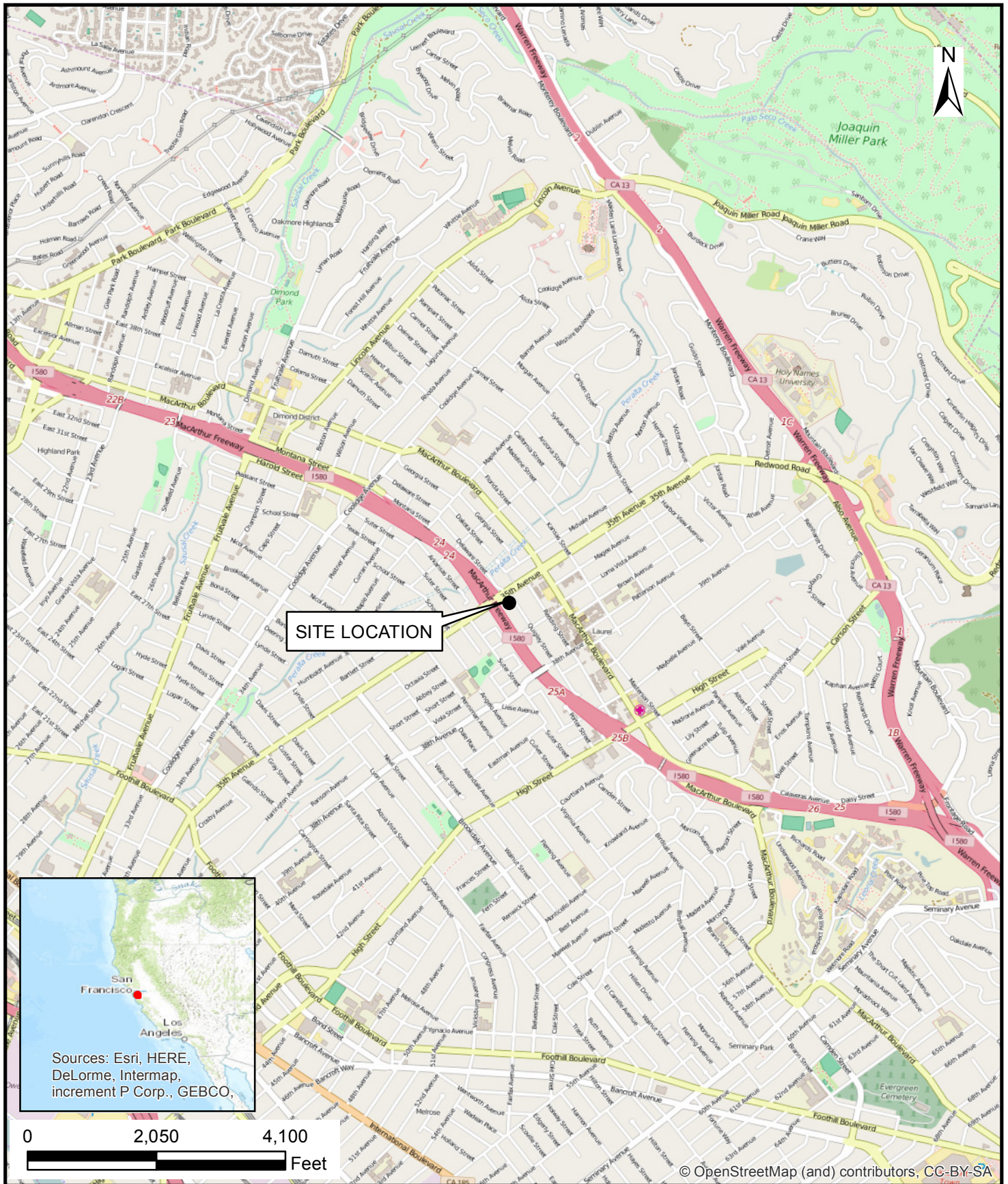
MTBE = Methyl t-butyl ether

QA = Quality assurance/trip blank

TAME = T-amyl methyl ether

TBA = T-butyl alcohol

## Figures



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO,

0 2,050 4,100 Feet

© OpenStreetMap (and) contributors, CC-BY-SA



**AECOM**  
 1220 AVENIDA ACASO  
 CAMARILLO, CALIFORNIA 93012  
 PHONE: 805.388.3775  
 FAX: 805.388.3557  
 WEB: HTTP://WWW.AECOM.COM

**SITE LOCATION MAP**

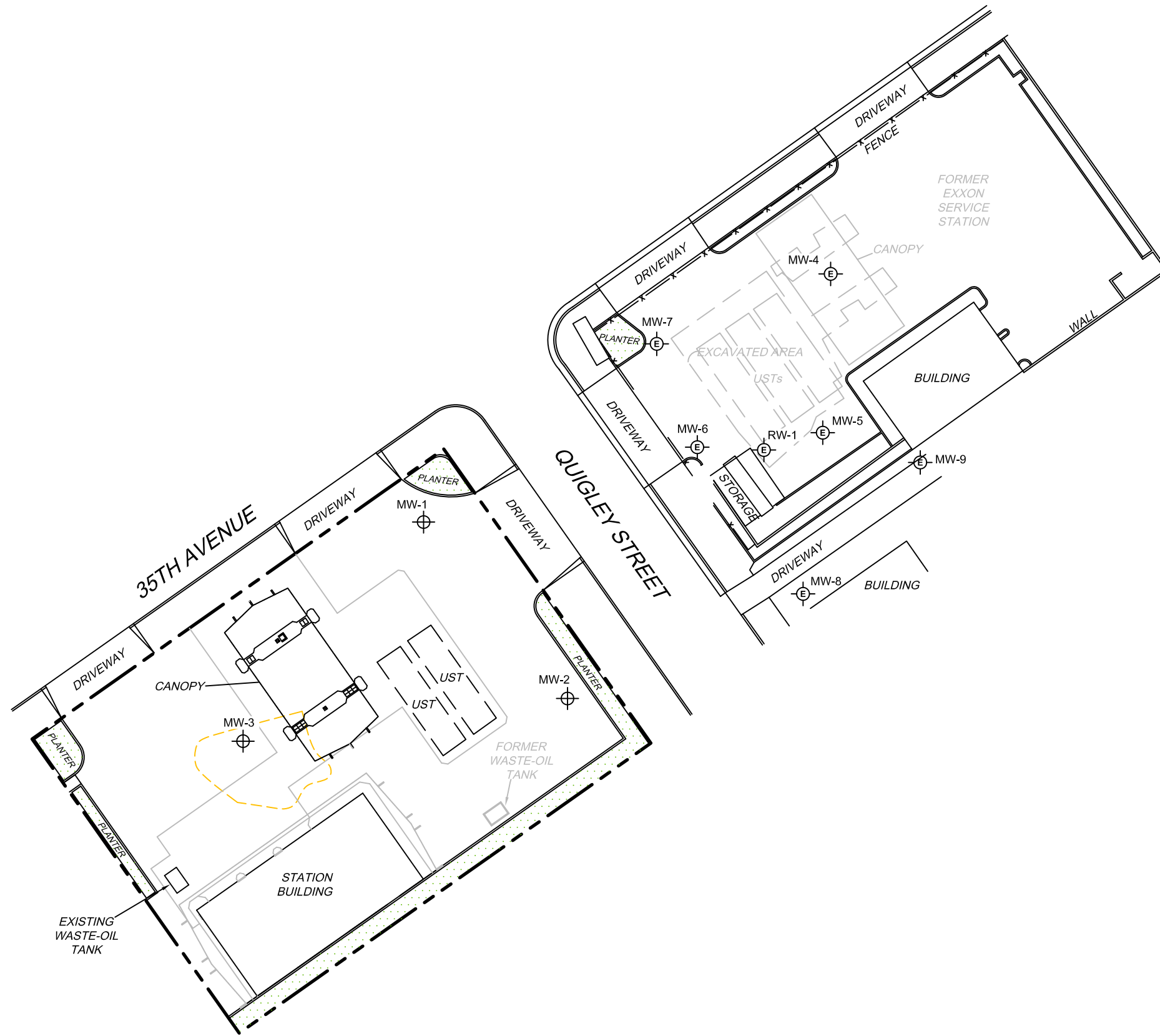
Unocal #6129 (351639) 3420 35th  
 Avenue Oakland, California

FIGURE NUMBER:

1

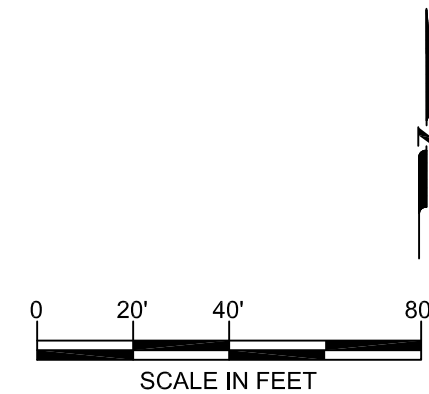
DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
T. Quiroz	01/15/2016	60338852	1 of 1

FILENAME: J:\Client-Projects\76\_Products\351639\_6129\_Oakland\_3420\_35th\_Ave\7.0\_Deliverables\7.2\_CADD\2015\_25A\351639-25A-15.dwg



**LEGEND**

- SUBJECT PROPERTY BOUNDARY
- ⊕ MONITORING WELL
- ⊕(E) FORMER EXXON SERVICE STATION MONITORING WELL
- - - 1991 EXCAVATION BOUNDARY
- UST UNDERGROUND STORAGE TANK



DESIGNED BY:	NO.:	DESCRIPTION:	DATE:	BY:
X				
DRAWN BY:				
M. Scop				
CHECKED BY:				
X				
APPROVED BY:				
X				

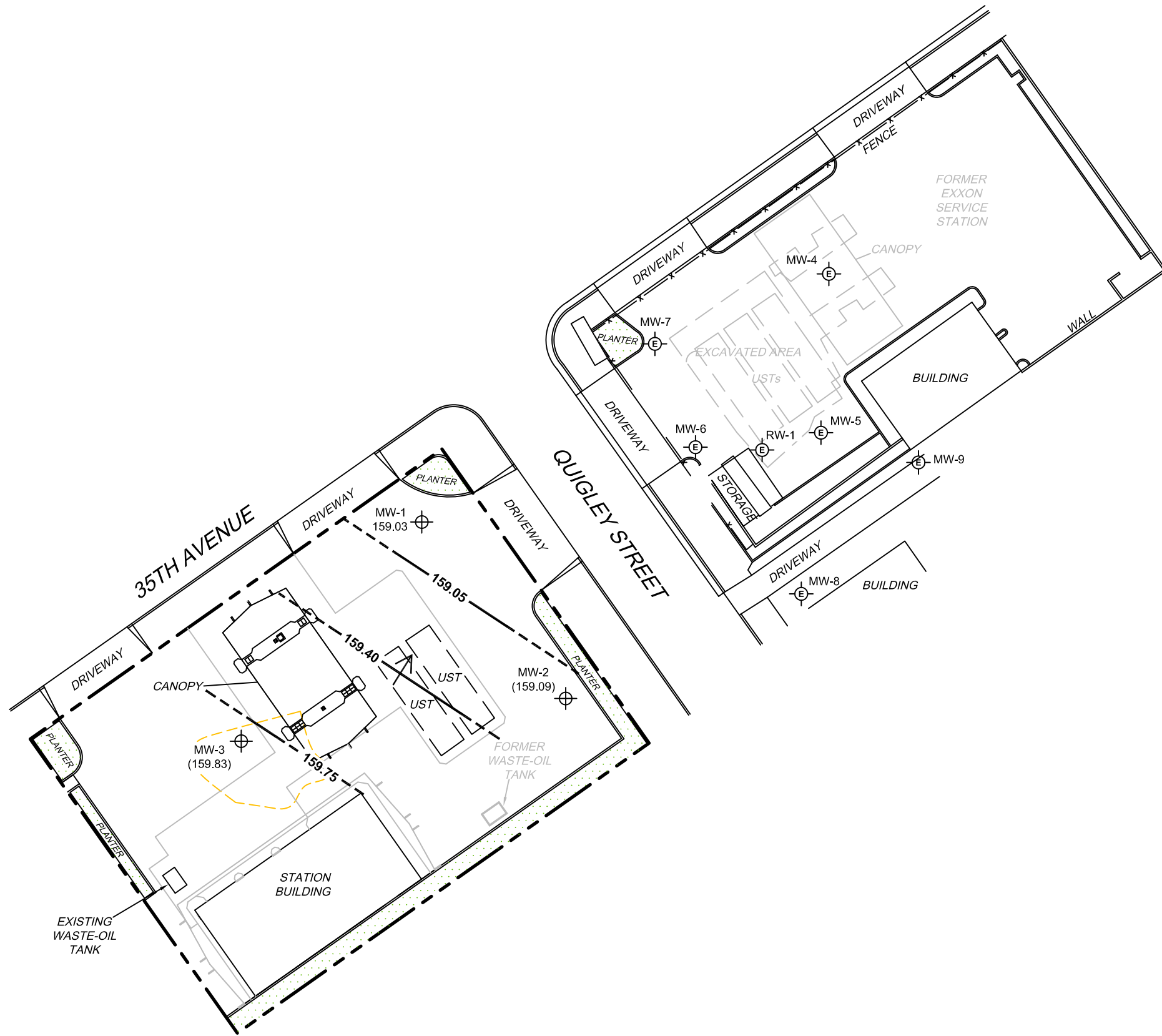
**AECOM**

AECOM  
1220 AVENIDA ACASO  
CAMARILLO, CALIFORNIA 93012  
PHONE: (805) 388-3775  
FAX: (805) 388-3577

<b>SITE PLAN</b>	
Unocal #6129 (351639) 3420 35th Avenue Oakland, California	
SCALE: 1" = 40'	DATE: 1/14/2015
PROJECT NUMBER: 60338773	

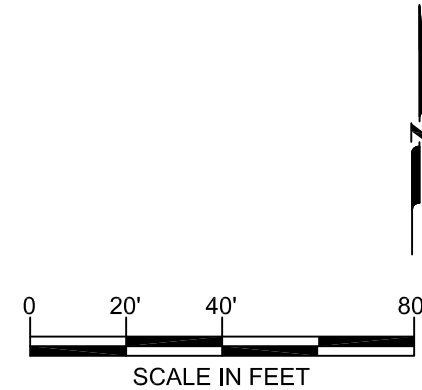
FIGURE NUMBER: <b>2</b>
SHEET NUMBER: X

FILENAME: j:\Client-Projects\76\_Products\351639\_6129\_Oakland\_3420\_35th\_Ave\7.0\_Deliverables\7.2\_CADD\2015\_25A\351639-25A-15.dwg



**LEGEND**

- SUBJECT PROPERTY BOUNDARY
- ⊕ MONITORING WELL
- ⊕ FORMER EXXON SERVICE STATION MONITORING WELL
- - - 1991 EXCAVATION BOUNDARY
- UST UNDERGROUND STORAGE TANK
- (#) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 159.40 --- CONTOUR OF GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE INFERRED)
- ← GROUNDWATER FLOW DIRECTION
- HYDRAULIC GRADIENT = 0.009 FEET PER FOOT



DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
X	M. Scop	X	X

NO.	DESCRIPTION:	DATE:	BY:

**AECOM**

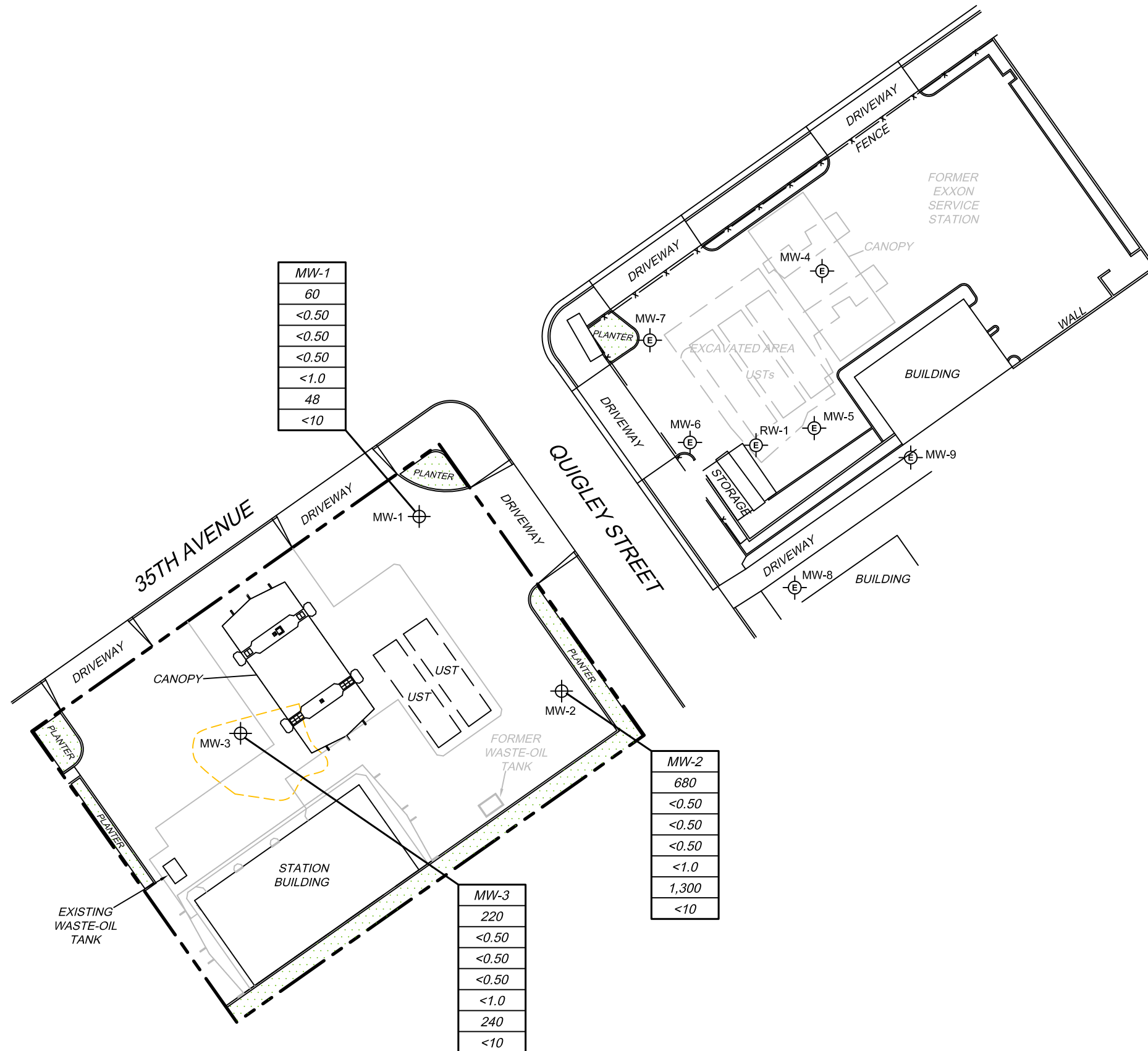
AECOM  
 1220 AVENIDA ACASO  
 CAMARILLO, CALIFORNIA 93012  
 PHONE: (805) 388-3775  
 FAX: (805) 388-3577

**SECOND SEMI-ANNUAL 2015  
 GROUNDWATER ELEVATION MAP**

Unocal #6129 (351639)  
 3420 35th Avenue  
 Oakland, California

SCALE: 1" = 40'  
 DATE: 1/14/2015  
 PROJECT NUMBER: 60338773

FIGURE NUMBER:	<b>3</b>
SHEET NUMBER:	X



**LEGEND**

- SUBJECT PROPERTY BOUNDARY
- ⊕ MONITORING WELL
- ⊕ FORMER EXXON SERVICE STATION MONITORING WELL
- - - 1991 EXCAVATION BOUNDARY
- UST UNDERGROUND STORAGE TANK

Well ID
TPH-g
Benzene
Toluene
Ethylbenzene
Total Xylenes
MTBE
TBA

ID = IDENTIFICATION  
 TPH-g = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE; REPORTED AS TOTAL PURGEABLE PETROLEUM HYDROCARBONS BY THE LABORATORY  
 MTBE = METHYL T-BUTYL ETHER  
 TBA = T-BUTYL ALCOHOL  
 <# = ANALYTE NOT DETECTED AT OR ABOVE INDICATED LABORATORY PRACTICAL QUANTITATION LIMIT  
 ANALYTE RESULTS EXPRESSED IN MICROGRAMS PER LITER

DESIGNED BY:	NO.:	DESCRIPTION:	DATE:	BY:
X				
DRAWN BY:				
M. Scop				
CHECKED BY:				
X				
APPROVED BY:				
X				

**AECOM**

AECOM  
 1220 AVENIDA ACASO  
 CAMARILLO, CALIFORNIA 93012  
 PHONE: (805) 388-3775  
 FAX: (805) 388-3577

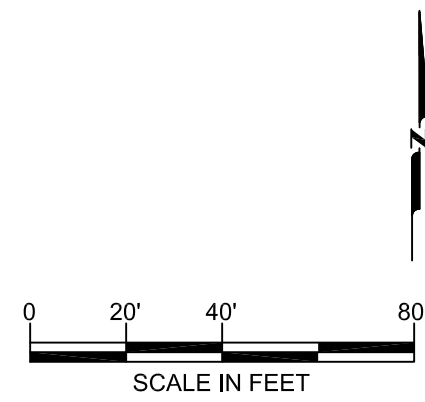
**SECOND SEMIANNUAL 2015  
 GROUNDWATER ANALYTICAL DATA MAP**

Unocal #6129 (351639)  
 3420 35th Avenue  
 Oakland, California

SCALE: 1" = 40'  
 DATE: 1/14/2015  
 PROJECT NUMBER: 60338773

FIGURE NUMBER:  
**4**

SHEET NUMBER:  
 X



## Charts

Chart 1 - Hydrograph for Well MW-1

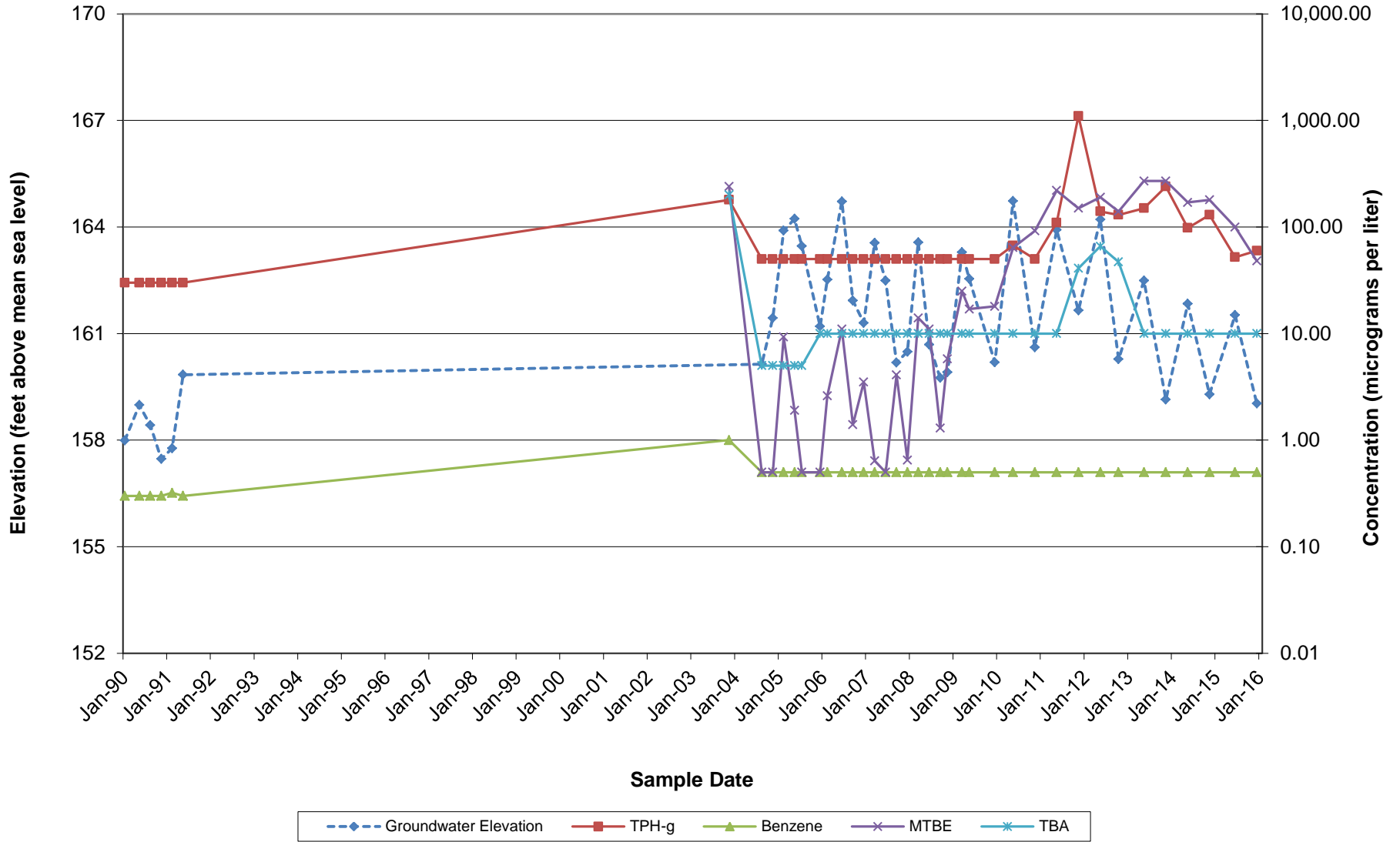




Chart 2 - Hydrograph for Well MW-2

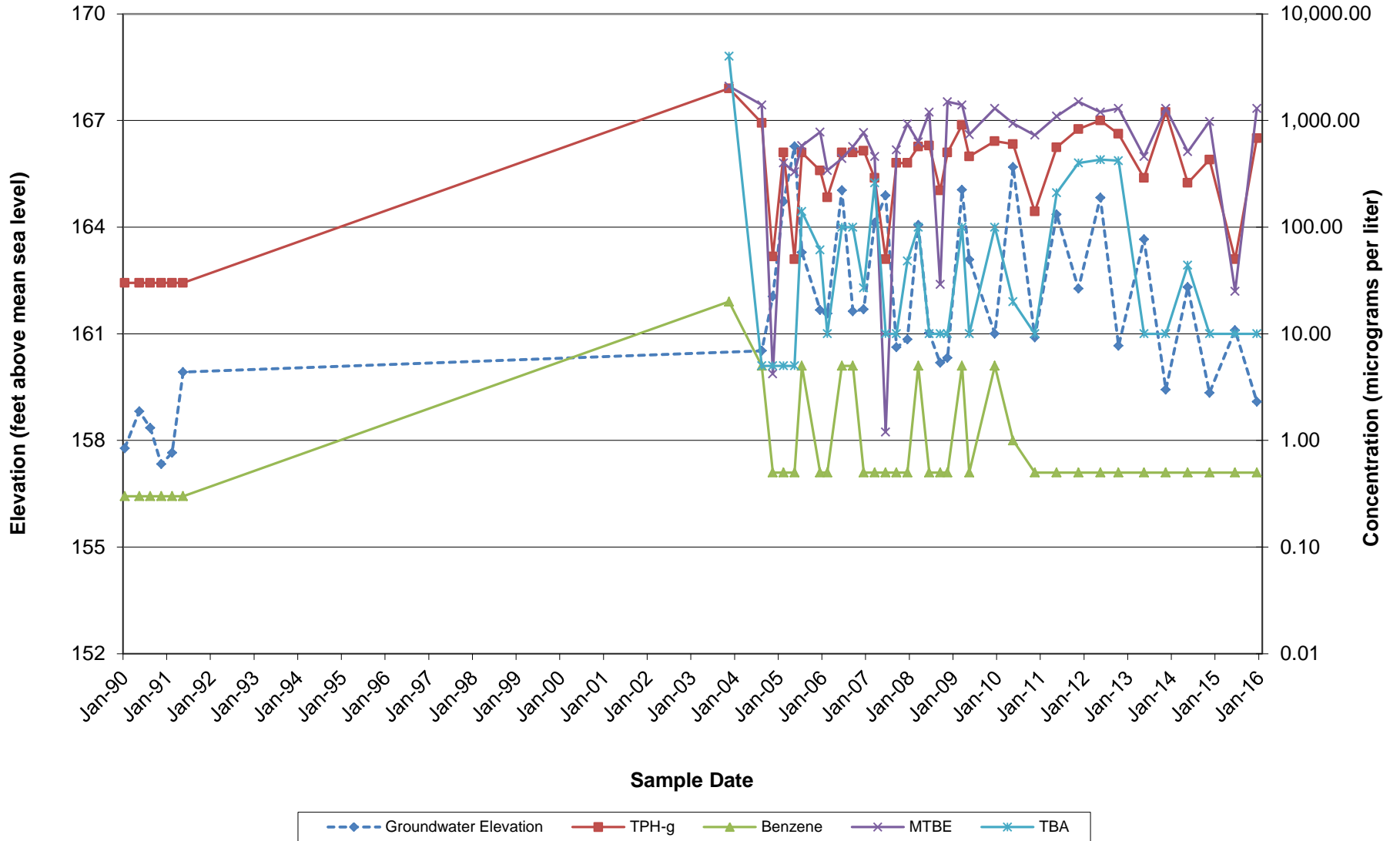
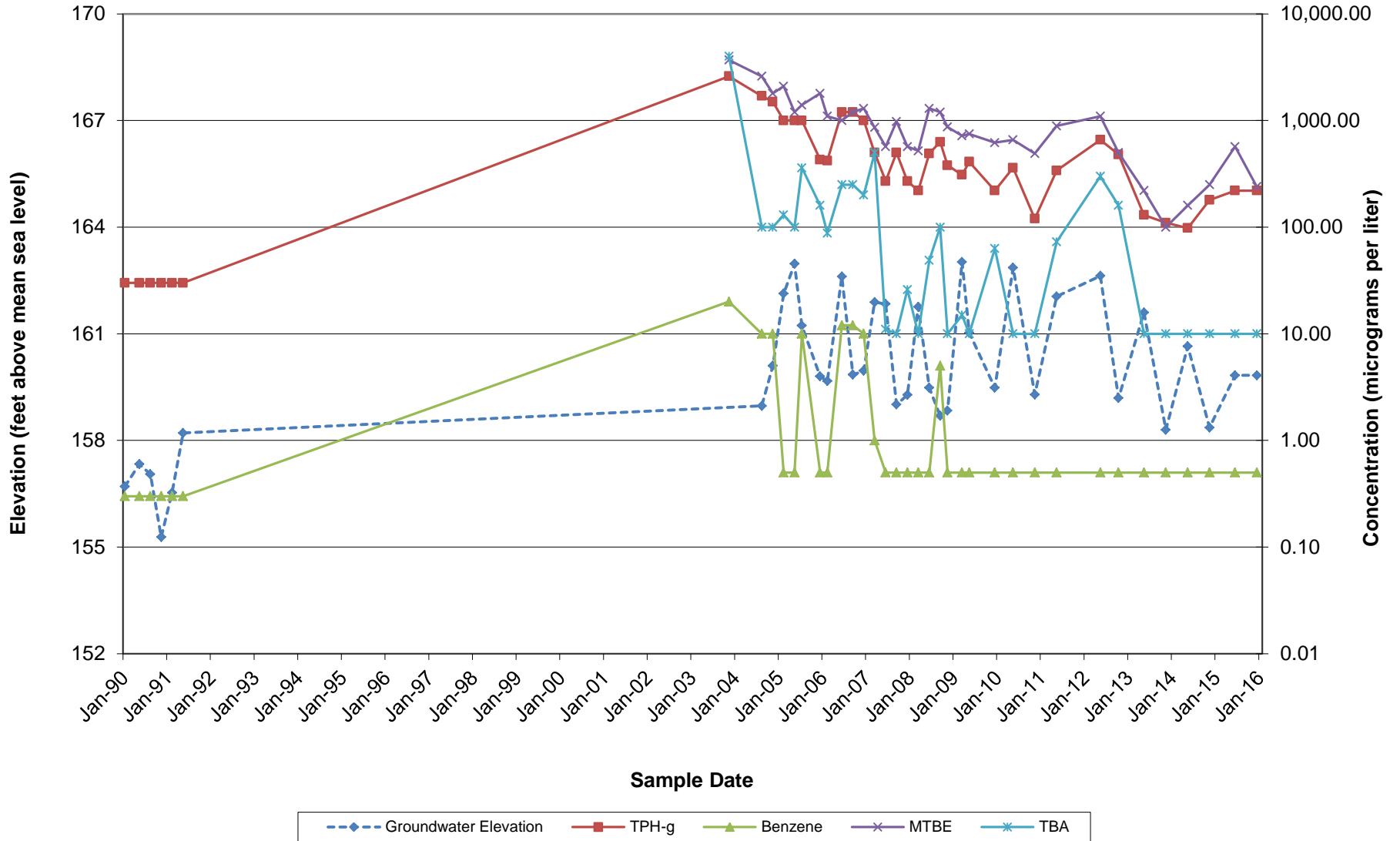


Chart 3 - Hydrograph for Well MW-3



**Attachment A**

**Groundwater Monitoring and Sampling  
Field Data Sheets**



# GETTLER-RYAN INC.



## TRANSMITTAL

December 29, 2015  
G-R #385640

TO: Mr. Chad Roper  
AECOM  
1220 Avenida Acaso  
Camarillo, California 93012

FROM: Deanna L. Harding  
Project Coordinator  
Gettler-Ryan Inc.  
6805 Sierra Court, Suite G  
Dublin, California 94568

RE: **Chevron Facility**  
**#351639/6129**  
**3420 35<sup>th</sup> Avenue**  
**Oakland, California**

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package Second Semi-Annual Event of December 15, 2015

### COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced data for your use.

Please provide us the updated historical data prior to the next monitoring and sampling event for our field use.

Please feel free to contact me if you have any comments/questions.

trans/351639 6129

# WELL CONDITION STATUS SHEET

Client/  
Facility #: **Chevron #351639 / 6129**  
Site Address: **3420 35Th Avenue**  
City: **Oakland, CA**

Job #: **385640**  
Event Date: **12-15-15**  
Sampler: **FT**

WELL ID	Vault Frame Condition	Gasket/O-Ring <small>(M) Missing (R) Replaced</small>	Bolts <small>(M) Missing (R) Replaced</small>	Bolt Flanges <small>B=Broken S=Stripped R=Retap</small>	Apron Condition <small>C=Cracked B=Broken G=Gone</small>	Grout Seal <small>(Deficient) Inches from TOC</small>	Casing <small>(Condition prevents tight cap seal)</small>	REPLACE LOCK Y/ <input checked="" type="checkbox"/> N	REPLACE CAP Y/ <input checked="" type="checkbox"/> N	WELL VAULT <small>Manufacture/Size/ # of Bolts</small>	Pictures Taken Y/ <input checked="" type="checkbox"/> N
MW-1	OK					→		↓	↓	Emco/12"12"	
MW-2	OK					→		↓	↓		
MW-3	OK					→		↓	↓		

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by Clean Harbors Environmental Services to Seaport Environmental located in Redwood City, California.



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351639 / 6129  
 Site Address: 3420 35Th Avenue  
 City: Oakland, CA

Job Number: 385640  
 Event Date: 12-15-15 (inclusive)  
 Sampler: PT

Well ID: MW-1  
 Well Diameter: 2 in.  
 Total Depth: 43.40 ft.  
 Depth to Water: 31.76 ft.

Date Monitored: 12-15-15

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

11.64 xVF .17 = 1.97 x3 case volume = Estimated Purge Volume: 6.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 34.08

### Purge Equipment:

Disposable Bailer   
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

### Sampling Equipment:

Disposable Bailer   
 Pressure Bailer \_\_\_\_\_  
 Metal Filters \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbant Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ ltr  
 Amt Removed from Well: \_\_\_\_\_ ltr  
 Water Removed: \_\_\_\_\_ ltr

Start Time (purge): 1330 Weather Conditions: Slippy  
 Sample Time/Date: 1630 12-15-15 Water Color: LT. B.W. Odor: Y / 0  
 Approx. Flow Rate: \_\_\_\_\_ gpm. Sediment Description: S. SILTY  
 Did well de-water? NO If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 31.82

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/mS / µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
<u>1334</u>	<u>2.0</u>	<u>6.65</u>	<u>572</u>	<u>18.2</u>	PRE: <u>2.2</u>	PRE: <u>142</u>
<u>1338</u>	<u>4.0</u>	<u>6.68</u>	<u>577</u>	<u>18.5</u>	<u>2.2</u>	<u>144</u>
<u>1342</u>	<u>6.0</u>	<u>6.70</u>	<u>581</u>	<u>18.6</u>	<u>2.1</u>	<u>147</u>
					<u>2.1</u>	<u>151</u>

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-1</u>	<u>3</u> x voa vial	<u>YES</u>	<u>HCL</u>	<u>BC LABS</u>	<u>TPH-GRO(8015)/BTX+MTBE(8260)/8 OXYS(8260)</u>

COMMENTS: \_\_\_\_\_

Add/Replaced Gasket: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_ Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351639 / 6129  
 Site Address: 3420 35Th Avenue  
 City: Oakland, CA

Job Number: 385640  
 Event Date: 12-15-15 (inclusive)  
 Sampler: PT

Well ID: MW- 2

Date Monitored: 12-15-15

Well Diameter: 2 in.

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Total Depth: 43.58 ft.

Depth to Water: 31.71 ft.

Check if water column is less than 0.50 ft.

11.87 xVF .17 = 2.01 x3 case volume = Estimated Purge Volume: 6.0 gal.

Depth to Water w/ 80% Recharge ((Height of Water Column x 0.20) + DTW): 34.08

**Purge Equipment:**

- Disposable Bailer
- Stainless Steel Bailer
- Stack Pump
- Peristaltic Pump
- QED Bladder Pump
- Other:

**Sampling Equipment:**

- Disposable Bailer
- Pressure Bailer
- Metal Filters
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started:	_____ (2400 hrs)
Time Completed:	_____ (2400 hrs)
Depth to Product:	_____ ft
Depth to Water:	_____ ft
Hydrocarbon Thickness:	_____ ft
Visual Confirmation/Description:	_____
Skimmer / Absorbant Sock (circle one)	_____
Amt Removed from Skimmer:	_____ ltr
Amt Removed from Well:	_____ ltr
Water Removed:	_____ ltr

Start Time (purge): 1421

Weather Conditions: Sunny

Sample Time/Date: 1700 12-15-15

Water Color: LT. BRN. Odor: Y / N

Approx. Flow Rate: ✓ gpm.

Sediment Description: S. SILTY

Did well de-water? NO If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 31.80

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (US mS μmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
<u>1425</u>	<u>2.0</u>	<u>6.71</u>	<u>644</u>	<u>18.9</u>	PRE: <u>1.8</u>	PRE: <u>149</u>
<u>1429</u>	<u>4.0</u>	<u>6.73</u>	<u>649</u>	<u>19.1</u>	<u>1.8</u>	<u>152</u>
<u>1433</u>	<u>6.0</u>	<u>6.76</u>	<u>655</u>	<u>19.3</u>	<u>1.7</u>	<u>155</u>
					<u>1.6</u>	<u>159</u>

**LABORATORY INFORMATION**

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW- 2</u>	<u>3</u> x voa vial	<u>YES</u>	<u>HCL</u>	<u>BC LABS</u>	<u>TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)</u>

COMMENTS: \_\_\_\_\_

Add/Replaced Gasket: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_ Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_





# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351639 / 6129  
 Site Address: 3420 35Th Avenue  
 City: Oakland, CA

Job Number: 385640  
 Event Date: 12.15.15 (inclusive)  
 Sampler: FT

Well ID: MW-3  
 Well Diameter: 2 in.  
 Total Depth: 39.44 ft.  
 Depth to Water: 30.45 ft.  
8.99 xVF = .17 = 1.52

Date Monitored: 12.15.15

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 32.24 x3 case volume = Estimated Purge Volume: 5.0 gal.

### Purge Equipment:

Disposable Bailer   
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

### Sampling Equipment:

Disposable Bailer   
 Pressure Bailer \_\_\_\_\_  
 Metal Filters \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started:	_____ (2400 hrs)
Time Completed:	_____ (2400 hrs)
Depth to Product:	_____ ft
Depth to Water:	_____ ft
Hydrocarbon Thickness:	_____ ft
Visual Confirmation/Description:	_____
Skimmer/ Absorbant Sock (circle one)	_____
Amt Removed from Skimmer:	_____ ltr
Amt Removed from Well:	_____ ltr
Water Removed:	_____ ltr

Start Time (purge): 1357 Weather Conditions: Sunny  
 Sample Time/Date: 1645 / 12.15.15 Water Color: lt. Brn Odor: Y / 0  
 Approx. Flow Rate: ✓ gpm. Sediment Description: S. SILT  
 Did well de-water? NO If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 30.52

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/mS / µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
<u>1400</u>	<u>1.5</u>	<u>6.69</u>	<u>365</u>	<u>19.0</u>	PRE: <u>1.9</u>	PRE: <u>131</u>
<u>1403</u>	<u>3.0</u>	<u>6.67</u>	<u>371</u>	<u>19.2</u>	<u>1.9</u>	<u>135</u>
<u>1407</u>	<u>5.0</u>	<u>6.65</u>	<u>377</u>	<u>19.4</u>	<u>1.8</u>	<u>138</u>
					<u>1.7</u>	<u>143</u>

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-3</u>	<u>3</u> x voa vial	<u>YES</u>	<u>HCL</u>	<u>BC LABS</u>	<u>TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)</u>


### COMMENTS:

Add/Replaced Gasket: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_ Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_

### CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC 1 of 1

Union Oil Site ID: <u>6129</u>				Union Oil Consultant: <u>AECOM</u>				<b>ANALYSES REQUIRED</b>												
Site Global ID: <u>T0600101465</u>				Consultant Contact: <u>CHAD ROTH</u>				TPH - Diesel by EPA 8015 TPH - G by GC/MS ( <u>82601</u> ) BTEX/MTBE ( <del>82602</del> ) by EPA 8260B Ethanol by EPA 8260B EPA 8260B Full List with OXYS <u>8 OXYS (8260B)</u>	Turnaround Time (TAT): Standard <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/>  Special Instructions											
Site Address: <u>3420 35th Ave. OAKLAND, CA</u>				Consultant Phone No.: <u>(925) 764-4027</u>																
Union Oil PM: <u>NICOLE M. HANSEN/FAUX</u>				Sampling Company: <u>GETZLER - 1244N</u>																
Union Oil PM Phone No: <u>(925) 790-6912 / (916) 322-7351</u>				Sampled By (PRINT): <u>FRANK TENNISONI</u>																
Charge Code: <u>NWRTB-0 351639-0-LAB</u>				Sampler Signature: 																
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.				BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911				Notes / Comments												
SAMPLE ID																				
Field Point Name	Matrix	Depth	Date (yyymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by GC/MS ( <u>82601</u> )	BTEX/MTBE ( <del>82602</del> ) by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS										
<u>QA</u>	<u>W-S-A</u>		<u>151215</u>	<u>1630</u>	<u>2</u>	X	X													
<u>MW-1</u>	<u>W-S-A</u>	<u>1"</u>	<u>151215</u>	<u>1630</u>	<u>3</u>	X	X			X										
<u>MW-2</u>	<u>W-S-A</u>	<u>1"</u>	<u>151215</u>	<u>1700</u>	<u>↓</u>	X	X			X										
<u>MW-3</u>	<u>W-S-A</u>	<u>1"</u>	<u>151215</u>	<u>1645</u>	<u>↓</u>	X	X			X										
	<u>W-S-A</u>																			
	<u>W-S-A</u>																			
	<u>W-S-A</u>																			
	<u>W-S-A</u>																			
	<u>W-S-A</u>																			
	<u>W-S-A</u>																			
	<u>W-S-A</u>																			
Relinquished By: <u>[Signature]</u> Company: <u>G-N IFC</u> Date / Time: <u>12-18-15 1730</u>				Relinquished By: <u>[Signature]</u> Company: <u>GRIM</u> Date / Time: <u>12-21-15 1500</u>				Relinquished By: _____ Company: _____ Date / Time: _____												
Received By: <u>[Signature]</u> Company: <u>GETZLER - KYLE FRITZ</u> Date / Time: <u>12-21-15 0700</u>				Received By: <u>[Signature]</u> Company: <u>Mary Boyan</u> Date / Time: <u>12-21-15 1500</u>				Received By: _____ Company: _____ Date / Time: _____												

**Attachment B**

**BC Labs Analytical Report**



Date of Report: 12/28/2015

Chad Roper

AECOM

1220 Avenida Acaso  
Camarillo, CA 93012

Client Project: 351639  
BCL Project: 6129  
BCL Work Order: 1532690  
Invoice ID: B222515

Enclosed are the results of analyses for samples received by the laboratory on 12/21/2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



## Table of Contents

### Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	5

### Sample Results

<b>1532690-01 - QA-W-151215</b>	
Volatile Organic Analysis (EPA Method 8260B).....	7
<b>1532690-02 - MW-1-W-151215</b>	
Volatile Organic Analysis (EPA Method 8260B).....	8
<b>1532690-03 - MW-2-W-151215</b>	
Volatile Organic Analysis (EPA Method 8260B).....	9
<b>1532690-04 - MW-3-W-151215</b>	
Volatile Organic Analysis (EPA Method 8260B).....	10

### Quality Control Reports

<b>Volatile Organic Analysis (EPA Method 8260B)</b>	
Method Blank Analysis.....	11
Laboratory Control Sample.....	12
Precision and Accuracy.....	13

### Notes

Notes and Definitions.....	14
----------------------------	----

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



CHAIN OF CUSTODY FORM  
Union Oil Company of California 6101 Bollinger Canyon Road San Ramon, CA 94583  
COC 1 of 1

Union Oil Site ID: 15-32690  
 Site Global ID: 6000101465  
 Site Address: 3420 35th Ave. OAKLAND, CA  
 Union Oil PM: NICOLE H. ANCIENEAUX  
 Union Oil PM Phone No: (925) 790-6912 (510) 333-1734  
 Charge Code: NWRTB-0 351639-0-LAB  
 This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.

Union Oil Consultant: ABEcom  
 Consultant Contact: CHAD RAY  
 Consultant Phone No.: (805) 764-4027  
 Sampling Company: GETZLER-REAN  
 Sampled By (PRINT): FURUKU TEMUNIONI  
 Sampler Signature: [Signature]  
 BC Laboratories, Inc.  
 Project Manager: Molly Meyers  
 4100 Atlas Court, Bakersfield, CA 93308  
 Phone No. 661-327-4911

Field Point Name	Matrix	Depth	Date (yyymmdd)	Sample Time	# of Containers	ANALYSES REQUIRED				Notes / Comments
						TPH - Diesel by EPA 8015	TPH - G by GC/MS (826)	BTEX/MTBE by EPA 8260B	Ethanol by EPA 8260B	
QA	W-S-A	-1	15 12 15	1630	2	X	X	X	X	8 OXYS (8260B)
MW-1	W-S-A	-1	11	1630	3	X	X	X	X	
MW-2	W-S-A	-3	11	1700	3	X	X	X	X	
MW-3	W-S-A	-4	11	1645	3	X	X	X	X	
	W-S-A									
	W-S-A									
	W-S-A									
	W-S-A									
	W-S-A									
	W-S-A									
	W-S-A									
	W-S-A									

Relinquished By: [Signature] Date / Time: 1730  
 Received By: [Signature] Date / Time: 12-21-15  
 Relinquished By: [Signature] Date / Time: 12-21-15 15:00  
 Received By: [Signature] Date / Time: 12-21-15 18:30  
 Relinquished By: [Signature] Date / Time: 12-21-15 15:00  
 Received By: [Signature] Date / Time: 12-21-15 18:30

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



BC LABORATORIES INC. COOLER RECEIPT FORM Page    Of   

Submission #: 15-32690

**SHIPPING INFORMATION**  
 Fed Ex  UPS  Ontrac  Hand Delivery   
 BC Lab Field Service  Other  (Specify) \_\_\_\_\_

**SHIPPING CONTAINER**  
 Ice Chest  None  Box   
 Other  (Specify) \_\_\_\_\_

**FREE LIQUID**  
 YES  NO

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals Ice Chest  Containers  None  Comments: \_\_\_\_\_  
 Intact? Yes  No  Intact? Yes  No

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

**COC Received**  
 YES  NO

Emissivity: 0.95 Container: Amber Thermometer ID: 208 Date/Time 12/2/15  
 Temperature: (A) 1.3 °C / (C) 1.3 °C Analyst Init KIB 2131

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK <u>094</u>	<u>AB</u>									
40ml VOA VIAL <u>096</u>	<u>ABC</u>	<u>ABC</u>	<u>ABC</u>							
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_ Date/Time: 12/2/15 805 Rev 20 07/24/2015  
 Sample Numbering Completed By: DJP JVC (S:\WPDoc\WordPerfect\LAB\_DOCS\FORMS\SAMRECrev 201  
 A = Actual / C = Corrected



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
**Project:** 6129  
**Project Number:** 351639  
**Project Manager:** Chad Roper

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1532690-01</b>	<b>COC Number:</b> --- <b>Project Number:</b> 6129 <b>Sampling Location:</b> --- <b>Sampling Point:</b> QA-W-151215 <b>Sampled By:</b> GRD	<b>Receive Date:</b> 12/21/2015 21:30 <b>Sampling Date:</b> 12/15/2015 00:00 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101465 Location ID (FieldPoint): QA Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	--

<b>1532690-02</b>	<b>COC Number:</b> --- <b>Project Number:</b> 6129 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-1-W-151215 <b>Sampled By:</b> GRD	<b>Receive Date:</b> 12/21/2015 21:30 <b>Sampling Date:</b> 12/15/2015 16:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101465 Location ID (FieldPoint): MW-1 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	--

<b>1532690-03</b>	<b>COC Number:</b> --- <b>Project Number:</b> 6129 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-2-W-151215 <b>Sampled By:</b> GRD	<b>Receive Date:</b> 12/21/2015 21:30 <b>Sampling Date:</b> 12/15/2015 17:00 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101465 Location ID (FieldPoint): MW-2 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	--

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.





AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
**Project:** 6129  
**Project Number:** 351639  
**Project Manager:** Chad Roper

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1532690-04</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 12/21/2015 21:30
	<b>Project Number:</b> 6129	<b>Sampling Date:</b> 12/15/2015 16:45
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> MW-3-W-151215	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> GRD	<b>Sample Type:</b> Water
		Delivery Work Order:
		Global ID: T0600101465
		Location ID (FieldPoint): MW-3
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
Project: 6129  
Project Number: 351639  
Project Manager: Chad Roper

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1532690-01	<b>Client Sample Name:</b> 6129, QA-W-151215, 12/15/2015 12:00:00AM
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	100	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.3	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	90.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	12/22/15	12/22/15 11:12	SE1	MS-V12	1	BYL2115

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

Reported: 12/28/2015 9:32  
Project: 6129  
Project Number: 351639  
Project Manager: Chad Roper

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1532690-02	<b>Client Sample Name:</b> 6129, MW-1-W-151215, 12/15/2015 4:30:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
<b>Methyl t-butyl ether</b>	<b>48</b>	<b>ug/L</b>	<b>0.50</b>		<b>EPA-8260B</b>	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>60</b>	<b>ug/L</b>	<b>50</b>		<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.0	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	12/22/15	12/22/15 12:59	SE1	MS-V12	1	BYL2115

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
**Project:** 6129  
**Project Number:** 351639  
**Project Manager:** Chad Roper

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1532690-03	<b>Client Sample Name:</b> 6129, MW-2-W-151215, 12/15/2015 5:00:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
<b>Methyl t-butyl ether</b>	<b>1300</b>	<b>ug/L</b>	<b>12</b>		<b>EPA-8260B</b>	ND	<b>A01</b>	<b>2</b>
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>680</b>	<b>ug/L</b>	<b>50</b>		<b>Luft-GC/MS</b>	ND		<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	100	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	98.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.4	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	91.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.0	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	12/22/15	12/22/15 13:17	SE1	MS-V12	1	BYL2115
2	EPA-8260B	12/22/15	12/22/15 15:30	SE1	MS-V12	25	BYL2115

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

Reported: 12/28/2015 9:32  
Project: 6129  
Project Number: 351639  
Project Manager: Chad Roper

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1532690-04	<b>Client Sample Name:</b> 6129, MW-3-W-151215, 12/15/2015 4:45:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
<b>Methyl t-butyl ether</b>	<b>240</b>	<b>ug/L</b>	<b>5.0</b>		<b>EPA-8260B</b>	ND	<b>A01</b>	<b>2</b>
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>220</b>	<b>ug/L</b>	<b>50</b>		<b>Luft-GC/MS</b>	ND		<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	105	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	92.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.0	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	12/22/15	12/22/15 16:06	SE1	MS-V12	1	BYL2115
2	EPA-8260B	12/22/15	12/22/15 16:41	SE1	MS-V12	10	BYL2115

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
Project: 6129  
Project Number: 351639  
Project Manager: Chad Roper

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BYL2115</b>						
Benzene	BYL2115-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BYL2115-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BYL2115-BLK1	ND	ug/L	0.50		
Ethylbenzene	BYL2115-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BYL2115-BLK1	ND	ug/L	0.50		
Toluene	BYL2115-BLK1	ND	ug/L	0.50		
Total Xylenes	BYL2115-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BYL2115-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BYL2115-BLK1	ND	ug/L	10		
Diisopropyl ether	BYL2115-BLK1	ND	ug/L	0.50		
Ethanol	BYL2115-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BYL2115-BLK1	ND	ug/L	0.50		
Total Purgeable Petroleum Hydrocarbons	BYL2115-BLK1	ND	ug/L	50		
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>BYL2115-BLK1</b>	<b>105</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>BYL2115-BLK1</b>	<b>99.3</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>BYL2115-BLK1</b>	<b>107</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
Project: 6129  
Project Number: 351639  
Project Manager: Chad Roper

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
<b>QC Batch ID: BYL2115</b>										
Benzene	BYL2115-BS1	LCS	25.310	25.000	ug/L	101		70 - 130		
Toluene	BYL2115-BS1	LCS	26.830	25.000	ug/L	107		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BYL2115-BS1	LCS	9.7700	10.000	ug/L	97.7		75 - 125		
Toluene-d8 (Surrogate)	BYL2115-BS1	LCS	10.340	10.000	ug/L	103		80 - 120		
4-Bromofluorobenzene (Surrogate)	BYL2115-BS1	LCS	9.4200	10.000	ug/L	94.2		80 - 120		

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

Reported: 12/28/2015 9:32  
Project: 6129  
Project Number: 351639  
Project Manager: Chad Roper

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
<b>QC Batch ID: BYL2115</b>		Used client sample: N								
Benzene	MS	1532581-04	ND	29.250	25.000	ug/L		117		70 - 130
	MSD	1532581-04	ND	28.690	25.000	ug/L	1.9	115	20	70 - 130
Toluene	MS	1532581-04	ND	30.060	25.000	ug/L		120		70 - 130
	MSD	1532581-04	ND	29.310	25.000	ug/L	2.5	117	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	MS	1532581-04	ND	10.030	10.000	ug/L		100		75 - 125
	MSD	1532581-04	ND	9.7800	10.000	ug/L	2.5	97.8		75 - 125
Toluene-d8 (Surrogate)	MS	1532581-04	ND	10.040	10.000	ug/L		100		80 - 120
	MSD	1532581-04	ND	10.010	10.000	ug/L	0.3	100		80 - 120
4-Bromofluorobenzene (Surrogate)	MS	1532581-04	ND	9.7000	10.000	ug/L		97.0		80 - 120
	MSD	1532581-04	ND	9.9100	10.000	ug/L	2.1	99.1		80 - 120

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.





AECOM  
1220 Avenida Acaso  
Camarillo, CA 93012

**Reported:** 12/28/2015 9:32  
**Project:** 6129  
**Project Number:** 351639  
**Project Manager:** Chad Roper

**Notes And Definitions**

- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A01 Detection and quantitation limits are raised due to sample dilution.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.