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1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577



Re: Former Tidewater Service Station 373378
7600 MacArthur Boulevard
Oakland, California

I have reviewed the attached Low-Threat Case Closure Request.

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 GHD Services, Inc., upon whose assistance and advice I have relied.

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

Sincerely,

A handwritten signature in black ink that reads "B. Frost".

Brittany Frost
Project Manager

Attachment: Low-Threat Case Closure Request



Low-Threat Case Closure Request

Former Tidewater Service Station
Phillip 66 Site 5677/Chevron Site 373378
7600 MacArthur Boulevard
Oakland, California
ACDEH Fuel Leak Case No. RO3087

Prepared For:

Ms. Karel Detterman

Alameda County Department of Environmental Health (ACDEH)

1131 Harbor Bay Parkway, Suite 250

Alameda, California 4502-6577

August 11, 2017

732 Broadway, Suite 301, Tacoma, WA 98402

062164 | 2017 | 04.94 | Report No. 11

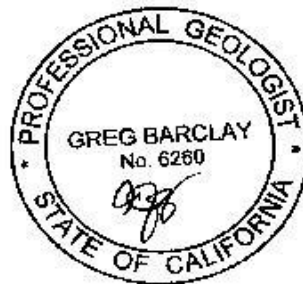


Low-Threat Case Closure Request

Former Tidewater Service Station
Phillip 66 Site 5677/Chevron Site 373378
7600 MacArthur Boulevard
Oakland, California
ACDEH Fuel Leak Case No. RO3087

Matthew Davis

Greg Barclay PG 6260



August 11, 2017

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1. Introduction

GHD is submitting this *Low-Threat Case Closure Request* for Former Tidewater Service Station located at 7600 MacArthur Boulevard in Oakland, California (Figure 1) on behalf of Chevron Environmental Management Company (Chevron) and Phillips 66 Company (Phillips 66). This report demonstrates that site conditions meet State Water Resources Control Board's (SWRCB's) *Low-Threat Underground Storage Tank Case Closure Policy* (LTCP).

2. Site Description and Background

The site is located at 7600 MacArthur Boulevard in Oakland, California (Figure 1), and is currently occupied by a tenant, who uses the property to store and repair automobiles. Based on information provided by ACDEH, Phillips Petroleum Company owned the property from 1966 through 1973.

Since then, the site has had several owners, but has not undergone any major redevelopment. Former site features included one 1,000-gallon underground storage tank (UST), one 300-gallon UST, a dispenser island, and a station building with two hydraulic lifts. Approximate locations of the former service station building and USTs are shown on Figure 2. The site is bordered by private residences to the northeast and southeast. Commercial businesses are located southwest beyond MacArthur Boulevard and a vacant lot is located northwest across 76th Avenue.

GHD, formerly Conestoga-Rovers & Associates (CRA), submitted a *Site Investigation Report and Closure Request* to ACDEH on November 21, 2014. After review of the closure request, ACDEH provided a response letter, *Technical Report Request* dated July 19, 2016 (Appendix A), requested that GHD provide the following:

- Further justification to show compliance with General Criteria F – Secondary Source Has Been Removed to the Extent Practicable;
- Development of wells MW-1, MW-2, and MW-3 and four quarters of sampling to verify compliance with the media-specific criteria for groundwater;
- Further evaluation of the media-specific criteria for vapor intrusion to indoor air; and
- A Data Gap Work Plan and updated Site Conceptual Model (SCM).

In response to the ACDEH technical report request, GHD submitted a *Data Gap Investigation Work Plan and Site Conceptual Model* on September 23, 2016. The September 2016 report summarized the hand auger activities completed in 2014 and concluded that no additional underground storage tanks were present at the site based on the hand auger results. The SCM identified a data gap for four quarterly groundwater monitoring and sampling events to evaluate the media-specific criteria for groundwater and soil vapor intrusion. Four consecutive quarterly monitoring events were completed between third quarter 2016 and second quarter 2017.

The most recent second quarter 2017 groundwater elevation contour and hydrocarbon concentration map is presented in Figure 3. Cumulative soil and groundwater analytical data are



presented in Tables 1 and 4. Nearby sensitive receptors are presented on Figure 4. A Policy checklist is provided in Appendix B. An updated SCM is provided in Appendix C.

3. Policy Evaluation

3.1 General Criteria Requirements

The general criteria requirements that must be satisfied by candidate sites are listed as follows:

- a. *The unauthorized release is located within the service area of a public water system.*
 - **Satisfied:** The site is served by municipal water supplied by the East Bay Municipal Utility District (EBMUD). The water well survey completed in 2014 did not identify any water supply wells within 1,000 feet of the site.
- b. *The unauthorized release consists only of petroleum.*
 - **Satisfied:** The site's unauthorized release has been characterized as a release of petroleum-based products from gasoline underground storage tanks and product piping from the former Tidewater service station.
- c. *The unauthorized ("primary") release from the UST system has been stopped.*
 - **Satisfied:** Petroleum storage and handling facilities that were the source of the release have been removed from the site. No additional buried USTs or piping were identified during the Geophysical Survey conducted in April 2014.
- d. *Free product has been removed to the maximum extent practicable.*
 - **Satisfied:** No light non-aqueous petroleum liquid (LNAPL) has been detected in any of the site monitoring wells.
- e. *A conceptual site model has been developed.*
 - **Satisfied:** A SCM was included in CRA's 2014 *Site Investigation Report*. A focused SCM was included in GHD's 2016 *Data Gap Work Plan and Updated SCM Report*. An updated SCM following completion of four quarters of groundwater monitoring is included in Appendix C of this report.
- f. *Secondary source removal has been addressed.*
 - **Satisfied:** Remedial excavation was conducted around the USTs in 2007; soil concentrations did not indicate the presence of a secondary source. In 2014, CRA completed a geophysical survey; hand auguring where magnetic anomalies were detected was completed. No tanks or scrap metal were observed in any of the hand augured holes, nor did field screening detect concentrations of VOCs in soil indicative of petroleum impacted soil.



- g. *Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15.*
 - o **Satisfied:** Soil and groundwater samples have been tested for MTBE. The results of the analytical testing have been reported to ACDEH, per California Health and Safety Code 25296.15.
- h. *Nuisance as defined by Water Code section 13050 does not exist at the site.*
 - o **Satisfied:** Conditions satisfying the definition of a nuisance as defined in Water Code section 13050 do not exist at the site.

3.2 Media-Specific Criteria

Media-specific criteria are related to the most common exposure scenarios, which in the Policy have been combined into three media-specific criteria:

1. Groundwater,
2. Vapor Intrusion to Indoor Air, and
3. Direct Contact and Outdoor Air Exposure.

3.2.1 Groundwater

The Policy requires that water quality objectives (WQOs) will be attained through natural attenuation within a reasonable amount of time, the contaminant plume that exceeds WQOs is stable or decreasing in areal extent, and meets the additional characteristics of one of the five classes of sites listed in the Policy.

The five classes of sites are stated in the Policy as follows:

1. a. The contaminant plume that exceeds WQOs is less than 100 feet in length.
b. There is no free product.
c. The nearest existing water supply well and/or surface water body is greater than 250 feet from the defined plume boundary.
2. a. The contaminant plume that exceeds WQOs is less than 250 feet in length.
b. There is no free product.
c. The nearest existing water supply well and/or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 3,000 µg/l and the dissolved concentration of MTBE is less than 1,000 µg/l.
3. a. The contaminant plume that exceeds WQOs is less than 250 feet in length.
b. Free product may be present below the site but does not extend off-site.
c. The plume has been stable or decreasing for a minimum of 5 years.



- d. The nearest existing water supply well and/or surface water body is greater than 1,000 feet from the defined plume boundary.
- e. The property owner is willing to accept a deed restriction if the regulatory agency requires a deed restriction as a condition of closure.
4.
 - a. The contaminant plume that exceeds WQOs is less than 1,000 feet in length.
 - b. There is no free product.
 - c. The nearest existing water supply well and/or surface water body is greater than 1,000 feet from the defined plume boundary.
 - d. The dissolved concentration of benzene is less than 1,000 $\mu\text{g/l}$ and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/l}$.
5.
 - a. An analysis of site specific conditions determines that the site under current and reasonable anticipated near-term future scenarios poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.

Satisfied: The site satisfies Class 2 criteria as follows:

Groundwater in the East Bay Plain basin is designated as a potential drinking water source;¹ however, no municipal wells were identified within a half mile of the site. The site is provided water by the EBMUD which relies solely on imported water to supply the region with drinking water;^{1,2} therefore, closure for this site was evaluated based on non-drinking water WQOs.

- Four quarters of groundwater sampling demonstrated concentrations of TPH_d, TPH_g, benzene, and MTBE were below the WQOs with one exception: TPH_d was observed at a concentration of 260 $\mu\text{g/l}$ in MW-1 during the third quarter 2016 sampling event. The dissolved hydrocarbon plume that exceeds WQOs is less than 250 feet in length in all directions. Because no concentrations of TPH_g, benzene or MTBE were detected above the WQOs during the four quarters of sampling. Therefore, a comparison to the average and 90th percentile plume lengths presented in the *LTCP Technical Justification for Groundwater Media-Specific Criteria Document* could not be completed. However, the average and 90th percentile plume lengths were included on Figure 4 for reference.
- No LNAPL has been observed in any monitoring wells.
- No drinking water wells were identified by Alameda County Public Works Agency, California Department of Water Resources, and GeoTracker's Groundwater Ambient Monitoring and Assessment within 1,000 feet of the site.
- The nearest surface water body is Arroyo Viejo Creek, located approximately 0.4 miles to the west. San Francisco Bay is 2.3 miles to the southwest.

¹ <http://www.ebmud.com/our-water/water-supply>

² California Regional Water Quality Control Board San Francisco Bay Region, East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA, June 1999.



- The dissolved concentration of benzene is less than 3,000 µg/l and the dissolved concentration of MTBE is less than 1,000 µg/l.

3.2.2 Vapor Intrusion to Indoor Air

The Policy describes conditions, including bioattenuation zones (soil conditions that support biodegradation of hydrocarbon vapors), which, if met, will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks. In many petroleum release cases, potential human exposures to vapors are mitigated by bioattenuation processes as vapors migrate toward the ground surface. The low-threat vapor-intrusion criteria described below apply to sites where the release originated and impacted or potentially impacted adjacent parcels when: (1) existing buildings are occupied or may be reasonably expected to be occupied in the future, or (2) buildings for human occupancy are reasonably expected to be constructed in the future. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor-intrusion-to-indoor-air pathway if:

- a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenario 4 as applicable; or
- b. A site-specific risk assessment for the vapor intrusion pathway is conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency; or
- c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health.

Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities.

Satisfied: Site conditions meet criteria (a), scenario 3A of the Policy (low concentrations groundwater without oxygen data). The depth to groundwater is greater the 5 fbg, dissolved benzene in groundwater is less than 100 µg/L (no benzene has been detected over four quarters of groundwater monitoring), and total TPH in the upper 5 feet of soil is less than 100 mg/kg.

3.2.3 Direct Contact and Outdoor Air Exposure

The Policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air poses an insignificant threat to human health. Release sites where human exposure may occur must satisfy the media-specific criteria for direct contact and outdoor air exposure and are considered low-threat if they meet any one of the following:

- a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in the table below for the specified depth below ground surface. The limits from 0 to 5 fbg protect from ingestion, dermal contact, and outdoor inhalation of volatile and particulate emissions. The 5 to 10 fbg limits protect from inhalation of volatile emissions only; the ingestion and dermal contact pathways are not considered significant. In addition, if exposure to construction workers or utility trench workers is reasonably anticipated, the concentration limits for Utility Worker must also be satisfied.



Table 3.2: Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health

Constituent	Residential		Commercial/ Industrial		Utility Worker	Maximum Concentration	Maximum Concentration
	0 – 5 fbg mg/kg	Volatilization to outdoor air 5 – 10 fbg mg/kg	0 – 5 fbg mg/kg	Volatilization to outdoor air 5 – 10 fbg mg/kg	0 – 10 fbg mg/kg	0 – 5 fbg mg/kg	>5-10 fbg mg/kg
Benzene	1.9	2.8	8.2	12	14	0.16	1.05
Ethylbenzene	21	32	89	134	314	1.7	1.9
Naphthalene	9.7	9.7	45	45	219	0.16	0.27
PAH*	0.063	NA	0.68	NA	4.5	0.26	<0.00067

Notes:

mg/kg = Milligrams per kilogram

NA = Not Analyzed

* Based on the seven carcinogenic polynuclear aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. The PAH screening level is only applicable where soil is affected by either waste oil and/or Bunker C fuel.

- b. Maximum concentrations of petroleum constituents in soil are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health.
- c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

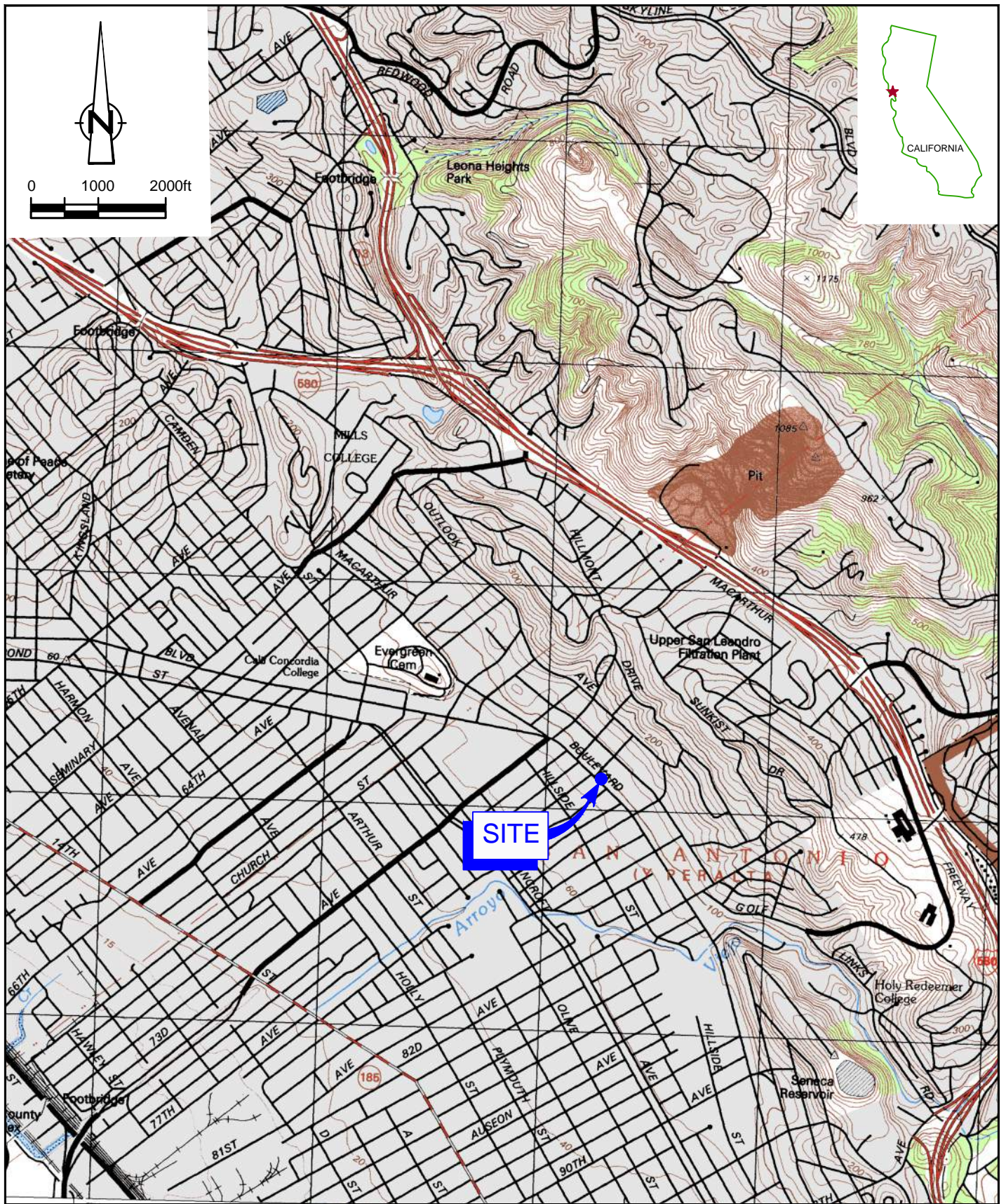
Satisfied: The site satisfies criteria (a). None of the soil samples collected exceeded the Policy residential criteria for direct contact and outdoor air exposure.

4. Conclusions and Recommendations

This site has been adequately assessed and remediated. Based on our review, site conditions meet the general and media-specific criteria established in the LTCP, and therefore pose a low threat to human health, safety, and the environment. Site conditions satisfy the case-closure requirements of Health and Safety Code section 25296.10, and case closure is consistent with Resolution 92-49 that requires that cleanup goals be met within a reasonable time frame.

Groundwater data, as presented in this *Low-Threat Closure Request*, support our conclusion that the site and the impacted groundwater pose no significant threat to human health or the environment. Therefore, on behalf of Chevron and Phillips 66, GHD respectfully requests closure of ACDEH Case No. RO3087.

Figures



SOURCE: USGS QUADRANGLE MAP; OAKLAND EAST, CALIFORNIA, 1997.

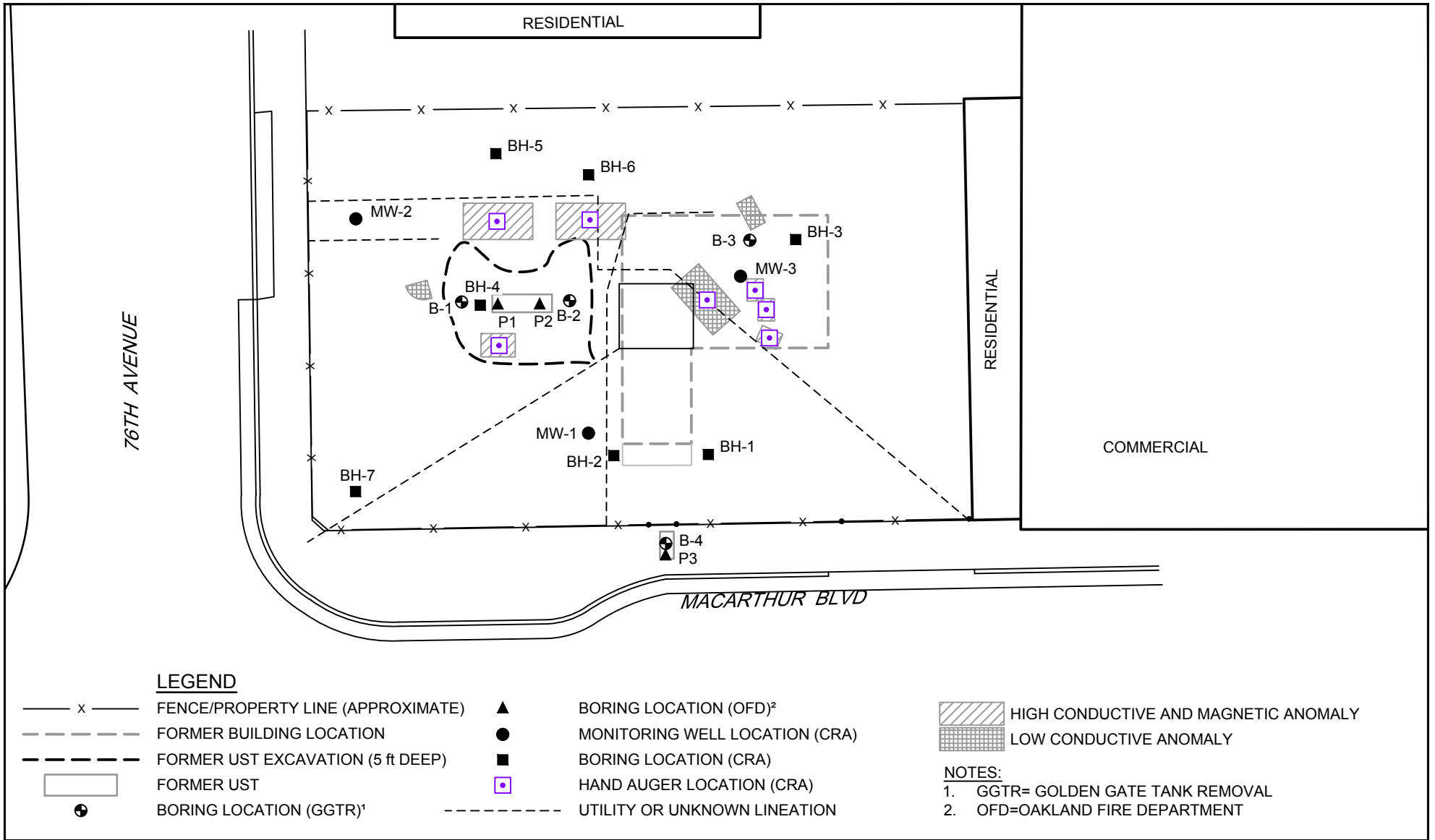


FORMER CHEVRON-BRANDED SERVICE STATION 373378
 7600 MACARTHUR BLVD
 OAKLAND, CALIFORNIA

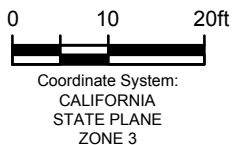
62164-2017
 Jul 24, 2017

VICINITY MAP

FIGURE 1



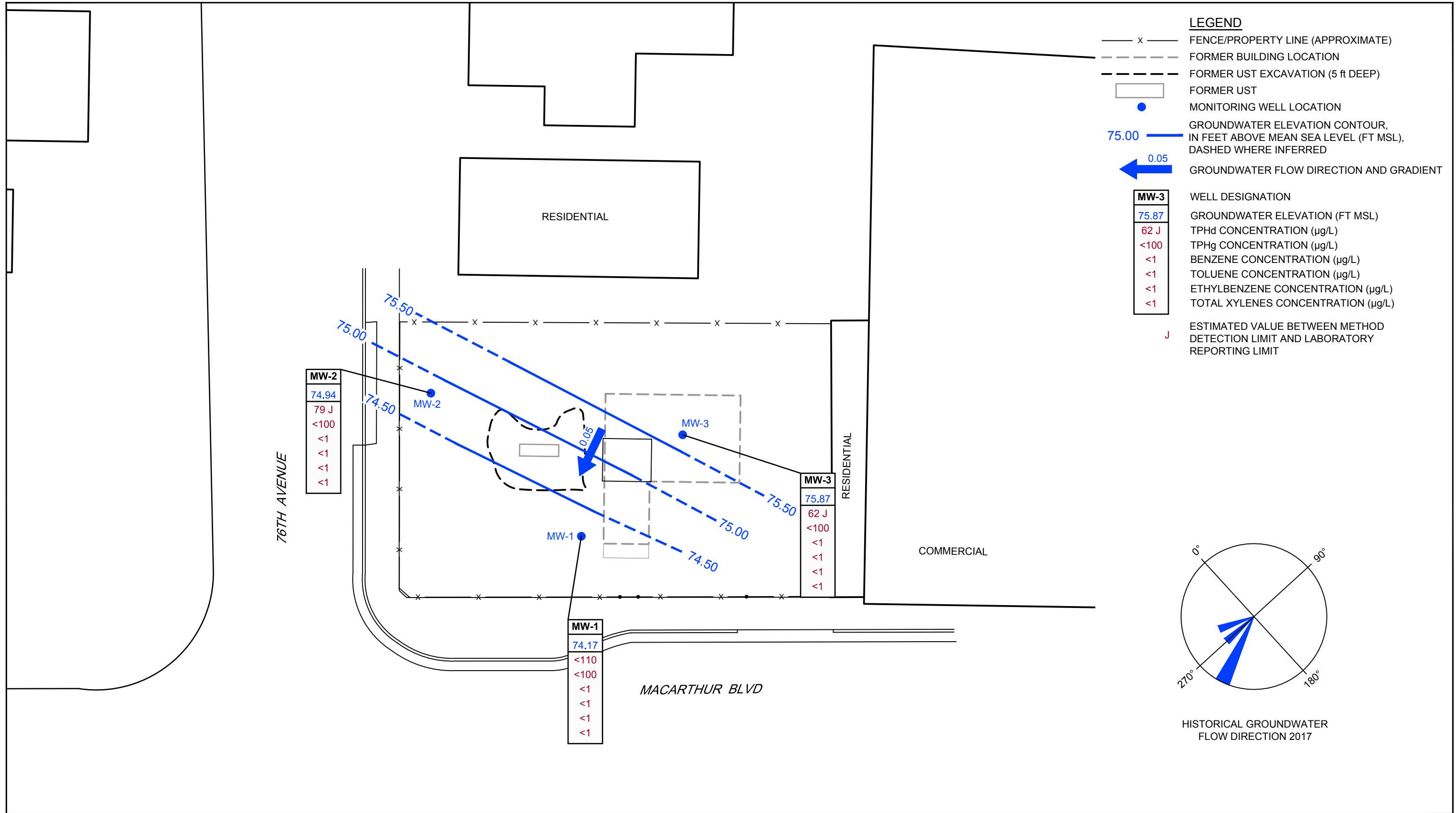
SOURCE: MORROW SURVEYING, OCTOBER 8, 2014.



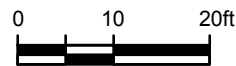
FORMER TIDEWATER SERVICE STATION
 PHILLIPS 66 SITE 5677
 CHEVRON SITE 373378
 7600 MacArthur Blvd, Oakland, California
 SITE MAP

62164-2017
 Jul 24, 2017

FIGURE 2



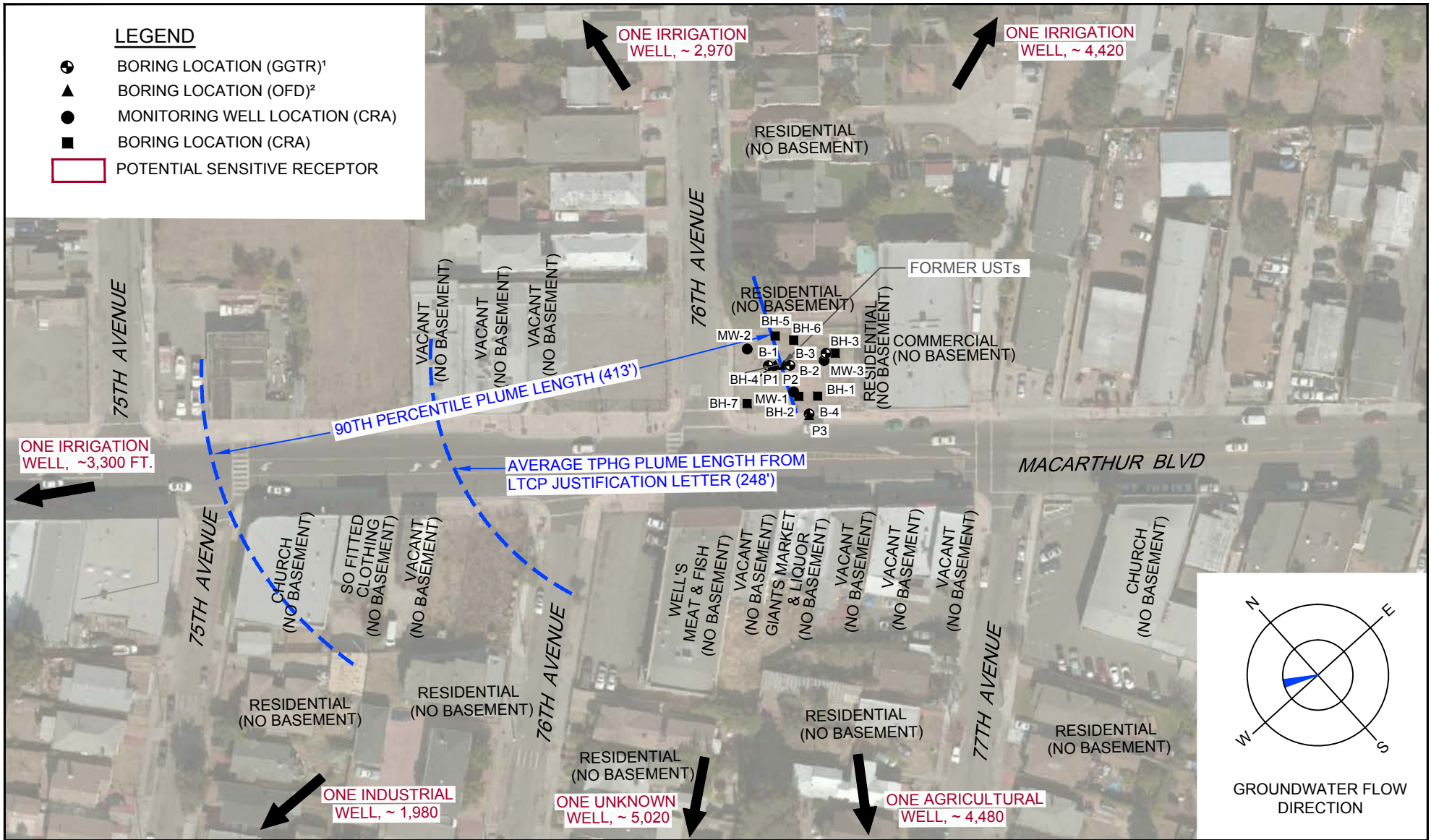
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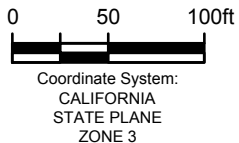
FORMER CHEVRON-BRANDED SERVICE STATION 373378
 7600 MACARTHUR BLVD
 OAKLAND, CALIFORNIA
 GROUNDWATER ELEVATION CONTOUR AND HYDROCARBON
 CONCENTRATION MAP - MAY 15, 2017

62164-2017
 Jul 24, 2017

FIGURE 3



SOURCE: MORROW SURVEYING, OCTOBER 8, 2014.



FORMER TIDEWATER SERVICE STATION
PHILLIPS 66 SITE 5677
CHEVRON SITE 373378

7600 MacArthur Blvd, Oakland, California
POTENTIAL RECEPTORS AND GROUNDWATER PLUME

62164-2017
Jul 24, 2017

FIGURE 4

Tables

Table 1

Cumulative Groundwater Elevation and Analytical Data
Former Tidewater Service Station
Phillips 66 Site 5677
Chevron Site 373378
7600 MacArthur Blvd.
Oakland, California

Sample ID	Date Sampled	Well Elevation (ft-amsl)	Depth to Water (ft)	Groundwater Elevation (ft-amsl)	Depth to LPH (ft)	Product Thickness (feet)	TPH (µg/L)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)
MW-1	7/28/2016 ¹	89.45	22.62	66.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8/5/2016	89.45	22.84	66.61	--	--	<5,000	260	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-1	12/15/2016	89.45	19.71	69.74	--	--	<5,000	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-1	2/16/2017	89.45	11.38	78.07	--	--	<5,000	<110	70 J	<1	<1	0.5 J	<1	<1	<1	<1	<1	<20
MW-1	5/15/2017	89.45	15.28	74.17	--	--	<5,000	<110	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-2	7/28/2016 ¹	90.35	23.06	67.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/5/2016	90.35	24.15	66.20	--	--	<5,000	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-2	12/15/2016	90.35	20.57	69.78	--	--	<5,000	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-2	2/16/2017	90.35	10.93	79.42	--	--	<5,000	57 J	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-2	5/15/2017	90.35	15.41	74.94	--	--	<5,000	79 J	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-3	7/28/2016 ¹	90.45	22.40	68.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	8/5/2016	90.45	22.91	67.54	--	--	1,500 J	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-3	12/15/2016	90.45	20.11	70.34	--	--	<5,000	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-3	2/16/2017	90.45	10.85	79.60	--	--	<5,000	<110	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
MW-3	5/15/2017	90.45	14.58	75.87	--	--	<5,000	62 J	<100	<1	<1	<1	<1	<1	<1	<1	<1	<20
QA-T	8/5/2016	--	--	--	--	--	--	--	<100	<1	<1	<1	<1	<1	--	--	--	--
QA-T	12/15/2016	--	--	--	--	--	--	--	<100	<1	<1	<1	--	<1	<1	<1	<1	<20
QA-T	2/16/2017	--	--	--	--	--	--	--	<100	<1	<1	<1	<1	<1	--	--	--	--
QA-T	5/15/2017	--	--	--	--	--	--	--	<100	<1	<1	<1	<1	<1	--	--	--	--

Table 1

**Cumulative Groundwater Elevation and Analytical Data
Former Tidewater Service Station
Phillips 66 Site 5677
Chevron Site 373378
7600 MacArthur Blvd.
Oakland, California**

Sample ID	Date Sampled	Well Elevation (ft-amsl)	Depth to Water (ft)	Groundwater Elevation (ft-amsl)	Depth to LPH (ft)	Product Thickness (feet)	TPH (µg/L)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)
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Abbreviations and Notes

amsl = above mean sea level

bgs = below ground surface

DIPE = Diisopropyl alcohol

ETBE = Ethyl tert-butyl ether

ID = Identification

LPH = Liquid phase hydrocarbons

MtBE = Methyl tertiary butyl ether

MRL = Method reporting limit

QA-T = Trip blank

RPD = Relative percent difference

TAME = Tert amylmethyl ether

TBA = Tert-butanol

TPH-DRO = Total Petroleum Hydrocarbons as Diesel Range Organics

TPH-GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics

TPH-MRO = Total Petroleum Hydrocarbons as Motor Oil Range Organics

µg/L = micrograms per liter

< = Less than MRL

'--' = Not applicable

j = Laboratory estimated value

1 = Well development performed

Table 2

**Historical Groundwater PAH Data
Former Tidewater Service Station
Phillips 66 Site 5677
Chevron Site 373378
7600 MacArthur Blvd.
Oakland, California**

Sample ID	Date Sampled	Additional SVOC's			PAH's															
		1,2-Dichlorobenzene (o-Dichlorobenzene) (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)Pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
MW-1	7/28/2016 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8/5/2016	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1	12/15/2016	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1	2/16/2017	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1	5/15/2017	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	7/28/2016 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/5/2016	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	12/15/2016	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	2/16/2017	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	5/15/2017	<5	<5	<5	3	1	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	3	<0.5	3	5	0.5 J
MW-3	7/28/2016 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	8/5/2016	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	12/15/2016	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	2/16/2017	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	5/15/2017	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA-T	8/5/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QA-T	12/15/2016	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QA-T	2/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QA-T	5/15/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2

**Historical Groundwater PAH Data
Former Tidewater Service Station
Phillips 66 Site 5677
Chevron Site 373378
7600 MacArthur Blvd.
Oakland, California**

Sample ID	Date Sampled	Additional SVOC's			PAH's													
		1,2-Dichlorobenzene (o-Dichlorobenzene) (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)Pyrene (µg/L)	Naphthalene (µg/L)

Abbreviations and Notes

- ID = Identification
- MRL = Method reporting limit
- PAH = Polycyclic Aromatic Hydrocarbons
- SVOC = Semi-Volatile Organic Compounds
- µg/L = micrograms per liter
- < = Less than MRL
- = Not applicable
- 1 = Well development performed

Table 3

**Historical Groundwater Metals Data
Former Tidewater Service Station
Phillips 66 Site 5677
Chevron Site 373378
7600 MacArthur Blvd.
Oakland, California**

Sample ID	Date Sampled	Aluminum (µg/L)	Barium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Phosphorus (µg/L)	Silicon (µg/L)	Silver (µg/L)	Sodium (µg/L)	Sulfur (µg/L)	Tin (µg/L)	Titanium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
MW-1	08/05/16	133 J	44.5	1,140	<5.0	52,300	2.4 J	<10.0	130 J	<15.0	22,300	151	3.7 J	3.2 J	37.8 J	15,300	<5.0	93,200	11,300	<20.0	8.4 J	22.4	<20.0
MW-1	12/15/16	<200	55.4	1,200	<5.0	55,300	2.0 J	<10.0	<200	<15.0	23,900	288	<10.0	<10.0	24.1 J	16,800	<5.0	99,800	11,400	<20.0	1.7 J	24.0	<20.0
MW-1	02/16/17	164 J	60.2	1,100	<5.0	53,800	<15.0	<10.0	182 J	<15.0	23,100	150	<10.0	3.9 J	20.2 J	17,100	<5.0	102,000	11,700	<20.0	5.8 J	24.9	5.6 J
MW-1	05/15/17	<200	62.3	1,070	<5.0	55,300	<15.0	<10.0	200	<15.0	23,600	136	<10.0	2.8 J	27.8 J	16,600	<5.0	105,000	10,800	<20.0	3.0 J	23.8	<20.0
MW-2	08/05/16	1,700	53.4	400	<5.0	52,100	7.1 J	11.3	1,740	<15.0	22,400	42	1.7 J	4.0 J	66.2 J	19,400	<5.0	100,000	15,500	<20.0	50.0	39.4	7.1 J
MW-2	12/15/16	<200	57.3	404	<5.0	58,400	3.2 J	4.2 J	172 J	<15.0	25,200	3.5 J	<10.0	<10.0	37.4 J	17,000	<5.0	99,800	15,700	<20.0	5.8 J	33.6	<20.0
MW-2	02/16/17	<200	43.2	383	<5.0	51,400	1.9 J	<10.0	<200	<15.0	22,300	<5	<10.0	<10.0	26.8 J	17,300	<5.0	111,000	15,200	<20.0	2.0 J	34.0	<20.0
MW-2	05/15/17	<200	56.7	384	<5.0	56,400	2.5 J	<10.0	<200	<15.0	24,200	<5	<10.0	<10.0	39.1 J	16,400	<5.0	99,800	14,700	<20.0	2.9 J	30.1	<20.0
MW-3	8/5/2016	<200	37.9	1,040	<5.0	58,900	2.8 J	<10.0	<200	<15.0	24,400	4.1 J	1.9 J	<10.0	54.0 J	13,900	<5.0	72,200	15,300	<20.0	6.9 J	22.7	<20.0
MW-3	12/15/2016	107 J	60.6	1,150	<5.0	63,900	3.1 J	4.6 J	<200	<15.0	26,700	3.4 J	<10.0	<10.0	41.0 J	15,600	<5.0	81,600	15,700	<20.0	3.6 J	26.7	<20.0
MW-3	2/16/2017	<200	62.7	895	<5.0	62,700	1.8 J	<10.0	<200	<15.0	26,300	7.1	<10.0	<10.0	21.9 J	16,400	<5.0	77,000	14,900	<20.0	3.3 J	28.5	<20.0
MW-3	5/15/2017	<200	61.6	1,020	<5.0	59,700	15.0	<10.0	<200	<15.0	24,800	3.3 J	<10.0	<10.0	30.1 J	15,200	<5.0	74,400	14,000	<20.0	3.1 J	26.6	<20.0
QA-T	8/5/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QA-T	12/15/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QA-T	2/16/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QA-T	5/15/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3

**Historical Groundwater Metals Data
Former Tidewater Service Station
Phillips 66 Site 5677
Chevron Site 373378
7600 MacArthur Blvd.
Oakland, California**

Sample ID	Date Sampled	Aluminum (µg/L)	Barium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Phosphorus (µg/L)	Silicon (µg/L)	Silver (µg/L)	Sodium (µg/L)	Sulfur (µg/L)	Tin (µg/L)	Titanium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
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Abbreviations and Notes

ID = Identification

MRL = Method reporting limit

µg/L = micrograms per liter

< = Less than MRL

-- = Not applicable

Historical Soil Analytical Results
Former Tidewater Service Station
Phillips 66 Site 5677/Chevron Site 373378
7600 MacArthur Boulevard
Oakland, California

Sample Location	Date	Depth (fbg)	TOG	TPHmo	TPHd	TPHg	VOCs													PAHs													
							Benzene	Toluene	Ethylbenzene	m+p-Xylene	o-Xylene	Acetone	2-Butanone	n-Butylbenzene	sec-Butylbenzene	Isopropylbenzene	p-Isopropyltoluene	n-propylbenzene	Methylene Chloride	1,2,4-Trimethylbenzene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Fluoranthene	Indeno (1,2,3-cd) pyrene	Naphthalene*	Phenanthrene	Pyrene
SFB-RWQCB Residential ESLs* SWRCB LTCP**			5,000	5,000	240	490	0.044	2.9	3.3	2.3	2.3	0.5	--	--	--	--	--	--	0.077	--	13	2.8	0.38	0.038	0.38	27	0.38	3.8	6	0.38	1.2	11	85
			--	--	--	--	1.9	--	21	--	--	--	--	--	--	--	--	--	--	--	--	--	0.063	--	--	--	--	--	--	9.7	--	--	
BH-5	10/2/2014	5	--	--	6.5 J	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/7/2014	10	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	0.003 J	0.003 J	0.004 J	<0.003	<0.003	0.004 J	0.004 J	0.004 J	<0.003	<0.003
	10/7/2014	15	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	0.003 J	0.004 J	0.004 J	<0.003	<0.003	0.004 J	0.004 J	0.004 J	<0.003	<0.003
	10/7/2014	20	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/7/2014	30	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/7/2014	35	727	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.008 J	0.007 J	<0.003	
BH-6	9/30/2014	5	--	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/8/2014	10	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.008 J	0.003 J	<0.003
	10/8/2014	15	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/8/2014	20	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/8/2014	25	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/8/2014	30	<200	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
BH-7	10/1/2014	5	--	--	6.4 J	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	0.005 J	0.008 J	<0.003	0.010 J	0.006 J	<0.003	0.004 J	0.007 J	0.006 J
	10/2/2014	10	--	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	10/2/2014	15	--	--	<3.9	<0.5	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.007	<0.004	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

Abbreviations & Notes

Results reported in milligrams per kilogram (mg/kg)
fbg = Feet below grade
TOG = Total oil and grease by Method 1664A (HEM SGT)
TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method 8015M
TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015M
TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015M
VOCs = Volatile organic compounds by EPA Method 8260; only detected VOCs shown, no other VOCs detected.
PAHs = Polynuclear aromatic hydrocarbons by EPA Method 8270C SIM; only detected PAHs shown, no other PAHs detected.
-- = Not analyzed
1 Samples collected from base of UST pits, depth not reported
2 Higher boiling hydrocarbons (C9-C16); no diesel pattern present
3 Atypical pattern
J = Estimated value between laboratory reporting limit and method detection limit
* San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, Table C-1, May 2013
** State Water Resources Control Board, Low-Threat Closure Policy, Direct Contact and Inhalation Risk Levels, Residential Soil 0-5 fbg

Appendix A

Agency Correspondence



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-657

July 19, 2016

Ms. Jillian Holloway
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
(Sent via E-mail to: JillianHolloway@chevron.com)

Ms. Hong Gardner
632 Via Rialto Road
Oakland, CA 94619
(Sent via E-mail to: honggardner@gmail.com)

Mr. Ed Ralston - Program Manager
Phillips 66 Company
76 Broadway
Sacramento, CA 95818
Sent via e-mail to: Ed.C.Ralston@p66.com

Subject: Technical Report Request for Fuel Leak Case RO0003087 and GeoTracker Global ID
T10000003434, Hong Gardner Property, 7600 MacArthur Boulevard, Oakland, CA 94605-
2944

Ladies and Gentlemen:

Alameda County Department Environmental Health's (ACDEH) has reviewed the case file in addition to the *Site Investigation Report and Closure Request* (Report) dated December 1, 2014 and the *Geophysical Survey, Sanborn Map Review, and Addendum to Work Plan for Site Investigation* (Work Plan) dated April 29, 2014. The reports were prepared and submitted on your behalf by Conestoga-Rovers & Associates, now renamed GHD, in reference to the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACDEH staff review, we have determined that the site does not meet the LTCP General Criteria f (Secondary Source Removal), Media-Specific Criteria for Groundwater, or Media-Specific Criteria for Vapor Intrusion to Indoor Air.

ACDEH requests preparation of a Data Gap Work Plan that is supported by an updated Site Conceptual Model (SCM) to address the following data gaps.

TECHNICAL COMMENTS

- 1. General Criteria f – Secondary Source Has Been Removed to the Extent Practicable –**
“Secondary source” is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described in the policy. “To the extent practicable” means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy.

ACDEH's review of the case files indicates that insufficient data and analysis has been presented to assess compliance with General Criteria f. The Geophysical Report included as Attachment C in the Work Plan describes finding six "High Strength Conductive Pulse Anomalies with Magnetic Gradiometer signature response" including "two relatively large projection anomalies along the back or northeast of the former building area that are found end to end in symmetry". One of the Work Plan's goals was to identify the buried conductive anomalies by hand augering borings in the areas of the anomalies to approximately 5-6 feet below ground surface. The Report, however, does not include the boring logs of the seven hand augered soil borings, discuss the findings of the seven hand augered soil borings, or resolve the origin of the buried anomalies. Consequently, it has not been determined if secondary source remains at the site. Please present a strategy in the Updated Site Conceptual Model (SCM) and Data Gap Work Plan (described in Technical Comment 4 below) to address these Technical Comments and in an appendix include the boring logs of the seven hand augered soil borings. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 4 below.

2. **LTCP Media Specific Criteria for Groundwater** – To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

Our review of the case files indicate that the three groundwater monitoring wells, MW-1 through MW-3, were installed in September and October 2014 and according to the Work Plan, were to be sampled on a quarterly basis for the first year. Grab groundwater samples were obtained from each well during installation, but the wells were not developed or sampled. Therefore, insufficient data and analysis has been presented to support the requisite characteristics of groundwater gradient direction, plume stability, and length. Please present a strategy in the Updated SCM and Data Gap Work Plan discussed in Technical Comment 4 to determine groundwater plume stability and length.

- a. **Monitoring Well Development and Quarterly Sampling and Rose Diagram:** Please develop the three wells and sample for a minimum of four quarters to establish groundwater gradient direction, existence of a plume, plume stability, and length; Please prepare a rose diagram using data from each sampling event to confirm the groundwater gradient consistency and please provide an updated rose diagram with every quarterly sampling event;
- b. **Groundwater Concentration and Elevation Graphs:** Please provide graphs indicating groundwater concentrations and groundwater elevations together with each sampling event;
- c. **Baseline Analytical:** To establish a baseline, on a one-time basis and in the future, on an as needed basis, please analyze all groundwater samples for the full suite of Volatile Organic Compounds (VOCs) and please ensure detection limits are below proposed cleanup levels;
- d. **LTCP Plume Lengths:** To present another line of evidence supporting plume lengths, please prepare a figure indicating the average, 90th percentile, and maximum plume lengths for TPHg, benzene, and MTBE by referencing Table 1: *Plume Characteristics*, in the LTCP's *Technical Justification for Groundwater Media-Specific Criteria*. As shown in Attachment 2, *Sample Figures of Adjacent Buildings with Basements, LTCP Plume Lengths, and Well Survey*, please include the locations of the six water production wells identified in the one mile well survey included in the Report.
- e. **Investigation-Derived Waste:** Please submit the disposal documentation for the soil cuttings, rinsate water, and forth-coming well development and quarterly sampling events to ACDEH and to Geotracker, as described below.

- 3. LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation (unsaturated) zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

Our review of the case files indicates that the risk of vapor intrusion cannot be assessed due to the uncertainty that the secondary source(s) were removed. Therefore, ACDEH requests an evaluation of the media-specific criteria in the updated SCM and Data Gap Work Plan. Please assess potential vapor intrusion to indoor air to the adjacent residences.

If soil vapor wells are proposed, please ensure that your sampling strategy is consistent with the field sampling protocols described in the Department of Toxic Substances Control's Final Vapor Intrusion Guidance (October 2011) and the updated February 22, 2016 San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels Version 3. Consistent with the guidance, ACDEH requires installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations. Please include the soil vapor investigation with the Updated SCM and Data Gap Work Plan requested below.

- 4. Data Gap Investigation Work Plan and Site Conceptual Model** – Please prepare a Data Gap Investigation Work Plan to address the technical comments listed above. Please support the scope of work in the Data Gap Investigation Work Plan with a focused SCM and Data Quality Objectives (DQOs) that relate the data collection to each LTCP criteria.

As a part of updating the SCM, please include a rose diagram and locations of houses and buildings that have basements in the immediate downgradient direction of the site similar to the example provided in Attachment 2, *Sample Figures of Adjacent Buildings with Basements, LTCP Plume Lengths, and Well Survey*.

- 5. Request for information** - The ACDEH case file for the subject site contains only the electronic files listed on our web site at <http://www.acgov.org/ACDEH/lop/ust.htm>. You are requested to submit electronic copies of all other reports including Phase I Reports, data, correspondence, etc. related to environmental investigations for this property not currently contained in our case file by the date specified in the Technical Report Request Section below. ACDEH requests e-mail notification of, and a list of the documents uploaded to Geotracker by the date listed below.
- 6. Electronic Submittal of Information (ESI) Compliance** - Site data and documents are maintained in two separate electronic databases – ACDEH's ftp site and the SWRCB's GeoTracker database. Both databases act as repositories for regulatory directives and reports; however, only GeoTracker has the functionality to store electronic compliance data including analytical laboratory data for soil, vapor and water samples, monitoring well depth-to-water measurements, and surveyed location and elevation data for permanent sampling locations. Although the SWRCB is responsible for the overall operation and maintenance of the GeoTracker System, ACDEH, as lead regulatory agency, is responsible to ensure the GeoTracker database is complete and accurate for sites regulated under ACDEH's Environmental Cleanup Oversight Programs (SWRCB March 2011 document entitled *Electronic Reporting Roles and Responsibilities*).

A review of the case file and the State's GeoTracker database indicates that the site is not in compliance with California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, stating that beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all

groundwater cleanup programs, including the Site Cleanup Program (SCP) cases. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites was required in GeoTracker. At present missing data and documents include, but may not be limited to, EDF submittals, depth to groundwater data (GEO_WELL files), well data (GEO_XY, and GEO_Z files), work plans, and older reports (GEO_REPORT files). Please upload requisite documents and data to GeoTracker. See Attachment 1 and the State's GeoTracker website for further details.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACDEH ftp site (Attention: Karel Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **September 20, 2016** – 3rd Quarterly Groundwater Monitoring and Sampling Report, Well Development, and Waste Disposal
File to be named: RO3087_GWM_R_yyyy-mm-dd
- **September 20, 2016** – Updated Site Conceptual Model and Data Gap Work Plan
File to be named: RO3087_SCM_WP_yyyy-mm-dd
- **January 20, 2017** – 4th Quarterly Monitoring and Sampling Report and Waste Disposal
File to be named: RO3087_GWM_R_yyyy-mm-dd
- **May 20, 2017** – 1st Quarterly Monitoring and Sampling Report and Waste Disposal
File to be named: RO3087_GWM_R_yyyy-mm-dd
- **September 20, 2017** – 2nd Quarterly Monitoring and Sampling Report and Waste Disposal
File to be named: RO3087_GWM_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please send me an e-mail message at karel.detterman@acgov.org or call me at (510) 567-6708.

Sincerely,



Digitally signed by Karel Detterman
DN: cn=Karel Detterman, o, ou,
email=karel.detterman@acgov.org, c=US
Date: 2016.07.19 16:16:17 -07'00'

Karel Detterman, PG
Hazardous Materials Specialist

Enclosures: Attachment 1 – *Responsible Party (ies) Legal Requirements / Obligations and Electronic Report Upload (ftp) Instructions*

Attachment 2, *Sample Figures of Adjacent Buildings with Basements, LTCP Plume Lengths, and Well Survey*

Ladies and Gentlemen
RO0003087
July 19, 2016, Page 5

cc: Matthew Davis, LG, 732 Broadway Suite 301, Tacoma, WA 98402 (Sent via E-mail to: matthew.davis@ghd.com)

Donald Schwartz, Esq., 7960-B Soquel Drive, No. 291, Aptos, CA 95003 (Sent via E-mail to: donald@lawofficedonaldschwartz.com)

Dilan Roe, ACDEH (Sent via E-mail to: dilan.roe@acgov.org)

Karel Detterman, ACDEH (Sent via E-mail to: karel.detterman@acgov.org)

Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	REVISION DATE: May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT 2

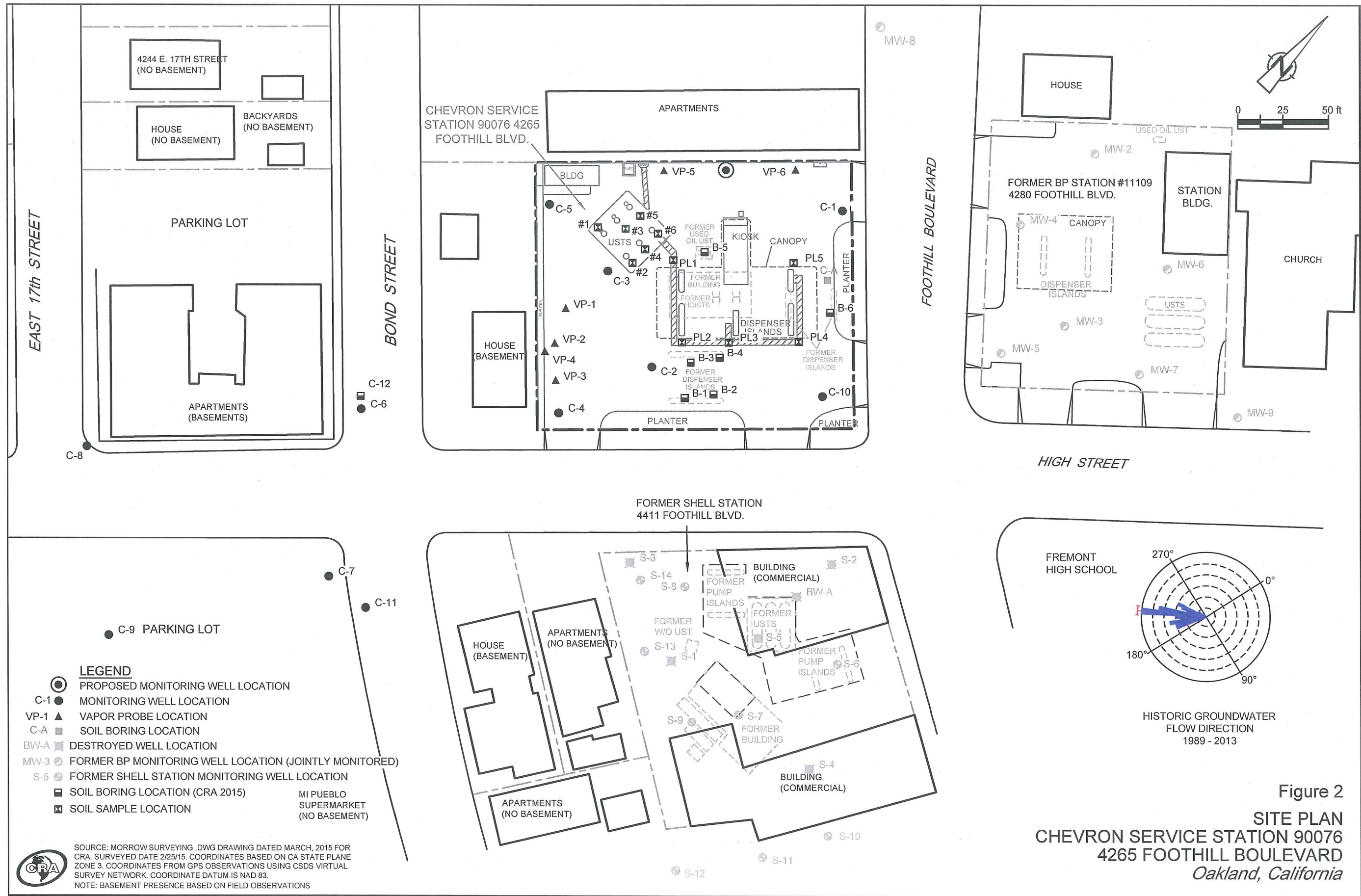


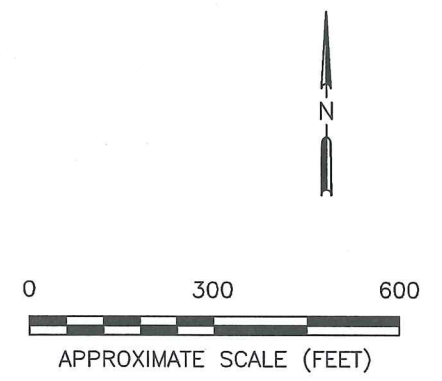
Figure 2
 SITE PLAN
 CHEVRON SERVICE STATION 90076
 4265 FOOTHILL BOULEVARD
 Oakland, California




SOURCE: MORROW SURVEYING .DWG DRAWING DATED MARCH, 2015 FOR CRA. SURVEYED DATE 2/25/15. COORDINATES BASED ON CA STATE PLANE ZONE 3. COORDINATES FROM GPS OBSERVATIONS USING CSDS VIRTUAL SURVEY NETWORK. COORDINATE DATUM IS NAD 83.
 NOTE: BASEMENT PRESENCE BASED ON FIELD OBSERVATIONS



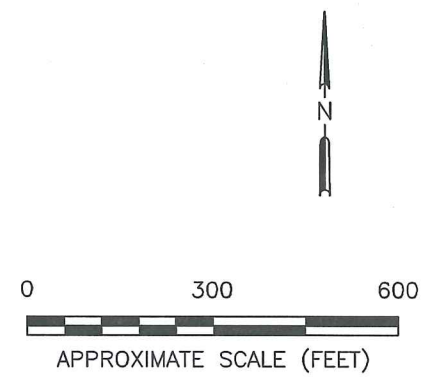
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- PROPERTIES WITH WELLS WITHIN 1/4-MILE OF SITE
 - MEDICAL OFFICES WITHIN 1/4-MILE OF SITE
 - ◆ SCHOOLS WITHIN 1/4-MILE OF SITE
 - ⊕ ACTIVE GROUNDWATER MONITORING WELL LOCATION
 - ⊖ DESTROYED GROUNDWATER MONITORING WELL LOCATION
 - AVERAGE PLUME LENGTH (5 ug/L)
 - 90TH PERCENTILE PLUME LENGTH (5 ug/L)
 - MAXIMUM PLUME LENGTH (5 ug/L)




 15575 LOS GATOS BLVD, BUILDING C LOS GATOS, CALIFORNIA 95032 PHONE: (408) 356-6124 FAX: (408) 356-6138	FOR: THE GOODYEAR TIRE AND RUBBER CO.		POTENTIAL BENZENE PLUME LENGTHS BASED ON LTCP TECHNICAL JUSTIFICATION GOODYEAR DEX #9578 3430 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA		FIGURE: 10
	JOB NUMBER: 185702872	DRAWN BY: KAM	CHECKED BY: KM	APPROVED BY: GM	DATE: 01/08/15



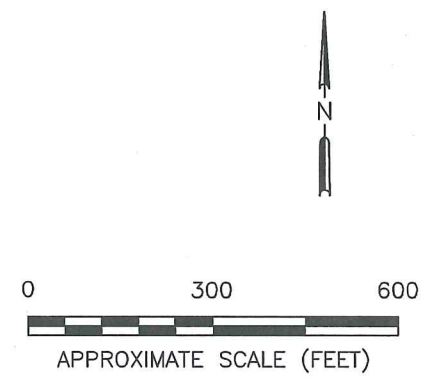
- LEGEND:**
- PROPERTIES WITH WELLS WITHIN 1/4-MILE OF SITE
 - MEDICAL OFFICES WITHIN 1/4-MILE OF SITE
 - ◆ SCHOOLS WITHIN 1/4-MILE OF SITE
 - ⊕ ACTIVE GROUNDWATER MONITORING WELL LOCATION
 - ⊖ DESTROYED GROUNDWATER MONITORING WELL LOCATION
 - AVERAGE PLUME LENGTH (5 ug/L)
 - 90TH PERCENTILE PLUME LENGTH (5 ug/L)
 - MAXIMUM PLUME LENGTH (5 ug/L)




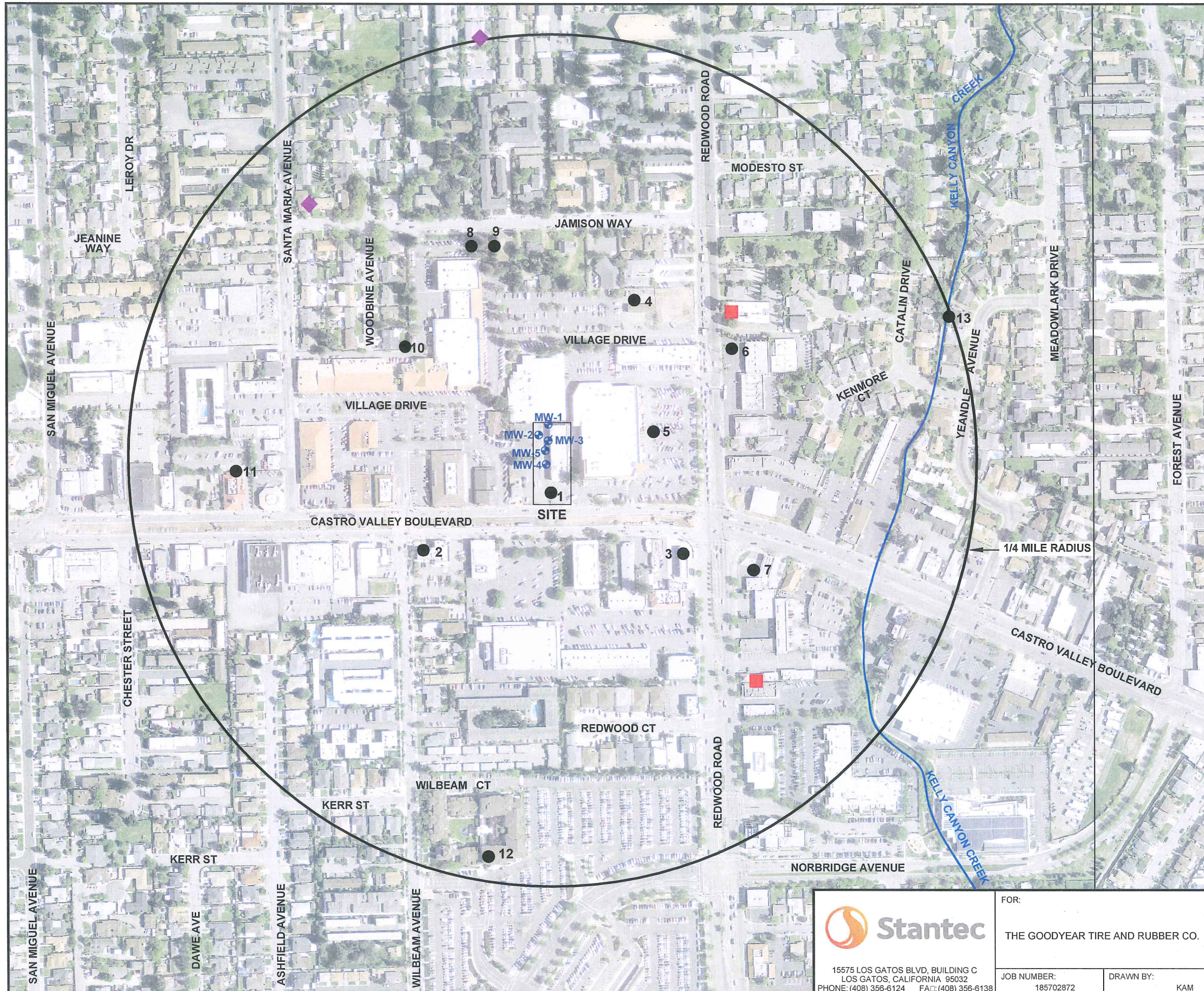
 15575 LOS GATOS BLVD, BUILDING C LOS GATOS, CALIFORNIA 95032 PHONE: (408) 356-6124 FAX: (408) 356-6138	FOR: THE GOODYEAR TIRE AND RUBBER CO.		POTENTIAL MTBE PLUME LENGTHS BASED ON LTCP TECHNICAL JUSTIFICATION GOODYEAR DEX #9578 3430 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA		FIGURE: 11
	JOB NUMBER: 185702872	DRAWN BY: KAM	CHECKED BY: KM	APPROVED BY: GM	DATE: 01/08/15



- LEGEND:**
- PROPERTIES WITH WELLS WITHIN 1/4-MILE OF SITE
 - MEDICAL OFFICES WITHIN 1/4-MILE OF SITE
 - ◆ SCHOOLS WITHIN 1/4-MILE OF SITE
 - ⊕ ACTIVE GROUNDWATER MONITORING WELL LOCATION
 - ⊗ DESTROYED GROUNDWATER MONITORING WELL LOCATION
 - AVERAGE PLUME LENGTH (100 ug/L)
 - 90TH PERCENTILE PLUME LENGTH (100 ug/L)
 - MAXIMUM PLUME LENGTH (100 ug/L)

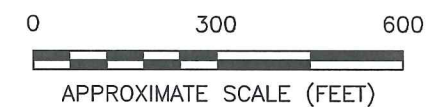



 15575 LOS GATOS BLVD, BUILDING C LOS GATOS, CALIFORNIA 95032 PHONE: (408) 356-6124 FAX: (408) 356-6138	FOR: THE GOODYEAR TIRE AND RUBBER CO.		POTENTIAL TPHg PLUME LENGTHS BASED ON LTCP TECHNICAL JUSTIFICATION GOODYEAR DEX #9578 3430 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA		FIGURE: 12
	JOB NUMBER: 185702872	DRAWN BY: KAM	CHECKED BY: KM	APPROVED BY: GM	DATE: 01/08/15



LEGEND:

- PROPERTIES WITH WELLS WITHIN 1/4-MILE OF SITE
- MEDICAL OFFICES WITHIN 1/4-MILE OF SITE
- ◆ SCHOOLS WITHIN 1/4-MILE OF SITE
- ⊕ ACTIVE GROUNDWATER MONITORING WELL LOCATION
- ⊗ DESTROYED GROUNDWATER MONITORING WELL LOCATION



 15575 LOS GATOS BLVD, BUILDING C LOS GATOS, CALIFORNIA 95032 PHONE: (408) 356-6124 FAX: (408) 356-6138	FOR:		WELL & SENSITIVE RECEPTOR SURVEY GOODYEAR DEX #9578 3430 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA		FIGURE:
	THE GOODYEAR TIRE AND RUBBER CO.				
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	
185702872	KAM	KM	GM	01/08/15	

APPENDIX C
Wells Survey Results
Former Goodyear Tire Store
3430 Castro Valley Boulevard
Castro Valley, CA

	Owner/Site Name	Well Type	Drill Date	Total Depth	Address	Approximate Distance/Direction From Site
1	Merritt Tire Sale	Monitoring Wells	Sept 94, Dec 96, Aug 12	16-20	3430 Castro Valley Blvd.	0
2	CHEVRON #9-4930 / VALLEY CAR WASH	Monitoring Well	Oct-93	20	3369 Castro Valley Blvd.	460 SW
3	Ted Simas (XTRA OIL DBA SHELL STATION)	Monitoring Wells	Feb 90 & Aug 97	18-20	3495 Castro Valley Blvd.	510 SE
4	R. T. Nahas Company (UNOCAL)	Monitoring Wells	Dec 89	25-30	20405 Redwood Rd.	520 NE
5	R. T. Nahas Company	Monitoring Wells	Apr 92	29-37	20629 Redwood Rd	310 E
6	Exxon Oil	Unknown	?	?	20450 Redwood Rd.	650 NE
7	BP #11105 / SHELL 17-1445	Monitoring Well	Sept 92, July 95, Aug 09,	15-30	3519 Castro Valley Blvd.	700 SE
8	R. T. Nahas Company	Domestic/Destroyed	Dec 75	56	3559 JAMISON WAY	700 NNW
9	R. T. Nahas Company	Destroyed	?	20 & 25	3533 JAMISON WAY	725 NNW
10	Horseshoe Drilling	Destroyed	Apr 96	20	20342 Woodbine Ave	600 NW
11	Mitzi Stockel	BOR/MON	Apr-90	8-23	3234 Castro Valley Blvd	1000 W
12	BART	Monitoring Well	Feb 93	16	21000 Wilbeam Ave.	1225 SSW
13	Robert D Rousey	Irrigation	May-77	28	20283 Yeandle Ave.	1325 ENE

Appendix B

Low-Threat Closure Policy Checklist

Site meets the criteria of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.¹

<p><u>General Criteria</u> General criteria that must be satisfied by all candidate sites:</p> <p>Is the unauthorized release located within the service area of a public water system?</p> <p>Does the unauthorized release consist only of petroleum?</p> <p>Has the unauthorized (“primary”) release from the UST system been stopped?</p> <p>Has free product been removed to the maximum extent practicable?</p> <p>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</p> <p>Has secondary source been removed to the extent practicable?</p> <p>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</p> <p>Does nuisance as defined by Water Code section 13050 exist at the site?</p> <p>Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria:</p> <p>1. Groundwater: To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:</p> <p>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</p> <p>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?</p> <p>If YES, check applicable class: <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p>

¹ Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

<p>For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p>2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies.</p> <p>Is the site an active commercial petroleum fueling facility? Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.</p> <p>a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4? If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4</p> <p>b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?</p> <p>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

3. Direct Contact and Outdoor Air Exposure:

The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c).

a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?

Yes No NA

b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?

Yes No NA

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?

Yes No NA

Appendix C

Site Conceptual Model

**Table 4-1
Site Conceptual Model**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Site	Soil beneath the site consists primarily of clay with varying, minor percentages of sand and gravel. Groundwater is encountered at approximately 33 to 34 feet below grade.		
Geology and Hydrogeology	Regional	Lithology in the vicinity of the site consists of Quaternary alluvium and Franciscan Formation chert, shale, greenstone, and sandstone. Groundwater in the Oakland area typically flows along topography, which slopes down toward the San Francisco Bay to the west. Quarterly groundwater monitoring data indicate a flow direct to the west-northwest.		
Surface Water Bodies		Arroyo Viejo Creek is located approximately 0.4 mile southwest of the site. It flows into the Oakland Inner Harbor. San Francisco Bay is 2.3 miles to the southwest.		
Nearby Wells		A review of DWR and ACPWA records indicate that 6 water production wells are located within 1 mile of the site. The nearest well is located approximately 1,980 feet west of the site.		
Release Source and Volume		Suspected sources include one 1,000-gallon gasoline UST, one 300-gallon gasoline UST, and two hydraulic lifts. The USTs were abandoned and filled with concrete circa 1970. The USTs and hydraulic lifts were removed in January 2007. The volume of release is not known.		
LNAPL		No LNAPL detected		
Source Removal Activities		Two USTs and two hydraulic lifts were removed in January 2007. Fate of over-excavated soil is unknown based on available reports, but hydrocarbon concentrations remaining in soil are not indicative a remaining residual source onsite. Additionally, hand auger borings were completed in October 2014 areas where potential USTs could be present based on a geophysical investigation. No tanks or metal scraps were found in any of the hand augured borings.		

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Contaminants of Concern		<p>Contaminants of concern for the site include petroleum hydrocarbon constituents, primarily TPHg, TPHd, and TPHmo.</p> <p>The presence of these constituents is consistent with the site history as a gasoline service station.</p>		
Petroleum Hydrocarbons in Soil		<p>The soil near the former location of the hydraulic lift contains TPHd, TPHmo, and TOG range hydrocarbons and the soil near the former location of the 300-gallon UST contains TPHg range hydrocarbons. Hydrocarbon concentrations detected in soil are primarily below SFB-RWQCB ESLs and do not pose a significant threat to human health or the environment.</p>		
Petroleum Hydrocarbons in Groundwater		<p>TPHg was detected in a grab sample from only one boring, MW-1 at 480 µg /L, and TPHd was detected in grab samples from four borings at concentrations ranging from 75 to 620 µg /L; no benzene or methyl tert-butyl ether (MTBE) was detected in groundwater.</p> <p>Following development and sampling of monitoring wells MW-1 through MW-3, four quarters of groundwater monitoring were completed. Only TPHd was detected in well MW-1 at 260 µg /L during the third quarter 2016 sampling event. No other petroleum constituents were detected above the SFB-RWQCB ESLs.</p> <p>Although TPHd was detected at concentrations exceeding the RWQCB ESLs of 100 µg/L, the results indicate that the remaining dissolved hydrocarbon plume is limited in extent. In previous work conducted in 2007, TPHg and TPHd range hydrocarbons in soil had atypical chromatogram patterns not indicative of gasoline or diesel. Given that the former USTs were abandoned in the 1970s, remaining hydrocarbon mass is likely weathered and degraded. The remaining TPHd hydrocarbons in groundwater, along with heavier (longer-chain) hydrocarbons detected in the TPH as motor oil and total oil and grease ranges beneath the site are not as soluble as unweathered product, and plume lengths are not as significant.¹ In technical guidance provided by the SWRCB for the LTCP, the average TPHg plume length based on empirical data is approximately 250 feet where sufficient dissolved TPHg-range</p>		

¹ State Water Resources Control Board, Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances (Separation Distances) to Receptors, July 12, 2011.

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		hydrocarbons, including benzene and MTBE, are present to migrate. The characteristics of the petroleum hydrocarbons detected beneath the site suggest that the hydrocarbon plume is likely stable and less than 250 feet in length.		
Vapor Intrusion to Indoor Air		The LTCP media specific criteria for soil vapor intrusion define 4 potential exposure scenarios for vapor intrusion to indoor air. Based on the results of the recent four quarters of groundwater sampling and soil data from previous investigations, site-specific data meet the requirements of scenario 3A, in which depth to groundwater is ≥ 5 fbg, dissolved benzene in groundwater is < 100 $\mu\text{g/L}$, and total TPH in the upper 5 feet of soil is < 100 mg/kg.		
Risk Evaluation		The site is a former gasoline service station and is currently vacant. There are no structures on the property except for foundations of former buildings. The owner hopes to develop the property for mixed commercial-residential use in the future, but there are currently no plans for development. Current site conditions pose a low risk, and the site meets the criteria of the SWRCB LTCP.		