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November 18, 2016

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Ref. No.: 581000

From: GHD

GHD Tel: 510.420.3369

Subject: 800 Franklin Street, Oakland, CA Fuel Leak Case No. RO0000196

No. of Copies	Description/Title	Drawing No./ Document Ref.	Issue
1	Conceptual Site Model and Case Closure Request	25	

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Remarks:

Should you have any questions regarding the contents of the document, please contact Bryan Fong at (510) 420-3369. Thank You.

Copy to: Ms. Peggy Chiu

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With respect to:

Conceptual Site Model and Case Closure Request
Dated November 18, 2016
Fuel Leak Case No. RO0000196

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.

Tommy Chiu
Mr. Tommy Chiu

November 18, 2016
Date

Conceptual Site Model and Low-Threat Closure Request

800 Franklin Street
Oakland, California

Prepared for: Chen Tso "Tommy" Chiu

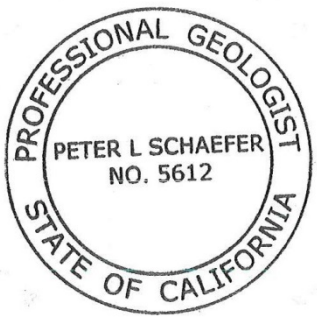
GHD | 5900 Hollis Street, Suite A Emeryville California 94608
581000 | Report No 25 | November 18 2016

Conceptual Site Model and Low-Threat Closure Request

800 Franklin Street
Oakland, California

Prepared for: Chen Tso "Tommy" Chiu

Bryan Fong



Peter Schaefer, PG

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1. Introduction

On behalf of Mr. Tommy Chiu, GHD Services Inc. (GHD) has prepared the following *Conceptual Site Model and Low-Threat Closure Request* for the property located at 800 Franklin Street in Oakland, California to demonstrate that this site meets closure criteria specified in the California State Water Quality Control Board's (SWQCB's) Low-Threat Underground Storage Tank Case Closure Policy (the Policy).

GHD is submitting this report as discussed in the Chiu family representative's and GHD's August 22, 2016 meeting with Alameda County Department of Environmental Health (ACEH) to discuss the path forward to closure. ACEH's September 14, 2016 electronic correspondence summarize the meeting and requested historical tables and figures, information on the down-gradient Bay Area Rapid Transit (BART) sump, and an additional round of groundwater analysis for volatile organic compounds (VOCs) by October 30, 2016. The VOC data were included in GHD's October 28, 2016 *Groundwater Monitoring Report – Second Half 2016* and the historical tables and figures and BART sump information were provided separately on October 28, 2016. A copy of the ACEH's September 14, 2016 electronic correspondence is provided in **Appendix A**.

2. Site Background

2.1 Site Description

The site is located in a mixed commercial/residential area, at the eastern corner of the intersection of 8th and Franklin Streets in Oakland, California (**Figure 1**). It is at an elevation of approximately 35 feet above mean sea level. The site presently has a two-story commercial building with a footprint over the entire lot (**Figure 2**). Retail stores currently operate on the ground floor with commercial offices above.

2.2 Site History

Prior to 1989 the site operated as a gasoline service station. Previous investigations indicate that five underground storage tanks (USTs) previously existed on site including two 6,000-gallon gasoline USTs, one 550-gallon waste oil, and one 1,000-gallon solvent UST. These USTs were installed circa 19701 (MES, 1989a) and subsequently removed in 1989. The 6,000-gallon USTs were formerly located in the northwest portion of the site, and the 550-gallon and 1,000-gallon USTs were formerly located underneath the sidewalk along 8th Street on the south side of the site. The fifth former UST is presumed to have been located on the eastern portion of the site and removed prior to 1988; however, no documentation has been discovered regarding the size, former contents, and removal of the UST.

1 Miller Environmental Company (MEC), *Work Plan for Subsurface Investigation and Remediation of Contaminated Soil*, August 24, 1989

2.3 Regional Geology and Hydrogeology

The site is located within the Coast Range geomorphic province of California. In general, the Coast Range province consists of Jurassic eugeosynclinal basement rocks and Cretaceous and Cenozoic sedimentary and volcanic rocks that have been faulted and folded with a northwest-southeast trend. The site lies within the East Bay Plain Subbasin. Sediments beneath the site consist of coalescing alluvial deposits from the Oakland Berkeley Hills. According to the United States Geologic Survey (USGS) Professional Paper 943,[2] the site is located on quaternary age alluvial deposits consisting of medium-grained, unconsolidated, moderately sorted, and permeable, fine sand, silt, and clayey silt with thin beds of coarse sand.

According to California Department of Water Resources (DWR) Bulletin 118,[3] the East Bay Plain Subbasin is a northwest trending alluvial basin, bounded on the north by San Pablo Bay, on the east by the contact with Franciscan basement rock, and on the south by the Nile Cone Groundwater Basin. The East Bay Plain Subbasin extends beneath the San Francisco Bay to the west. The East Bay Plain Subbasin aquifer system consists of unconsolidated sediments of Quaternary age. Throughout most of the East Bay Plain in the region of the site, groundwater flows from east to west, towards San Francisco Bay and typically correlates with the site topography.

From 1860 to 1930 groundwater from the East Bay Plain was the major water supply of the East Bay, before Sierra water was imported into the area. By the late 1920's the groundwater supply was too small to meet the growing population and the wells often became contaminated by seepage or saltwater intrusion. By 1929, East Bay Municipal Utility District (EBMUD) provided imported water to East Bay communities via the Mokelumne Aqueduct. This high-quality, reliable supply soon eliminated the need for local groundwater wells. In 1996, the San Francisco Bay Regional Water Quality Control Board (RWQCB) reviewed General Plans for Oakland and other communities. They found that Oakland did not have any plans to develop local groundwater resources for drinking water, due to existing or potential saltwater intrusion, contamination, or poor or limited quality.[4]

2.4 Local Geology and Hydrogeology

Based on previous subsurface investigations, subsurface soil beneath the site consists of fine to medium-grained sand and silty sand to approximately 36 feet below grade (fbg),. Some sand-clay mixtures were encountered in boring B-4 on the western portion of the site from 2 to 6 fbg and northwest of the site from 15 to 18 fbg in boring MW-6. Geotechnical soil boring logs obtained from nearby Bay Area Rapid Transit District (BART) identified fine to medium-grained sand to 40 fbg underlain by a low permeability, hard, silty clay from approximately 40 to 70 fbg.

An unconfined water-bearing zone is present beneath the site at 20 fbg and is approximately 20 feet thick. Since 1989, the groundwater table has fluctuated approximately 4 feet from approximately

2 Edward J. Helley, K.R. Lajoie, W.E. Spangle, and M.L. Blair; USGS Professional Paper 943; *Flatland deposits of the San Francisco Bay region, California; their geology and engineering properties, and their importance to comprehensive planning*; Modified February 2, 2012
3 DWR Bulletin 118, *California's Groundwater*, Updated 2003
4 RWQCB Groundwater Committee; *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report for Alameda and Contra Costa Counties, CA;* June 1999

20 to 24 fbg. Groundwater beneath the site flows predominantly towards the northwest. The observed flow direction may be influenced by BART tunnels, which run east west and vary in depth from approximately 27 to 32 fbg beneath 8th Street and Franklin Street and by potential groundwater pumping from the BART pump station no. 2 approximately 550 feet to the southwest of the site.

Boring logs are presented in **Appendix B** and site cross-sections are presented on **Figures 3 and 4**.

2.5 Surface Water Bodies

The nearest surface water bodies to the site are Oakland Inner Harbor located 2,300 feet to the southwest and Lake Merritt approximately 3,000 feet to the east.

3. Site History

Several phases of soil and groundwater assessments have been conducted at the site since the USTs were removed in 1989. Soil sampling, boring, and well locations are presented on **Figure 2**. Well construction details and soil, groundwater, and soil vapor analytical results from these investigations are presented in **Tables 1 through 5**. Boring logs are presented in **Appendix B**.

1988 Subsurface Investigation: In May 1988, Frank Lee & Associates (FLA) performed a geotechnical investigation for the subject site. FLA collected three soil samples from 1 to 4 fbg. No total oil and grease (TOG), total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, total xylenes (BTEX), or other volatile organic compounds (VOCs) were detected in the samples. FLA's June 13, 1988 *Soil and Foundation Investigation* report presents investigation details.

1988 Subsurface Investigation: In August 1988, LW Environmental Services, Inc. (LWES) performed a soil investigation. MEC's November 3, 1989 *Report on Subsurface Investigation and Remediation of Contaminated Soil* report states that up to 8,340 milligrams per kilogram (mg/kg) TPHg were detected in soil samples LWES collected in the vicinity of the then-existing USTs.

1989 UST Removal: In June 1989, the Robert J. Miller Company removed four USTs: two 6,000-gallon gasoline tanks, one 550-gallon waste-oil tank, and one 1,000-gallon solvent tank. The Traverse Group Inc. (TGI) collected soil samples from beneath each tank and visually inspected the condition of each tank upon removal. No obvious pitting or corrosion was reported. The two gasoline USTs were removed from the northwestern corner of the site. The waste-oil and solvent USTs were removed from an area in the sidewalk south of the site, along 8th Street. Approximately 10 cubic yards of soil was deemed contaminated by TGI and stockpiled on site. Soil that TGI determined to be clean or only slightly impacted was stockpiled separately on site. Soil samples collected from the excavations contained up to 4,000 mg/kg total petroleum hydrocarbons as waste oil (TPHwo), 430 mg/kg total petroleum hydrocarbons as diesel (TPHd), 3,100 mg/kg TPHg, 7.5 mg/kg benzene, 87 mg/kg toluene, 59 mg/kg ethylbenzene, 290 mg/kg total xylenes, and semi-volatile organic compounds (SVOCs) 0.50 mg/kg bis(2-ethylhexyl)phthalate, 28 mg/kg naphthalene, and 23 mg/kg 2-methyl-naphthalene. No other VOCs or SVOCs were detected in the

samples. All of the sample locations were subsequently over excavated. The highest levels of fuel hydrocarbon contamination were detected in the northeast corner of the northeastern excavation and in the waste oil/solvent UST excavation. MEC's August 24, 1989 *Work Plan for Subsurface Investigation and Remediation of Contaminated Soil* presents UST removal analytical results.

1989 Over-Excavation and Subsurface Investigation: In September and October 1989, MEC performed a preliminary investigation to determine whether fuel detected in soil during UST excavation activities impacted groundwater. Two locations were re-excavated to approximately 15 fbg and approximately 25 cubic yards of additional contaminated soil was removed. Confirmation soil samples were collected from the over-excavation sidewalls and bottoms. Soil samples collected from the northwestern over-excavation area contained up to 80 mg/kg TPHwo, 2.3 mg/kg TPHg, 0.05 mg/kg toluene, and 0.14 mg/kg xylenes. TPHd, benzene, and ethylbenzene were not detected in these soil samples. Soil samples collected from the waste oil/solvent over-excavation area contained up to 400 mg/kg TPHwo, 250 mg/kg TPHd, 10,000 mg/kg TPHg, 50 mg/kg benzene, 210 mg/kg toluene, 270 mg/kg ethylbenzene, and 54 mg/kg total xylenes. Further over-excavation in the waste oil/solvent excavation was not possible due to the proximity of 8th Street and interfering utilities along the southern edge of this excavation. An estimated 32 cubic yards of contaminated soil was hauled to a Class I disposal facility. The northwestern excavation was backfilled with a combination of clean fill and re-used "uncontaminated soil" from the initial excavation of the two gasoline USTs. The waste oil/solvent excavation was backfilled with clean fill.

MEC installed monitoring wells (MW-1, MW-2, and MW-3) to investigate groundwater conditions. Soil samples collected from the well borings contained up to 50 mg/kg TOG, 50 mg/kg TPHwo, 170 mg/kg TPHd, 7,800 mg/kg TPHg, 52 mg/kg benzene, 220 mg/kg toluene, 77 mg/kg ethylbenzene, and 400 mg/kg total xylenes. MEC's November 3, 1989 *Report on Subsurface Investigation and Remediation of Contaminated Soil* details this work.

1991 Site Redevelopment: Construction of the existing building on site began in early 1991.

1991 Subsurface Investigation: In September and October 1991, MEC drilled two boreholes (B1 and B2) and installed two groundwater monitoring wells (MW-4 and MW-5) to further define the lateral extent of offsite hydrocarbon contamination. Soil samples collected from the soil borings and well borings contained up to 190 mg/kg total recoverable petroleum hydrocarbons, 50 mg/kg TPHwo, 160 mg/kg TPHd, 2,900 mg/kg TPHg, 60 mg/kg toluene, 0.21 mg/kg ethylbenzene, and 0.60 mg/kg total xylenes. No total petroleum hydrocarbons as motor oil (TPHmo) or benzene were detected in the soil samples. On October 31, 1991, approximately 1/8 inch of floating product was observed in well MW-2. MEC's January 20, 1992 *Report on Subsurface Investigation Related to Well Installation and Boring* provides investigation details.

1997 Subsurface Investigation: In May 1997, Associated Terra Consultants, Inc. (ATC) installed one monitoring well (MW-6). Soil samples were collected from the well boring contained up to 9.1 mg/kg TPHd, 0.050 mg/kg benzene, 0.011 mg/kg toluene, 0.023 mg/kg ethylbenzene, 0.099 mg/kg total xylenes, and 0.0050 mg/kg methyl tertiary-butyl ether (MTBE). No TOG or TPHg were detected in the soil samples. ATC's October 19, 1997 *Environmental Monitoring Report May 1997* details the well installation.

2006 Subsurface Investigation: In November 2006, Cambria Environmental Technology, Inc. (Cambria) installed two soil vapor probes (VP-1 and VP-2) in the city sidewalk along Franklin and 8th Streets. Soil samples collected from the soil vapor probe borings at approximately 5 fbg contained up to 6.9 mg/kg TPHmo and 4.0 mg/kg TPHd. No TPHg, BTEX, MTBE, 1,2-dichloroethane (1,2-DCA) or chloroform were detected in the soil samples.

In December 2006, Cambria collected vapor samples from VP-1 and VP-2. No benzene was detected in the soil vapor samples. Cambria's February 27, 2007 *Site Assessment Report* presents vapor probe installation and sampling details.

2007 Well Destruction and Subsurface Investigations: In January 2007, Cambria destroyed well MW-3, which had been clogged with debris since 2004, by pressure grouting. In February 2007, Cambria installed a replacement groundwater monitoring well (MW-3A). Cambria's February 23, 2007 *Site Assessment Report* details the well destruction and reinstallation.

In July 2007, Conestoga-Rovers & Associates (CRA) collected a second round of vapor samples from soil vapor wells VP-1 and VP-2. The soil vapor samples contained 9.6 micrograms per cubic meter ($\mu g/m^3$) 2-butanone (methyl ethyl ketone), 12 $\mu g/m^3$ 2,2,4-trimethylpentane, 34 $\mu g/m^3$ freon 12, 27 $\mu g/m^3$ acetone, and 8.9 $\mu g/m^3$ tetrachloroethene (PCE). No BTEX or other VOCs were detected in the samples. CRA's October 4, 2007 *Soil Vapor Sampling Report* provides vapor sampling results.

2011 Subsurface Investigation: In March 2011, CRA drilled three Hydropunch™ borings (B-7 through B-9) to further characterize the hydrocarbon plume down-gradient of the source area. The grab groundwater sample from boring B-9 contained 3.0 mg/L toluene, no other constituents of concern (COCs) were detected in the grab groundwater samples. CRA's July 18, 2012 *Down-Gradient Site Characterization Report* provides investigation details.

2012 Subsurface Investigation: In May 2012 CRA installed a groundwater monitoring well (MW-7) to further characterize the hydrocarbon plume down-gradient of the source area. CRA's July 8, 2012 *Down-Gradient Site Characterization Report* details the well installation.

2015 Subsurface Investigation: In December 2015, GHD installed and sampled two sub-slab soil vapor probes (SSVP-1 and SSVP-2) and re-sampled existing soil vapor probes (VP-1 and VP-2) to assess vapor intrusion risk to indoor air within the on-site building. Soil vapor samples contained up to 1.2 $\mu g/m^3$ benzene, 28 $\mu g/m^3$ toluene, 2.8 $\mu g/m^3$ m,p-xylenes, 0.55 $\mu g/m^3$ naphthalene, and 6.8 $\mu g/m^3$ PCE. No TPHg, ethylbenzene, o-xylenes, trichloroethene, cis-1,2-dichloroethene (cis-1,2-DCE); or vinyl chloride were detected in the samples. Based on the sample results, it was determined that no potential risk for vapor intrusion to the site building exists. GHD's January 19, 2016 *Soil Gas Assessment Report* presents investigation data.

Groundwater Monitoring: Periodic groundwater monitoring has been conducted since October 1989. Groundwater is currently monitored on a semi-annual basis.

4. Conceptual Site Model (CSM)

4.1 Source of Contamination

The primary COCs at the site are residual TPHg and BTEX in groundwater and soil from the former gasoline USTs located in the northwest portion of the site and the former USTs located in the sidewalk along 8th Street. According to historical reports, the former USTs located in the sidewalk along 8th Street were used for storing waste oil and solvents. However, soil analytical data from this UST excavation suggests that gasoline was likely stored and/or released from the former 1,000-gallon tank.

TPHd was also detected in soil and groundwater; however, none of the USTs were recorded to store diesel. Therefore, TPHd concentrations are most likely related to gasoline constituents that elute within the TPHd range. Quarterly monitoring laboratory analytical notes consistently report that only gasoline-range compounds are significant, which supports this hypothesis.

4.1.1 Hydrocarbon Distribution in Soil

Soil samples have been collected for chemical analysis from five soil borings; six groundwater monitoring well locations and two vapor probes located on and off the site. Petroleum hydrocarbons have been primarily detected at depths ranging from 21 to 26 fbg under the sidewalk and street west-northwest of the former 6,000-gallon gasoline USTs and also from 15 to 26 fbg in the vicinity of the former 550-gallon and 1,000-gallon USTs located in the sidewalk along 8th Street. TPHg concentrations range from 120 to 2,200 milligrams per kilogram (mg/kg) in the vicinity of the two former 6,000-gallon USTs and range from 4.1 to 10,000 mg/kg in the vicinity of the former 550-gallon and 1,000-gallon USTs.

Hydrocarbon-impacted soil in the vicinity of the former 6,000-gallon USTs appears to extend offsite beneath the sidewalk and Franklin Street to the northwest. Hydrocarbon-impacted soil in the vicinity of the former 550-gallon and 1,000-gallon USTs appears to extend off site beneath the sidewalk and 8th Street to the southwest and south. The extent of hydrocarbon-impacted soil in the vicinity of the former 6,000-gallon USTs is adequately defined laterally and vertically. The extent of hydrocarbon-impacted soil in the vicinity of the former 550-gallon and 1,000-gallon USTs is adequately defined laterally, but is undefined vertically below groundwater, beyond 26 fbg. However, based on the lower specific gravity of petroleum hydrocarbons relative to the specific gravity of water, the vertical extent of hydrocarbon-impacted soil below groundwater beyond 26 fbg is likely limited. Soil analytical data is presented in **Table 2**. Historical soil sampling locations are shown on **Figure 2**. Soil analytical data is presented on **Figures 3 through 7**.

4.1.2 Hydrocarbon Distribution in Groundwater

Groundwater at the site has been characterized by periodic sampling of seven monitoring wells. Depth to groundwater ranges from approximately 20 to 25 fbg. During the September 13, 2016 sampling event, TPHg was only detected in monitoring wells MW-2 and MW-3A at concentrations of 37,000 and 26,000 μg/L, respectively, and benzene was only detected in these wells at 1,900 and 3,000 μg/L, respectively. Elevated concentrations of TPHg and benzene in groundwater appear to

form a comingled plume that extends from the two former UST source areas towards well MW-6. The elongated plume shape is consistent with the localized groundwater flow direction (**Figure 8**). The downgradient extent of the hydrocarbon plume is defined by MW-7 and MW-5. Concrete-lined BART tunnels in the immediate vicinity may be acting as a potential barrier to plume migration and pumping from the BART sump located near the southern corner of Broadway and 7th Street likely influences groundwater gradient. Water samples collected from the BART sump by Shell Oil Products US as part of their investigation of the former Shell station located at 461 8th Street, Oakland demonstrate that the groundwater plumes from this site do not significantly impact groundwater pumped from the BART sump (**Appendix C**). BART installation records indicate that the top of the BART tunnels ranges from approximately 27 to 32 fbg under 8th Street and Franklin Street. Further down gradient, the BART tunnels may rise to the same elevation as the groundwater table. The hydrocarbon plume appears to be adequately defined in all directions. **Figure 9** presents an isoconcentration contour map for benzene in groundwater. Historical groundwater data is presented in **Tables 3 and 4.**

4.1.3 Plume Stability and Concentration Trends

Trend analysis indicates that the dissolved-phase hydrocarbon concentration trends in MW-2 are decreasing, and trends in MW-3/3A are flat. Dissolved-phase hydrocarbon concentrations in down-gradient well MW-6 are highly variable and no trend is readily observed, however, based on monitoring data from down-gradient well MW-5 and MW-7 the groundwater plume generally appears to be stable. Trend analysis graphs of TPHg and benzene in MW-2, MW-3/3A and MW-6 are presented in **Appendix D**.

4.1.4 Hydrocarbon Distribution in Soil Vapor

Two rounds of soil vapor samples were collected at a depth of approximately 5 fbg from soil vapor probes VP-1 and VP-2 located adjacent to the former UST source areas. No concentrations were detected above regulatory screening levels. Soil vapor results are presented on **Table 5** and summarized on **Figure 10**.

4.2 Sensitive Receptors

4.2.1 Designated Beneficial Groundwater Use

The site lies within the East Bay Plain Sub-basin 2-9.04. In general, groundwater in this basin has been designated beneficial for municipal and domestic water supply, industrial process and service water supply, and agricultural water supply; however as stated above, due to existing or potential saltwater intrusion, contamination, or poor or limited quality, Oakland has no plans to use shallow groundwater for drinking water. All drinking water for the City of Oakland is supplied by East Bay Municipal Utility District. Therefore, the groundwater beneath the site should be considered as a non-drinking water resource.

4.2.2 Well and Surface Water Survey Results

GHD completed a sensitive receptor survey in 2014, which included reviewing DWR well records within a 1,000-ft radius of the site. One irrigation well was identified approximately 1,000 north of

the site; however this well was not found using SWRCB's GeoTracker Groundwater Ambient Monitoring and Assessment Program feature. The irrigation well location is shown on **Figure 1.** No municipal or domestic wells were identified within the 1,000-ft radius well survey.

The nearest surface water bodies to the site are Oakland Inner Harbor located 2,500 feet to the southwest and Lake Merritt approximately 3,000 feet to the east.

4.2.3 Preferential Flow Pathways

During previous investigations, shallow subsurface utilities less than 7 fbg were identified in the vicinity of the site, beneath the sidewalk. Due to the depth to groundwater (20 fbg), subsurface utilities are not likely to be acting as preferential pathways for hydrocarbon plume migration. Due to the depth to residual impacted soil (20 fbg) and favorable soil vapor sample results, subsurface utilities are not likely to be acting as preferential pathways for soil vapor migration.

As stated above, groundwater beneath the site flows predominantly towards the northwest (**Figure 8**) and is likely influenced by dewatering from the BART sump located near the southern corner of Broadway and 7th Street. The observed flow direction may be influenced by BART tunnels, which run east west and vary in depth from approximately 27 to 32 fbg beneath 8th Street and Franklin Street, and/or by potential groundwater pumping from the BART pump station no. 2 approximately 550 feet to the southwest of the site.

4.2.4 Likelihood of Impact to Wells

Oakland does not use groundwater for drinking water purposes; therefore, there is no likelihood of impact to a municipal supply well. Only one irrigation well was identified approximately 1,000 feet north and cross-gradient. Based on the cross-gradient location and the intervening distance between this well and the site it is unlikely to be impacted by residual hydrocarbons from the site.

4.2.5 Likelihood of Impact to Surface Water

Based on the northwest groundwater flow direction; the likelihood of any impact to the up-gradient Lake Merritt surface water body is very low. Based on the long intervening distance from the site to Oakland Inner Harbor (2,500 feet); the likelihood of any impact to the Oakland Inner Harbor is very low.

4.3 Risk Assessment

4.3.1 Conceptual Site Exposure Model

The site consists of a two story commercial building that encompasses the entire property. The surrounding properties consist of commercial businesses.

Elevated TPHg and benzene concentrations in soil have been detected between 21 to 26 fbg on the northwestern side of the site beneath the sidewalk and Franklin Street and also on the western side of the site beneath the sidewalk and along 8th Street. A groundwater plume lies beneath the northwest and south edges of the site and extends west-northwesterly parallel to the groundwater flow direction.

4.3.2 Exposure Pathways – On-Site Human Receptors

Potential exposure pathways on Site include direct contact with hydrocarbon impacted soil, ingestion of hydrocarbon impacted groundwater, and inhalation of hydrocarbon vapors volatizing from soil and groundwater.

Direct Contact with Hydrocarbon-Impacted Soil

Hydrocarbon-impacted soil exists between 21 and 26 fbg and the entire site consists of a slab-on-grade commercial building, bounded by concrete sidewalks and paved streets. Direct contact to impacted surficial soil is not considered a complete exposure pathway.

Ingestion of Hydrocarbon-Impacted Groundwater

Drinking water for the City of Oakland is provided by EBMUD and no municipal or domestic drinking water wells have been identified in the site vicinity, therefore, contact with or ingestion of groundwater is not considered a complete exposure pathway.

Inhalation of Hydrocarbon Vapors

Hydrocarbon impacted soil and groundwater is located approximately 21 to 26 fbg. Little to no hydrocarbons were detected in shallow soil vapor samples. Based on soil vapor investigation results, inhalation of soil vapor does not appear to be a significant exposure pathway.

Exposure Pathways – Off-Site Human Receptors

The site is located in a mixed commercial/residential area and is bounded to the north and east by residential and commercial properties, to the west by Franklin Street, and to the south by 8th Street. An internet search was conducted for potential off site sensitive receptors within a 1,000-ft radius of the Site. Three schools/day care facilities were identified within the radius: Oakland Charter High School located approximately 950 ft northeast and cross-gradient of the Site; Shoong Family Chinese Cultural Center located approximately 600 ft east and up-gradient of the Site; and Family Bridges located approximately 900 ft southeast and up-gradient of the site. No hospitals or senior care centers were identified within the 1,000-ft search radius (Google, 2016). As noted above, surface water bodies are unlikely to be impacted; therefore, water used for recreation is not considered a complete exposure pathway.

The extent of the groundwater plume is adequately defined, as a result there does not appear to be any potential exposure to the identified off-site sensitive receptors.

4.3.3 Human Health Risk Assessment

The following table compares the maximum hydrocarbon concentration in soil vapor data from December 2015 with RWQCB environmental screening levels (ESLs)5 and Policy media-specific soil vapor criteria. Soil vapor analytical results are also presented in **Table 5** and summarized on **Figure 10**.

5 RWQCB, *User's Guide: Derivation and Application of ESLs - Interim Final,* February 2016

Table A Comparison of Maximum Soil Vapor Concentrations, ESLs and Policy

Analyte	Maximum Concentration ($\mu g/m^3$)	Shallow Soil Vapor ESL Residential Scenario[1] ($\mu g/m^3$)	Shallow Soil Vapor ESL Commercial/Industrial Scenario[1] ($\mu g/m^3$)	Policy Media-Specific Soil Vapor Criteria[2] ($\mu g/m^3$)
TPHg	<510	50,000	100,000	--
Benzene	1.2[3]	48	420	280,000
Toluene	28	160,000	1,300,000	--
Ethylbenzene	<1.4	560	4,900	3,600,000
m,p-Xylene[2]	2.8[3]	52,000	440,000	--
o-Xylene	<1.4	52,000	440,000	--
Naphthalene	0.55[3]	41	360	310,000
PCE	6.8[3]	240	2,100	--
TCE	<2.1	240	3,000	--
cis-1,2-DCE	<0.72	4,200	35,000	--
Vinyl Chloride	<0.61	4.7	160	--

TCE = Trichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
-- = No Policy soil vapor criteria published
1 - ESL Table T2-1: Tier 2 Input and Output
2 – Policy Appendix 4: Scenario 4 – Direct Measurement of Soil Gas Concentrations – With Bioattenuation Zone - Commercial
3 – Estimated concentration below laboratory reporting limit

4.3.4 Identified Human Exceedances

Gasoline-range constituents detected in soil vapor did not exceeded any of the risk based ESLs or Policy media-specific soil vapor criteria. Based on the low soil vapor concentrations, the hydrocarbon impacts beneath the site do not appear to pose a threat to human health.

4.3.5 Identified Ecological Exceedances

Based on the low likelihood of there being any impact to surface water, an ecological risk assessment has not been performed and therefore no ecological exceedances have been identified.

5. Policy Evaluation

5.1 General Criteria Requirements

The site meets all the Policy's eight general criteria. Provided below is a brief synopsis of how the listed general criteria requirements of the Policy have been satisfied at the site.

a. *The unauthorized release is located within the service area of a public water system*

Satisfied: The EBMUD provides public water service to the City of Oakland. The site is within and connected to the EBMUD public water system.

b. *The unauthorized release consists only of petroleum*

Satisfied: The site's unauthorized release was identified as a gasoline fuel release related to a leaking UST(s) and associated underground piping.

c. *The unauthorized ("primary") release from the UST system has been stopped*

Satisfied: All USTs and impacted tank backfill have been removed from the site. In June 1989, two 6,000-gallon gasoline USTs, one 550-gallon waste oil, and one 1,000-gallon solvent UST were removed along with 10 cubic yards of impacted soil. In September-October 1989, an additional 22 cubic yards of hydrocarbon-impacted soil was removed from the former 6,000-gallon UST excavation. The fifth former UST is presumed to have been located on the eastern portion of the site and to have been removed prior to 1988; however, no documentation has been discovered regarding the size, former contents, or removal.

d. *Free product has been removed to the maximum extent practicable*

Satisfied: No product has been observed at the site since October 1992. Well MW-2 reportedly contained approximately 1/8-inch of free product on October 31, 19916 and ¼- inch of free product on October 21, 19927.

e. *A conceptual Site model has been developed*

Satisfied: A CSM has been completed by GHD and is summarized above in Section 4.0.

f. *Secondary source removal has been addressed*

Satisfied: The site setting and use supports that secondary source has been removed to the extent practicable.

In October 2014, GHD informally evaluated the following remedial options: in situ chemical oxidation (ISCO), in situ enhanced biodegradation (ISEB), excavation, dual-phase extraction (DPE), and air sparge/soil vapor extraction (AS/SVE). The evaluation was based on technical feasibility, cost effectiveness, and environmental sustainability. A summary of the evaluation of remedial options is presented below.

6 MEC, *Report on Subsurface Investigation Related to Well Installation and Borings*, January 20, 1992
7 KDM Environmental, Inc., *Quarterly Monitoring of Wells – Third Quarter 1992*, November 13, 1992

The site is based in the heart of Chinatown in Oakland. The surrounding businesses are primarily open food markets and restaurants. There is heavy vehicular and pedestrian traffic. Hundreds of pedestrians and vehicles pass through the area each day and into the evening hours. The site is completely occupied by the building footprint; there is no open space to accommodate equipment, materials, etc. The adjacent sidewalk and street parking area are potentially available for short-term/temporary work, but is hazardous in consideration of the pedestrian and vehicular traffic. Last, there are residential apartments on the upper floors of the adjacent buildings. Night activities would need to adhere to the City of Oakland noise ordinance, and consider potential complaints by residences as a public nuisance

In Situ Chemical Oxidation (ISCO): Conceptual design – Inject a chemical oxidant into existing wells MW-2 and MW-3A, and an additional injection well near soil sample EX-2A. This option is not recommended for the following reasons:

- Public and worker safety – As noted there is heavy pedestrian and vehicular traffic. Proper storage and handling of the ISCO chemicals is critical for assuring public safety. The businesses, sidewalks, and possibly sections of the streets would need to be closed.
- Secondary source material remains in the vadose zone (EX-2A) and ISCO is most effective when contacting source material in saturated conditions. In this situation, there is no assurance that the oxidant will effectively contact the source material.
- Effectiveness and cost uncertainty – Although the soil formation is conducive for distribution and dispersion of a chemical oxidant, the effectiveness is contingent on sufficient contact with source material and the limited competing organics. CRA conducted ISCO at a nearby site (8th Street and Broadway). The formation accepted the chemical well, but the treatment did not meet expectations even after additional injections were conducted and proved to be not cost-effective.

In Situ Enhanced Biodegradation (ISEB): Conceptual design – Inject an amendment (e.g. electron acceptor solution) into existing wells MW-2 and MW-3A, and an additional injection well near soil sample EX-2A. This option is not recommended for the following reasons:

- Secondary source material remains in the vadose zone (EX-2A). ISEB is most effective for remediating residual dissolved-phase impacts and does not address source material. Source material above the water table will continue to feed dissolved-phase impact and negate any enhanced bio-activity.

Excavation: Excavation to remove the residual source material would be effective if possible. The following considerations most likely prohibit implementing excavation:

- Excavation presents a significant hazard to workers and the general public given the heavy pedestrian and vehicular traffic.
- Utilities in the sidewalk likely prohibit accessing the residual source material. Temporarily re-routing utilities may not be feasible or permitted and would be cost-prohibitive if allowed.
- The excavation and possible utility interrupt will negatively affect the community.

- Source material reside at 15 fbg and deeper. Shoring would be required to maintain structural integrity for surrounding buildings and infrastructure. Substantial clean overburden would need to be removed and handled to remove the source material.
- Dewatering may be required to get source material in saturated soils. As previously noted, Merritt Sand yields substantial groundwater and there is no space to accommodate a dewatering system.
- In general, excavation is not an environmentally sustainable approach since it just relocates the source material (to a landfill). This effort consumes substantial resources for no net environmental benefit since the impacts are already naturally attenuating at the site.

Given these considerations, excavation is not deemed a feasible or cost-effective approach at this time. If the site undergoes development in the future, the residual source material may become more readily accessible at that time. However, at this time given that no receptors are at risk, excavation is not recommended.

Dual-Phase Extraction (DPE): The site constraints cannot accommodate a fixed DPE system. There is no space to accommodate the equipment. Short-term DPE events could be conducted, but again the site constraints dictate the effectiveness of the events. The use of standard DPE equipment for conducting such events is not considered feasible. The equipment (oxidizer, tank, generator, propane tank, etc.) would need to be staged in the street and would present a hazard and nuisance to the general public. This may not even be permissible by the City of Oakland. Therefore, the only viable conceptual design for DPE events would be using a vacuum truck. However this option is not recommended for the following reasons:

- The soil formation (Merritt Sands) will yield a substantial amount of groundwater, which limits the technical feasibility of DPE and specifically given the depth to water and with using a vacuum truck. A vacuum truck typically cannot effectively lift water from deeper than 25 to 30 fbg. The groundwater table ranges from 20 to 24 fbg. Given that the Merritt Sands will yield substantial water, the vacuum truck's pump will likely expend its energy removing water and not vapor-phase hydrocarbon mass. Vapor-phase hydrocarbon mass removal dictates DPE effectiveness; dissolve-phase hydrocarbon mass removal is comparatively negligible. Given such, DPE is not considered technically feasible.

Air Sparge /Soil Vapor Extraction (AS/SVE): Conceptual design – Install AS and SVE wells near MW-2 and MW-3A. Install conveyance piping from these wells under sidewalk, stubbing-up at the building, and mount on the wall to run to the roof. Install a small air compressor for AS and blower for SVE on the roof. Also install a vapor treatment system (carbon or small oxidizer) for vapor treatment. AS/SVE is the only feasible active remedial approach. The Merritt Sand is favorable for AS and SVE. SVE would effectively remove the residual source material in the vadose zone and capture vapors from AS. AS would volatilize hydrocarbon mass from saturated soil and groundwater. AS would also promote biodegradation by increasing oxygen levels in the subsurface. Some limiting factors with implementing AS/SVE at the site are:

- City of Oakland would need to allow/permit roof-top equipment installation and operation.

- Structural integrity of roof – The roof would need to be assessed to determine if it could bear the weight of the necessary equipment.
- Roof access – Safe and secure access to the roof would need to be confirmed to accommodate installation, operation, and maintenance.
- Equipment placement – An encroachment permit to crane equipment on to the roof would be required to install the equipment. The crane would need to be staged in the street and require street closure. If carbon treatment is used, then this may occur repeatedly when the carbon media requires replacement.
- Given the surrounding residential apartments, operation of the AS/SVE system would be limited to daytime hours, which would increase the operational duration.

The cost to install AS/SVE wells is estimated at $60,000. Installation of the system is estimated at $100,000, but may be more expensive depending on the roof considerations. Annual operation is estimated to cost $50,000. It is assumed that one year of operation would meet the Policy requirement for secondary source removal. Groundwater monitoring costs $15,000 per year. Assuming one year of monitoring during operation and one year of post-remediation monitoring, the total cost is $30,000. System demolition is estimated to cost $40,000 and well destructions by pressure-grouting are estimated at $75,000. The total life-cycle cost equates to at least $355,000. The relative high life-cycle cost of this remedial option is not justified by a risk to any receptors.

Furthermore, given that no receptors are at risk from the residual petroleum hydrocarbon impacts in soil and groundwater, implementation of a AS/SVE system would not be an environmentally sustainable approach based on electrical power usage, excessive travel/transport, and equipment and manpower usage to implement, operate, and maintain the system; and unwarranted waste generation and disposal (carbon consumption). Increased noise pollution would result from operation. Noise generation from the SVE blower(s) and oxidizer (as warranted) would likely generate complaints from adjacent residents potentially forcing the potential repeated shutdown of the equipment, and/or sporadic operation of the system. Greenhouse gas emissions would result from electricity usage, catalytic destruction of the recovered soil vapors, and vehicle use for the implementation, operation, maintenance, and decommissioning of the system. The design, implementation, operation, maintenance, and decommissioning of a system to remove a minimal amount of residual petroleum based mass, in effect trades one environmental issue for another.

Based on the evaluation of remedial alternatives presented above, no active remedial options are considered technically feasible, cost-effective, and/or environmentally sustainable. The site setting and use weighs heavily in this conclusion and supports that secondary source has been removed to the extent practicable.

g. *Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15.*

Satisfied: Soil and groundwater have been tested for MTBE and the results uploaded to Geotracker. No MTBE concentrations have been detected above laboratory reporting limits for any soil samples collected at the site with the exception of one verification sample (B-6-6B) at a concentration of 0.0050 mg/kg. No MTBE is currently detected in groundwater.

h. *A "nuisance" as defined by Water Code section 13050 does not exist at the Site.*

Satisfied: Water Code section 13050 defines "nuisance" as anything which meets **all** of the following requirements:

1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with comfortable enjoyment of the property

2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal

3) Occurs during, or as result of, the treatment or disposal of wastes

Based on the existing site conditions and the previous environmental site assessment work, a nuisance meeting the three criteria listed above does not exist at the Site.

5.2 Media-Specific Criteria Requirements

5.2.1 Groundwater-Specific Requirements

It is a fundamental tenet of the Policy that if the closure criteria described in the Policy are satisfied at a release site, WQOs will be attained through natural attenuation within a reasonable amount of time, prior to the need for the any affected groundwater. If a site has groundwater with a designated beneficial use which is affected by an unauthorized release, to satisfy the media-specific criteria for groundwater stated in the Policy, the contaminant plume that exceeds WQOs 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. The site falls into the Policy's groundwater-specific criteria Class 3. The rationale for meeting the three requirements of Class 3 is provided below:

(a) *The contaminant plume that exceeds water quality objectives is less than 250 feet in length.*

Satisfied: The current benzene plume exceeding WQOs is approximately 75 feet in length (see **Figure 9**) and the plume length of other COCs is less than 250 ft in length. Benzene in groundwater has been delineated in all directions and is adequately defined down gradient by monitoring wells MW-5, MW-7, and Hydropunch™ borings B-7, B-8, and B-9.

(b) *There is no free product.*

Satisfied: As stated above, no free product has been measured in any of the monitoring wells since October 1992.

(c) *The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.*

Satisfied: Based on well survey results, no municipal supply wells or surface water bodies are located within a 1,000 ft radius from the defined plume boundary. The identified irrigation well located 1,000 ft to the north is plotted on **Figure 1**.

(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.*

Satisfied: In the third quarter 2016 sampling event, benzene was only detected in two wells (1,900 µg/l in MW-6 and 3,000 µg/l in MW-2). As shown in the trend graph in Appendix D, the benzene concentrations in well MW-3A are steadily declining. MTBE was not detected in any of the wells during the third quarter 2016 sampling event.

5.2.2 Petroleum Vapor Intrusion to Indoor Air

The site meets the Policy's Scenario 4 (with bioattenuation zone) criteria for vapor intrusion. Soil and soil vapor samples were collected at 5.5 and 5 fbg, respectively, from sampling locations located along the western site building perimeter (VP-1) and along the southern site building perimeter (VP-2). Oxygen concentrations in soil vapor ranged from 18% (VP-1) to 19% (VP-2). In 1988, soil samples were collected beneath the current site building at 1 fbg (B-2-1) and 4 fbg (B-3-4). TPH is less than 100 mg/kg in the top 5 feet of soil.

Soil vapor results were compared to the Policy criteria, *Appendix 4, Scenario 4 – Direct Measurement of Soil Gas Concentrations – With Bioattenuation Zone*.

Table B Comparison of Soil Vapor Results To Policy Criteria

Analyte	Frequency of Detection	Highest Conc. (µg/m^3)	Soil Vapor Criteria (µg/m^3) With Bioattenuation Zone	
			Residential	Commercial
Benzene	0/2 (0%)	<0.96	<85,000	<280,000
Ethylbenzene	0/2 (0%)	<1.4	<1,100,000	<3,600,000
Naphthalene	0/2 (0%)	<0.15	<93,000	<310,000

As shown above in Table B, benzene, ethylbenzene, and naphthalene concentrations did not exceed either the residential or commercial Policy criteria.

Additionally, two sub-slab probes were installed inside the site building (SSVP-1 and SSVP-2) and sub-slab soil vapor samples were collected at 1 fbg. Benzene and ethylbenzene were not detected in the sub-slab soil vapor samples. Naphthalene was detected at an estimated concentration of 0.55 µg/m^3 in SSVP-2.

Soil vapor results are presented in **Table 5.** Based on the results, residual hydrocarbons do not pose a vapor intrusion risk.

5.2.3 Direct Contact and Outdoor Air Exposure

The site meets the Policy criteria for direct contact and outdoor air exposure. As above, the site is completely paved and the residual hydrocarbon mass is deeper than 10 fbg based on extensive soil sampling across the site.

Soil samples from borings VP-1 and VP-2 (Cambria, 2006), and historical samples from well installations and subsurface investigations between 1989 and 1997 confirm that benzene and ethylbenzene concentrations in soil between 0 and 10 fbg are below residential, commercial, and utility worker criteria. A comparison of the soil analytical results and Policy closure criteria for direct contact with contaminated soil are summarized below in Table C.

Table C Comparision of Soil Analytial To Direct Contact Policy Criteria

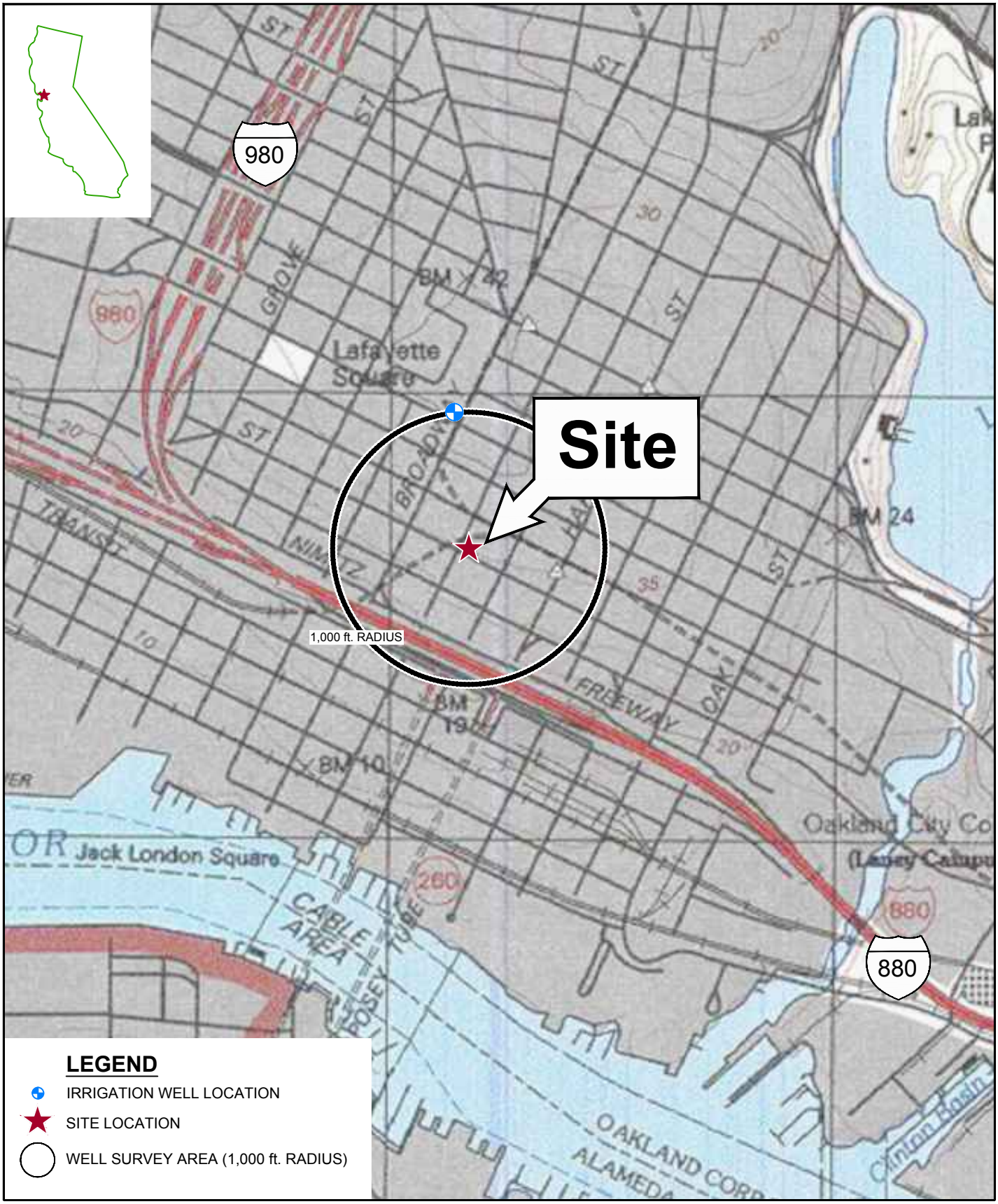
Chemical	Maximum Concentration (mg/kg)		Policy Soil Criteria (mg/kg)		
	0 to 5 fbg	5 to 10 fbg	Residential 0 to 5 fbg	Commercial 0 to 5 fbg	Utility Worker 0 to 10 fbg
Benzene	<0.1	<0.040	1.9	8.2	14
Ethylbenzene	<0.1	<0.040	21	89	314
Naphthalene	N/A	N/A	9.7	45	219

There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent (%) benzene and 0.25% naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the site are below naphthalene thresholds in Table 1 of the Policy. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

6. Recommendations

Site conditions meet the general and media-specific criteria established in the Policy, and therefore pose a low threat to human health, safety, and the environment, as well as satisfy the case closure requirements of Health and Safety Code section 25296.10 and Resolution 92-49 that requires that cleanup goals be met within a reasonable time frame. Therefore, on behalf of Tommy Chiu, GHD respectfully requests environmental case closure.

Figures



0 500 1000ft

CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

581000-061

Oct 28, 2016

VICINITY MAP

Figure 1

CAD File: 581000-061(025)GN-SO001.dwg

LEGEND

- BART SUMP
- MONITORING WELL LOCATION
- APPROXIMATE BART SOIL BORING (BART 1963)
- HYDROPUNCH SOIL BORING LOCATION
- SOIL BORING LOCATION (FRANK LEE AND ASSOCIATES, 1988)
- B-1 SOIL BORING LOCATION (MILLER ENVIRONMENTAL CO., 1991)
- VP-1 SOIL VAPOR PROBE (CAMBRIA, 2006)
- EX1-A SOIL SAMPLE LOCATION
- SUB-SLAB SOIL GAS PROBE
- SOIL SAMPLE LOCATION (THE TRAVERSE GROUP, INC., 1989)

0°
270°
90°
180°
Historical Groundwater Flow Direction 4Q89 to 3Q16

8TH STREET
BROADWAY
EIGHTH STREET
FRANKLIN STREET

Driveway
Former Dispenser Island (typ.)
Excavation Area
Former Fuel Lines
Former Shell Station
461 8th St.
705-721 Broadway
Freight Elevator
Building
Bradford Pharmacy
445 8th St.
B.A.R.T. Parking Lot
American Asian Home Care, Inc.
704 Broadway
Former Chevron Station
BART SUMP No. 2
BART Easement surveyed by Virgil Chavez on March 4, 2011

MW-7
B-9
B-8
BART boring No. 14
B-7
MW-6
MW-5
MW-4
BART boring No. 15
B-2

MW-3A
MW-1
MW-2
VP-1
T3
EX1-C
B-3
T4
T1
T2
EX1-B
B-2
EX1-A
SSVP-1
SSVP-2
B-4
VP-2
B-1
W1
W2A
EX2-A
ST
S2
EX2-B
B-1
former 6,000 gal. gasoline USTs
Current Two Story Building
former dispenser island
possible former UST location (unknown size/contents)
former 550 gal. waste oil UST
former 1,000 gal. solvent UST

0 20 50ft

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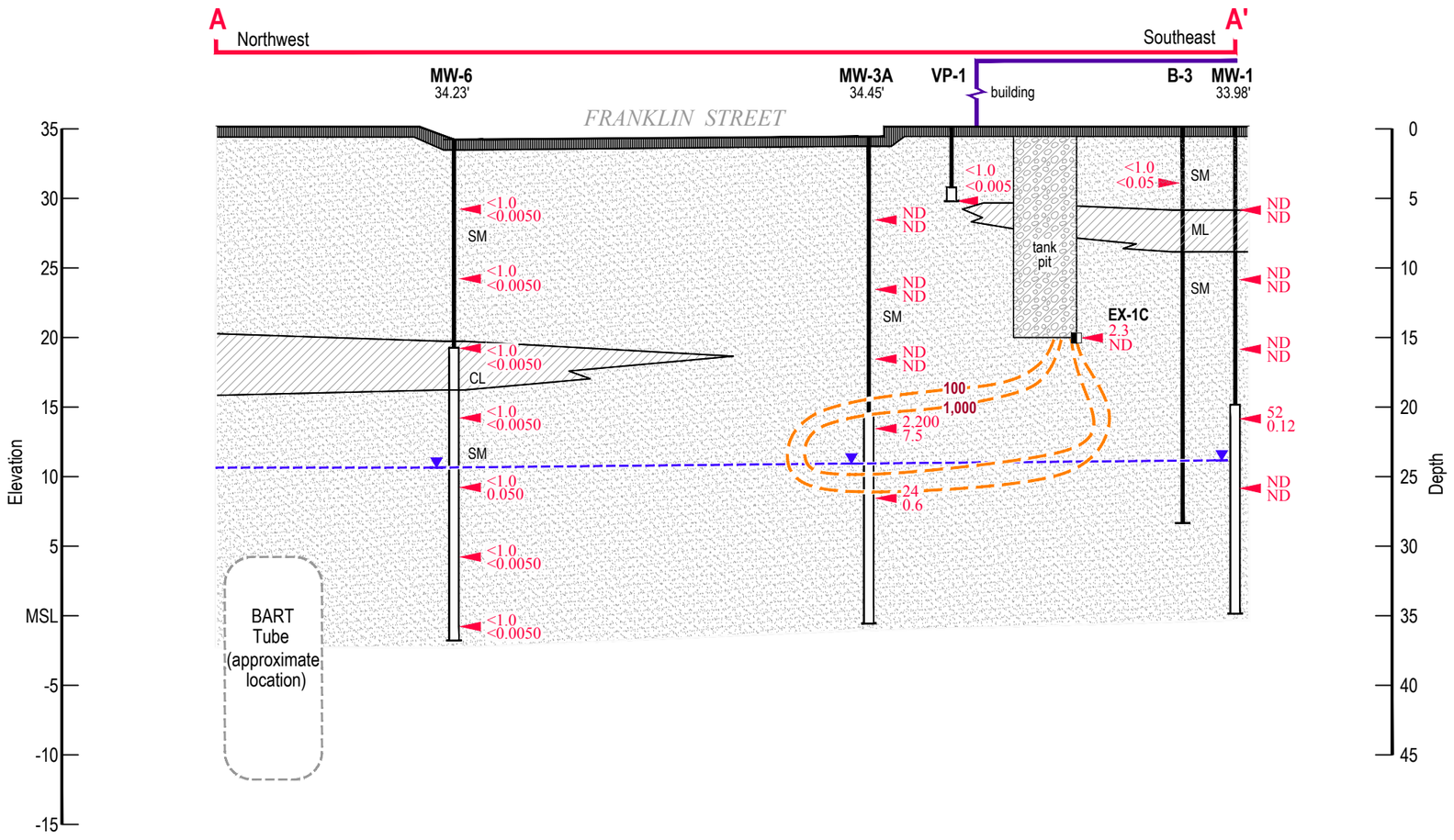
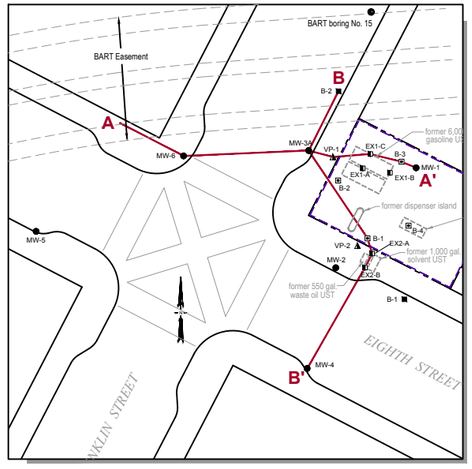
SITE PLAN

581000-061
Oct 28, 2016

Figure 2

CAD File: 581000-061(025)GN-SO002.DWG





LEGEND

- = Asphalt / Concrete
- = Low Permeability Soils
  - CL - Clay
  - ML - Inorganic silts, very fine sands, silty or clayey fine sands, clayey silts, with slight plasticity
- = Moderate Permeability Soils
  - SM - Silty Sand
  - SP - Poorly Graded Sand
- = Fill (Tank Pit)
- TPHg isoconcentration contour in soil, in milligrams per kilogram (mg/kg)
- TPHg / Benzene — Hydrocarbon concentrations in Soil, in milligrams per kilogram (mg/kg)

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring
ND — Not Detected
Approximate sample location
Depth of Groundwater - 09/13/16 (unless otherwise noted)

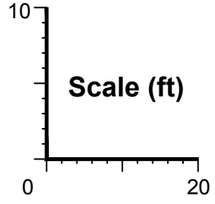
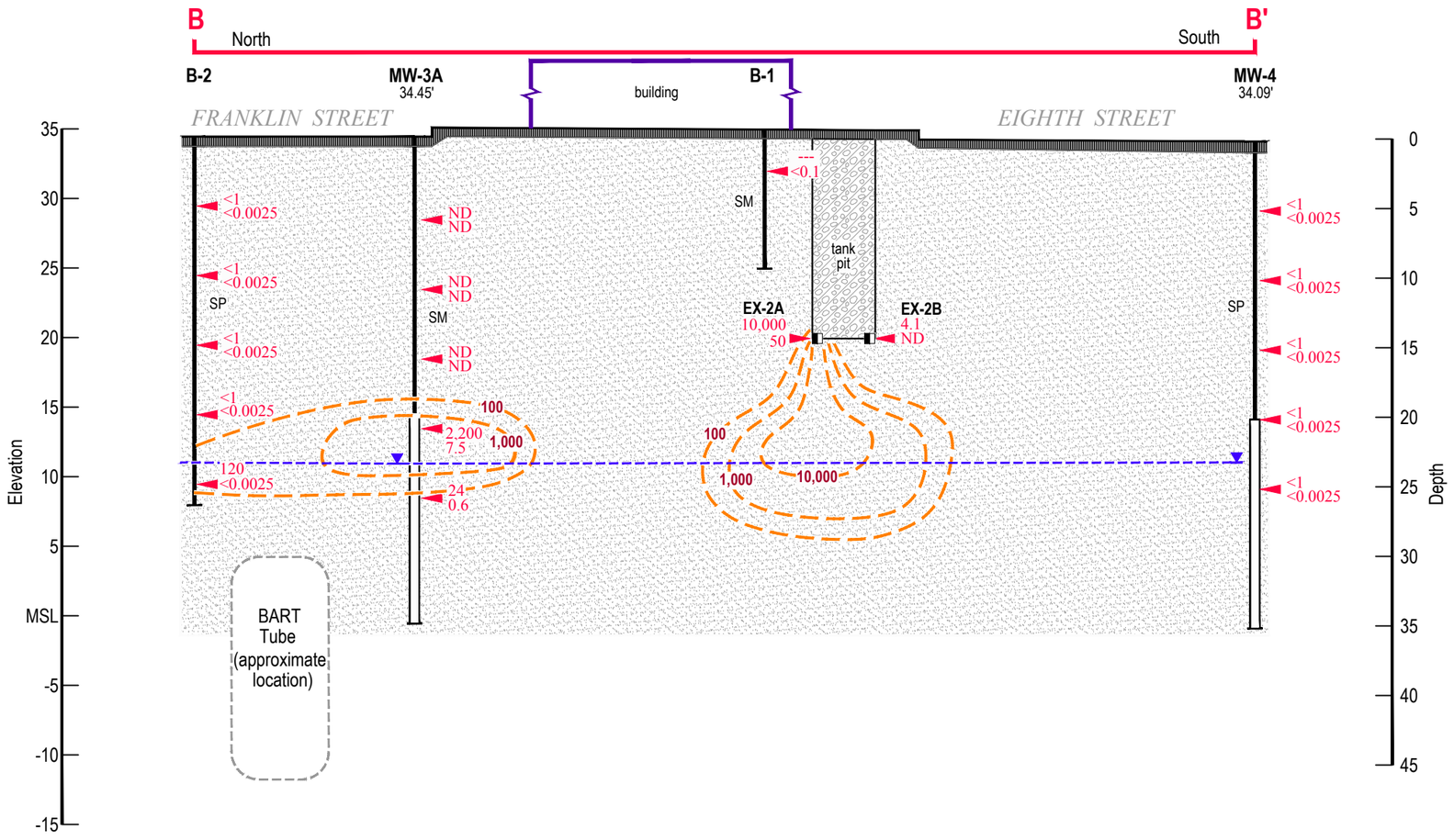
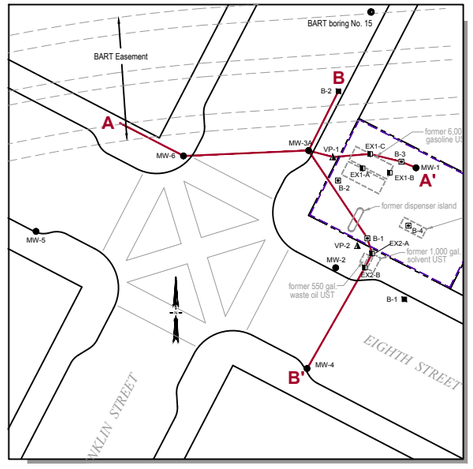


FIGURE 3

HYDROGEOLOGIC CROSS SECTION A-A'
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California





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Depth of Groundwater - 09/13/16 (unless otherwise noted)

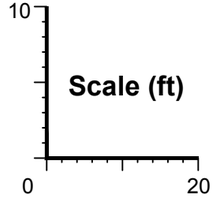


FIGURE 4

HYDROGEOLOGIC CROSS SECTION B-B'
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California

LEGEND

- MW-1 ● Monitoring well location
- B-1 ⊡ Soil boring location (Frank Lee □ Assoc., 19□□)
- B-1 ■ Soil boring location (Miller Environmental Co., 1991)
- ◐ Approximate BART soil boring location (BART 1963)
- EX1-A ◧ Soil sample location (Miller Environmental Co., 19□9)
- VP-1 ◭ Soil □apor probe (Cambria, 2006)

N□ TE□ Soil concentrations are in milligrams per kilogram (mg/kg)

MW-3A			
Date	Depth	TPHg	Benzene
9/12-13/89	6'	ND	ND
9/12-13/89	11'	ND	ND
9/12-13/89	16'	ND	ND
9/12-13/89	21'	**2,200**	**7.5**
9/12-13/89	26'	**24**	**0.6**

MW-6			
Date	Depth	TPHg	Benzene
5/15/97	5'	<1.0	<0.0050
5/15/97	10'	<1.0	<0.0050
5/15/97	15'	<1.0	<0.0050
5/15/97	20'	<1.0	<0.0050
5/15/97	25'	<1.0	0.050
5/15/97	30'	<1.0	<0.0050
5/15/97	35'	<1.0	<0.0050

MW-5			
Date	Depth	TPHg	Benzene
10/3/91	5'	<1.0	<0.0025
10/3/91	10'	<1.0	<0.0025
10/3/91	15'	<1.0	<0.0025
10/3/91	20'	<1.0	<0.0025
10/3/91	25'	<1.0	<0.0025

B-2			
Date	Depth	TPHg	Benzene
10/2/91	5'	<1.0	<0.0025
10/2/91	10'	<1.0	<0.0025
10/2/91	15'	<1.0	<0.0025
10/2/91	20'	<1.0	<0.0025
10/2/91	25'	**120**	<0.0025

VP-1			
Date	Depth	TPHg	Benzene
11/17/06	5.5'	<1.0	<0.005

B-2			
Date	Depth	TPHg	Benzene
5/3/88	1'	<1.0	<0.05

B-1			
Date	Depth	TPHg	Benzene
5/3/88	3'	---	<0.1

VP-2			
Date	Depth	TPHg	Benzene
11/17/06	5.5'	<1.0	<0.005

EX1-A			
Date	Depth	TPHg	Benzene
9/7/89	15'	ND	ND

EX1-C			
Date	Depth	TPHg	Benzene
9/7/89	15'	**2.3**	ND

B-3			
Date	Depth	TPHg	Benzene
5/3/88	4'	<1.0	<0.05

MW-1			
Date	Depth	TPHg	Benzene
9/12-13/89	6'	ND	ND
9/12-13/89	11'	ND	ND
9/12-13/89	16'	ND	ND
9/12-13/89	21'	**52**	**0.12**
9/12-13/89	26'	ND	ND

EX1-B			
Date	Depth	TPHg	Benzene
9/7/89	15'	ND	ND

EX2-A			
Date	Depth	TPHg	Benzene
9/7/89	15'	**10,000**	**50**

EX2-B			
Date	Depth	TPHg	Benzene
9/7/89	15'	**4.1**	ND

MW-2			
Date	Depth	TPHg	Benzene
9/12-13/89	6'	ND	ND
9/12-13/89	11'	ND	ND
9/12-13/89	16'	ND	ND
9/12-13/89	21'	**1,900**	**50**
9/12-13/89	26'	**7,800**	**30**

B-1			
Date	Depth	TPHg	Benzene
9/11/91	5'	<0.20	<0.0050
9/11/91	10'	<0.20	<0.0050
9/11/91	15'	<0.20	<0.0050
9/11/91	20'	<0.20	<0.0050
9/11/91	25'	**2,900**	<25

MW-4			
Date	Depth	TPHg	Benzene
10/2/91	5'	<1.0	<0.0025
10/2/91	10'	<1.0	<0.0025
10/2/91	15'	<1.0	<0.0025
10/2/91	20'	<1.0	<0.0025
10/2/91	25'	<1.0	<0.0025

BART Easement
BART boring No. 15
BART boring No. 14
B-2
MW-3A
MW-6
VP-1
EX1-C
B-3
MW-1
EX1-A
EX1-B
B-2
former 6,000 gal. gasoline USTs
Current Two Story Building
former dispenser island
possible former UST location (unknown si□e/contents)
B-4
B-1
VP-2
EX2-A
former 1,000 gal. solvent UST
MW-2
EX2-B
former 550 gal. waste oil UST
B-1
MW-5
MW-4
EIGHTH STREET
FRANKLIN STREET

0 15 30□□

GHD

CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

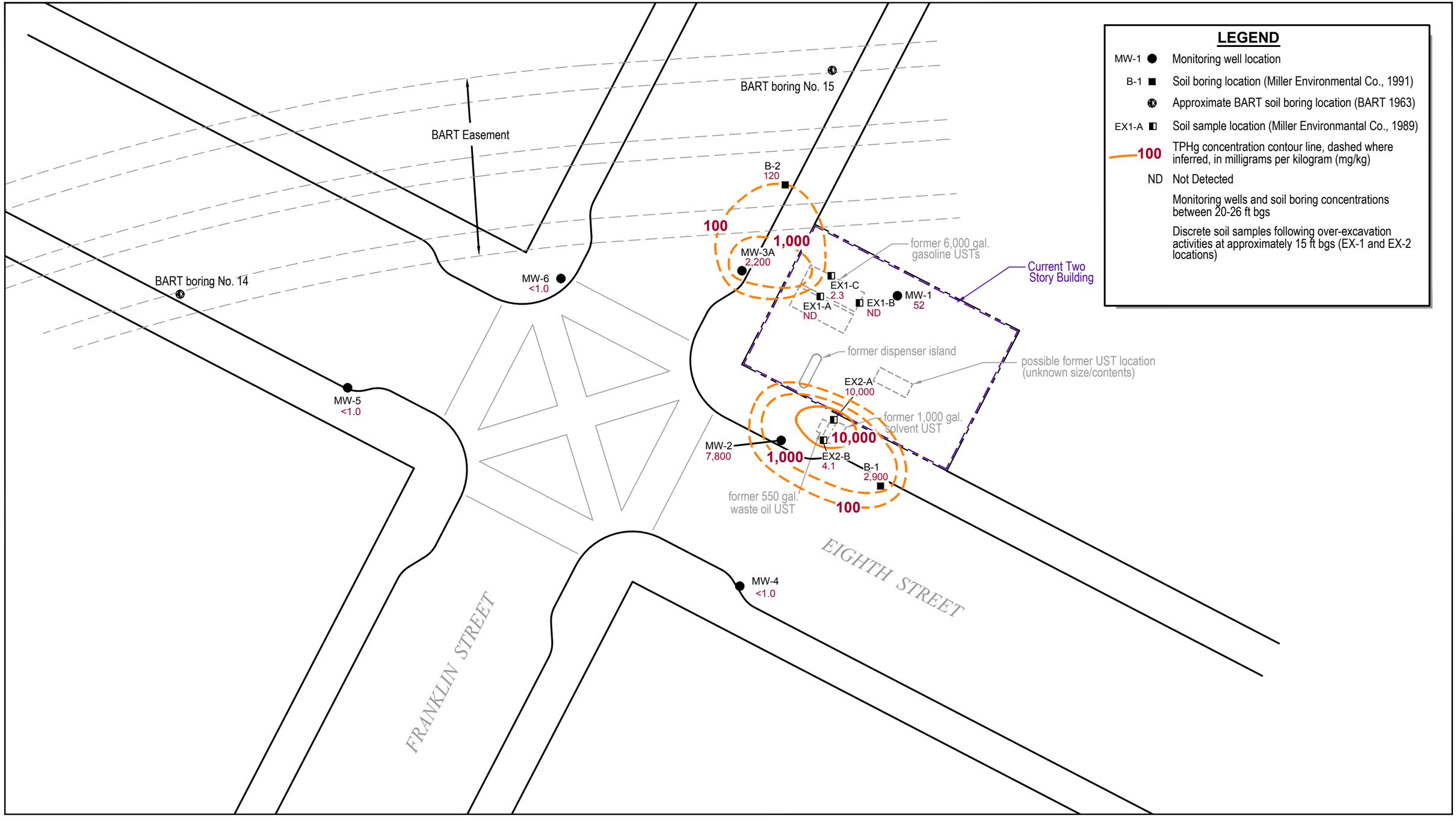
581000-061

O□□28, 2016

SOIL ANALYTICAL SUMMARY MAP

FIGURE 5

CAD F□□□581000-061(025)GN-SO004.DWG



0 15 30ft

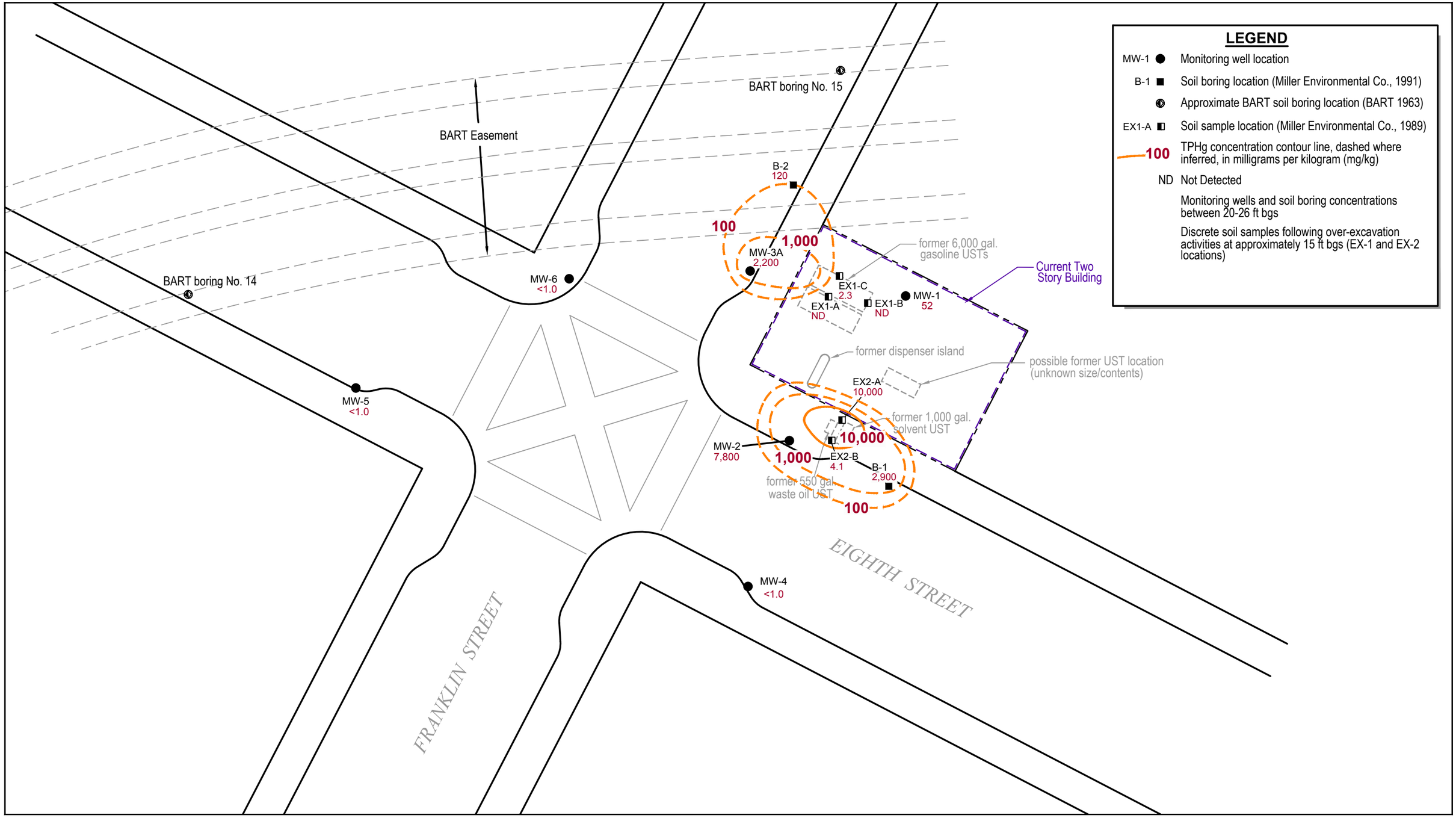
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

581000-061
Oct 28, 2016

TPHg IN SOIL ISOCONCENTRATION MAP (15-26 fbg)

FIGURE 6

CAD File: 581000-061(025)GN-SO005.DWG



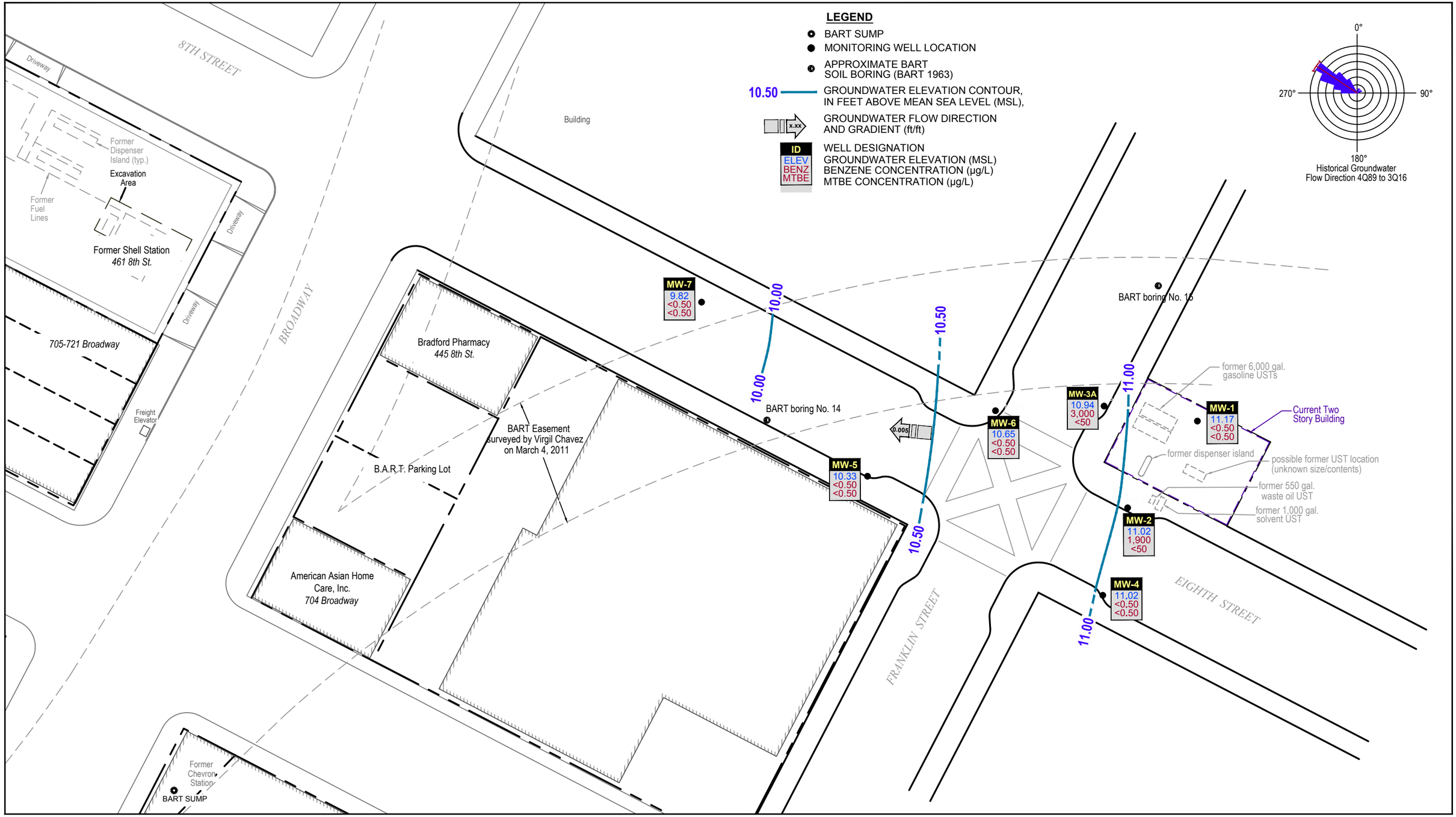
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

581000-061
Oct 28, 2016

BENZENE IN SOIL ISOCONCENTRATION MAP (15-26 fbg)

FIGURE 7

CAD File: 581000-061(025)GN-SO006.DWG



0 20 50ft

CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR and HYDROCARBON CONCENTRATION MAP - SEPTEMBER 13, 2016

581000-061

Oct 28, 2016

Figure 8

CAD File: 581000-061(025)GN-SO007.DWG

LEGEND

- BART SUMP
- MONITORING WELL LOCATION
- APPROXIMATE BART SOIL BORING (BART 1963)
- 46 — BENZENE CONCENTRATION CONTOUR, IN MICROGRAMS PER LITER (µg/L)
- WELL — WELL DESIGNATION
- BENZ — BENZENE CONCENTRATION (µg/L)

0°
270° 90°
180°
Historical Groundwater Flow Direction 4Q89 to 3Q16

8TH STREET
BROADWAY
EIGHTH STREET
FRANKLIN STREET

Driveway
Former Dispenser Island (typ.)
Excavation Area
Former Fuel Lines
Former Shell Station
461 8th St.
705-721 Broadway
Freight Elevator
Building
Bradford Pharmacy
445 8th St.
B.A.R.T. Parking Lot
BART Easement surveyed by Virgil Chavez on March 4, 2011
American Asian Home Care, Inc.
704 Broadway
Former Chevron Station
BART SUMP
BART boring No. 14
BART boring No. 15

MW-7 <0.50
MW-5 <0.50
MW-6 <0.50
MW-3A 3,000
MW-1 <0.50
MW-2 1,900
MW-4 <0.50

46
460

former 6,000 gal. gasoline USTs
Current Two Story Building
former dispenser island
possible former UST location (unknown size/contents)
former 550 gal. waste oil UST
former 1,000 gal. solvent UST

0 20 50ft

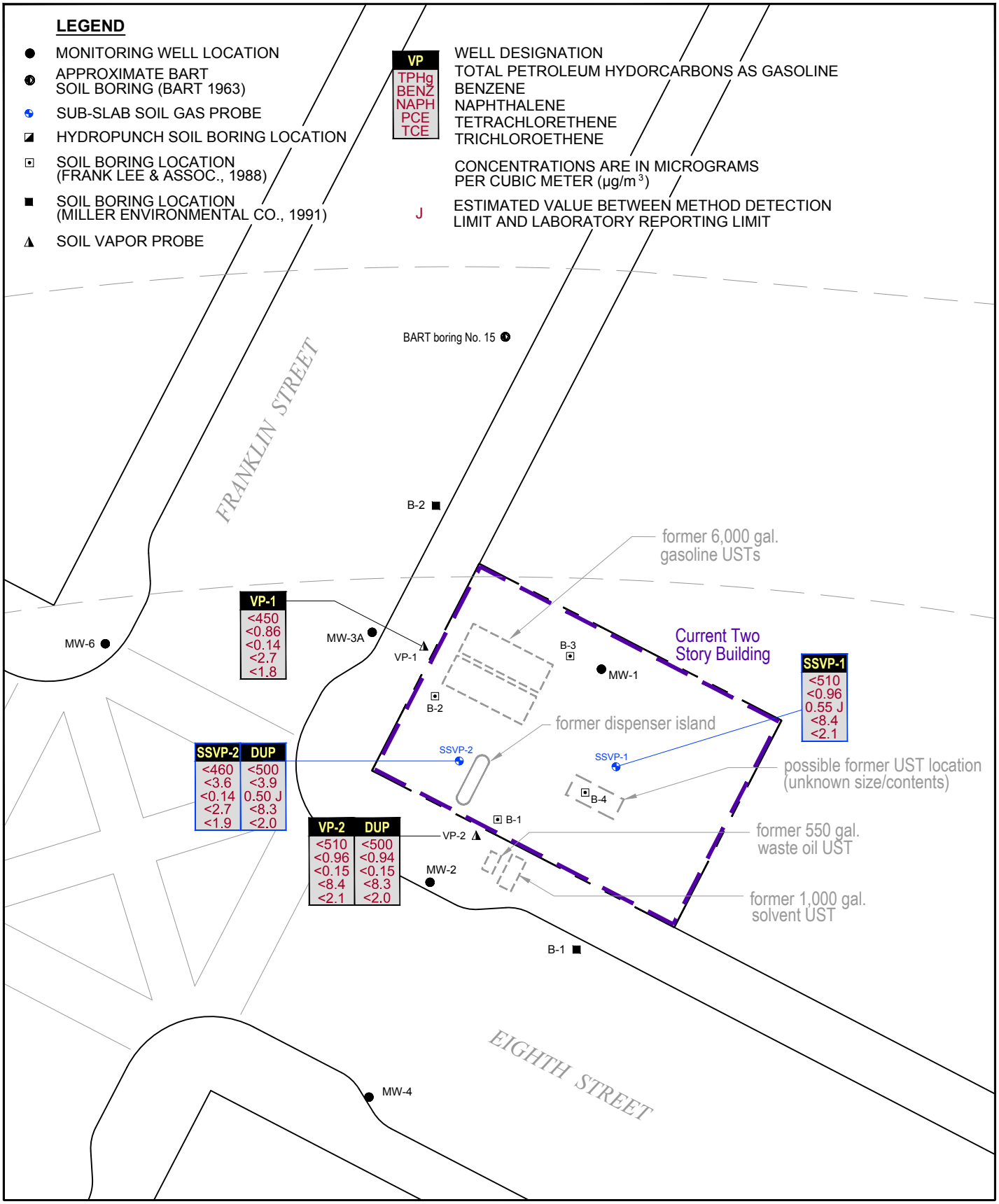
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

DISSOLVED-PHASE BENZENE
ISOCONCENTRATION MAP - SEPTEMBER 13, 2016

581000-061
Oct 28, 2016

Figure 9

CAD File: 581000-061(025)GN-SO008.DWG



0 10 30ft

N

GHD

CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

581000-061

Oct 28, 2016

SITE PLAN and VAPOR GAS SAMPLING RESULTS
DECEMBER 16, 2015

Figure 10

CAD File: I:\Sonoma.Public\0-Users\MDutra\Draft Requests\581000\581000-REPORTS\581000-061(025)\581000-061(025)GN-SO009.DWG

Tables

Table 1

Well Construction Details
Chiu Property
800 Franklin Street
Oakland, California

Well ID	Date Installed	Borehole Depth (ft)	Borehole Diameter (in)	Casing Diameter (in)	Screen Interval (ft bgs)	Screen Size (in)	Filter Pack (ft bgs)	Bentonite Seal (ft bgs)	Cement Seal (ft bgs)	TOC Elevation (ft msl)
MW-1	1989	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	16.0 - 18.0	0 - 16.0	33.42
MW-2	1989	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	16.0 - 18.0	0 - 16.0	33.66
MW-3*	Installed: 1989 Destroyed: 1/29/07	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	16.0 - 18.0	0 - 16.0	34.23
MW-3A	2/8/2007	35.0	10.0	4	20.0 - 35.0	0.010	19.0 - 35.0	17.0 - 19.0	0 - 17.0	34.16
MW-4	10/2/1991	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	-	0 - 18.0	33.64
MW-5	10/3/1991	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	-	0 - 18.0	33.56
MW-6	5/15/1997	35.0	8.0	2	14.5 - 36.25	0.010	14.5 - 36.25	12.5 - 14.5	0 - 12.5	33.98
MW-7	5/23/2012	35.0	8.0	2	18.0 - 35.0	0.010	16.0 - 35.0	14.0 - 16.0	0 - 14.0	33.49

Abbreviations / Notes

ft = feet
in = inches
ft bgs = feet below grade surface
ft msl = feet above mean sea level
TOC = top of casing
* = Monitoring well MW-3 properly destroyed on January 29, 2007 by Cambria.

TABLE 2

SOIL ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Sample ID	Date Sampled	Depth (ft)	Total Oil & Grease (mg/kg)	TPHwo (mg/kg)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	SVOCs (mg/kg)	VOCs (mg/kg)	TRPH	Total Lead (mg/kg)
Soil and Foundation Investigation by Frank Lee & Associates - Soil Borings																
B-1-3	5/3/1988	3	ND<30	-	-	-	-	ND<0.1	ND<0.1	ND<0.1	ND<0.1	-	-	ND	ND<30	-
B-2-1	5/3/1988	1	-	-	-	-	ND<1.0 *	ND<0.05	ND<0.1	-	ND<0.1	-	-	ND	-	-
B-3-4	5/3/1988	4	-	-	-	-	ND<1.0 *	ND<0.05	ND<0.1	-	ND<0.1	-	-	ND	-	-
UST Removal by Robert J. Miller Company																
UST Excavation Compliance Samples - Collected by The Traverse Group, Inc.																
T1 - Gasoline Tank	June-89	-	-	ND<30	--	ND<6.3	ND<1.0	0.011	0.0036	ND<0.0025	0.006	-	(1)	ND	-	-
T2 - Gasoline Tank	June-89	-	-	30	--	ND<6.7	5.0	0.050	0.044	0.0036	0.023	-	(2)	ND	-	-
T3 - Gasoline Tank	June-89	-	-	ND<30	--	ND<7.0	ND<1.0	0.0046	ND<0.0025	ND<0.0025	ND<0.0025	-	(3)	ND	-	-
T4 - Gasoline Tank	June-89	-	-	1,350	--	420	3,100	7.5	87	59	290	-	(4)	ND	-	-
W1 - Waste Oil Tank	June-89	-	-	4,000	--	430	270	ND<5.0	ND<5.0	ND<5.0	14	-	(5)	ND	-	-
W2A - Waste Oil Tank	June-89	-	-	50	--	170	2,300	ND<2.5	3	ND<2.5	12	-	(6)	ND	-	-
S1 - Solvent Tank	June-89	-	-	ND<30	--	ND<6.0	1.8	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	(7)	ND	-	-
S2 - Solvent Tank	June-89	-	-	ND<30	--	106	62	ND<1.0	ND<1.0	ND<1.0	ND<1.0	-	(8)	ND	-	-
SP1 - Spoils Pile "Contaminated"	June-89	-	-	900	--	240	184	ND<5.0	17	19	110	-	(9)	ND	-	-
SP2 - Spoils Pile "Clean"	June-89	-	-	ND<30	--	ND<6.7	ND<1.0	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	ND	ND	-	-
SP3 - Spoils Pile "Clean"	June-89	-	-	150	--	40	120	ND<1.0	ND<1.0	ND<1.0	2.1	-	(10)	ND	-	-
Subsurface Investigation by Miller Environmental Company																
Over-Excavation Confirmation Samples																
EX1-A (fuel tank)	9/7/1989	15	-	ND<30	--	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
EX1-B (fuel tank)	9/7/1989	15	-	40	--	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
EX1-C (fuel tank)	9/7/1989	15	-	80	--	ND<10	2.3	ND<0.040	0.05	0.14	ND<0.040	-	-	-	-	-
EX2-A (waste oil and solvent tanks)	9/7/1989	15	-	400	--	250	10,000	50	210	270	54	-	-	-	-	-
EX2-B (waste oil and solvent tanks)	9/7/1989	15	-	ND<30	--	ND<10	4.1	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
Well Installation Soil Samples																
MW1-A	9/12-13/1989	6		30	-	23	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW1-B	9/12-13/1989	11		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW1-C	9/12-13/1989	16		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW1-D	9/12-13/1989	21		ND<30	-	ND<10	52	0.12	0.70	0.53	4.5	-	-	-	-	-
MW1-E	9/12-13/1989	26		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW2-A	9/12-13/1989	6		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW2-B	9/12-13/1989	11		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW2-C	9/12-13/1989	16		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW2-D	9/12-13/1989	21		50	-	110	1,900	7.4	51	24	180	-	-	-	-	-
MW2-E	9/12-13/1989	26		30	-	170	7,800	52	220	77	400	-	-	-	-	-
MW3-A	9/12-13/1989	6		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW3-B	9/12-13/1989	11		ND<30	-	25	ND<1.0	ND<0.040	ND<0.040	ND<0.040	ND<0.040	-	-	-	-	-
MW3-C	9/12-13/1989	16		ND<30	-	ND<10	ND<1.0	ND<0.040	ND<0.040	ND<0.040	0.07	-	-	-	-	-
MW3-D	9/12-13/1989	21		40	-	160	2,200	7.5	42.3	16	180	-	-	-	-	-
MW3-E	9/12-13/1989	26		ND<30	-	ND<10	24	0.60	1.1	0.17	1.4	-	-	-	-	-

TABLE 2

SOIL ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Sample ID	Date Sampled	Depth (ft)	Total Oil & Grease (mg/kg)	TPHwo (mg/kg)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	SVOCs (mg/kg)	VOCs (mg/kg)	TRPH	Total Lead (mg/kg)
Additional Subsurface Investigation by Miller Environmental Company																
B1-5	9/11/1991	5	ND	-	-	ND<5.0	ND<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND<20	-
B1-10	9/11/1991	10	ND	-	-	ND<5.0	ND<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND<20	-
B1-15	9/11/1991	15	ND	-	-	ND<5.0	ND<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND<20	-
B1-20	9/11/1991	20	ND	-	-	ND<5.0	ND<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND<20	-
B1-25	9/11/1991	25	ND	-	-	160	2,900	ND<25	60	ND<25	ND<25	-	-	-	190	-
B2-5	10/2/1991	5	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
B2-10	10/2/1991	10	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
B2-15	10/2/1991	15	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
B2-20	10/2/1991	20	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
B2-25	10/2/1991	25	ND<50	-	ND<10	83	120	ND<0.0025	0.31	0.21	0.60	-	-	-	-	-
MW4-5	10/2/1991	5	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW4-10	10/2/1991	10	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW4-15	10/2/1991	15	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW4-20	10/2/1991	20	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW4-25	10/2/1991	25	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW5-5	10/3/1991	5	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW5-10	10/3/1991	10	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW5-15	10/3/1991	15	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW5-20	10/3/1991	20	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
MW5-25	10/3/1991	25	ND<50	-	ND<10	ND<1	ND<1	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	-	-
Additional Subsurface Investigation by Associated Terra Consultants, Inc.																
B6-1 (MW-6)	5/15/1997	5	ND<50	-	-	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	-
B6-2 (MW-6)	5/15/1997	10	ND<50	-	-	9.1	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	-
B6-3B (MW-6)	5/15/1997	15	ND<50	-	-	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	-
B6-4B (MW-6)	5/15/1997	20	ND<50	-	-	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	-
B6-5B (MW-6)	5/15/1997	25	ND<50	-	-	ND<1.0	ND<1.0	0.050	0.011	0.023	0.099	ND<0.0050	-	-	-	-
B6-6B (MW-6)	5/15/1997	30	ND<50	-	-	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	0.0050	-	-	-	-
B6-11 (MW-6)	5/15/1997	35	ND<50	-	-	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	-
Soil Vapor Borings by Cambria																
VP-1.5.5	11/17/2006	5.5	--	--	6.9	4.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	chloroform & 1,2-DCA: ND<0.005	-	35
VP-2-5.5	11/17/2006	5.5	--	--	ND<5.0	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	chloroform & 1,2-DCA: ND<0.005	-	-

TABLE 2

SOIL ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Abbreviations and Analyses:

ND<0.5 = Not Detected (ND) above laboratory detection limit.
ft = Measured in feet
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
TPHwo = Total petroleum hydrocarbons as waste oil by modified EPA Method 418.1/3550/SM503
TPHmo = Total petroleum hydrocarbons as motor boil by modified EPA Method 8015
Benzene, ethylbenzene, toluene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020 or 8021B
SVOCs = Semi-volatile organics by EPA Method 8270.
VOCs = Volatile organics by EPA Method 8240.
TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1
Total Lead by EPA Method 7420
mg/kg = Milligrams per kilogram
- = Not sampled, not analyzed, or not applicable
* = Analyzed for "low to medium boiling point hydrocarbons" by EPA Method 8015.
WO1 sampled on 1/17/1991 was also analyzed for Total Petroleum Fuel Hydrocarbons by EPA Method 8015 (ND<1.0 mg/kg).
WO1 sampled on 1/17/1991 was also analyzed for Halogenated Volatile Organics by EPA Method 8010 (all analytes were ND).
WO1 sampled on 1/17/1991 was also analyzed for Semi-Volatile Organics by EPA Method 8270. The following analytes were detected: benzo(a)pyrene at 0.10 mg/kg, fluoranthene at 0.11 mg/kg, and pyrene at 0.15 mg/kg (all other analytes were ND).

Sample loction removed during overexcavation activities

(1) = 0.20 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(2) = 0.24 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(3) = 0.42 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(4) = 28 mg/kg naphthalene; 23 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(5) = 0.37 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(6) = 6.4 mg/kg naphthalene; 4.1 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(7) = 0.50 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(7) = 0.50 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(8) = 2.4 mg/kg naphthalene; 1.9 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(9) = 27 mg/kg naphthalene; 13 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(10) = 1.6 mg/kg naphthalene; 2.0 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.

Table 3

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
MW-1	9/21/1989	22.87	10.55	ND<50	ND<120	--	ND<1	ND<1	ND<1	ND<1	--	8.6
33.42	10/31/1991	--	--	630	960	1,700	3.2	ND<0.5	ND<0.5	130	--	0.0098
34.89	10/21/1992	23.48	11.41	520	--	--	78	38	ND<0.5	120	--	ND
	2/25/1993	22.51	12.38	1,600	--	--	160	190	34	350	--	--
	4/27/1993	22.36	12.53	380	--	--	5.2	ND<0.5	ND<0.5	74	--	--
	10/7/1993	--	12.10	1,000	--	--	81	150	47	230	--	--
33.98	3/28/1994	--	11.91	460	--	--	14	25	14	39	--	--
	4/29/1994	--	--	--	--	--	--	--	--	--	--	--
	6/10/1994	--	11.66	--	--	--	--	--	--	--	--	--
	7/8/1994	--	11.62	--	--	--	--	--	--	--	--	--
	7/26/1994	--	11.48	--	--	--	--	--	--	--	--	--
	8/25/1994	--	11.47	--	--	--	--	--	--	--	--	--
	10/27/1994	22.51	11.47	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	1/6/1995	--	12.08	--	--	--	--	--	--	--	--	--
	2/1/1995	--	12.79	--	--	--	--	--	--	--	--	--
	3/29/1995	--	12.75	--	--	--	--	--	--	--	--	--
	10/31/1995	--	12.48	1,400	--	--	15	38	49	510	19	--
	5/21/1997	--	12.49	150	--	--	2.9	1.5	8.6	26	ND<5.0	--
	8/10/2004	23.35	10.63	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/28/2004É	--	--	--	--	--	--	--	--	--	--	--
	12/21/2004	22.93	11.05	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/11/2005É	--	--	--	--	--	--	--	--	--	--	--
	6/16/2005	20.68	13.30	ND<50	--	--	0.64	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/1/2005	20.74	13.24	ND<50	--	--	1.2	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	12/16/2005	20.95	13.03	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/10/2006	20.34	13.64	ND<50	--	--	0.60	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/15/2006	21.51	12.47	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5
	3/8/2007	21.81	12.17	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	0.72	ND<0.5	ND<5.0	ND<0.5
	9/17/2007	22.08	11.90	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	ND<0.5
	3/4/2008	21.72	12.26	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/3/2008	22.70	11.28	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2009	22.49	11.49	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.65
	9/8/2009	22.80	11.18	ND<50	ND<50	ND<250	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5
	3/19/2010	22.25	11.73	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	0.58
	9/3/2010	22.51	11.47	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	3/4/2011	22.10	11.88	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	8/22/2011	22.23	11.75	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	3/5/2012	22.61	11.37	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/27/2012	22.31	11.67	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/25/2013	22.20	11.78	--	--	--	--	--	--	--	--	--
	9/19/2013	22.84	11.14	--	--	--	--	--	--	--	--	--
	3/13/2014	22.80	11.18	--	--	--	--	--	--	--	--	--
	9/17/2014	←						Well Inaccessible				→
	3/30/2015	22.59	11.39	--	--	--	--	--	--	--	--	--
	9/15/2015	23.19	10.79	--	--	--	--	--	--	--	--	--
	3/9/2016	22.68	11.30	--	--	--	--	--	--	--	--	--
	9/13/2016	**22.81**	**11.17**	**ND<50**	**ND<50**	**--**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**ND<0.50**

Table 3

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
MW-2	9/21/1989	23.25	10.40	38,000	210	3,900	1,300	1,200	ND<20	4,700	--	--
33.66	10/31/1991	--	--	10,000	1,500	--	1,800	1,200	270	960	--	0.17
	11/6/1991	24.02	9.64	--	--	--	--	--	--	--	--	--
	10/21/1992	22.42	11.24	270,000	--	--	9,700	4,500	9,600	56,000	--	15.4
	2/25/1993	21.50	12.16	49,000	--	--	4,300	11,000	1,300	9,100	--	--
	4/27/1993	21.26	12.40	39,000	--	--	1,400	4,000	220	5,200	--	--
	10/7/1993	--	12.04	50,000	--	--	2,700	8,100	940	7,800	--	--
	3/28/1994	--	11.88	20,000	--	--	360	1,300	220	1,800	--	--
	4/29/1994	--	11.87	--	--	--	--	--	--	--	--	--
	6/10/1994	--	11.44	--	--	--	--	--	--	--	--	--
	7/8/1994	--	11.42	--	--	--	--	--	--	--	--	--
	7/26/1994	--	11.22	--	--	--	--	--	--	--	--	--
	8/25/1994	--	11.01	--	--	--	--	--	--	--	--	--
	10/27/1994	22.66	11.00	21,000	--	--	1,200	3,700	600	4,300	--	--
	1/6/1995	--	11.66	--	--	--	--	--	--	--	--	--
	2/1/1995	--	12.21	--	--	--	--	--	--	--	--	--
	3/29/1995	--	12.66	--	--	--	--	--	--	--	--	--
	10/31/1995	--	11.51	45,000	--	--	3,100	8,800	1,200	8,400	810	--
	5/21/1997	--	12.65	18,000	--	--	1,400	4,200	680	3,600	370	--
	8/10/2004	21.03	12.63	47,000 (a)	--	--	4,200	4,900	1,400	6,000	ND<500	--
	9/28/2004	22.95	10.71	--	--	--	--	--	--	--	--	--
	12/21/2004	20.91	12.75	13,000 (a)	--	--	500	310	34	1600	ND<100	--
	3/11/2005	11.35	22.31	32,000 (a)	--	--	970	2,400	890	4,200	ND<1,000	--
	6/16/2005	20.50	13.16	43,000 (a,i)	--	--	1,500	3,400	1,200	5,400	ND<1,200	--
	9/1/2005	20.60	13.06	20,000 (a)	--	--	640	1,700	460	2,200	ND<200	--
	12/16/2005	20.83	12.83	32,000 (a,i)	--	--	1,000	3,100	760	3,800	ND<500	--
	3/10/2006	20.05	13.61	20,000 (a)	--	--	460	1,900	440	2,400	ND<400	--
	9/15/2006	21.31	12.35	43,000 (a)	3,100 (d)	ND<250	1,600	4,400	1,100	5,100	ND<500	ND<10
	3/8/2007	21.62	12.04	30,000 (a,h)	4,600 (d,h)	ND<1,200	1,200	3,400	890	4,500	ND<500	ND<50 (j,h)
	9/17/2007	21.92	11.74	31,000 (a)	6,600 (d,b)	340	790	3,000	700	3,100	ND<100	ND<100
	3/4/2008	--	--	--	--	--	--	--	--	--	--	--
	9/3/2008	22.50	11.16	46,000 (a)	5,100 (d)	370	1,700	8,600	1,400	7,500	ND<250	ND<250
	3/4/2009	22.25	11.41	56,000 (a)	13,000 (d)	1,100	1,500	5,300	990	4,500	ND<10	ND<10
	9/8/2009	22.60	11.06	42,000 (a)	11,000 (d)	1,200	1,400 (1,200)	5,200 (4,900)	970 (890)	5500 (4,900)	ND<100 (ND<100)	ND<100
33.75	3/19/2010 **	21.96	11.70	30,000 (a,h)	12,000 (d,h)	--	(1,000)	(3,500)	(980)	(4,500)	(ND<50)	ND<5.0
	9/3/2010	22.30	11.45	9,500 (a)	1,500 (d)	--	(320)	(290)	(140)	(970)	(ND<12)	ND<12
	3/4/2011	21.85	11.90	12,000 (a)	2,200 (d)	--	(610)	(430)	(290)	(1,400)	(ND<25)	ND<25
	8/22/2011	22.04	11.71	7,900 (a)	1,300 (d)	--	(320)	(270)	(170)	(1,400)	(ND<12)	ND<12
	3/5/2012	22.32	11.43	18,000(a)	1,400 (d)	--	1,200	930	560	2,100	ND<500	--
	9/27/2012	22.16	11.59	6,300 (a)	690 (d)	--	410	290	130	830	ND<70	--
	3/25/2013	22.01	11.74	9,200 (a)	900 (d)	--	820	440	280	1,200	ND<250	--
	9/19/2013	22.68	11.07	20,000 (a)	2,300 (d)	--	1,900	2,200	630	3,100	ND<550	--
	3/13/2014	22.65	11.10	15,000 (a)	1,400 (d)	--	1,400	1,800	550	1,700	ND<350	--
	9/17/2014	23.94	9.81	42,000 (a)	1,900 (b,d)	--	2,300	5,200	1,300	5,700	ND<1,000	--
	3/30/2015	22.49	11.26	29,000 (a)	1,700 (d)	--	2,100	2,400	1,200	3,300	ND<750 (e)	--

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
MW-2	9/15/2015	23.09	10.66	35,000 (a)	2,200 (d)	--	2,400	4,600	1,700	6,500	ND<500	--
(cont.)	3/9/2016	22.55	11.20	29,000 (a)	2,500 (d, k)	--	2,000	1,500	1,400	3,800	ND<700 (e)	--
	9/13/2016	**22.73**	**11.02**	**37,000**	**2,300 (d)**	**--**	**(1,900)**	**(2,200)**	**(1,400)**	**(4,800)**	**(ND<50)**	**ND<50**
MW-3	9/21/1989	24.02	10.21	87,000	0	4,500	3,200	8,800	ND<20	6,500	--	70.0
34.23	10/31/1991	--	--	310,000	25,000	--	9,300	25,000	5,600	27,000	--	0.058
	11/6/1991	23.52	10.71	--	--	--	--	--	--	--	--	--
	10/21/1992	23.32	10.91	22,000	--	--	10,000	4,300	790	2,100	--	ND
	2/25/1993	22.51	11.72	29,000	--	--	8,400	5,400	1,300	3,300	--	--
	4/27/1993	22.37	11.86	50,000	--	--	8,200	8,700	1,000	5,400	--	--
	10/7/1993	--	14.19	1,700	--	--	3,100	3,700	400	1,700	--	--
	3/28/1994	--	11.52	53,000	--	--	3,900	4,600	710	2,500	--	--
	4/29/1994	--	11.34	--	--	--	--	--	--	--	--	--
	6/10/1994	--	11.13	--	--	--	--	--	--	--	--	--
	7/8/1994	--	11.09	--	--	--	--	--	--	--	--	--
	7/26/1994	--	10.94	--	--	--	--	--	--	--	--	--
	8/25/1994	--	10.80	--	--	--	--	--	--	--	--	--
	10/27/1994	23.56	10.67	8,500	--	--	2,700	2,700	490	2,000	--	--
	1/6/1995	--	11.33	--	--	--	--	--	--	--	--	--
	2/1/1995	--	11.79	--	--	--	--	--	--	--	--	--
	3/29/1995	--	12.10	--	--	--	--	--	--	--	--	--
	10/31/1995	--	11.23	19,000	--	--	4,400	4,600	720	2,900	410	--
	5/21/1997	--	11.68	4,000	--	--	810	840	190	690	ND<100	--
	9/28/2004					Well is damaged. Unable to measure depth to water or collect sample.						
	12/21/2004					Well is damaged. Unable to measure depth to water or collect sample.						
	3/11/2005					Well is damaged. Unable to measure depth to water or collect sample.						
	6/16/2005					Well is damaged. Unable to measure depth to water or collect sample.						
	9/1/2005					Well is damaged. Unable to measure depth to water or collect sample.						
	12/16/2005					Well is damaged. Unable to measure depth to water or collect sample.						
	3/10/2006					Well is damaged. Unable to measure depth to water or collect sample.						
	9/15/2006					Well is damaged. Unable to measure depth to water or collect sample.						
	1/29/2007					Well properly destroyed by Cambria.						
MW-3A	1/29/2007					**MW-3A replaces MW-3**						
34.16	3/8/2007	22.42	11.74	30,000 (a,i)	1,700 (d,i)	ND<250	2,600	4,400	710	4,600	ND<1,000	ND<50 (j)
	9/17/2007	22.65	11.51	9,800 (a)	980 (d)	ND<250	1,100	1,800	270	1,100	ND<25	ND<25
	3/4/2008	22.31	11.85	21,000 (a,i)	1,700 (d,i)	ND<250	2,600	5,000	810	3,500	ND<50	ND<50
	9/3/2008	23.11	11.05	13,000 (a)	880 (d)	ND<250	1,400	2,100	370	1,500	ND<50	ND<50
	3/4/2009	22.98	11.18	12,000 (a)	810 (d)	ND<250	1,000	1,700	330	1,200	ND<5.0	7.2
	9/8/2009	23.25	10.91	8,900 (a)	780 (d)	ND<250	870 (830)	1300 (1,200)	260 (200)	1100 (880)	ND<25 (ND<25)	ND<25
	3/19/2010	22.79	11.37	16,000 (a)	1,700 (d)	--	(1,900)	(3,200)	(620)	(2,800)	(ND<50)	10
	9/3/2010	23.02	11.14	35,000 (a)	1,600 (d)	--	(5,300)	(6,500)	(1,100)	(5,100)	(ND<120)	ND<120
	3/4/2011	22.60	11.56	35,000 (a)	3,300 (d)	--	(5,000)	(6,400)	(1,900)	(8,800)	(ND<100)	ND<100
	8/22/2011	22.71	11.45	42,000 (a)	2,700 (d)	--	(5,700)	(6,300)	(1,800)	(7,800)	(ND<120)	ND<120
	3/5/2012	22.99	11.17	49,000(a)	1500 (d)	--	4,400	2,800	1,900	8,200	ND<800	--
	9/27/2012	22.85	11.31	51,000 (a)	3,200 (d)	--	5,100	4,000	2,000	8,300	ND<800	--
	3/25/2013	22.72	11.44	43,000 (a)	2,900 (d)	--	4,200	2,700	1,700	6,300	ND<250	--

Table 3

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
MW-3A	9/19/2013	23.30	10.86	31,000 (a)	3,100 (d)	--	3,200	2,100	1,500	6,200	ND<170	--
(cont.)	3/13/2014	23.21	10.95	39,000 (a,k)	6,100 (b,d,l)	--	3,200	1,200	1,900	7,200	ND<200	--
	9/17/2014	23.46	10.70	39,000 (a)	1,500 (d)	--	3,300	1,200	1,500	5,900	ND<1,000	--
	3/30/2015	23.05	11.11	22,000 (a)	1,800 (d)	--	2,500	730	800	3,300	ND<180 (e)	--
	9/15/2015	23.58	10.58	26,000 (a)	1,700 (d)	--	3,200	1,200	1,200	4,900	ND<500	--
	3/9/2016	23.14	11.02	19,000 (a)	3,700 (d, k)	--	1,500	140	550	2,300	ND<500	--
	9/13/2016	**23.22**	**10.94**	**26,000**	**1,800 (d)**	**--**	**(3,000)**	**(200)**	**(890)**	**(3,300)**	**(ND<50)**	**ND<50**
MW-4	10/31/1991	--	--	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND
33.64	11/6/1991	23.32	10.32	--	--	--	--	--	--	--	--	--
	10/21/1992	22.10	11.54	410	--	--	3.1	29	6.8	47	--	ND
	2/25/1993	21.13	12.51	170	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	4/27/1993	20.74	12.90	100	--	--	ND<0.5	ND<0.5	ND<0.5	0.9	--	--
	10/7/1993	--	12.52	240	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	3/28/1994	--	12.34	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	4/29/1994	--	11.33	--	--	--	--	--	--	--	--	--
	6/10/1994	--	11.55	--	--	--	--	--	--	--	--	--
	7/8/1994	--	11.54	--	--	--	--	--	--	--	--	--
	7/26/1994	--	11.30	--	--	--	--	--	--	--	--	--
	8/25/1994	--	11.09	--	--	--	--	--	--	--	--	--
	10/27/1994	22.69	10.95	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	1/6/1995	--	11.70	--	--	--	--	--	--	--	--	--
	2/1/1995	--	12.34	--	--	--	--	--	--	--	--	--
	3/29/1995	--	12.76	--	--	--	--	--	--	--	--	--
	10/31/1995	--	11.61	80	--	--	ND<0.5	0.6	ND<0.5	1.0	ND<0.5	--
	5/21/1997	--	12.08	ND<50	--	--	11	120	27	180	ND<5.0	--
	9/28/2004	22.72	10.92	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	12/21/2004	20.65	12.99	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/11/2005	20.20	13.44	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	6/16/2005	20.38	13.26	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/1/2005	20.48	13.16	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	12/16/2005	20.78	12.86	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/10/2006	19.81	13.83	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/15/2006	21.16	12.48	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5
	3/8/2007	21.52	12.12	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5
	9/17/2007	21.84	11.80	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2008	21.41	12.23	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/3/2008	22.50	11.14	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2009	22.15	11.49	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/8/2009	22.56	11.08	ND<50	ND<50	ND<250	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5
33.73	3/19/2010 *	21.88	11.76	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	9/3/2010	22.21	11.52	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	3/4/2011	21.78	11.95	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	8/22/2011	21.92	11.81	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	3/5/2012	22.34	11.39	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/27/2012	21.98	11.75	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/25/2013	21.95	11.78	--	--	--	--	--	--	--	--	--

Table 3

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
MW-4	9/19/2013	←						Inaccessible				→
(cont.)	3/13/2014	22.62	11.11	--	--	--	--	--	--	--	--	--
	9/17/2014	22.99	10.74	--	--	--	--	--	--	--	--	--
	3/30/2015	22.49	11.24	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--
	9/15/2015	22.12	11.61	--	--	--	--	--	--	--	--	--
	3/9/2016	22.56	11.17	--	--	--	--	--	--	--	--	--
	9/13/2016	**22.71**	**11.02**	**ND<50**	**ND<50**	**--**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**ND<0.50**
MW-5	10/31/1991	--	--	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
33.51	11/6/1991	24.00	9.51	ND	--	--	ND	ND	ND	ND	--	--
	10/21/1992	23.24	10.27	840	--	--	17	120	39	180	--	--
33.56	2/25/1993	22.40	11.16	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	4/27/1993	22.15	11.41	260	--	--	53	19	1.2	2.4	--	--
	10/7/1993	--	11.06	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	3/28/1994	--	10.95	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	4/29/1994	--	10.91	--	--	--	--	--	--	--	--	--
	6/10/1994	--	10.68	--	--	--	--	--	--	--	--	--
	7/8/1994	--	10.60	--	--	--	--	--	--	--	--	--
	7/26/1994	--	10.45	--	--	--	--	--	--	--	--	--
	8/25/1994	--	10.28	--	--	--	--	--	--	--	--	--
	10/27/1994	23.50	10.06	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	1/6/1995	--	10.78	--	--	--	--	--	--	--	--	--
	2/1/1995	--	11.25	--	--	--	--	--	--	--	--	--
	3/29/1995	--	11.63	--	--	--	--	--	--	--	--	--
	10/31/1995	--	10.64	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--
	5/21/1997	--	11.04	260	--	--	2.4	33	7.7	56	ND<5.0	--
	9/28/2004	23.70	9.86	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	1.5	ND<5.0	--
	12/21/2004	21.40	12.16	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/11/2005	21.40	12.16	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	6/16/2005	21.63	11.93	ND<50 (i)	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/1/2005	21.65	11.91	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	12/16/2005	21.94	11.62	ND<50 (i)	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/10/2006	21.11	12.45	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/15/2006	22.20	11.36	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5
	3/8/2007	22.44	11.12	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5
	9/17/2007	22.73	10.83	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2008	22.32	11.24	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/3/2008	23.13	10.43	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2009	22.95	10.61	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/8/2009	23.21	10.35	ND<50	ND<50	ND<250	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5
33.67	3/19/2010 *	22.72	10.84	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	9/3/2010	23.03	10.64	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	3/4/2011	22.60	11.07	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	8/22/2011	22.63	11.04	ND<50	ND<50	--	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5
	3/5/2012	22.94	10.73	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/27/2012	22.75	10.92	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/25/2013	22.73	10.94	--	--	--	--	--	--	--	--	--

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
MW-5	9/19/2013	23.34	10.33	--	--	--	--	--	--	--	--	--
(cont.)	3/13/2014	23.32	10.35	--	--	--	--	--	--	--	--	--
	9/17/2014	23.57	10.10	--	--	--	--	--	--	--	--	--
	3/30/2015	23.10	10.57	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--
	9/15/2015	23.62	10.05	--	--	--	--	--	--	--	--	--
	3/9/2016	23.21	10.46	--	--	--	--	--	--	--	--	--
	9/13/2016	**23.34**	**10.33**	**ND<50**	**ND<50**	**--**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**ND<0.50**
MW-6	5/21/1997	--	11.26	760	--	--	2.5	1.7	ND<0.50	25	10	--
33.98	9/28/2004	24.00	9.98	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	12/21/2004	21.61	12.37	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/11/2005	21.60	12.38	340 (a)	--	--	1.9	2.6	0.68	0.61	ND<5.0	--
	6/16/2005	21.81	12.17	1,300 (a)	--	--	58	8.3	6.1	4.0	ND<25	--
	9/1/2005	21.82	12.16	1,900 (a)	--	--	150	19	18	76	ND<12	--
	12/16/2005	22.03	11.95	3,600 (a,i)	--	--	560	63	33	230	ND<50	--
	3/10/2006	21.46	12.52	2,200 (a)	--	--	240	10	20	87	ND<50	--
	9/15/2006	22.46	11.52	1,800 (a)	480 (d)	ND<250	10	6.7	9.9	42	ND<17	ND<0.5
	3/8/2007	22.64	11.34	4,300 (a)	890 (d)	ND<250	260	36	29	140	ND<60	ND<10 (j)
	9/17/2007	22.88	11.10	7,000 (a)	970 (d)	ND<250	760	28	46	270	ND<10	ND<10
	3/4/2008	22.51	11.47	400 (a)	74 (d)	ND<250	46	ND<1.0	1.0	6.0	ND<1.0	ND<1.0
	9/3/2008	23.24	10.74	280 (a)	69 (d, b)	ND<250	2.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2009	23.14	10.84	670 (a)	150 (d)	ND<250	68	13	ND<2.5	12	ND<2.5	ND<2.5
	9/8/2009	23.38	10.60	8,000 (a)	1,400 (d)	ND<250	870 (770)	16 (ND<12)	34 (17)	1500 (1,200)	ND<12 (ND<12)	ND<12
34.05	3/19/2010 *	22.93	11.05	8,900 (a)	1,200 (d)	--	(2,900)	(ND<100)	(ND<100)	(ND<100)	(ND<5.0)	15
	9/3/2010	23.19	10.86	4,600 (a)	710 (d)	--	(1,500)	(33)	(35)	(79)	(ND<25)	ND<25
	3/4/2011	22.78	11.27	3,700 (a)	410 (d)	--	(1,300)	(170)	(70)	(200)	(ND<25)	ND<25
	8/22/2011	22.85	11.20	490 (a)	120 (b,d)	--	(190)	(ND<5.0)	(ND<5.0)	(ND<5.0)	(ND<5.0)	ND<5.0
	3/5/2012	23.16	10.89	190 (a)	65 (b,d)	--	38	2.7	1.4	7.3	ND<15	--
	9/27/2012	22.91	11.14	79 (a)	ND<50	--	11	ND<0.5	ND<0.5	0.90	ND<5.0	--
	3/25/2013	22.87	11.18	59 (a)	ND<50	--	12	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/19/2013	23.40	10.65	8,500 (a)	1,100 (d)	--	3,200	48	52	92	ND<250	--
	3/13/2014	23.36	10.69	2,300 (a)	140 (b,d)	--	900	3.1	11	16	ND<17	--
	9/17/2014	23.61	10.44	7,600 (a)	830 (d)	--	2,600	45.0	55	130	ND<100	--
	3/30/2015	23.19	10.86	850 (a)	93 (d)	--	260	2.7	7.8	12	ND<5.0	--
	9/15/2015	23.68	10.37	820 (a)	200 (d, m)	--	220	5.5	5.7	14	ND<10	--
	3/9/2016	23.27	10.78	1,300 (a)	180 (d)	--	370	5.4	2.2	6.5	ND<45 (e)	--
	9/13/2016	**23.40**	**10.65**	**ND<50**	**ND<50**	**--**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**ND<0.50**
MW-7	6/25/2012	22.98	10.51	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
33.49	9/27/2012	23.22	10.27	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	12/4/2012	23.46	10.03	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	3/25/2013	23.19	10.30	ND<50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--
	9/19/2013	23.65	9.84	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--
	3/13/2014	23.60	9.89	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--
	9/17/2014	23.73	9.76	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--
	3/30/2015	23.44	10.05	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--
	9/15/2015	23.81	9.68	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	1.0	ND<5.0	--

Table 3

Groundwater Analytical and Elevation Data: TPHg, BTEX, MTBE, and 1,2-DCA
Chiu Property
800 Franklin Street
Oakland, California

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (ft msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	1,2-DCA
				←				µg/L				→
	3/9/2016	23.53	9.96	ND<50	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.5	ND<5.0	--
	9/13/2016	**23.67**	**9.82**	**ND<50**	**ND<50**	**--**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**(ND<0.50)**	**ND<0.50**
Grab Groundwater												
B-7	3/11/2011	--	--	ND<50 (i)	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
B-8	3/11/2011	--	--	ND<50 (i)	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
B-9	3/12/2011	--	--	ND<50 (i)	--	--	ND<0.5	3.0	ND<0.5	ND<0.5	--	--

Abbreviations and Notes:

TOC Elevation = Top of well casing elevation
ft msl = Feet above mean sea level
ft below TOC = Feet below top of casing
µg/L = Micrograms per liter
TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015C
TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C with silica gel cleanup
TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method 8015C with silica gel cleanup
BTEX = Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B, prior to September 3, 2008 by EPA Method 8021B
MTBE = Methyl tertiary-butyl ether by EPA Method 8260B, prior to September 3, 2008 by EPA Method 8021B
1,2-DCA = 1,2-Dichloroethane by EPA Method SW8260B, prior to 2006 by EPA Method 601
Other VOCs analyzed by EPA Method SW8260B, prior to 2006 by EPA Method 601
Sheen = A sheen was observed on the water's surface
Field = Observed in the field
Lab = Observed in analytical laboratory
(a) = unmodified or weakly modified gasoline is significant
(b) = diesel range compounds are significant; no recognizable pattern
(d) = gasoline range compounds are significant
(e) = reporting limit for MTBE raised due to co-elution with non-target peaks
(h) = lighter than water immiscible sheen/product is present
(i) = liquid sample that contains ~1 vol. % sediment
(j) = sample diluted due to high organic content/matrix interference
(k) = surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
(l) = oil range compounds are significant
(m) = Stoddard solvent/mineral spirit may be present
ND<5.0 = Not detected above detection limit.
ND = Not detected above laboratory reporting limit
-- = Not available, not analyzed, or not applicable
* = Surveyed September 7, 2006; updated to table May 24, 2010
** = Surveyed March 8, 2007; updated to table May 24, 2010
É = Unable to access well due to denial by current tenant

Table 4

Groundwater Analytical Data: VOCs
Chiu Property
800 Franklin Street
Oakland, California

Well ID	Date Sampled	Bromo-Dichloro-methane (mg/L)	n-Butyl-benzene (mg/L)	Chloroform (mg/L)	1,2-Dichloro-ethane (mg/L)	1,2-Dichloro-propane (mg/L)	Isopropyl-benzene (mg/L)	4-Isopropyl - toluene (mg/L)	Naphthalene (mg/L)	n-Propyl-benzene (mg/L)	1,1,1-Trichloro-ethane	tertiary-Butyl Alcohol	1,2,4-Trimethyl-benzene (mg/L)	1,3,5-Trimethyl-benzene (mg/L)	Tetrachloro-ethene (mg/L)	Other VOCs (mg/L)
MW-1	9/21/1989	ND<0.5	--	0.8	8.6	ND<0.5	--	--	--	--	ND<0.5	--	--	--	ND<0.5	ND
	10/31/1991	ND<0.4	--	ND<0.4	9.8	ND<0.4	--	--	--	--	ND<2.0	--	--	--	ND<0.4	ND
	10/21/1992	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
	9/15/2006	--	--	6.4	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	3/8/2007	--	--	6.9	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	9/17/2007	ND<0.5	ND<0.5	4.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2008	ND<0.5	ND<0.5	1.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/3/2008	ND<0.5	ND<0.5	0.98	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2009	ND<0.5	ND<0.5	ND<0.5	0.65	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/8/2009	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/19/2010	ND<0.5	ND<0.5	ND<0.5	0.58	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/3/2010	ND<0.5	ND<0.5	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2011	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	8/22/2011	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/13/2016	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<2.0**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND**
MW-2	9/21/1989	ND<20.0	--	ND<20.0	ND<20.0	ND<20.0	--	--	--	--	ND<20.0	--	--	--	ND<20.0	ND
	10/31/1991	ND<0.4	--	ND<0.4	170	ND<0.4	--	--	--	--	ND<2.0	--	--	--	ND<0.4	ND
	10/21/1992	--	--	--	15.4	--	--	--	--	--	--	--	--	--	--	--
	9/15/2006	--	--	16	ND<10	--	--	--	--	--	--	--	--	--	--	--
	3/8/2007	--	--	ND<50	ND<50	--	--	--	--	--	--	--	--	--	--	--
	9/17/2007	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	110	100	ND<100	ND<1,000	1,000	220	ND<100	ND
	9/3/2008	ND<250	ND<250	ND<250	ND<250	ND<250	ND<250	ND<250	310	ND<250	ND<250	ND<1,000	1,400	320	ND<250	ND
	3/4/2009	ND<10	55	ND<10	ND<10	ND<10	88	25	140	190	ND<10	ND<40	1,200	250	ND<10	ND
	9/8/2009	ND<100	ND<100	ND<0.5	ND<100	ND<100	ND<100	ND<100	200	110	ND<100	ND<100	1,300	180	ND<100	ND
	3/19/2010	ND<50	65	ND<5.0	ND<50	ND<50	78	ND<50	240	180	ND<50	ND<200	1,400	370	ND<50	ND
	9/3/2010	ND<12	15	ND<12	ND<12	ND<12	43	ND<12	71	71	ND<12	ND<50	570	120	ND<12	ND
	3/4/2011	ND<25	26	ND<25	ND<25	ND<25	61	ND<25	110	89	ND<25	ND<25	650	160	ND<25	ND
	8/22/2011	ND<12	ND<12	ND<0.5	ND<12	ND<12	18	ND<12	55	35	ND<12	ND<50	420	76	ND<12	ND
	9/13/2016	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**280**	**100**	**ND<50**	**ND<200**	**750**	**150**	**ND<50**	**ND**
MW-3A	9/21/1989	ND<20.0	--	ND<20.0	ND<20.0	ND<20.0	--	--	--	--	ND<20.0	--	--	--	ND<20.0	ND
	10/31/1991	ND<0.4	--	ND<0.4	58.0	0.68	--	--	--	--	1.4	--	--	--	ND<0.4	ND
	10/21/1992	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
	3/8/2007	--	--	ND<50	ND<50	--	--	--	--	--	--	--	--	--	--	--
	9/17/2007	ND<25	ND<25	ND<25	ND<25	ND<25	ND<25	ND<25	27	27	ND<25	ND<250	220	55	ND<25	ND
	3/4/2008	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	110	80	ND<50	ND<200	580	160	ND<50	ND
	9/3/2008	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	62	62	ND<50	ND<200	240	58	ND<50	ND
	3/4/2009	ND<5.0	15	7.9	7.2	ND<5.0	14	ND<5.0	67	37	ND<5.0	ND<2.0	230	68	ND<5.0	ND
	9/8/2009	ND<25	ND<25	6.3	ND<25	ND<25	ND<25	ND<25	39	ND<25	ND<25	ND<100	110	ND<25	ND<25	ND
	3/19/2010	ND<50	ND<50	ND<5.0	10	ND<50	ND<50	ND<50	150	57	ND<50	ND<200	460	110	ND<50	ND
	9/3/2010	ND<0.5	ND<0.5	ND<120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	160	ND<0.5	ND<0.5	ND<2.0	580	130	ND<0.5	ND
	3/4/2011	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	240	130	ND<100	ND<400	940	300	ND<100	ND
	8/22/2011	ND<120	ND<120	ND<0.5	ND<120	ND<120	ND<120	ND<120	200	ND<120	ND<120	ND<500	930	190	ND<120	ND
	9/13/2016	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**ND<50**	**210**	**91**	**ND<0.50**	**ND<200**	**790**	**230**	**ND<50**	**ND**
MW-4	10/31/1991	ND<0.4	--	2.6	ND<0.4	ND<0.4	--	--	--	--	ND<2.0	--	--	--	ND<0.4	ND
	10/21/1992	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
	9/15/2006	--	--	28	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	3/8/2007	--	--	23	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	9/17/2007	ND<0.5	ND<0.5	18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2008	ND<0.5	ND<0.5	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/3/2008	ND<0.5	ND<0.5	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2009	ND<0.5	ND<0.5	14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/8/2009	ND<0.5	ND<0.5	11	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/19/2010	ND<0.5	ND<0.5	10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND

Table 4

Groundwater Analytical Data: VOCs
Chiu Property
800 Franklin Street
Oakland, California

Well ID	Date Sampled	Bromo-Dichloro-methane (mg/L)	n-Butyl-benzene (mg/L)	Chloroform (mg/L)	1,2-Dichloro-ethane (mg/L)	1,2-Dichloro-propane (mg/L)	Isopropyl-benzene (mg/L)	4-Isopropyl - toluene (mg/L)	Naphthalene (mg/L)	n-Propyl-benzene (mg/L)	1,1,1-Trichloro-ethane	tertiary-Butyl Alcohol	1,2,4-Trimethyl-benzene (mg/L)	1,3,5-Trimethyl-benzene (mg/L)	Tetrachloro-ethene (mg/L)	Other VOCs (mg/L)
MW-4	9/3/2010	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
con't	3/4/2011	ND<0.5	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	8/22/2011	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/13/2016	**ND<0.50**	**ND<0.50**	**0.63**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<2.0**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND**
MW-5	10/31/1991	ND<0.4	--	1.1	ND<0.4	ND<0.4	--	--	--	--	ND<2.0	--	--	--	ND<0.4	ND
	10/21/1992	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
	9/15/2006	--	--	10	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	3/8/2007	--	--	18	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	9/17/2007	0.77	ND<0.5	14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2008	0.64	ND<0.5	19	ND<0.5	ND<1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/3/2008	ND<0.5	ND<0.5	17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2009	ND<0.5	ND<0.5	14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/8/2009	ND<0.5	ND<0.5	11	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/19/2010	ND<0.5	ND<0.5	14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/3/2010	ND<0.5	ND<0.5	7.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2011	ND<0.5	ND<0.5	3.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	8/22/2011	ND<0.5	ND<0.5	1.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	ND<0.5	ND
	9/13/2016	**ND<0.50**	**ND<0.50**	**0.71**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<2.0**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND**
MW-6	9/15/2006	--	--	3.2	ND<0.5	--	--	--	--	--	--	--	--	--	--	--
	3/8/2007	--	--	ND<10	ND<10	--	--	--	--	--	--	--	--	--	--	--
	9/17/2007	ND<10	16	ND<10	ND<10	ND<10	62.0	ND<10	160	150	ND<10	ND<100	13	ND<10	ND<10	ND
	3/4/2008	ND<1.0	1.2	ND<1.0	ND<1.0	ND<1.0	4.8	ND<1.0	5.9	9.7	ND<1.0	ND<4.0	ND<1.0	ND<1.0	ND<1.0	ND
	9/3/2008	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.73	ND<0.5	1.7	0.96	ND<0.5	ND,2.0	ND<0.5	ND<0.5	ND<0.5	ND
	3/4/2009	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	7.4	ND<2.5	13	19	ND<2.5	13	ND<2.5	ND<2.5	ND<2.5	ND
	9/8/2009	ND<12	ND<12	ND<0.5	ND<12	ND<12	20	ND<12	120	58	ND<12	ND<50	160	48	ND<12	ND
	3/19/2010	ND<5.0	ND<5.0	ND<5.0	15.0	ND<5.0	ND<5.0	ND<5.0	250	120	ND<5.0	ND<20	ND<5.0	ND<5.0	ND<5.0	ND
	9/3/2010	ND<25	ND<25	ND<25	ND<25	ND<25	36	ND<25	130	80	ND<25	ND<100	ND<25	ND<25	ND<25	ND
	3/4/2011	ND<25	ND<25	ND<25	ND<25	ND<25	26.0	ND<25	100	51	ND<25	ND<100	ND<25	ND<25	ND<25	ND
	8/22/2011	ND<5.0	ND<5.0	0.86	ND<5.0	ND<5.0	6.3	ND<5.0	ND<5.0	10	ND<5.0	ND<20	ND<5.0	ND<5.0	ND<5.0	ND
	9/13/2016	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<2.0**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND**
MW-7	**9/13/2016**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<2.0**	**ND<0.50**	**ND<0.50**	**0.77**	**ND**

Abbreviations and Notes:
µg/L = Micrograms per liter
VOC = Volatile organic compounds analyzed gy EPA Method 8260B; prior to 2006, analyzed by EPA Method 601
ND = Not detected above laboratory reporting limit
-- = Not available, not analyzed, or not applicable

Table 5

Soil Vapor Analytical Data
Chiu Property
800 Franklin Street
Oakland, California

Sample ID	Date Sampled	Depth (ft)	TPHg	Benzene	Toulene	Ethylbenzene	m,p-Xylene	o-Xylene	Naphthalene	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Oxygen	Carbon dioxide	Methane	Nitrogen	Helium (tracer)	Isobutane (tracer)	Butane (tracer)	Propane (tracer)
			µg/m³											%							
Policy Soil Gas Criteria - Commercial*			--	280,000	--	3,600,000	--	--	310,000	--	--	--	--	--	--	--	--	--	--	--	--
Sub-Slab/Soil Gas ESL - Commerical**			100,000	420	1,300,000	4,900	440,000		360	2,100	3,000	35,000	160	--	--	--	--	--	--	--	--
Soil Vapor Probes																					
VP-1	12/28/2006	5	--	<3.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
	7/25/2007	5	--	<3.9	<4.6	<5.2	<5.2	<5.2	--	<8.2	--	--	--	--	--	--	--	--	ND	ND	ND
	12/16/2015	**5**	**<450**	**<0.86**	**1.5 j**	**<1.2**	**<1.2**	**<1.2**	**<0.14**	**<2.7**	**<1.8**	**<0.64**	**<0.54**	**18**	**2.4**	**<0.00034**	**80**	**<0.17**	**--**	**--**	**--**
VP-2	12/28/2006	5	--	<4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
	7/25/2007	5	--	<3.6	<4.3	<5.0	<5.0	<5.0	--	8.9	--	--	--	--	--	--	--	--	ND	ND	ND
	12/16/2015	**5**	**<510**	**<0.96**	**<1.5**	**<1.4**	**<1.4**	**<1.4**	**<0.15**	**6.8 j**	**<2.1**	**<0.72**	**<0.61**	**19**	**1.0**	**<0.00034**	**80**	**<0.17**	**--**	**--**	**--**
Sub-Slab Vapor Probes																					
SSVP-1	**12/16/2015**	**1**	**<510**	**<0.96**	**3.0 j**	**<1.4**	**<1.4**	**<1.4**	**0.55 j**	**6.6 j**	**<2.1**	**<0.72**	**<0.61**	**15**	**4.1**	**<0.00025**	**81**	**0.29**	**--**	**--**	**--**
SSVP-2	**12/16/2015**	**1**	**<460**	**1.2 j**	**28**	**<1.2**	**2.8 j**	**<1.2**	**<0.14**	**<2.7**	**<1.9**	**<0.65**	**<0.56**	**20**	**1.0**	**<0.00023**	**78**	**0.70**	**--**	**--**	**--**
Duplicate Samples (field)																					
VP-1-DUP	12/28/2006	5	--	<4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
VP-1 Duplicate	7/25/2007	5	--	<4.0	<4.8	<5.5	6.0	<5.5	--	<6.9	--	--	--	--	--	--	--	--	ND	ND	ND
VP-2 Duplicate	12/28/2006	5	--	<4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
VP-2-DUP	**12/16/2015**	**5**	**<500**	**<0.94**	**6.3**	**<1.3**	**<1.3**	**<1.3**	**<0.15**	**6.7j**	**<2.0**	**<0.71**	**<0.60**	**19**	**1.1**	**<0.00024**	**80**	**<0.12**	**--**	**--**	**--**
SSVP-2-DUP	**12/16/2015**	**1**	**<500**	**0.99 j**	**15**	**<1.3**	**1.6 j**	**<1.3**	**0.50 j**	**3.4 j**	**<2.0**	**<0.71**	**<0.60**	**18**	**1.4**	**<0.00024**	**80**	**0.84**	**--**	**--**	**--**

Abbreviations and Analyses:

TPHg = Total Petroleum Hydrocarbons as Gasoline
PCE = Tetrachloroethene
TCE = Trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
LTCP = Low-Threat Underground Storage Tank Closure Policy
* = California State Water Resources Control Board, *Low-Threat Underground Storage Tank Closure Policy* (the Policy) Appendix 4 Scenario 4 - Direct Measurement of Soil Gas Concentrations - Soil Gas Criteria - With Biottenuation Zone - Commercial
ESL = Environmental Screening Levels
** = *User's Guide: Derivation and Application of ESLs (Interim Final 2016)* and ESL Table T2-1: Tier 2 Input and Output (Feb. 2016, Rev.3)
ft = Measured in feet
<n = Not dectected (ND) above laboratory reporting limit, n.
µg/m³ = Micrograms per cubic meter.
Benzene, isobutane, butane and propane by modified EPA Method TO-15 (7/25/2007 event analyzed the TO-15 full scan)
J = Estimated value

Appendices

Appendix A
Agency Correspondence

Soo, Kit

From: Soo, Kit, Env. Health <Kit.Soo@acgov.org>
Sent: Wednesday, September 14, 2016 2:30 PM
To: esme_designers@yahoo.com
Cc: Fong, Bryan; Schaefer, Peter; Roe, Dilan, Env. Health
Subject: RO196 - Bill Louie's Service Station - 800 Franklin Street, Oakland - August 22, 2016 Meeting Summary and Action items ~COR-581000~ [Copy]

Dear Ms. Chiu,

Thank you for attending the meeting on August 22, 2016. Attendees of the meeting included Peggy Chiu, Anny Chiu (Chiu Family); Peter Schaeffer and Bryan Fong (GHD Consultants); and Dilan Roe and Kit Soo from Alameda County Department of Environmental Health (ACDEH). The purpose of the meeting was to discuss the status of the project as well as to introduce myself as the new case worker for this site.

The below summarizes our discussion items, deliverables/action items during the course of the meeting:

Discussion

General

- History of the site and current land use.
- No basements or crawl space are located at the site.

Soil Vapor Sampling

- The *Soil Gas Assessment Report, Chiu Property, 800 Franklin Street, Oakland, California,* dated January 19, 2016, prepared by GHD Consultants, was reviewed. The purpose of this investigation was to assess the potential for vapor intrusion risk to indoor air within the on-site building. The results showed that no hydrocarbon or volatile organic compounds (VOCs) were detected at concentrations above the Environmental Screening Levels (ESLs) from the soil gas wells (VP-1 and VP-2) located at the perimeter of the property and sub-slab probes (SSVP-1 and SSVP-2) located within the building.

Groundwater Monitoring

- Groundwater flow and directions are likely influenced by the dewatering activities associated with the BART tunnel which is located immediately north/northwest of the site.
- Groundwater concentrations for benzene in the tested wells have generally been stable and consistent with historical results.
- BART Tube - identify the BART sump located closest to the site.

Deliverables/Action Items

As discussed during the meeting, please prepare the following support document and performed the following to advance the site to closure.

1. Table and Figure showing all borings/monitoring wells, excavation base and wall samples, etc., for what is remaining at the site
2. Identify the BART sump located closest to the site. Propose sampling the sump if accessible.
3. Perform groundwater sampling for the 2md Half of 2016 and add VOC analysis (Method 8260B) to all sampled groundwater monitoring locations, for verification of impacts associated with the historical solvent and waste oil tanks

After the completion of the above-mentioned items, prepare a request for closure document which goes through the Low Threat Closure Policy criteria in detail.

Technical Report Request

Please upload the documentation to the ACDEH ftp site (Attention: Kit Soo) and to the State Water Resources Control Board's GeoTracker website according to the following schedule and naming convention:

1. **October 30, 2016** - Table and Figure showing all borings/monitoring wells, excavation base and wall samples, etc., for what is remaining at the site; and information with respect to the location of the closest BART sump to the site
   File to be named: MISC_SAMP_R RO0196

2. **October 30, 2016** – Groundwater Monitoring Summary Report
   File to be named: GWM_R_yyyy-mm-dd RO0196

If you have any questions, please let us know.

Thanks,
Kit

Kit Soo, PG
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Pkwy
Alameda, CA 94502
Direct - 510-567-6791
kit.soo@acgov.org

This e-mail has been scanned for viruses

Appendix B
Boring Logs

BORING LOG B-1

JOB NO: 8854-S1 DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin St., Oakland SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger DATUM: MSL

SAMPLER TYPE	DRIVE WEIGHT-LB	HEIGHT OF FALL-IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
					SM	Silty fine sand, mottled yellowish-brown and brown, moist, loose.
B-1-1	7	10.4	98.8			Medium dense.
						Color changes to yellowish-brown.
				5		Dense.
B-1-2	45	12.8	106.4			
				10		Boring terminated at 10 feet deep. No free ground water encountered.

FILE

BORING LOG B-2

JOB NO: 8864-S1 DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin Street, Oakland SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger DATUM: MSL

SAMPLER TYPE	DRIVE WEIGHT-LB	HEIGHT OF FALL-IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
					SM	Silty sand, brown, moist, medium dense.
				5		Color changes to yellowish-brown.
				10		
B-2-1	45			15		Less fines.
B-2-2	50/9"	13.7	96.3	20		Some silt.
						Boring terminated at 20 feet deep. No free ground water encountered

FILE

BORING LOG B-3

JOB NO: 8864-S1 DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin Street, Oakland SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger DATUM MSL

SAMPLER TYPE	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
B-3-1	8	11.6	107.0		SM	Silty sand with some gravel, brown, moist, stiff: baserock.
						Some clay, gray, green and brown: tank backfill?
B-3-2	12	17.9	102.6	5		
					ML	Sandy silt, dark gray, moist, low plasticity, firm to stiff: tank backfill?
B-3-3	50	11.8	110.4	10	SM	Silty fine sand, grayish-green, moist, dense: tank backfill?
						Slight petroleum odor?
B-3-4	45	13.3	114.2	15		Slight petroleum odor?
						End of backfill 15½ feet?
						Color changes to yellowish-brown.
B-3-5	50 6"	15.1	108.9	20		

FILE

BORING LOG B-3 (cont.)

JOB NO.: 8864-S1

JOB NAME: 800 Franklin Street, Oakland

SHEET 2 OF 2

DEPTH 20 TO 28½ FT.

Sample	Blows per ft.	Moisture Content %	Dry Unit Weight p.c.f.	Depth in feet	USCS Classification	
				20		
B-3-6	50/6"			25		Petroleum odor? Partial recovery.
				30		Boring terminated at 28½ feet deep. Free ground water encountered at 28 feet deep. Boring backfilled with cement grout to 23½ feet.

FILE

FRANK LEE & ASSOCIATES

BORING LOG B-4

JOB NO: 8864-S1

DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin Street, Oakland

SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger

DATUM: MSL

SAMPLER TYPE	DRIVE WEIGHT-LB	HEIGHT OF FALL-IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
					ML	Silt, brown, moist, low plasticity, soft: artificial fill? Some sand and gravel.
B-4-1	8	13.1	111.7		CL	Sandy clay, mottled light and dark brown, moist, low plasticity; metal objects: artificial fill, old tank removal backfill.
B-4-2	11			5		
				10		Boring terminated at 6 feet deep due to refusal (obstruction in fill). No free ground water encountered.

FILE

BORING LOG

PROJECT NO:90-1008	PROJECT NAME: CHIU
LOCATION:800 FRANKLIN ST., OAKLAND, CA	
GEOLOGIST: REINHARD RUHMKE	
GROUND WATER DEPTH: 25 FEET	
DRILLING METHODS: HOLLOW-STEM AUGER	

BORING NO:B1
DATE:09/11/91
PAGE 1 OF 1
DRILLER:HEW

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
0				8 INCHES CONCRETE			
5	B1-5	18"	10 13 16	LIGHT BROWN FINE SAND; LOOSE; DRY.	SP		
10	B1-10	18"	9 11 11	GRAYISH-GREEN FINE SAND; LOOSE; DRY; ODOR.	SP		
15	B1-15	18"	6 10 14				
20	B1-20	18"	7 13 18	OLIVE-GRAY BROWN FINE SAND; MOTTLED; ODOR; DRY.	SP		
25	B1-25	18"	7 21 28	DARK GRAY FINE SAND; WET; ODOR; END OF BORING.			

REMARKS

BOREHOLE WAS BACKFILLED WITH NEAT CEMENT

MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

BORING LOG

PROJECT NO:90-1008	PROJECT NAME: CHIU	BORING NO:B2
LOCATION:800 FRANKLIN ST., OAKLAND, CA		DATE:10/02/91
GEOLOGIST:REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 26 FEET		DRILLER:HEW
DRILLING METHODS: HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
0				8 INCHES CONCRETE			
1–4				LIGHT BROWN FINE SAND: LOOSE: DRY.			
5	B2-5	18"	7 11 14	A LITTLE CLAY.	SP		
6–9				NO CLAY.			
10	B2-10	14"	10 12 15	BROWN FINE SAND: LOOSE: DRY.			
11–13							
14					SP		
15	B2-15	4"	5 12 14	MOIST			
16–19							
20	B2-20	18"	14 18 19	OLIVE-GRAY FINE SAND: SLIGHT ODOR: DRY.	SP		
21–24							
25	B2-25	2"	7 7 10	DARK GRAY FINE SAND: WET: ODOR: END OF BORING			
26–30							

REMARKS

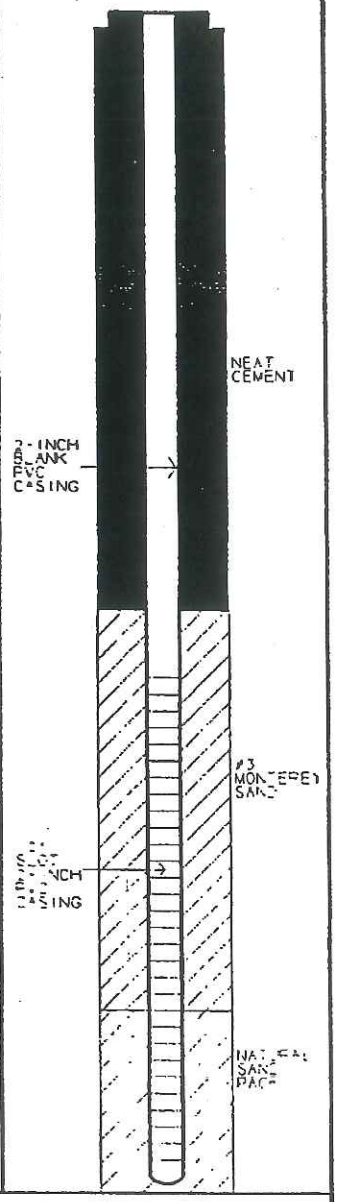
BOREHOLE WAS BACKFILLED WITH NEAT CEMENT

MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

BORING LOG

PROJECT NO: 90-1008	PROJECT NAME: CHIU	BORING NO: MW4
LOCATION: 800 FRANKLIN ST., OAKLAND, CA		DATE: 10/02/91
GEOLOGIST: REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 25 FEET		DRILLER: HEW
DRILLING METHODS: HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
0				8 INCHES CONCRETE			
5	MW4-5	18"	4 4 5	BROWN FINE SAND: LOOSE: DRY.	SP		
10	MW4-10	14"	12 15 16				
15	MW4-15	14"	5 6 9				
20	MW4-20	12"	12 18 21	GRAY FINE SAND: LOOSE: DRY: ODOR	SP		
25	MW4-25	[illegible]	13 24 25	WET	SP		
35				END OF BORING			



REMARKS

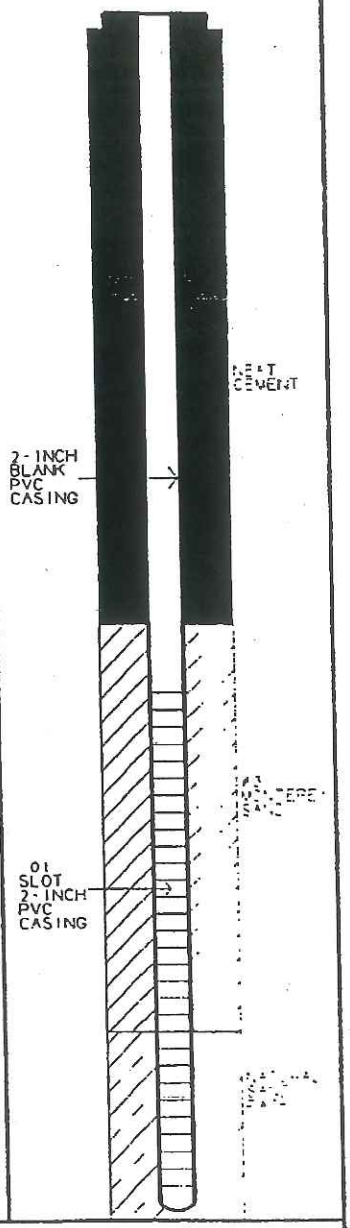
A NATURAL FILTER PACK WAS GENERATED DUE TO FLOWING SANDS

MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

BORING LOG

PROJECT NO:90-1008	PROJECT NAME: CHIU	BORING NO:MW5
LOCATION:800 FRANKLIN ST., OAKLAND, CA		DATE:10/03/91
GEOLOGIST:REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 26 FEET		DRILLER:HEW
DRILLING METHODS:HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
0				8 INCHES CONCRETE			
5	MW5-5	10"	12 12 13				
7				RUSTY BROWN SILTY FINE SAND: LOOSE:DRY	SP		
10	MW5-10	18"	10 12 14	A LITTLE CLAY			
12				NO CLAY OR SILT			
15	MW5-15	18"	5 8 11				
18					SP		
20	MW5-20	18"	13 19 23	A LITTLE CLAY			
23				NO CLAY			
25	MW5-25	18"	12 19 34	WET			
29					SP		
35				END OF BORING			



REMARKS

A NATURAL FILTER PACK WAS GENERATED DUE TO FLOWING SANDS

MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

File No. 124575

KEY TO BORING LOGS

BORING LOG SYMBOL

—	Geologic contact line
═	Termination of boring
▽	Water level, preliminary measurement
▼	Water level, stabilized

SAMPLE RECOVERY

■	Undisturbed sample, retained for lab testing
▯	Sampler drive distance, sample examined in the field
☒	No sample recovered
SPT	Standard Penetration Test

SOIL SAMPLE TYPE

C	California
CM	California Modified
HS	Driven manual Hand Sampler
NQ	NQ Wireline
P	Piston
PB	Pitcher Barrel
SS	Split Spoon (Terzaghi)

File No: 124575

LOG OF MONITORING WELL - MW-6

Client: Chiu
Site: 800 Franklin St.
Drillers: Kvilhaug
Drill Rig: B-61
Auger Type/Size: 8" hollow stem
Top of Casing Elevation: 33 (Local Datum)

Logged By: RH
Approved By:
Date Completed: May 15, 1997
Casing Diameter: 2 in.
Screen Size: .010
Filter pack: #3 sand

Symbols used explained on "Key to Boring Logs"

Sample Number	Sampler	Blows per foot	F.I.D. Reading (ppm)	Dry Unit Weight p.c.f.	Well Data	Depth in feet	U.S. C.S.	Surface Conditions: Concrete Description
						0		**Concrete Slab.**
								Baserock, grayish-brown crushed rock.
								Sand, medium-grained, brown, slightly damp to damp, dense; no odor.
								Some clay
B6-1		48				5		
								Easy drilling.
						10		No odor.
B6-2		24						
								Increased sand, decreased clay, moisture change to wet.
						15		**Clayey sand,** medium-grained, grayish-green, damp, dense; some petroleum hydrocarbon odor.
B6-3A B6-3B		42						
								Sand, medium- to coarse-grained, greenish-gray, damp, dense.
						20		

ASSOCIATED TERRA CONSULTANTS, Inc.

File No: 124575

LOG OF MONITORING WELL MW- 6 (Continued)

Sample Number	Sampler	Blows per foot	F.I.D. Reading (ppm)	Dry Unit Weight p.c.f.	Well Data	Depth in feet	U.S. C.S.	Description
B6-4A B6-4B		42				20		
						▽		Color change to gray.
						25		
B6-5A B6-5B		97						
						30		Change color to grayish-green.
B6-6A B6-6B		50						
						35		
B6-11		14						
								Bottom of hole at 36-1/4 ft. Free groundwater encountered at 22-1/2 ft.
						40		
						45		

Boring/Well Log Legend

KEY TO SYMBOLS/ABBREVIATIONS

- First encountered groundwater
- Static groundwater
- Soils logged by hand-auger or air-knife cuttings
- Soils logged by drill cuttings or disturbed sample
- Undisturbed soil sample interval
- Soil sample retained for submittal to analytical laboratory
- No recovery within interval
- Hydropunch screen interval

PID = Photo-ionization detector or organic vapor meter reading in parts per million (ppm)

fbg = Feet below grade

Blow Counts = Number of blows required to drive a California-modified split-spoon sampler using a 140-pound hammer falling freely 30 inches, recorded per 6-inch interval of a total 18-inch sample interval

(10YR 4/4) = Soil color according to Munsell Soil Color Charts

msl = Mean sea level

Soils logged according to the USCS.

UNIFIED SOILS CLASSIFICATION SYSTEM (USCS) SUMMARY

Major Divisions			Graphic	Group Symbol	Typical Description
Coarse-Grained Soils (>50% Sands and/or Gravels)	Gravel and Gravelly Soils	Clean Gravels (≤5% fines)		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		Gravels with Fines (≥15% fines)		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils	Clean Sands (≤5% fines)		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sand, little or no fines
		Sands with Fines (≥15% fines)		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (>50% Silts and/or Clays)	Silts and Clays			ML	Inorganic silts, very fine sands, silty or clayey fine sands, clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays			MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils
				CH	Inorganic clays of high plasticity
				OH	Organic clays of medium to high plasticity, organic silts
Highly Organic Soils				PT	Peat, humus, swamp soils with high organic contents

I:\MISC\TEMPLATES\BORING LOG LEGEND.AI

CONESTOGA-ROVERS & ASSOCIATES

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	MW-3
JOB/SITE NAME	Chiu	**DRILLING STARTED**	29-Jan-07
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	29-Jan-07
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Woodward Drilling Co., C57 #710079	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	--	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	10-inch	**SCREENED INTERVALS**	NA
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Well located on Franklin St. between two metered parking spaces in front of 800 Franklin St. building.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							8-inches of concrete.	0.7	
							Silty SAND (fill): Light brown; moist; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		
				5			**Silty SAND:** Light brown; moist; 40% silt, 60% fine to medium sand; low plasticity; low estimated permeability.	5.0	
				10					
				15			@ 15' - Olive gray, 30% silt, 60% fine to medium sand.		
				20					Portland Type I/II

Continued Next Page

WELL LOG (PID) I:\IR\6-CHARS\5810--\581000\581000~1\158FF5B~1\BORING~1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 7/1/10

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	MW-3
JOB/SITE NAME	Chiu	**DRILLING STARTED**	29-Jan-07
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	29-Jan-07

Continued from Previous Page

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
					SM				
				25			@ 25' - Light brown.		
				30			@ 30 - 15% silt, 85% fine to medium sand; non-plastic; and moderate estimated permeability.		
							@ 32.5' - Olive gray and wet.		
				35				35.0	Bottom of Boring @ 35 fbg

Notes:

Soil lithology based on soil cuttings from MW-3A and other site boring logs.

2-inch, PVC, schedule 40 well MW-3 was destroyed by pressure grouting on January 29, 2007. MW-3 was screened from approximately 20 to 35 feet below grade.

WELL LOG (PID) I:\IR\6-CHARS\5810-5810000\581000~1\56FF5B~1\BORING~1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 7/1/10

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	MW-3A
JOB/SITE NAME	Chiu	**DRILLING STARTED**	08-Feb-07
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	08-Feb-07
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Woodward Drilling Co., C57 #710079	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	10-inch	**SCREENED INTERVALS**	20 to 35 fbg
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Well located on Franklin St. between two metered parking spaces in front of 800 Franklin St. building.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							8-inches of concrete.	0.7	
0							**Silty SAND (fill):** Light brown; moist; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		
0				5			**Silty SAND:** Light brown; moist; 40% silt, 60% fine to medium sand; low plasticity; low estimated permeability.	5.0	
1				15			@ 15' - Olive gray, 30% silt, 60% fine to medium sand.		

Portland Type I/II

Bentonite Seal

Lonestar Sand #2/12

WELL LOG (PID) I:\IR16-CHARS\5810-\581000\581000-158FF5B-1\BORING-1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 7/1/10

Continued Next Page

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	MW-3A
JOB/SITE NAME	Chiu	**DRILLING STARTED**	08-Feb-07
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	08-Feb-07

Continued from Previous Page

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
					SM				
32				25			@ 25' - Light brown.		
1198				30			@ 30 - 15% silt, 85% fine to medium sand; non-plastic; and moderate estimated permeability.		4"-diam., 0.010" Slotted Schedule 40 PVC
128							@ 32.5' - Olive gray and wet.		
				35				35.0	Bottom of Boring @ 35 fbg

Notes:

Soil lithology based on soil cuttings from MW-3A.

4-inch well MW-3A is located adjacent to former well MW-3.

WELL LOG (PID) I:\IR16-CHARS\5810-1581000\581000~1158FF5B~1\BORING~1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 7/1/10

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	VP-1
JOB/SITE NAME	Chiu	**DRILLING STARTED**	17-Nov-06
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	17-Nov-06
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	3-inch	**SCREENED INTERVALS**	5.5 to 6 fbg
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	On Franklin St. in front of 800 Franklin St. building		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0							Surface: 4-inches of concrete.	0.3	Portland Type I/II
							Silty SAND (fill): Light brown; damp; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		Hydrated Granular Bentonite 1.5 - 4 fbg
									1/4-inch Nyflow tubing
									Dry Granular Bentonite 4 - 5 fbg
0		VP-1-5.5		5					Monterey Sand #2/12
									6-inch Screened Vapor Probe
								6.0	Bottom of Boring @ 6 fbg

Note:
Installed soil vapor probe VP-1 to 6 fbg.
See Figure 3 for construction details of the soil vapor probe.
Soil vapor probe was sampled on 12/28/2006.

WELL LOG (PID) I:\IR\6-CHARS\5810--\581000\581000--1\58FF5B--1\BORING--1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 7/1/10

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	VP-2
JOB/SITE NAME	Chiu	**DRILLING STARTED**	17-Nov-06
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	17-Nov-06
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	3-inch	**SCREENED INTERVALS**	5.5 to 6 fbg
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA
REMARKS	On 8th St. in sidewalk in front of 800 Franklin St. building		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Surface: 4-inches of Concrete.	0.3	Portland Type I/II
0							**Silty SAND (fill):** Light brown; damp; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		Hydrated Granular Bentonite 1.5 - 4 fbg
							@3': Yellow-grey; 25% silt, 75% fine to medium sand.		1/4-inch Nyflow tubing
									Dry Granular Bentonite 4 - 5 fbg
0		VP-2- 5.5		5					Monterey Sand #2/12
								6.0	6-inch Screened Vapor Probe
									Bottom of Boring @ 6 fbg

Note:
Installed soil vapor probe VP-1 to 6 fbg.
See Figure 3 for construction details of the soil vapor probe.
Soil Vapor probe was sampled on 12/28/2006.

WELL LOG (PID) I:\IR\6-CHARS\5810--\581000\581000~1\158FF5B~1\BORING~1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 7/1/10

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BORING / WELL LOG

CLIENT NAME	Tommy Chiu	**BORING/WELL NAME**	MW-7
JOB/SITE NAME	Chiu Property	**DRILLING STARTED**	22-May-12
LOCATION	800 Franklin St, Oakland, CA	**DRILLING COMPLETED**	23-May-12
PROJECT NUMBER	581000	**WELL DEVELOPMENT DATE (YIELD)**	08-Jun-12
DRILLER	Vapor Tech Services C-57# 916085	**GROUND SURFACE ELEVATION**	33.75 ft above msl
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	33.49 ft above msl
BORING DIAMETER	8 inches	**SCREENED INTERVALS**	18 to 35 fbg
LOGGED BY	T. Kirnan	**DEPTH TO WATER (First Encountered)**	28.00 fbg (23-May-12)
REVIEWED BY	B. Foss PG #7445	**DEPTH TO WATER (Static)**	22.91 fbg (08-Jun-12)
REMARKS	Utility cleared by air knife assisted vac truck to 8 fbg.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							ASPHALT	1.0	
				5	SW		**SAND:** Light brown; dry; 100 % fine to medium grained sand.		
							@8': **SAND with Silt:** 10% silt, 90% fine to medium grained sand.	8.0	Portland Type I/II
				10			**Silty SAND:** Light brown; dry; 15% silt, 85% fine to medium grained sand.	10.0	2" diam., Schedule 40 PVC
							@11': Gray mottling; 20% silt, 80% fine to medium grained sand.		
							@13': Light brown; dry; 5% clay, 15% silt, 80% fine to medium grained sand.	13.0	
				15	SM				Bentonite Seal
							@16': Light brown; dry; 20% silt, 80% fine to medium grained sand.	16.0	Monterey Sand #2/16
							@19': 25% silt, 75% fine to medium grained sand.	19.0	2"-diam., 0.010" Slotted Schedule 40 PVC
				20				20.0	

WELL LOG (PID) I:\IR\6-CHARS\5810-\581000\581000~1\58328D~1\612120~1.GPJ DEFAULT.GDT 7/9/12

Continued Next Page

Conestoga Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608
Telephone: 510-420-0700
Fax: 510-420-9170

BORING / WELL LOG

CLIENT NAME	Tommy Chiu	**BORING/WELL NAME**	MW-7
JOB/SITE NAME	Chiu Property	**DRILLING STARTED**	22-May-12
LOCATION	800 Franklin St, Oakland, CA	**DRILLING COMPLETED**	23-May-12

Continued from Previous Page

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							@20': 15% silt, 85% fine to medium grained sand.		
					SM		@22': Gray to light brown, moist, 20% silt, 80% fine to medium grained sand. ▼		
							@24': **Silty SAND with Clay:** Light brown; moist; 10% clay, 20% silt, 70% fine grained sand, low plasticity.	24.0	
				25			@25.5': **Silty SAND:** Light brown; moist; 20% silt, 80% fine grained sand.	25.5	◄ Monterey Sand #2/16
					SW		**SAND:** Light borwn; moist; 100% coarse grained sand.	26.0	
							Silty SAND: Moderate brown; moist; 20% silt, 80% fine to medium grained sand.	26.5	◄ 2"-diam., 0.010" Slotted Schedule 40 PVC
							@28': wet ▽		
							@29': 30% silt, 70% fine to medium grained sand.		
				30	SM		@30': 15% silt, 85% fine to medium grained sand, few coarse.	30.0	
							@32': 20% silt, 80% fine to medium grained sand.	32.0	
							@33': **Silty SAND with Clay:** Moderate brown; moist; 10% clay; 20% silt; 70% fine to medium grained sand.	34.0	
					ML		**Clayey SILT with Sand:** Moderate brown; moist; 20% clay, 70% silt, 10% fine grained sand.	35.0	
				35					Bottom of Boring @ 35 fbg

WELL LOG (PID) I:\IR\6-CHARS\5810--\581000\581000~1\158328D~1\161212G~1.GPJ DEFAULT.GDT 7/9/12

Appendix C
Shell Oil Products US – BART Sump Water Sampling Data

04/05/2011

Sump Water Sampling Data Map

EXPLANATION

- SUMP-OPD-1 — Approximate sump sample location
- B-28 — Soil boring location
- SVP-1 — Soil vapor probe location
- S-4 — Monitoring well location
- S-21B — Deeper monitoring well location
- OW-1 — Observation well location
- IP-1 — Injection point
- B-24/VP-1 — Soil boring/vapor probe location
- S-1 — Destroyed well location
- BART line tunnel
- Storm drain line (STM)
- Water line (W)
- Sanitary sewer line (SAN)
- Telecommunications line (T)
- Gas line (G)
- Electrical line (E)
- M.H. — Manhole
- C.B. — Catch basin
- FL = 16.50' — Flow line depth below ground surface

Sample ID	Sample Date	TPHg (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Sulfate (mg/l)
SUMP-OPD-1	11/19/2010	93	38	<1.0	4.2	<1.0	100

Notes:
Sump sample ID, date, and concentrations in micrograms per liter (µg/l) or milligrams per liter (mg/l)
TPHg = Total petroleum hydrocarbons as gasoline
<X = Not detected at reporting limit X

WASHINGTON STREET
8TH STREET
BROADWAY
7TH STREET
6TH STREET
980 FREEWAY OVERPASS
880 FREEWAY OVERPASS

Former Shell Station
461 8th St.

Aladdin Bail Bonds
458 7th St.

705-721 Broadway

Bradford Pharmacy
445 8th St.

B.A.R.T. Parking Lot

American Asian Home Care, Inc.
704 Broadway

Oakland Police Department
455 7th St., 611 Broadway, & 620 Washington St.

Former Chevron Station

Eight Orchids Condominiums & Apartments
423 7th St.

Excavation Area

Freight Elevator

Building

Parking

Driveway

Sample ID	Sample Date	TPHg (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Sulfate (mg/l)
SUMP-OPD-2	11/19/2010	<50	<1.0	<1.0	<1.0	<1.0	<1.0

SUMP-OPD-2 (Rm. B3)

SUMP-OPD-1 (Rm. B55)

Sample ID	Sample Date	TPHg (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Sulfate (mg/l)
SUMP-OPD-1	11/19/2010	93	38	<1.0	4.2	<1.0	100

SUMP-BART-1

Sample ID	Sample Date	TPHg (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Sulfate (mg/l)
SUMP-BART-1	2/2/2011	<50	<0.50	<0.50	<0.50	<1.0	62,000

0 30 60 120
Scale (ft)

N

FIGURE
2

Former Shell Service Station
461 8th Street
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Base map modified from 6-25-08 Virgil Chavez Land Survey map.

I:\Shell\6-chars\2415-\241501-Oakland 461 8th\241501-FIGURES\241501 SITE PLAN.DWG

TABLE 1

SUMP WATER SAMPLING ANALYTICAL DATA
FORMER SHELL SERVICE STATION
461 8TH STREET, OAKLAND, CALIFORNIA

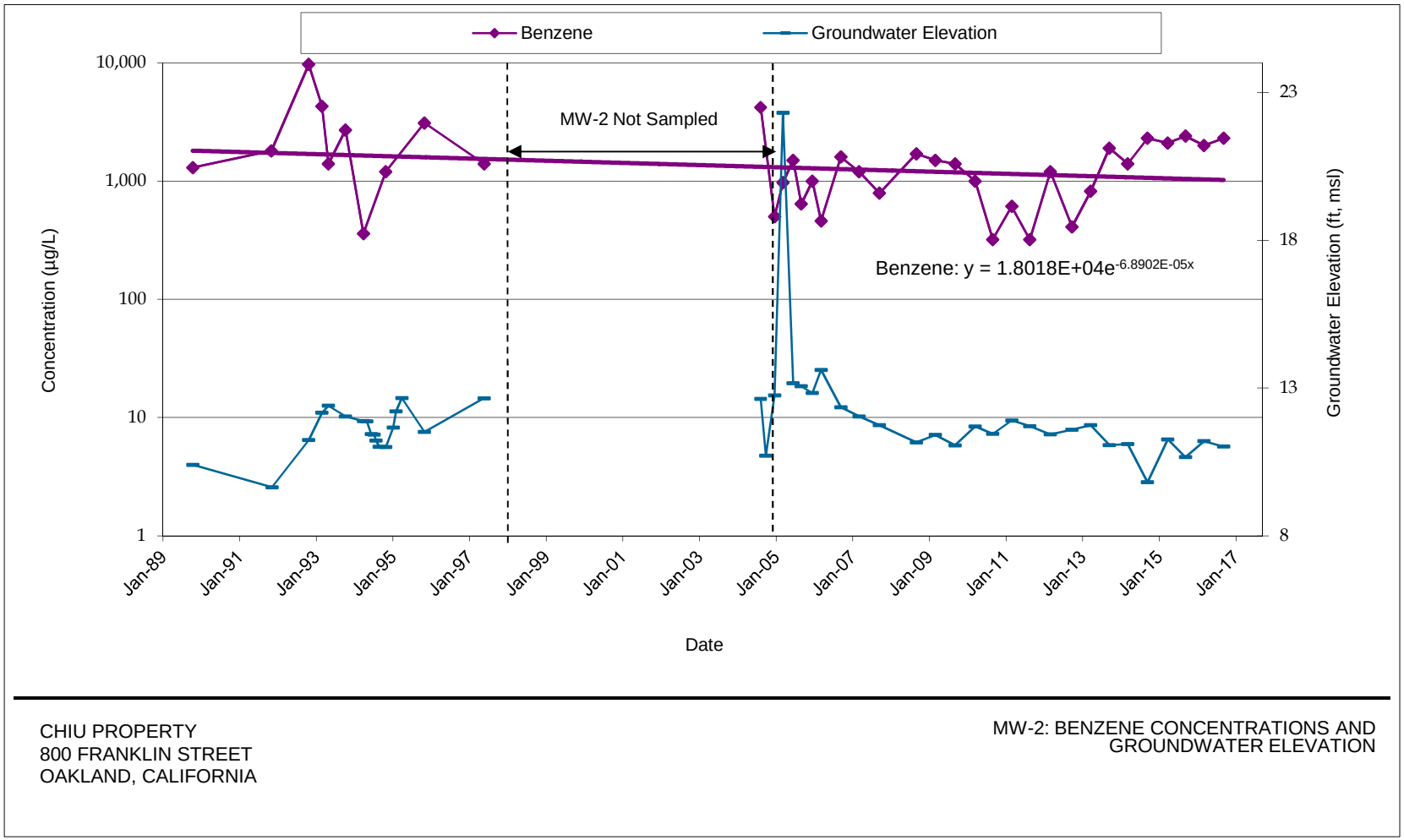
Sample ID	*Date*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*TBA*	*DIPE*	*ETBE*	*TAME*	*Sulfate*[a]
SUMP-OPD-1	11/19/2010	93	38	<1.0	4.2	<1.0	<1.0	<10	<2.0	<2.0	<2.0	100[a]
SUMP-OPD-2	11/19/2010	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	<1.0[a]
SUMP-BART-1	2/2/2011	<50	<0.50	<0.50	<0.50	<1.0	<1.0	<10	<1.0	<1.0	<1.0	62,000[a]
Groundwater ESL[b]*:*		210	46	130	43	100	1,800	18,000	---	---	---	---

Notes:

All results in micrograms per liter (µg/l) with the exception of sulfate which is reported in milligrams per liter (mg/l).
TPHg = Total petroleum hydrocarbons as gasoline; analyzed by EPA Method 8260B
Benzene, toluene, ethylbenzene, and xylenes EPA Method 8260B
MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B
TBA = Tertiary-butyl alcohol analyzed by EPA Method 8260B
DIPE = Di-isopropyl ether analyzed by EPA Method 8260B
ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B
TAME = Tertiary-amyl methyl ether analyzed by EPA Method 8260B
Sulfate by EPA Method 300.0
<x = Not detected at reporting limit x
--- = No applicable ESL
ESL = Environmental screening level

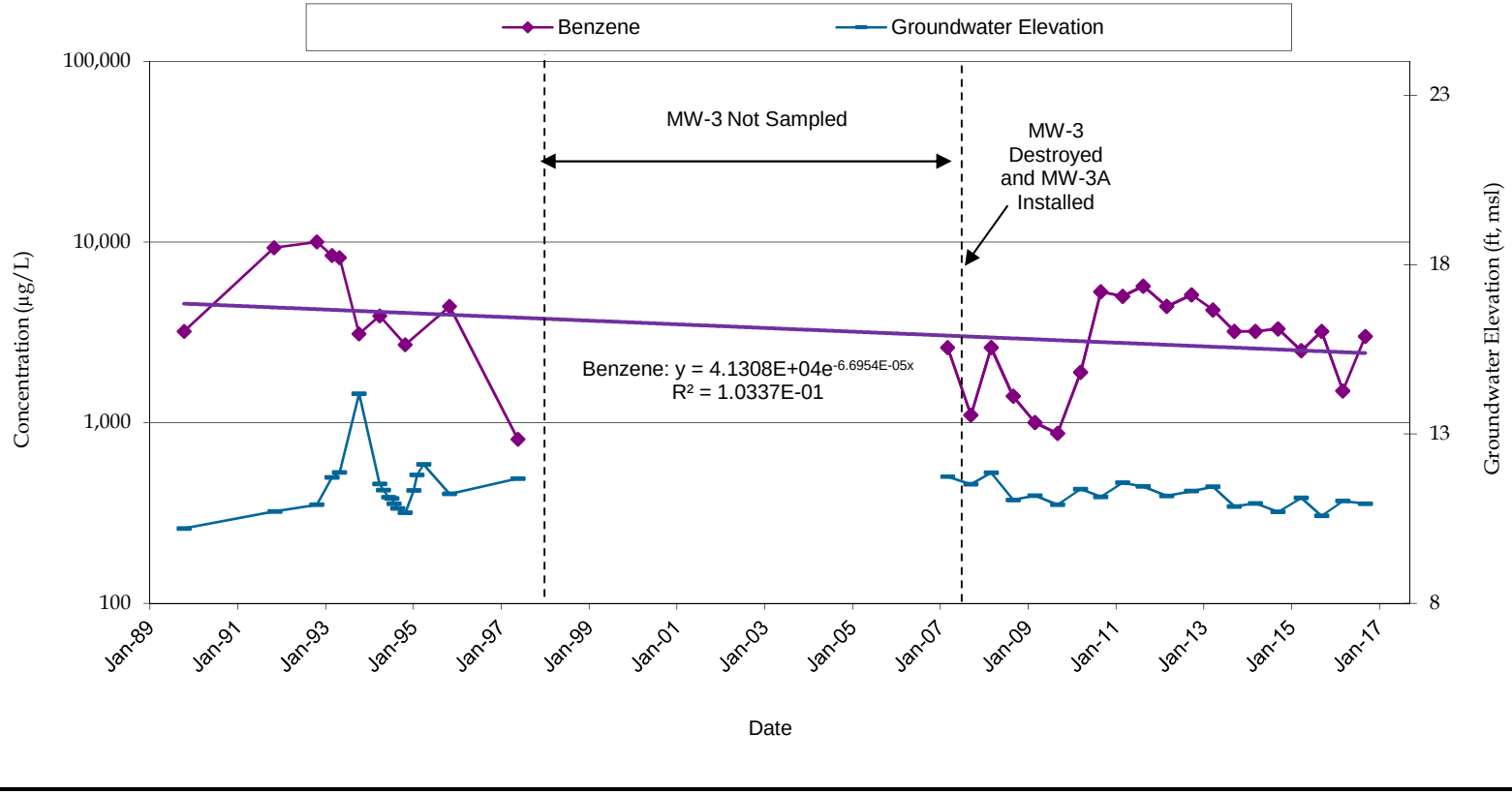
a = Sulfate reported in mg/l
b = San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for groundwater where groundwater is not a source of drinking water (Table B of *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*, California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008]).

Appendix D
Hydrocarbon Trend Graph



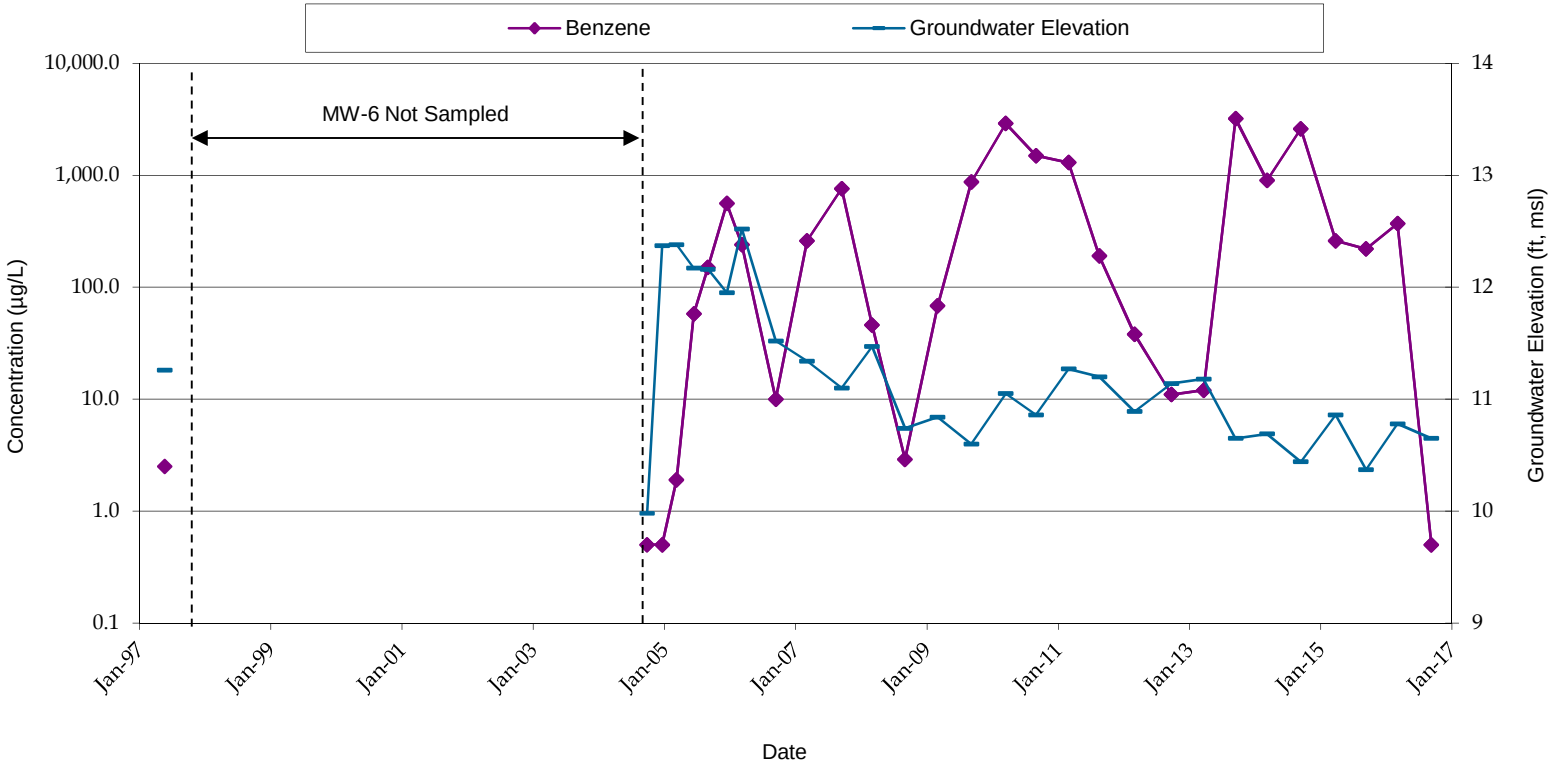
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

MW-2: BENZENE CONCENTRATIONS AND GROUNDWATER ELEVATION



CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

MW-3/3A: BENZENE CONCENTRATIONS AND GROUNDWATER ELEVATION



CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

MW-6: BENZENE CONCENTRATIONS AND GROUNDWATER ELEVATION