Ms. Dilan Roe
Alameda County Environmental Health
1131 Harbor Parkway, Suite 250
Alameda, CA 94502-6577

Shell Oil Products US
DS Soil & Groundwater Focus Delivery Group
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Tel (714) 731 1050
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Email Andrea.Wing@shell.com
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RE: 2703 Martin Luther King Jr. Way, Oakland, California
PlaNet Site ID USF04645
PlaNet Project ID 27482
ACEH Case No. RO0000145

Dear Ms. Roe:

I am informed and believe that, based on a reasonably diligent inquiry undertaken by AECOM on behalf of Equilon Enterprises LLC dba Shell Oil Products US, the information and/or recommendations contained in the attached document is true, and on that ground I declare under penalty of perjury in accordance with Water Code section 13267 that this statement is true and correct.

As always, please feel free to contact me directly at (714) 731-1050 with any questions or concerns.

Sincerely,
Shell Oil Products US

Andrea A. Wing
Principal Program Manager

AECOM
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Suite 800
Oakland, CA 94612
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May 27, 2016

Dilan Roe
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: Revised Corrective Action Plan
Former Shell Service Station
2703 Martin Luther King Jr. Way, Oakland, California
Shell PlaNet Site ID: USF04645
Shell PlaNet Project ID: 27482
Agency No. RO0000145

Dear Ms. Roe:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US, AECOM Technical Services, Inc. is pleased to submit this Revised Corrective Action Plan for the Former Shell Service Station located at 2703 Martin Luther King Jr. Way in Oakland, California.

If you have any questions regarding this submittal, please contact Sara Heikkila at 213-996-2285 or Sara.Heikkila@aecom.com.

Sincerely,

Sara Heikkila
Project Manager

Joann Lin, P.E.
Project Engineer

Enclosures: Revised Corrective Action Plan

cc: Andrea Wing, Shell Oil Products US
Rodney & Janet Kwan, Auto Tech West (site owner)
2703 Martin Luther King Jr. Way, Oakland, CA 94612
Monique Oatis, 670 27th Street, Oakland CA (off-site property owner)

AECOM

Revised Corrective Action Plan

Former Shell Service Station
2703 Martin Luther King Jr. Way
Oakland, California

May 2016

Revised Corrective Action Plan

Former Shell Service Station
2703 Martin Luther King Jr. Way
Oakland, California

PlaNet Site ID	USF04645
PlaNet Project ID	27482
Agency Case No.	RO0000145

Submitted to:

Dilan Roe
Alameda County Environmental Health
1131 Harbor Bay Parkway Suite 250
Alameda, California 94502

Submitted by:

AECOM Technical Services, Inc.
1333 Broadway, Suite 800
Oakland, California 94612

On Behalf of

Shell Oil Products US

May 27, 2016

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List of Acronyms

ACEH	Alameda County Environmental Health
AECOM	AECOM Technical Services, Inc.
bgs	below ground surface
CAP	Corrective Action Plan
COC	constituents of concern
CRA	Conestoga-Rovers & Associates
DO	dissolved oxygen
DPE	dual phase extraction
GWE	groundwater extraction
HHRA	Human Health Risk Assessment
ISCO	in-situ chemical oxidation
LTCP	State's Low-threat Underground Storage Tank Case Closure Policy
MNA	monitored natural attenuation
MTBE	methyl tertiary-butyl ether
ORC	oxygen release compound
ORP	oxidation and reduction potential
PAH	polycyclic aromatic hydrocarbon
ROI	radius of influence
SCM/FS/CAP	Site Conceptual Model and Feasibility Study/Corrective Action Plan
Shell	Equilon Enterprises LLC dba Shell Oil Products US
the Site	Former Shell service station at 2703 Martin Luther King Jr. Way
SWRCB	California State Water Resources Control Board
TPHg	total petroleum hydrocarbons as gasoline
UST	underground storage tank
VOC	volatile organic compound

1 Introduction

On behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), AECOM Technical Services, Inc. (AECOM) prepared this Revised Corrective Action Plan (CAP) for the Former Shell Service Station (the Site) located at 2703 Martin Luther King Jr. Way in Oakland, California (Figure 1).

The purpose of this report is to present a revised CAP for the proposed remedial approach based on the State Water Resources Control Board (SWRCB) *Low-Threat Underground Storage Tank Case Closure Policy* (LTCP) (SWRCB, 2012).

This report was prepared in response to the Alameda County Environmental Health (ACEH) January 19, 2016 letter (provided in Appendix A) requesting that a revised CAP be prepared. The previous CAP was submitted in 2008 by Conestoga-Rovers & Associates (CRA) (CRA, 2008a). AECOM requested a four-week extension for submitting the CAP, and Dilan Roe (ACEH) approved the extension to May 27, 2016, in an email on April 5, 2016 (Appendix A).

2 Background

This section describes the Site and associated environmental history, geology, and hydrogeology. Historical soil data are included on Tables 1 and 2, and historical groundwater data are included on Table 3.

2.1 Site Description

The Site is a former service station located on the northwest corner of Martin Luther King Jr. Way and 27th Street in a commercial and residential area of Oakland, California (Figure 1). A Shell service station operated on the property from approximately 1959 to 1979, with two dispenser islands, three gasoline underground storage tanks (USTs), and a waste oil UST. The fueling equipment was removed after Shell terminated operations at the Site.

In 1979, Acme West Ambulance Company purchased the Site and installed a 2,000-gallon gasoline UST in the same approximate location of Shell's former USTs. The property was sold to Auto Tech West in 1986, and the Site is currently used as an automotive repair shop. Auto Tech West reportedly never used the UST that was removed in 1994, although an active 150-gallon aboveground waste oil tank is currently in use in the northern-central portion of the property. Gasoline constituents were detected in soil samples collected following the removal of a 2,000-gallon UST and separate-phase hydrocarbons were detected at several soil boring locations during October 1994.

Two excavations occurred at the Site (as seen in Figure 2). The UST pit was over-excavated from 9 feet below ground surface (bgs) to approximately 11 feet bgs during 1996 prior to backfilling with clean, imported fill material. A shallow soil (0 to 2 feet bgs) excavation was completed in 2013 behind the former service station building. An area on the northwestern boundary of the property (around soil sample W-2, Figure 2) was over-excavated to 3 feet bgs. The Site currently has one existing building in the northwest corner of the property with open service bays. The remaining portion of the Site is paved with asphalt.

2.2 Environmental Site History

Environmental activities have been performed since 1994. A detailed description of the Site history is provided in Appendix B, and sample locations are provided on Figures 2 and 3.

2.3 Regional Geology and Hydrogeology

The Site is within the East Bay Plain basin. Existing beneficial uses of the East Bay Plain basin include municipal and domestic water supply, industrial service supply, industrial process supply, and agricultural water supply. The Site falls within Zone A of the East Bay Plain basin, as defined in the June 1999 "East Bay Plain Groundwater Basin Beneficial Use Evaluation Report for Alameda and Contra Costa Counties, CA" (San Francisco Bay Regional Water Quality Control Board, 1999). Groundwater in Zone A is noted as an existing or probably drinking water resource, with a deep basin ranging from 500 to over 1,000 feet bgs. However, the document also states that the City of Oakland has no plans to "develop local groundwater

resources for drinking water purposes because of existing or potential salt water intrusion, contamination, or poor or limited quantity."

2.4 Site Specific Geology and Hydrogeology

The Site is generally underlain by fine-grained soils (clays and silts). A coarser-grained lens may be present at approximately 10 to 25 feet bgs. The coarser-grained lens does not appear to extend beneath the Site to the southeast, nor to the southwest, and appears to become thinner northwest of the Site. Additional non-continuous coarser-grained lenses are shown on cross sections (CRA, 2008a) (Appendix C).

Depth to groundwater in the Site monitoring wells has ranged historically from approximately 3 to 10 feet bgs. Groundwater has also been encountered in shallow soil vapor probe screen intervals even when no groundwater is encountered in deeper screen intervals in the same locations (i.e., VP-3 during May 2007), and when groundwater in the nearby monitoring wells is deeper. This may be indicative of perched water along preferential pathways. The sanitary and storm sewer systems in the vicinity, buried at depths ranging from 3.5 to 9 feet bgs, may encounter groundwater. Additional utility lines were identified in the northwest corner of the property, including a potential sewer line deeper than 4 feet bgs, an electrical line traced from the station building to the western property boundary, and an unidentified utility traced from the northwest corner of the building to the southwest (Figure 2).

Groundwater has been first encountered during drilling at depths ranging from approximately 7 to 15 feet bgs. Based on this, groundwater may be semi-confined. Groundwater flow direction flows radially outward from the 1996 excavation footprint toward the west-northwest to southwest at gradients ranging from "variable" to 0.01 to 0.07 feet per foot (Groundwater Monitoring Reports 2008 through 2016). The fourth quarter 2015 groundwater gradient and chemical concentration map is included in Appendix C. Department of Water Resources records during 2003 and a door-to-door survey of properties within 500 feet of the Site in 2003 and 300 feet in 2006 did not identify a well within a one-half mile radius of the Site. The nearest surface water body is Lake Merritt, which is over one-half mile southeast of the Site. Based on the absence of drinking water wells within one-half mile radius of the Site and the City of Oakland having no plans to develop local groundwater resources, groundwater beneath the Site is not considered to be a drinking water source.

2.5 Remediation History

The past remedial actions conducted on the Site include the following:

- 1994: UST Removal
- 1996: Over-Excavation
- 2001: Oxygen Releasing Compound (ORC) Sock Installation in V-1 and V-2
- 2003 – 2005: ORC Sock Installation in MW-5 and V-2
- January 2006: Dual Phase Extraction (DPE) Pilot Test

Additional information about the remediation history is provided in Appendix B.

3 LTCP Evaluation

On August 17, 2012, the SWRCB adopted Resolution No. 2012-0016, the LTCP. The intent of this policy is to increase cleanup process efficiency at petroleum release sites. A benefit of improved efficiency is the preservation of limited resources for mitigation of releases posing the greatest threat to human and environmental health. Per the policy, sites that meet the general and media-specific criteria described in the policy do not pose a threat to human health, safety, or the environment and are appropriate for case closure pursuant to Health and Safety Code section 25296.10. The policy further states that sites meeting the stated criteria for low-threat closure should be issued a closure letter if the site is determined to be low-threat based upon a site-specific analysis. Site conditions with respect to this policy are discussed below.

3.1 General Criteria

a) *The unauthorized release is located within the service area of a public water system.*
Satisfied: The Site and surrounding area are located within the East Bay Municipal Utility District which serves as the public water system.

b) *The unauthorized release consists only of petroleum.*
Satisfied: Soil and groundwater impacts have been identified as lead, polycyclic aromatic hydrocarbons (PAHs), and gasoline or other refined petroleum product releases. On October 30, 2013, ACEH agreed that lead and PAHs were not related to the releases from the Site, additional investigation of shallow lead and PAHs is not required. The Shell release consists only of petroleum.

c) *The unauthorized ("primary") release from the UST system has been stopped.*
Satisfied: In 1994, the USTs, dispensers, and product piping were removed.

d) *Free product has been removed to the maximum extent practicable.*
Satisfied: Free product was only detected in grab groundwater samples collected from four soil borings drilled in 1995 and has not been detected since.

e) *A conceptual site model has been developed.*
Not Satisfied: A conceptual site model was submitted in February 2008 (CRA, 2008a). Several subsurface investigations have been conducted since 2008; therefore, AECOM proposes to update the conceptual site model. An updated conceptual site model section was included in the Human Health Risk Assessment (HHRA) (AECOM, 2015), which identified the need for additional soil vapor sampling.

f) *Secondary source removal has been addressed.*
Not Satisfied: In 1996, over-excavation was conducted in the former UST pit to approximately 11 feet bgs. In the second quarter 2001, ORC filter socks were installed in wells V-1 and V-2 and were discontinued in the fourth quarter of 2001. In the first quarter of 2003, ORC filter socks were installed in V-2 and MW-5 and continued through the first quarter 2005. In January 2006, Cambria conducted a DPE pilot test (Cambria, 2006b). Cambria determined DPE would not be a feasible remedial technology for the target areas at the Site. A shallow soil excavation to approximately 2 feet bgs behind the Site building was conducted in 2013, in which an area on the northwest

boundary of the property was over-excavated to approximately 3 feet bgs during this excavation. These secondary source removal efforts have not been successful in reducing concentrations to below LTCP criteria.

g) *Soil or groundwater has been tested for methyl tertiary-butyl ether (MTBE) and results reported in accordance with Health and Safety Code section 25296.15.*
Satisfied: Soil and groundwater samples have been analyzed for MTBE.

h) Nuisance as defined by Water Code section 13050 does not exist at the site.
Satisfied: Conditions meeting the definition of a nuisance as defined in Water Code section 13050 do not exist at the Site.

3.2 Media-Specific Criteria

There are three media-specific criteria that must be satisfied under the *LTCP*:

3.2.1 Groundwater

The *LTCP* includes five classes of sites (that can be considered "low threat") with differing characteristics such as plume length, contaminant concentrations, and distance to supply wells or surface water bodies. The current site plume has concentrations exceeding water quality objectives, but is stable to decreasing in areal extent, considering the safety restrictions to obtaining additional off-site data, as discussed below. The Site is reviewed against Class 4 below to be conservative:

a) *The contaminant plume that exceeds water quality objectives is less than 1,000 feet long*.
Satisfied. The total petroleum hydrocarbons as gasoline (TPHg) and benzene plumes are defined in the upgradient direction by wells MW-1, MW-2, and MW-12 (Appendix C). The plumes are not defined crossgradient to the southwest of MW-4 and MW-14; however, there is not a feasible location for an additional well to the southwest due to safety concerns with drilling on 27th Street. TPHg and benzene concentrations in MW-4 and MW-14 have been stable to decreasing since monitoring began in 2001 (MW-4) and 2006 (MW-14); therefore, AECOM considers TPHg and benzene are adequately defined crossgradient to the southwest. The plumes are defined crossgradient to the northeast by MW-12; however, concentrations are not defined northwest of MW-7 and MW-8. TPHg and benzene concentrations in MW-7 and MW-8 show strong decreasing trends since monitoring began in 2006; therefore, AECOM considers the plumes defined crossgradient to the northwest. The plumes are adequately defined in the downgradient direction by MW-10 and MW-11. The residual TPHg and benzene plumes are significantly shorter than 1,000 feet.

b) *There is no free product.*
Satisfied. No free product has been detected in the Site groundwater monitoring wells.

c) *The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary*.
Satisfied. According to Cambria's sensitive receptor survey there were no wells identified within a 0.5 mile radius of the Site. Department of Water Resources records during 2003 and a door-to-door survey of properties within 500 feet of the Site in 2003 and 300 feet in 2006 did not identify a well within a one-half mile radius of the Site (Cambria, 2006a). The nearest surface water body is

Lake Merritt, which is over one-half mile southeast of the Site in the upgradient direction. AECOM concludes there are no water supply wells or surface water bodies less than 1,000 feet from the plume boundary.

d) *The dissolved concentration of benzene is less than 1,000 µg/L, and the dissolved concentration of MTBE is less than 1,000 µg/L*.
Not satisfied for benzene and satisfied for MTBE. The maximum benzene concentration was detected at 6,200 µg/L in MW-5, 1,300 µg/L in MW-4, and 1,200 µg/L in MW-14 during the most recent sampling event in December 2015. Benzene concentrations exceed the LTCP criteria. MTBE was not detected in any of the groundwater monitoring wells in December of 2015.

3.2.2 Petroleum Vapor Intrusion to Indoor Air

The Site is no longer an active fueling facility and a site-specific HHRA was completed and submitted by AECOM in December 2015. Based on the results of the risk assessment, on-site sources may potentially pose unacceptable risk for vapor intrusion health risks to future commercial/industrial workers. There appears to be no significant vapor intrusion risk to current or future off-site residents or current on-site commercial/industrial workers (AECOM, 2015). After the CAP implementation, vapor intrusion risk is expected to be decreased as the source area is remediated. Further confirmation of off-site vapor intrusion will be conducted by resampling soil vapor probes VP-7 and VP-13.

3.2.3 Direct Contact and Outdoor Air Exposure

The Site meets the residential direct contact and outdoor air requirements for benzene and ethylbenzene in soil, specified in Scenario 2 in the policy. A site specific risk assessment was conducted by AECOM which shows no unacceptable risk to for inhalation of outdoor air and direct contact with soil for construction/excavation workers, on-site hypothetical residents and off-site residents (AECOM, 2015).

4 Corrective Action Plan

The following sections discuss the currently applicable remedial approaches for addressing the petroleum hydrocarbon and oxygenate impacts identified beneath the Site. CRA previously evaluated monitored natural attenuation (MNA), groundwater extraction (GWE), in-situ chemical oxidation (ISCO), DPE, and excavation remedial approaches in their February 5, 2008 *Site Conceptual Model and Feasibility Study/Corrective Action Plan* (SCM/FS/CAP) and recommended excavation with a bio-sparge component. AECOM concurs with the previous findings that GWE, ISCO, and DPE technologies were infeasible from a technical and/or health and safety standpoint or not economically viable given the current site conditions (CRA, 2008a). As a result, AECOM is evaluating no action, MNA, excavation, bio-sparging, and pulsed oxygen injection.

4.1 Remedial Objectives

The remedial action objectives for the Site are to protect receptors (from possible groundwater ingestion and/or soil vapor intrusion to indoor air) and/or to remove secondary source material to the extent practicable using industry standard remediation techniques and to prepare the Site for regulatory closure in accordance with LTCP. As indicated in Section 3, dissolved benzene concentrations are above the LTCP criteria in MW-4, MW-5, and MW-14 in December of 2015. Thus, the objective is to reduce the residual source mass on site, which is expected to also, on site and off site, reduce dissolved benzene concentrations.

4.2 Remedial Alternatives Screening Criteria

Each of the proposed remedial actions are evaluated for (1) technical feasibility; (2) cost-effectiveness; (3) ACEH acceptance; and (4) sustainability as follows:

Technical Feasibility – A technically feasible technology (or approach) means that the technology is easily implemented, with readily available equipment and is a proven technology capable of remediating constituents of concern (COCs). If a technology is not technically feasible, the equipment might not readily available, or the process for the remediation COCs will not occur within a reasonable timeframe. In this report, technical feasibility is described as effective, effective with conditions, or ineffective.

Economic Feasibility – Economic feasibility is identified based on capital and operations costs over the life-cycle of the project. For this evaluation we have referenced costs estimated by CRA in their SCM/FS/CAP for MNA and excavation (CRA, 2008a). Life-cycle costs of a remediation system include capital costs, operation and maintenance costs, and demolition and construction activities required to restore a site to conditions existing prior to initiating remedial action. In some cases demolition may include, but is not limited to, buildings, pumps, and tanks.

Regulatory Acceptance – Regulatory acceptance is based on past experience in obtaining approval from the lead regulatory agency, and the anticipated regulatory agency's acceptance of the remedial action. An acceptable technology indicates that the

technology is accepted by the regulator, and is currently in use for similar sites. A ranking of not acceptable indicates that a remedial action is unlikely to be accepted by regulators, is not currently being utilized on similar sites, or is likely to be viewed as inapplicable to the COCs.

Sustainability – Sustainability takes into account the environmental, social, and economic factors for the implementation of the remedial technology and until site closure. Environmental effects include trips to the sites for implementation, operation and maintenance, and subsequent monitoring; and energy required to run the associated equipment. Social indicators encompass human health and safety, communities, and ethics and equality. Lastly, economic factors include direct, indirect, and induced economic costs and benefits. For this feasibility study, we have identified the sustainability from low to high, with high sustainability indicating the most favorable.

4.3 Focused Remedial Alternative Evaluation

The feasibility study considered each of the following remedial alternatives for the Site:

(1) No action

(2) MNA

(3) Excavation

(4) Bio-Sparge System

(5) Pulsed Oxygen Injection

Table 4 summarizes the remedial alternatives that were considered, along with the level of technical, economical, and regulatory feasibility.

4.3.1 No Action

No action is not seen as a viable approach from a technical standpoint or regulatory standpoint.

4.3.2 MNA

MNA is likely to be effective as a long-term solution. Petroleum hydrocarbons will naturally degrade through biological reactions and will sorb to soil as well as they slowly volatilize. However, due to the concentrations currently observed, this approach is not seen as acceptable to regulators due to the timeframe to reach water quality objectives. AECOM recognizes that MNA is the least resource intensive approach to effective remediation on the Site, but it may require long-term monitoring.

4.3.3 Excavation

Excavation is the removal and transport of contaminated soil to an off-site treatment and disposal facility. Excavation would be an effective solution to eliminate COCs in source soil and reduce concentrations in groundwater. The extent of excavation can be determined in advance by existing soil and groundwater data and confirmed by field observations.

The excavation would be focused in the western-central portion of the Site from the eastern boundary to the auto repair facility (north) to the former island dispensers (west) to well MW-4 (south) a depth of approximately 20 feet bgs (Figures 4a-d and Appendix D) . The estimated excavation volume would be 1,600 cubic yards. The auto repair facility would need to be closed during excavation. Depth to groundwater ranges from approximately 4 feet bgs to 10 feet bgs, so dewatering may be required.

There are the following limitations with excavation:

- The excavation would intersect the coarse-grained soil lens that is found from approximately 10 to 25 feet bgs. Due to the Site lithology, which consists of a more permeable layer below tighter soils, and the dewatering activities within the excavation, the excavation would need to have shoring and additional excavation design (including tie-backs, shoring to a deep depth) would need to be reviewed by a geotechnical engineer.
- Potential geotechnical and health and safety issues pose risks due to the proximity to nearby residences and auto repair facility. A geotechnical evaluation would need to be conducted to confirm the structural integrity of both buildings.
- Dewatering up to 15 feet of water for excavation within the saturated zone would be costly and a health and safety issue.

This technology would effectively reduce concentrations in soil and groundwater and achieve remedial objectives in a reasonable timeframe; however, potential geotechnical and health and safety issues exist. AECOM does not recommend this as a remedial alternative.

4.3.4 Bio-Sparge System

This technology pulses pressurized air into the aquifer, which helps to provide dissolved oxygen to be utilized by aerobic biota for the biodegradation of COCs. The purpose of bio-sparging is to mainly remove mass through aerobic biodegradation, rather than volatilization. Pulsed bio-sparging would require an installation of an air compressor and the associated underground piping with a control system, consisting of a timer and solenoids. Injection wells would be pulsed at timed intervals, typically conducted in zones. Bio-sparging enhances bioremediation with native aerobic microbes. The treatment time of 2 years for bio-sparging is based on experience at similar sites, estimated COC mass needed to be treated, and corresponding oxygen demand for biodegradation.

This technology has several limitations:

- The COC concentrations are within the range for bio-sparging.
- The successful application of the technology requires a healthy population of constituent-utilizing bacteria to be present and the aquifer to be in an oxidative state. The oxidation reduction potential (ORP) and dissolved oxygen (DO) data suggest that the aquifer is in a reductive state. However, the fact that oxygen has been consumed indicates that an aerobic microbial population exists at the site that could readily utilize oxygen as an electron receptor.

A pilot test would be required to establish the optimal injection time intervals and the radius of influence (ROI) of pulsed injections. Due to the longer treatment times between bio-sparging and oxygen injection and potential volatilization, AECOM does not recommend bio-sparging.

4.3.5 Pulsed Oxygen Injection

This technology pulses pressurized high concentrations of oxygen into the aquifer, which helps to provide dissolved oxygen to be utilized by aerobic biota for the biodegradation of COCs. The purpose of oxygen injection is to mainly remove mass through aerobic biodegradation, rather than volatilization. Therefore, soil vapor extraction is not proposed in conjunction with oxygen injection. Pulsed oxygen injection would require an installation of an oxygen generator, air compressor, and the associated underground piping with a control system, consisting of a timer and solenoids.

Injection wells would be pulsed at timed intervals, typically conducted in zones. The oxygen would be injected into the coarse-grained lens, where the majority of the COC mass exists. The injected oxygen can stimulate biodegradation in both the vadose and saturated zones. The dissolved oxygen concentrations in MW-4 and MW-5 during the fourth quarter 2015 sampling event were 1.58 and 0.77 milligrams per liter, respectively. The flow rate for oxygen injection is lower than air sparging, decreasing the chance of plume migration. The treatment time of 1 to 1.5 years for oxygen injection, used for cost comparison, is based on experience at similar sites, estimated COC mass needed to be treated, and corresponding oxygen demand for biodegradation.

This technology has the following limitations:

- The successful application of the technology requires a healthy population of constituent-utilizing bacteria to be present and the aquifer to be in an oxidative state. The ORP and DO data suggest that the aquifer is in a reductive state. However, the fact that oxygen has been consumed indicates that an aerobic microbial population exists at the site that could readily utilize oxygen as an electron receptor.
- Elevated health and safety concerns due to presence of a reactive oxidant (i.e., oxygen).

A pilot test would be required to determine the optimal injection time intervals and the ROI of pulsed injections. Due to the low flow rates associated with oxygen injection, lower risk of potential soil vapor migration is anticipated than with bio-sparging. Due to potential geotechnical and safety issues with excavation, AECOM proposes oxygen injection on site.

5 Proposed Remedial Approach and Corrective Action Plan

5.1 Recommended Remedial Approach

AECOM proposes pulsed oxygen injection to remediate the impacted capillary fringe and groundwater. The three determining factors were its potential effectiveness and reduced treatment time. To implement oxygen injection, AECOM proposes to conduct a pilot study consisting of the following tasks:

- Install the below grade infrastructure to well locations;
- Mobilize an oxygen generator unit;
- Conduct a one-month pilot study of oxygen injection; and
- Conduct one post-injection monitoring event, followed by three monthly rebound monitoring events.

Pilot study data will be used to characterize the oxygen generation and determine design parameters including ROI, injection pressure, and oxygen injection interval.

5.2 Pilot Study

The recommended pilot study would assess the remedial effectiveness in the vicinity near MW-4 and MW-5. The proposed remediation layout is presented in Figure 5.

5.2.1 Conceptual Remedial System Installation

A mobile oxygen injection unit would be mobilized for oxygen injection into the groundwater to oxidize COCs in the soil and groundwater during the pilot study. For the pilot test, AECOM would be injecting near wells MW-4 and MW-5, the hot spot areas. The oxygen piping would be installed in underground trenches and routed to a treatment system area (Figure 5).

5.2.2 New Proposed Injection Well Installation

Two oxygen injection wells are proposed to be installed near MW-4 and MW-5 to treat the residual impacted soil and groundwater mass. Based on historical soil concentration data, the injection wells would be installed with well screens from 15 to 17 feet bgs. The final well screen depths will be determined by visual observations and field photoionization detector readings. Based on the Site lithology, the ROI is estimated to be ten feet, which will need to be confirmed during the pilot study.

5.2.3 Underground Conveyance Piping

The oxygen injection unit will be connected to the injection wells through underground conveyance piping. The oxygen injection unit will be staged to the south of the station building. Approximately 90 feet of conveyance piping will be required to connect the two proposed injection wells for the pilot study. Following the pipe installation, the trenches will be backfilled to pre-existing condition. The oxygen will be transported within underground piping at least 18 inches bgs.

5.2.4 Oxygen Injection Unit

A mobile oxygen unit with a target capability of injecting 43 pounds of oxygen per day is proposed for the pilot test. Typical oxygen generators can sparge oxygen level up to 30% to 40% at high flow rates or up to 90% at lower flow rates. The optimal injection frequency will be determined to maximize the ROI and minimize volatile organic compound (VOC) off-gassing. The probability of VOC off-gassing, if it occurs, would be temporary and limited to the initial injection period when volatilization is most likely.

AECOM will confirm the available electrical capacity of the service station and determine whether an electrical upgrade is needed for the oxygen system operation.

5.2.5 Pilot Study Report

After the rebound monitoring, AECOM will draft a pilot study report documenting the following:

- Oxygen system operation;
- Field groundwater parameter readings and analytical results;
- Results of the rebound testing;
- Assessment of the findings; and
- Conclusions and recommendations.

Based on the pilot study results, AECOM will recommend whether additional operation of oxygen injection is appropriate.

5.2.6 Schedule

The following is a tentative schedule for the pilot study:

- Three months to design system and prepare and submit the Pilot Study Work Plan;
- Six weeks for building, well installation, and other associated permitting;
- Two to four weeks to install two injection wells, trench, and lay underground conveyance piping;
- Baseline sampling at the injection wells, treatment zone wells, and associated monitoring wells up gradient and down gradient of the injection;
- One month of oxygen injection pilot study, one post-injection sampling event, and three monthly rebound monitoring events; and
- Six weeks for the pilot study report to evaluate the results and provide recommendations for the path forward.

6 Limitations

The conclusions, if any, presented in this report are professional opinions based solely upon the data described in this report. They are intended exclusively for the purpose outlined herein and the Site location and project indicated. This report is for the sole use and benefit of the client. The scope of services performed in execution of this effort may not be appropriate to satisfy the needs of other users, and any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user. No express or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed by the client with the customary thoroughness and competence of professionals working in the same area on similar projects.

7 References

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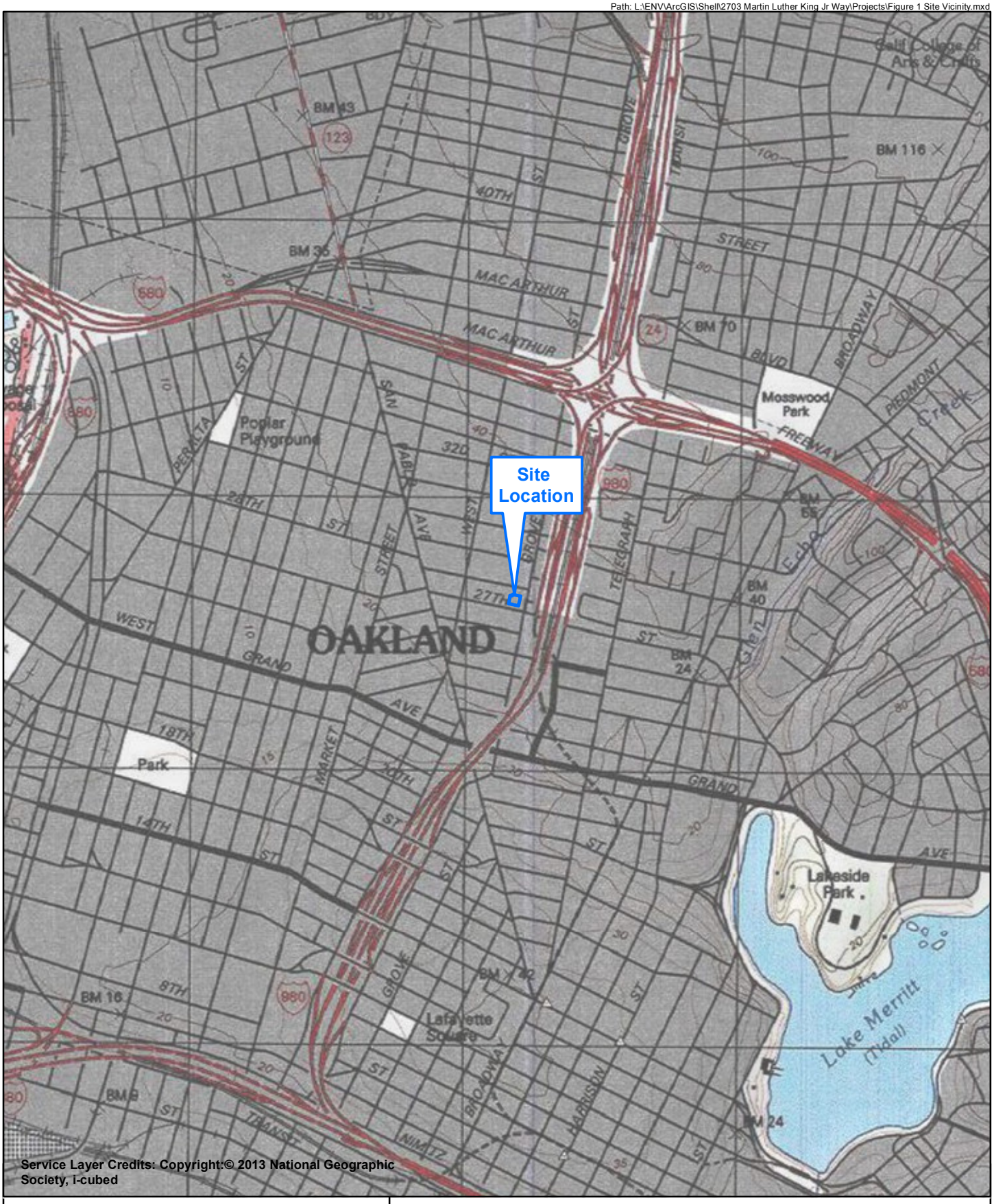
Figures

Path: L:\ENV\ArcGIS\Shell\2703 Martin Luther King Jr Way\Projects\Figure 1 Site Vicinity.mxd



N

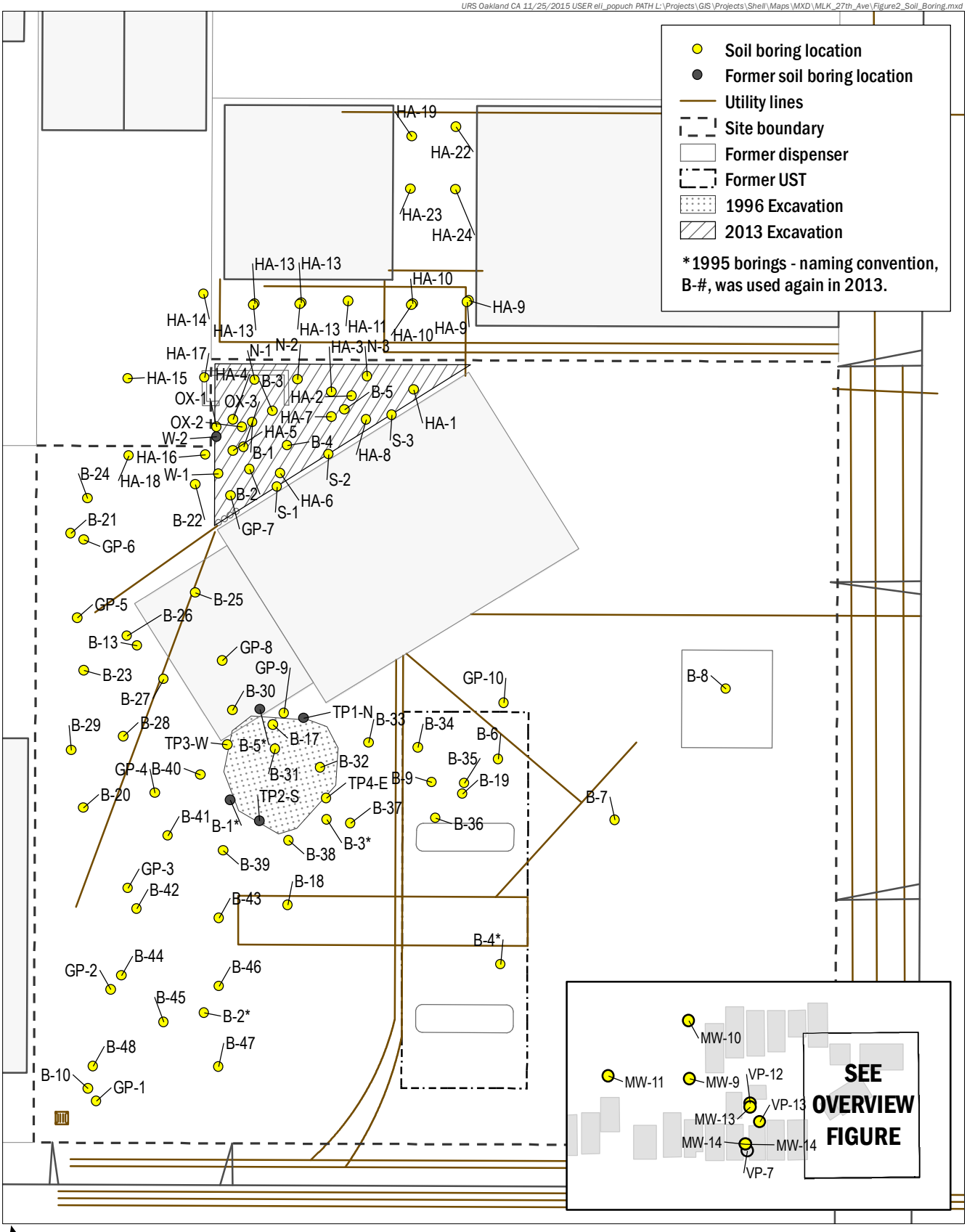
0 2,000 4,000

Feet

Figure 1
Site Vicinity Map

AECOM

Former Shell Service Station
2703 Martin Luther King Jr. Way, Oakland, California



Source: GHD, 2015; AECOM, 2015

AECOM

Shell

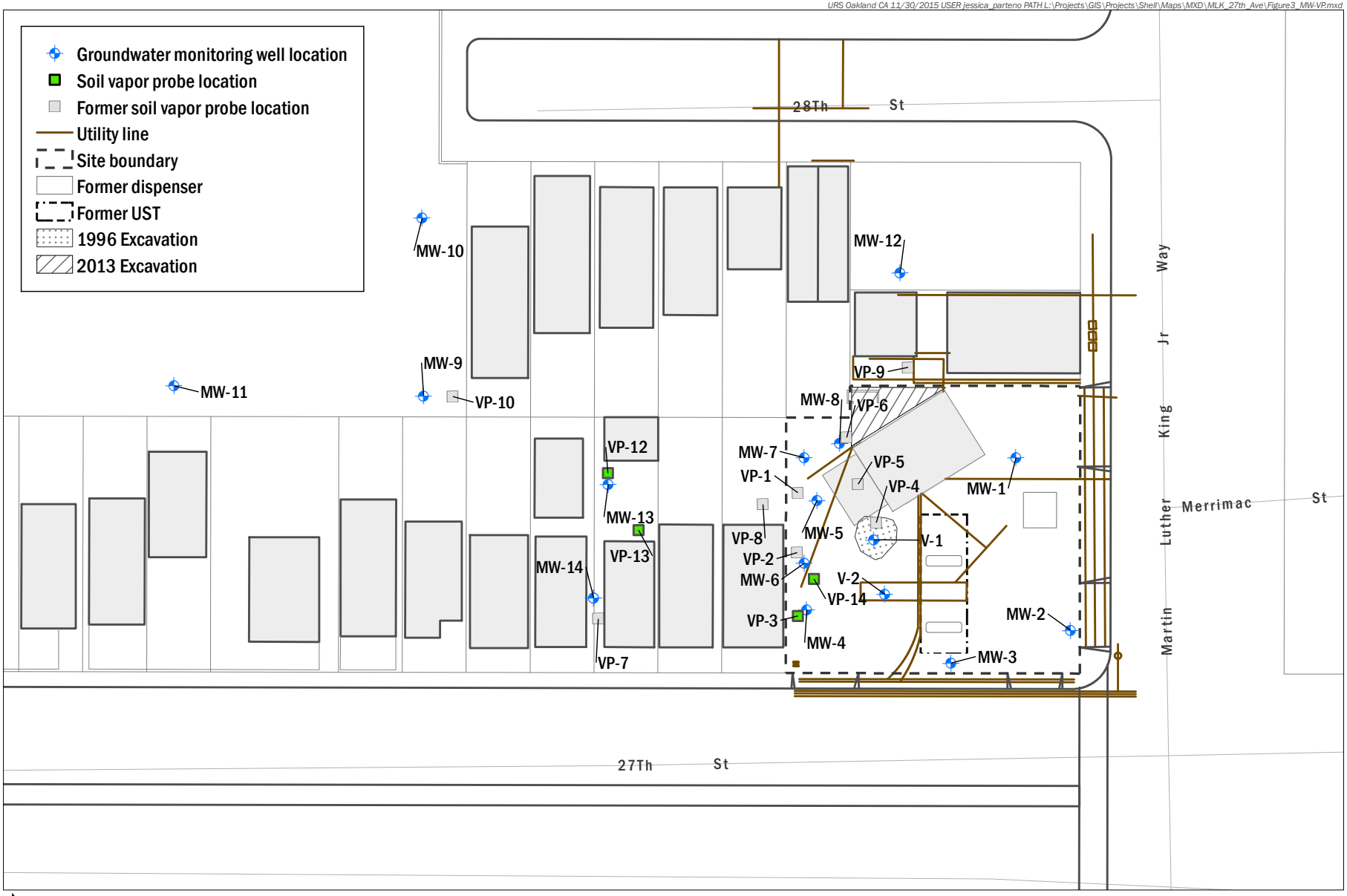
Former Shell Service Station

2703 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA

FIGURE 2

Soil Boring Locations

URS Oakland CA 11/30/2015 USER jessica_parteno PATH L:\Projects\GIS\Projects\Shell\Maps\MXD\MLK_27th_Ave\Figure3_MW-VP.mxd



Source:
GHD, 2015; AECOM, 2015

AECOM

Shell

Former Shell Service Station
2703 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA

FIGURE 3

Groundwater Monitoring and Soil Vapor Locations

- Soil boring location- benzene detected
- Soil boring or former soil boring location where benzene not detected at or above laboratory reporting limit X.XX
- Former soil boring location-benzene detected
- Groundwater monitoring well location benzene detected
- Groundwater monitoring well location where benzene not detected at or above laboratory reporting limit X.XX
- Soil vapor probe location - benzene detected
- Soil vapor or former soil vapor probe location where benzene not detected at or above laboratory reporting limit X.XX
- Former soil vapor probe location- benzene detected
- Utility line
- Site boundary
- Former dispenser
- Former UST
- 1996 Excavation
- 2013 Excavation
- (0.63) Benzene concentration in milligrams per kilogram (mg/kg)
- Benzene isoconcentration contour line in mg/kg

^ Benzene not detected at or above laboratory reporting limit <5.0; not used in contouring
*1995 borings - naming convention, B-#, was used again in 2013.
fbg = feet below grade
Notes:
- MW-11 outside of displayed map area; benzene not detected at or above laboratory reporting limit <0.0050 at any depth sampled.
- Soil boring, groundwater monitoring, and soil vapor probe locations not sampled are not shown on map.

MW-10
MW-9
MW-13
MW-14
VP-7
MW-12
VP-9
OVER-EXCAVATED TO 3 FBG
EXCAVATED TO 2 FBG
EXCAVATED TO 11 FBG
B-1
B-24
GP-6
MW-7
GP-7
B-25
GP-5
VP-1
B-26
B-13
GP-8
VP-8 (0.00096)
B-23
MW-5
B-17
GP-9
B-30 (0.064)
B-27
B-28
B-29
B-33
B-34
B-6
GP-10
B-31
B-32
B-40
GP-4
B-1*
B-35
B-19
B-36
B-37
B-7
B-20 (0.0075)
MW-6
B-41
TP2-S
GP-3 (0.027)
B-38
B-39
B-42^ (<5.0)
B-43
V-2 (0.29)
B-18
0.1
MW-4
VP-3
GP-2 (0.035)
B-46
B-2* (0.6)
B-45
B-48
B-44 (0.0088)
B-47
GP-1
MW-1
MW-2
MW-3

0 25 Feet

Source: GHD, 2015; AECOM, 2015

AECOM

Shell
Former Shell Service Station
2703 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA

FIGURE 4A

Benzene in Soil (4.5 to 5.5 fbg) Isoconcentration Map

- Soil boring location- benzene detected
- Soil boring or former soil boring location where benzene not detected at or above laboratory reporting limit X.XX
- Former soil boring location-benzene detected
- Groundwater monitoring well location benzene detected
- Groundwater monitoring well location where benzene not detected at or above laboratory reporting limit X.XX
- Soil vapor probe location - benzene detected
- Soil vapor or former soil vapor probe location where benzene not detected at or above laboratory reporting limit X.XX
- Former soil vapor probe location- benzene detected
- Utility line
- Site boundary
- Former dispenser
- Former UST
- 1996 Excavation
- 2013 Excavation
- (0.63) Benzene concentration in milligrams per kilogram (mg/kg)
- Benzene isoconcentration contour line in mg/kg

^ Benzene not detected at or above reporting limit indicated; not used in contouring
*1995 borings - naming convention, B-#, was used again in 2013.
fbg = feet below grade
Notes:
- MW-11 outside of displayed map area; benzene not detected at or above laboratory reporting limit <0.0050 at any depth sampled.
- Soil boring, groundwater monitoring, and soil vapor probe locations not sampled are not shown on map.

MW-10
MW-9
MW-13
MW-14 (0.0083)
MW-12
OVER-EXCAVATED TO 3 FBG
EXCAVATED TO 2 FBG
EXCAVATED TO 11 FBG
B-22 (0.17)
B-24
MW-8
B-21
GP-6
MW-7
GP-7
B-25^ (<2.5)
B-26 (3.0)
B-23^ (<6.2)
MW-5 (3.3)
B-27 (9.9)
B-30 (6.1)
B-5* (1.8)
B-28 (2.0)
B-29 (0.010)
TP3-W (3.1)
B-40^ (<10)
B-31
B-32
TP4-E
B-33 (2.8)
B-34
B-6 (0.3)
B-35
B-8
B-37
B-36
B-7
B-41^ (<10)
MW-6
10
GP-3 (15)
B-39 (2.5)
B-38
B-42 (72)
B-43
B-18
MW-4 (1.1)
B-44
B-46
B-45
B-48
B-47
GP-1
MW-3

N

0 25
Feet

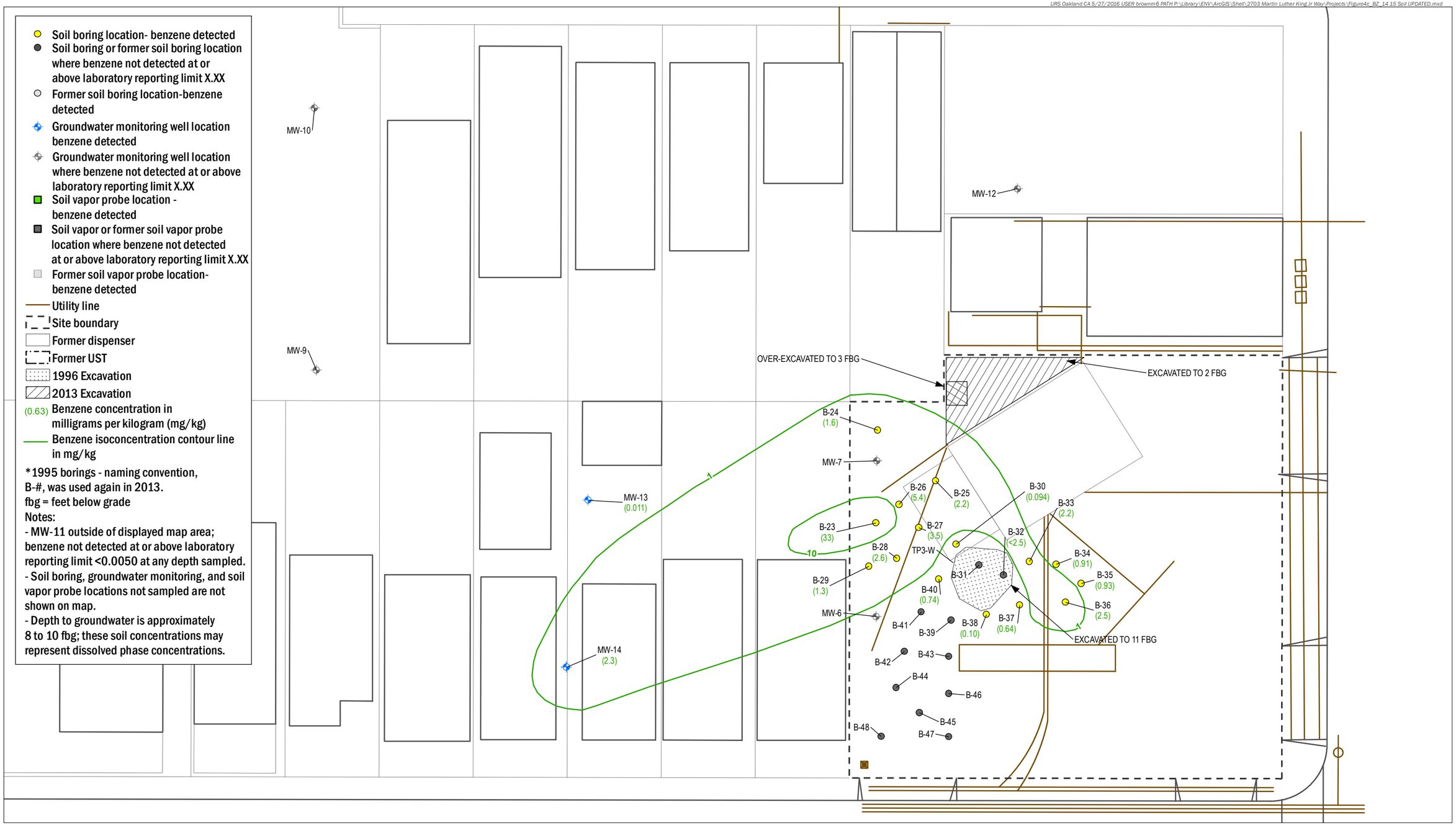
Source: GHD, 2015; AECOM, 2015

AECOM

Shell
Former Shell Service Station
2703 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA

FIGURE 4B

Benzene in Soil (8 to 11 fbg) Isoconcentration Map



Source: GHD, 2015; AECOM, 2015

AECOM

Shell

Former Shell Service Station

2703 MARTIN LUTHER KING JR. WAY

OAKLAND, CALIFORNIA

FIGURE 4C

Benzene in Soil (14 to 15.5 fbg) Isoconcentration Map

Source: GHD, 2015; AECOM, 2015

AECOM

Shell

Former Shell Service Station

2703 MARTIN LUTHER KING JR. WAY

OAKLAND, CALIFORNIA

FIGURE 4D

Benzene in Soil (19.5 fbg) Isoconcentration Map

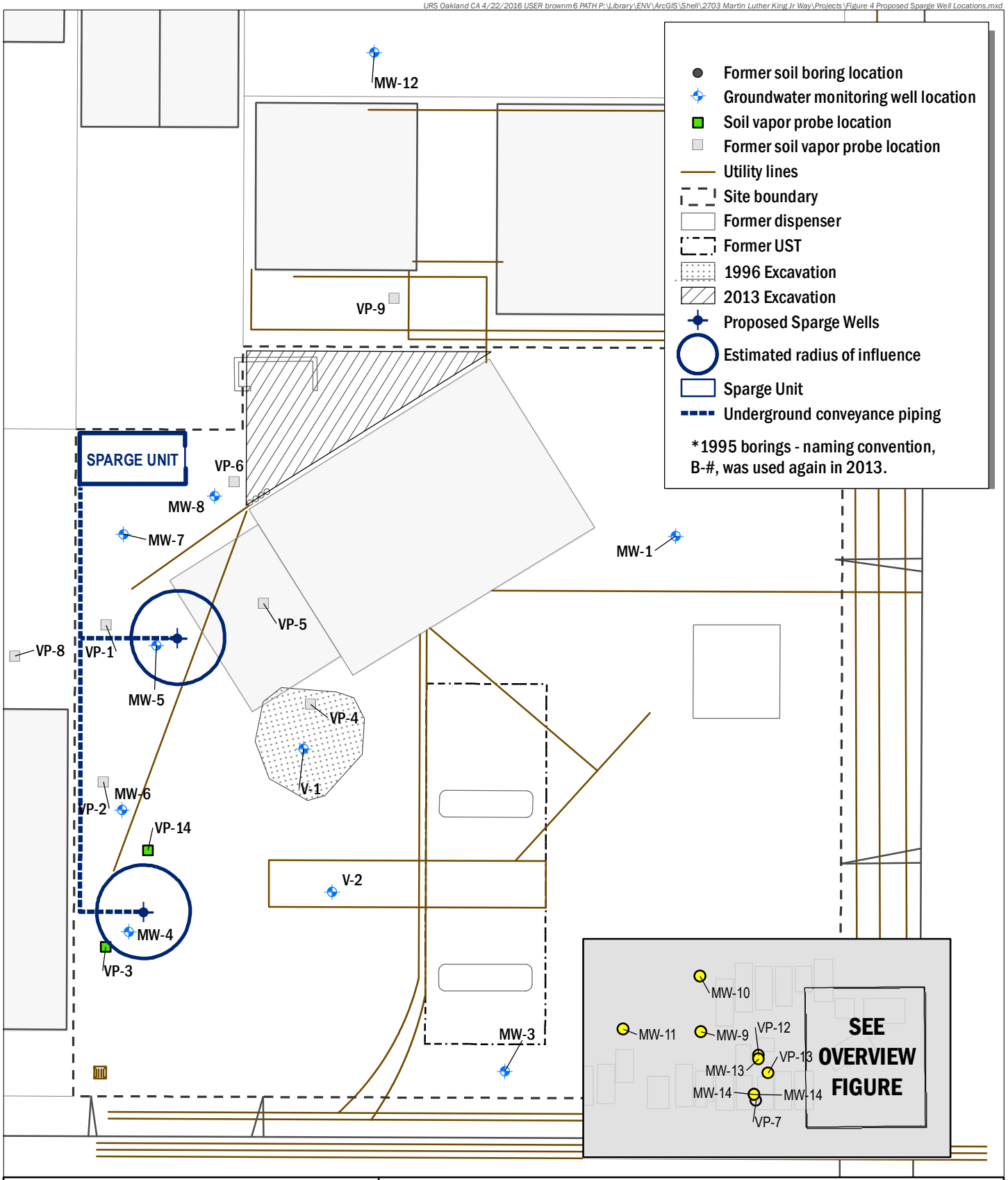


Figure 5
Proposed Pilot Test Layout

AECOM

Former Shell Service Station
2703 Martin Luther King Jr. Way, Oakland, California

Tables

Table 1
Historical Soil Analytical Data for TPHg, BTEX, and Fuel Oxygenates
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
TP-1-N	10/11/1994		**18,000** [a,b]	**100**	**870**	**370**	**2,000**	---	---	---	---	---
TP-2-S	10/11/1994		**870** [a,b]	**2.9**	2.1	**19**	**21**	---	---	---	---	---
B-1-5	05/23/1995	5.0	63	<0.1	<0.1	0.4	0.1	---	---	---	---	---
B-2-5	05/23/1995	5.0	260	0.6	<0.1	4.7	10	---	---	---	---	---
B-3-6	05/23/1995	6.0	150	<0.1	<0.1	0.9	0.4	---	---	---	---	---
B-4-6	05/23/1995	6.0	55	<0.1	<0.1	0.4	0.2	---	---	---	---	---
B-5-8	05/23/1995	8.0	**830**	**1.8**	9.2	**12.0**	**33**	---	---	---	---	---
B-6-5	05/23/1995	5.0	130	<0.1	<0.1	1.0	1.1	---	---	---	---	---
B-6-10	05/23/1995	10.0	390	0.3	<0.1	**7.3**	**27**	---	---	---	---	---
B-7-5	05/23/1995	5.0	<20	<0.1	<0.1	1.0	1.1	---	---	---	---	---
B-7-10	05/23/1995	10.0	53	<0.1	<0.1	0.2	0.3	---	---	---	---	---
B-8-10	05/23/1995	10.0	<20	<0.1	<0.1	0.1	<0.1	---	---	---	---	---
TP-3-W	07/17/1996	11.0	560	**3.1**	4.1	**11**	**41**	---	---	---	---	---
TP-4-E	07/17/1996	11.0	**2,700**	<3.00	**44**	**36**	**210**	---	---	---	---	---
B-10	07/17/1996	6.0	1.7	<0.0050	<0.0050	<0.0050	0.0058	<0.025	---	---	---	---
B-11 (MW-1)	07/17/1996	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	---	---	---	---
B-12 (MW-2)	07/17/1996	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	---	---	---	---
B-13	07/17/1996	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	---	---	---	---
V-2	07/19/1996	5.5	110	0.29	<0.12	1.2	<0.12	7.7	---	---	---	---
MW-3-5.0	11/22/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---
MW-3-10.5	11/22/2000	10.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---
MW-4-5.0	11/22/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---
MW-4-10.5	11/22/2000	10.5	860	1.1	<0.20	**18**	**66**	<0.20	<2.0	---	---	---
MW-5-5.0	11/22/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---
MW-5-10.5	11/22/2000	10.5	**1,300**	**3.3**	**13**	**26**	**140**	<0.20	<2.0	---	---	---
B-17-5.0	11/22/2000	5.0	1.3	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---

Table 1
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Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
B-17-7.0	11/22/2000	7.0	**2,100**	0.31	0.64	**18**	**140**	<0.050	<0.050	---	---	---
B-18-5.0	11/22/2000	5.0	1.2	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---
B-18-7.0	11/22/2000	7.0	42	<0.0050	<0.0050	0.094	<0.0050	0.0070	<0.050	---	---	---
B-19-5.0	11/22/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---
B-19-7.0	11/22/2000	7.0	2.4	0.02	<0.0050	0.025	0.023	<0.0050	<0.020	---	---	---
B-20-4.5	04/11/2002	4.5	1.1	0.0075	<0.005	<0.005	<0.005	<0.5	---	---	---	---
B-20-7.5	04/11/2002	7.5	22	<0.005	<0.005	0.14	0.027	<0.5	---	---	---	---
B-21-3.0	04/11/2002	3.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.5	---	---	---	---
B-21-8.0	04/11/2002	8.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.5	---	---	---	---
B-22-3.0	04/11/2002	3.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.5	---	---	---	---
B-22-8.0	04/11/2002	8.0	380	0.17	0.27	**6.1**	**31**	<0.5	---	---	---	---
GP-1-5.0'	08/29/2005	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-1-10.0'	08/29/2005	10.0	190 [c]	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
GP-2-4.5'	08/29/2005	4.5	1.5	0.035	<0.0050	0.0063	<0.0050	---	---	---	---	---
GP-3-5.0'	08/29/2005	5.0	7.5	0.027	<0.0050	0.085	0.11	---	---	---	---	---
GP-3-8.5'	08/29/2005	8.5	**3,300**	**15**	2.7	**91**	**230**	---	---	---	---	---
GP-4-4.5'	08/31/2005	4.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-5-4.5'	08/30/2005	4.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-6-5.0'	08/29/2005	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-6-9.5'	08/29/2005	9.5	260	<0.50	<0.50	2.1	6.8	---	---	---	---	---
GP-7-5.0'	08/30/2005	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-7-9.5'	08/30/2005	9.5	440	<0.50	1.8	**10**	**59**	---	---	---	---	---
GP-8-4.5'	08/30/2005	4.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-9-4.5'	08/31/2005	4.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
GP-10-4.5'	08/31/2005	4.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-6	01/04/2006	5	<4.9 [d,e]	<0.025 [d]	<0.025 [d]	0.025 [d]	0.044 [d]	---	---	---	---	---

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Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
MW-6	01/04/2006	10	290	<1.2 [f]	<1.2 [f]	3.1 [f]	3.2 [f]	---	---	---	---	---
MW-6	01/04/2006	15.5	36	<0.62 [f]	<0.62 [f]	0.65 [f]	2.1 [f]	---	---	---	---	---
MW-6	01/04/2006	19.5	<1.0 [d,e]	0.0090 [d]	<0.0050 [d]	0.010 [d]	0.022 [d]	---	---	---	---	---
MW-7	01/04/2006	5.5	<1.0 [d,e]	<0.0050 [d]	<0.0050 [d]	<0.0050 [d]	0.013 [d]	---	---	---	---	---
MW-7	01/04/2006	11.5	7.1 [d,e,g]	<0.025 [d,g]	<0.025 [d,g]	0.19 [d,g]	5.2 [d,g]	---	---	---	---	---
MW-7	01/04/2006	16.5	340	<1.2 [f]	<1.2 [f]	**7.2** [f]	<1.2 [f]	---	---	---	---	---
MW-7	01/04/2006	19.5	<1.0 [d,e]	<0.0050 [d]	<0.0050 [d]	<0.0050 [d]	0.010 [d]	---	---	---	---	---
MW-8	01/03/2006	6.5	<1.0 [d,e]	<0.0050 [d]	<0.0050 [d]	<0.0050 [d]	<0.0050 [d]	---	---	---	---	---
MW-8	01/03/2006	10.5	880	<6.2 [f]	<6.2 [f]	**15** [f]	**72** [f]	---	---	---	---	---
MW-8	01/03/2006	19.5	19	0.63 [f]	<0.62 [f]	<0.62 [f]	0.80 [f]	---	---	---	---	---
B-23	01/03/2006	5	<1.0 [d,e]	<0.0050 [d]	<0.0050 [d]	<0.0050 [d]	<0.0050 [d]	---	---	---	---	---
B-23	01/03/2006	10	520	<6.2 [f]	<6.2 [f]	**12** [f]	**62** [f]	---	---	---	---	---
B-23	01/03/2006	15.5	**3,800**	**33** [f]	**50** [f]	**98** [f]	**480** [f]	---	---	---	---	---
B-23	01/03/2006	19.5	350	1.6 [f]	1.9 [f]	**15** [f]	**35** [f]	---	---	---	---	---
MW-12-5	02/28/2006	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-12-10	02/28/2006	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-12-15	02/28/2006	15	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-12-19.5	02/28/2006	19.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-14-5	02/28/2006	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-14-10	02/28/2006	10	32	0.0083	<0.0050	0.028	0.0055	<0.0050	<0.025	---	---	---
MW-14-14	02/28/2006	14	970	**2.3**	0.18	**19**	**27**	<0.15	<0.70	---	---	---
CPT-6-17	05/17/2007	17	<0.50	0.0020	0.0032	<0.0050	0.0019	---	---	---	---	---
VP-7-4.5	06/06/2007	4.5	<0.50	<0.0050	<0.0050	<0.0050	<0.010	---	---	---	---	---
VP-8-4.5	05/29/2007	4.5	<0.50	0.00096	0.00084	0.00084	0.0015	---	---	---	---	---
VP-9-4.5	07/23/2008	4.5	<0.50	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.010	<0.010	<0.010
MW-9@5 fbg	08/10/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---

Table 1
Historical Soil Analytical Data for TPHg, BTEX, and Fuel Oxygenates
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
MW-9@9.5 fbg	08/10/2010	9.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-9@14.5 fbg	08/10/2010	14.5	100	<0.50	<0.50	0.62	<0.50	---	---	---	---	---
MW-9@19.5 fbg	08/10/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-10@5 fbg	08/10/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-10@9.5 fbg	08/10/2010	9.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-10@14.5 fbg	08/10/2010	14.5	**1,200**	<2.5	<2.5	**19**	**34**	---	---	---	---	---
MW-10@19.5 fbg	08/10/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-11@5 fbg	08/10/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-11@9.5 fbg	08/10/2010	9.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-11@14.5 fbg	08/10/2010	14.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-11@19.5 fbg	08/10/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-24-5	12/20/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-24-10	12/20/2010	10	550	<0.50	<0.50	3.6	**22**	---	---	---	---	---
B-24-15	12/20/2010	15	380	**1.6**	<0.50	**5.0**	**20**	---	---	---	---	---
B-24-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-25-5	12/23/2010	5	1.9	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-25-10	12/23/2010	10	730	<2.5	<2.5	**12**	**51**	---	---	---	---	---
B-25-15	12/23/2010	15	290	**2.2**	<0.50	**5.0**	7.3	---	---	---	---	---
B-25-19.5	12/23/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	0.016	---	---	---	---	---
B-26-5	12/20/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-26-10	12/20/2010	10	**1,100**	**3.0**	<0.50	**21**	**110**	---	---	---	---	---
B-26-15	12/20/2010	15	660	**5.4**	<0.50	**12**	**32**	---	---	---	---	---
B-26-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-27-5	12/20/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-27-10	12/20/2010	10	**1,600**	**9.9**	**10**	**28**	**140**	---	---	---	---	---
B-27-15	12/20/2010	15	490	**3.5**	0.62	**15**	**40**	---	---	---	---	---

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Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
B-27-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-28-5	12/20/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-28-10	12/20/2010	10	460	**2.0**	<0.50	**7.4**	**37**	---	---	---	---	---
B-28-15	12/20/2010	15	57	**2.6**	5.4	**11**	**58**	---	---	---	---	---
B-28-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	0.012	---	---	---	---	---
B-29-5	12/20/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-29-10	12/20/2010	10	<0.50	0.010	<0.0050	0.015	0.012	---	---	---	---	---
B-29-15	12/20/2010	15	97	**1.3**	<0.50	1.7	7.2	---	---	---	---	---
B-29-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-30-5	12/23/2010	5	<50	0.064	<0.0050	0.015	0.0087	---	---	---	---	---
B-30-10	12/23/2010	10	**2,300**	**6.1**	3.0	**44**	**240**	---	---	---	---	---
B-30-15	12/23/2010	15	<50	0.094	0.0056	0.055	0.11	---	---	---	---	---
B-30-19.5	12/23/2010	19.5	0.51	<0.0050	<0.0050	0.012	0.044	---	---	---	---	---
B-31-5	12/22/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-31-10	12/22/2010	10	**2,300**	<0.50	<0.50	0.77	0.62	---	---	---	---	---
B-31-12	12/22/2010	12	**28,000**	<50	**89**	**510**	**2,600**	---	---	---	---	---
B-31-15	12/22/2010	15	190	<0.50	<0.50	2.0	3.5	---	---	---	---	---
B-31-19.5	12/22/2010	19.5	3.2	0.039	<0.0050	0.024	0.0058	---	---	---	---	---
B-32-5	12/22/2010	5	130	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-32-7	12/22/2010	7	220	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-32-10	12/22/2010	10	**1,800**	<2.5	<2.5	4.1	<2.5	---	---	---	---	---
B-32-12	12/22/2010	12	<50	0.011	<0.0050	0.017	0.17	---	---	---	---	---
B-32-15	12/22/2010	15	260	<2.5	<2.5	**5.4**	3.5	---	---	---	---	---
B-32-19.5	12/22/2010	19.5	0.54	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-33-5	12/22/2010	5	60	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-33-10	12/22/2010	10	**1,800**	**2.8**	<2.5	**36**	**140**	---	---	---	---	---

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Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
B-33-15	12/22/2010	15	240	**2.2**	<0.50	4.3	5.7	---	---	---	---	---
B-33-19.5	12/22/2010	19.5	0.95	0.014	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-34-5	12/22/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-34-10	12/22/2010	10	290	<0.50	<0.50	1.7	<0.50	---	---	---	---	---
B-34-15	12/22/2010	15	170	0.91	<0.50	3.5	4.3	---	---	---	---	---
B-34-19.5	12/22/2010	19.5	160	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-35-5	12/22/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-35-10	12/22/2010	10	300	<0.50	<0.50	4.3	2.6	---	---	---	---	---
B-35-15	12/22/2010	15	<50	0.93	<0.50	0.75	0.92	---	---	---	---	---
B-35-19.5	12/22/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-36-5	12/22/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-36-10	12/22/2010	10	230	<0.50	<0.50	4.2	5.0	---	---	---	---	---
B-36-15	12/22/2010	15	290	**2.5**	<0.50	**5.8**	7.7	---	---	---	---	---
B-36-19.5	12/22/2010	19.5	2.2	<0.50	<0.0050	0.016	<0.0050	---	---	---	---	---
B-37-5	12/22/2010	5	<50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-37-10	12/22/2010	10	**1,500** [a]	<2.5	<2.5	**30**	**87**	---	---	---	---	---
B-37-15	12/22/2010	15	67	0.64	<0.50	1.5	2.1	---	---	---	---	---
B-37-19.5	12/22/2010	19.5	70	0.92	<0.50	2.0	1.1	---	---	---	---	---
B-38-5	12/21/2010	5	1.2	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-38-8.5	12/21/2010	8.2	<50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-38-10	12/21/2010	10	980	<2.5	<2.5	<2.5	<2.5	---	---	---	---	---
B-38-15	12/21/2010	15	<50	0.10	<0.0050	1.1	0.070	---	---	---	---	---
B-38-19.5	12/21/2010	19.5	0.93	<0.0050	<0.0050	0.0082	0.0065	---	---	---	---	---
B-39-5	12/21/2010	5	140	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-39-8.5	12/21/2010	8.5	140	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-39-10	12/21/2010	10	**2,600**	**2.5**	<2.5	**30**	**67**	---	---	---	---	---

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Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
B-39-15	12/21/2010	15	190	<0.50	<0.50	1.6	0.63	---	---	---	---	---
B-39-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-40-5	12/21/2010	5	68	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-40-10	12/21/2010	10	**4,200**	<10	**63**	**65**	**430**	---	---	---	---	---
B-40-12.5	12/21/2010	12.5	470	<2.5	<2.5	**6.6**	**38**	---	---	---	---	---
B-40-15	12/21/2010	15	200	0.74	<0.50	2.2	2.7	---	---	---	---	---
B-40-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-41-5	12/20/2010	5	470	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-41-8.5	12/20/2010	8.5	**7,200**	<10	<10	**68**	**56**	---	---	---	---	---
B-41-10	12/20/2010	10	**4,500**	<10	<10	**68**	**290**	---	---	---	---	---
B-41-15	12/20/2010	15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-41-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-42-5	12/20/2010	5	**3,000**	<5.0	<5.0	**5.5**	<5.0	---	---	---	---	---
B-42-10	12/20/2010	10	**17,000**	**72**	**320**	**270**	**1,400**	---	---	---	---	---
B-42-15	12/20/2010	15	0.95	<0.0050	0.019	0.0097	0.055	---	---	---	---	---
B-42-19.5	12/20/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-43-5	12/21/2010	5	170	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-43-10	12/21/2010	10	**1,300**	<2.5	<2.5	**21**	7.3	---	---	---	---	---
B-43-15	12/21/2010	15	1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-43-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-44-5	12/21/2010	5	1.3	0.0088	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-44-10	12/21/2010	10	570	<2.5	<2.5	**13**	<2.5	---	---	---	---	---
B-44-15	12/21/2010	15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-44-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-45-5	12/21/2010	5	1.2	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-45-10	12/21/2010	10	200	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---

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Sample ID	Date	Depth (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)
B-45-15	12/21/2010	15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-45-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-46-5	12/21/2010	5	<50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-46-8.5	12/21/2010	8.5	210	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-46-10	12/21/2010	10	**1,000**	<2.5	<2.5	<2.5	5.8	---	---	---	---	---
B-46-15	12/21/2010	15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-46-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-47-5	12/21/2010	5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-47-10	12/21/2010	10	130	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-47-15	12/21/2010	15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-47-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-48-5	12/21/2010	5	1	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-48-10	12/21/2010	10	74	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---
B-48-15	12/21/2010	15	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
B-48-19.5	12/21/2010	19.5	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
MW-13	03/24/2015	5	<0.099	<0.00099	<0.00099	<0.00099	<0.0020	---	---	---	---	---
MW-13	03/24/2015	10	<0.099	<0.00099	<0.00099	<0.00099	<0.0020	---	---	---	---	---
MW-13	03/24/2015	15	18	0.011	<0.0049	0.0049	<0.0097	---	---	---	---	---
MW-13	03/24/2015	19.5	<0.10	<0.0010	<0.0010	<0.0010	<0.0020	---	---	---	---	---
Shallow Soil (≤10 fbg) ESL [h] :			***500***	***1.2***	***9.3***	***4.7***	***11***	***8.4***	***110***	***NA***	***NA***	***NA***
Deep Soil (>10 fbg) ESL [h] :			***1,000***	***1.2***	***9.3***	***4.7***	***11***	***8.4***	***110***	***NA***	***NA***	***NA***

Table 1
Historical Soil Analytical Data for TPHg, BTEX, and Fuel Oxygenates
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Notes:

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260; before August 10, 2010 by EPA Method 8015 unless otherwise noted.

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B; before November 22, 2000 analyzed by EPA Method 8020 unless otherwise noted.

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

fbg = Feet below grade

mg/kg = Milligrams per kilogram

--- = Not analyzed

<x = Not detected at reporting limit x

ESL = Environmental screening level

NA = No applicable ESL

Results in bold exceed applicable ESL

a = Heavier gasoline range compounds are significant (aged gasoline?).

b = Gasoline range compounds are significant; no recognizable pattern.

c = Quantity of unknown hydrocarbon(s) in sample based on gasoline.

d = Extracted out of hold time

e = Analyzed by EPA Method 8260

f = Analyzed by EPA Method 8021

g = Internal standard out of range.

H = San Francisco Bay Regional Water Quality Control Board (RWQCB) commercial/industrial ESL for soil where groundwater is not a source of drinking water (Tables B and D of User's Guide: Derivation and Application of Environmental Screening Levels, RWQCB, Interim Final 2013).

Table 2
Historical Soil Data for TPHmo, TPHd, PAHs, and Lead
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

					PAHs																				
Sample ID	Date	Depth (fbg)	TPHmo (mg/kg)	TPHd (mg/kg)	Naphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Bis (2-ethylhexyl) phthalate (mg/kg)	Diethyl Phthalate (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Benzo(a) Anthracene (mg/kg)	Chrysene (mg/kg)	Benzo(k) Fluoranthene (mg/kg)	Benzo(b) Fluoranthene (mg/kg)	Benzo(a) Pyrene (mg/kg)	Benzo(g,h,i) Perylene (mg/kg)	Indeno(1,2,3-c,d) Pyrene (mg/kg)	Dibenz(a,h) Anthracene (mg/kg)	1-Methylnaphthalene (mg/kg)	Lead (mg/kg)
MW-6	01/04/2006	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	17
MW-6	01/04/2006	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	14
MW-6	01/04/2006	15.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	01/04/2006	19.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	01/04/2006	5.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11
MW-7	01/04/2006	11.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.5
MW-7	01/04/2006	16.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	01/04/2006	19.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	01/03/2006	6.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	310
MW-8	01/03/2006	10.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.3
MW-8	01/03/2006	19.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-23	01/03/2006	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9.1
B-23	01/03/2006	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.4
B-23	01/03/2006	15.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-23	01/03/2006	19.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
HA-1-0.7'	04/08/2009	0.7	**7,900**	**1,300 a**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	---	---	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	**0.18**	<0.040	<0.040	<0.040	<0.040	24.5
HA-1-1.5'	04/08/2009	1.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	7.73
HA-1-5'	04/08/2009	5	97	19 a	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	7.74
HA-2-0.7'	04/08/2009	0.7	**6,700**	**560 a**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	---	---	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	**0.19**	<0.040	<0.040	<0.040	<0.040	44.0
HA-2-1.5'	04/08/2009	1.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	29.5
HA-2-5'	04/08/2009	5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	19.4
HA-3-0.7'	04/08/2009	0.7	**6,300**	**570 a**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	---	---	<0.040	<0.040	<0.040	0.070	<0.040	<0.040	**0.16**	<0.040	<0.040	<0.040	<0.040	59.9
HA-3-1.5'	04/08/2009	1.5	50	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	20.8
HA-3-5'	04/08/2009	5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	6.65
HA-4-0.7'	04/08/2009	0.7	**7,800**	**4,500 a**	1.2	<1.0	<1.0	1.6	1.7	8.5	2.6	---	---	7.9	8.1	**3.6**	**4.0**	**7.1**	<1.0	**4.2**	1.6	**2.2**	<1.0	<1.0	43.5
HA-4-1.5'	04/08/2009	1.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	10.1
HA-4-5'	04/08/2009	5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	5.81
HA-5-0.7'	04/08/2009	0.7	**5,800**	**700 a**	<0.040	<0.040	<0.040	<0.040	<0.040	0.25	0.075	---	---	0.39	0.98	0.29	0.48	**0.61**	**0.56**	**0.51**	0.18	0.16	0.048	<0.040	46.0
HA-5-1.5'	04/08/2009	1.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	8.14

Table 2
Historical Soil Data for TPHmo, TPHd, PAHs, and Lead
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHmo (mg/kg)	TPHd (mg/kg)	Naphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Bis (2-ethylhexyl) phthalate (mg/kg)	Diethyl Phthalate (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Benzo(a) Anthracene (mg/kg)	Chrysene (mg/kg)	Benzo(k) Fluoranthene (mg/kg)	Benzo(b) Fluoranthene (mg/kg)	Benzo(a) Pyrene (mg/kg)	Benzo(g,h,i) Perylene (mg/kg)	Indeno(1,2,3-c,d) Pyrene (mg/kg)	Dibenz(a,h) Anthracene (mg/kg)	1-Methylnaphthalene (mg/kg)	Lead (mg/kg)
HA-5-5'	04/08/2009	5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	7.85
HA-6-0.7'	04/08/2009	0.7	**7,400**	**1,800 a**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	---	---	<0.040	0.077	<0.040	0.12	<0.040	<0.040	**0.21**	0.077	<0.040	<0.040	<0.040	40.3
HA-6-1.5'	04/08/2009	1.5	290	**110 a**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	11.3
HA-6-5'	04/08/2009	5	230	**130 a**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	12.1
HA-7-0.7'	04/08/2009	0.7	**11,000**	**910 a**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	---	---	<0.040	<0.040	<0.040	0.091	<0.040	<0.040	**0.18**	<0.040	<0.040	<0.040	<0.040	37.1
HA-7-1.5'	04/08/2009	1.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	8.82
HA-7-5'	04/08/2009	5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	7.45
HA-8-0.7'	04/08/2009	0.7	**9,600**	**810 a**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	---	---	<0.040	<0.040	<0.040	0.079	<0.040	<0.040	**0.17**	<0.040	<0.040	<0.040	<0.040	32.8
HA-8-1.5'	04/08/2009	1.5	74	11 a	<0.020	<0.020	<0.020	<0.020	<0.020	0.10	0.027	---	---	0.29	0.31	0.17	0.18	0.18	0.15	**0.20**	0.045	0.061	<0.020	<0.020	**1,060**
HA-8-5'	04/08/2009	5	190	35 a	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	19.7
HA-9-0	12/13/2010	0	470	**140a**	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	---	---	0.19	0.23	0.12	0.15	0.10	0.12	**0.14**	0.15	0.10	<0.10	<0.10	**1,410**
HA-9-1	12/13/2010	1	26	11 a	<0.020	<0.020	<0.020	<0.020	<0.020	0.091	0.027	---	---	0.14	0.14	0.093	0.10	0.062	0.071	**0.092**	0.057	0.044	<0.020	<0.020	**357**
HA-9-4.5	12/13/2010	4.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	5.53
HA-10-0	12/13/2010	0	370a	**150a**	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	---	---	0.17	0.22	0.11	0.17	0.11	0.15	**0.14**	0.22	0.14	<0.10	<0.10	**1,240**
HA-10-1	12/13/2010	1	**1,200**	**430a**	0.020	<0.020	<0.020	<0.020	<0.020	0.098	0.030	---	---	0.20	0.24	0.12	0.15	0.094	0.11	**0.16**	0.14	0.10	0.022	<0.020	**529**
HA-10-4.5	12/13/2010	4.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	7.39
HA-11-0	12/13/2010	0	340a	**120a**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	---	---	0.19	0.27	0.11	0.17	0.10	0.14	**0.16**	0.18	0.12	<0.10	<0.10	**1,950**
HA-11-1	12/13/2010	1	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	0.048	<0.020	---	---	0.074	0.070	0.047	0.052	0.035	0.027	**0.043**	0.024	<0.020	<0.020	<0.020	**166**
HA-11-4.5	12/13/2010	4.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	73.2
HA-12-0	12/13/2010	0	120	39 a	0.059	0.042	0.048	<0.020	<0.020	0.26	0.055	---	---	0.41	0.55	0.20	0.25	0.17	0.18	**0.26**	0.21	0.15	0.035	0.029	**4,550**
HA-12-1	12/13/2010	1	130	39 a	<0.020	<0.020	<0.020	<0.020	<0.020	0.089	0.026	---	---	0.086	0.088	0.050	0.057	0.040	0.035	**0.045**	0.035	0.025	<0.020	<0.020	**1,150**
HA-12-4.5	12/13/2010	4.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	9.25
HA-13-0	12/13/2010	0	**920**	**210a**	<0.10	<0.10	<0.10	<0.10	<0.10	0.26	<0.10	---	---	0.38	0.42	0.22	0.25	0.19	0.18	**0.24**	0.19	0.15	<0.10	<0.10	**3,940**
HA-13-1	12/13/2010	1	<25	7.8a	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**291**
HA-13-4.5	12/13/2010	4.5	<25	<5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	---	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**498**
HA-14-0	04/18/2012	0	69	47	<0.18	---	<0.18	<0.18	<0.18	<0.18	<0.18	---	---	<0.18	0.27	<0.18	<0.18	<0.18	0.25	**0.22**	0.20	<0.18	<0.18	---	**1,800**
HA-14-1	04/18/2012	1	<5.0	<5.0	<0.030	---	<0.030	<0.030	<0.030	<0.030	<0.030	---	---	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	---	**87**
HA-14-4.5	04/18/2012	4.5	<5.0	<5.0	<0.030	---	<0.030	<0.030	<0.030	<0.030	<0.030	---	---	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	---	7.7
HA-15-0	04/18/2012	0	<10	23	<0.45	---	<0.45	<0.45	<0.45	<0.45	<0.45	---	---	0.054	0.080	<0.45	<0.45	<0.45	0.058	<0.45	<0.45	<0.45	<0.45	---	**1,400**
HA-15-1	04/18/2012	1	<10	11	<0.045	---	<0.045	<0.045	<0.045	<0.045	<0.045	---	---	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	---	40

Table 2
Historical Soil Data for TPHmo, TPHd, PAHs, and Lead
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHmo (mg/kg)	TPHd (mg/kg)	Naphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Bis (2-ethylhexyl) phthalate (mg/kg)	Diethyl Phthalate (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Benzo(a) Anthracene (mg/kg)	Chrysene (mg/kg)	Benzo(k) Fluoranthene (mg/kg)	Benzo(b) Fluoranthene (mg/kg)	Benzo(a) Pyrene (mg/kg)	Benzo(g,h,i) Perylene (mg/kg)	Indeno(1,2,3-c,d) Pyrene (mg/kg)	Dibenz(a,h) Anthracene (mg/kg)	1-Methylnaphthalene (mg/kg)	Lead (mg/kg)
HA-15-4.5	04/18/2012	4.5	<5.0	<5.0	<0.030	---	<0.030	<0.030	<0.030	<0.030	<0.030	---	---	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	---	6.4
HA-16-0	04/18/2012	0	75	89	<0.18	---	<0.18	<0.18	<0.18	0.19	<0.18	---	---	<0.18	0.26	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	---	**1,100**
HA-16-1	04/18/2012	1	10	7.3	<0.045	---	<0.045	<0.045	<0.045	<0.045	<0.045	---	---	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	---	**220**
HA-16-4.5	04/18/2012	4.5	<5.0	<5.0	<0.045	---	<0.045	<0.045	<0.045	<0.045	<0.045	---	---	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	---	**150**
HA-17-0	04/18/2012	0	81	50	<0.45	---	<0.45	<0.45	<0.45	<0.45	<0.45	---	---	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	---	**4,200**
HA-17-1	04/18/2012	1	<10	<10	<0.030	---	<0.030	<0.030	<0.030	<0.030	<0.030	---	---	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	---	38
HA-17-4.5	04/18/2012	4.5	<5.0	<5.0	<0.030	---	<0.030	<0.030	<0.030	<0.030	<0.030	---	---	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	---	14
HA-18-0	04/18/2012	0	61	53	<0.45	---	<0.45	<0.45	<0.45	<0.45	<0.45	---	---	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	---	**1,000**
HA-18-1	04/18/2012	1	8.3	7.3	<0.045	---	<0.045	<0.045	<0.045	<0.045	<0.045	---	---	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	---	**410**
HA-18-4.5	04/18/2012	4.5	<5.0	<5.0	<0.030	---	<0.030	<0.030	<0.030	<0.030	<0.030	---	---	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	---	11
B-1	01/22/2013	2	109	50.6	<0.31	<0.32	<0.31	<0.29	<0.29	<0.23	<0.21	<0.26	<0.23	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.17	<0.17	<0.16	<0.30	55.9
B-2	01/22/2013	2	<4.9	2.85 b	<0.077	<0.079	<0.078	<0.073	<0.072	<0.058	<0.053	0.467	**0.0788 b**	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.043	<0.043	<0.041	<0.076	6.8
B-3	01/22/2013	2	<5.0	3.74 b	<0.077	<0.079	<0.078	<0.073	<0.072	<0.058	<0.053	0.0683 b	**0.0595 b**	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.043	<0.042	<0.041	<0.076	7.3
B-4	01/22/2013	2	<4.9	<2.5	<0.15	<0.16	<0.15	<0.15	<0.14	<0.12	<0.11	<0.13	<0.11	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.086	<0.085	<0.082	<0.15	97.3
B-5	01/22/2013	2	36.9	13.8	<0.15	<0.16	<0.16	<0.15	<0.14	<0.12	<0.11	<0.13	<0.11	0.151 b	0.158 b	0.0800 b	0.0832 b	0.0687 b	0.0858 b	0.0868 b	<0.086	<0.085	<0.082	<0.15	83.8
N-1	01/22/2013	2	116	28.6 b	<0.31	<0.32	<0.31	<0.29	<0.29	<0.23	<0.21	<0.27	<0.23	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.17	<0.17	<0.16	<0.30	306
N-2	01/22/2013	2	<5.0	2.63 b	<0.077	<0.079	<0.078	<0.073	<0.072	<0.058	<0.053	<0.66	**0.0756 b**	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.043	<0.042	<0.041	<0.076	48.8
N-3	01/22/2013	2	184	40.2	<0.15	<0.16	<0.16	<0.15	<0.14	<0.12	<0.11	0.415 b	<0.11	0.113 b	0.136 b	0.0767 b	0.0925 b	0.0808 b	0.0900 b	0.100 b	<0.086	<0.085	<0.083	<0.15	**721**
S-1	01/22/2013	2	23.4	4.84 b	<0.077	<0.080	<0.078	<0.073	<0.072	<0.058	<0.054	<0.067	<0.057	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.043	<0.043	<0.041	<0.076	7.6
S-2	01/22/2013	2	<4.8	2.55 b	<0.077	<0.079	<0.078	<0.073	<0.072	<0.058	<0.053	<0.66	**0.0644 b**	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.043	<0.042	<0.041	<0.076	13.3
S-3	01/22/2013	2	<4.9	<2.4	<0.077	<0.079	<0.078	<0.073	<0.072	<0.058	<0.053	<0.66	<0.056	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.043	<0.042	<0.041	<0.076	9.4
W-1	01/22/2013	2	23.6	8.52 b	<0.077	<0.16	<0.16	<0.15	<0.14	<0.12	<0.11	<0.13	<0.11	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.087	<0.085	<0.083	<0.15	41.8
W-2	01/22/2013	2	254	162	<0.15	<0.16	<0.16	<0.15	<0.14	<0.12	<0.11	<0.13	<0.11	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.086	<0.085	<0.082	<0.15	215
OX-1	02/21/2013	3	53.0	41.9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.66	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	13.0
OX-2	02/21/2013	3	54.9	13.2	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.33	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	11.5
OX-3	02/21/2013	3	14.4	7.36	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	0.0771 b	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	6.4
HA-9-0 d	04/22/2013	0	---	---	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	3.7 c	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<0.17	---	---
HA-10-0 d	04/22/2013	0	---	---	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	1.4	1.6	<0.66	1.0	<0.66	**2.0**	**1.7**	2.4	**1.7**	<0.84	---	---
HA-10-1 d	04/22/2013	1	---	---	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	1.3 c	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.84	---	---
HA-12-0 d	04/22/2013	0	---	---	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	5.6 c	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<4.2	---	---

Table 2
Historical Soil Data for TPHmo, TPHd, PAHs, and Lead
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Sample ID	Date	Depth (fbg)	TPHmo (mg/kg)	TPHd (mg/kg)	Naphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Bis (2-ethylhexyl) phthalate (mg/kg)	Diethyl Phthalate (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Benzo(a) Anthracene (mg/kg)	Chrysene (mg/kg)	Benzo(k) Fluoranthene (mg/kg)	Benzo(b) Fluoranthene (mg/kg)	Benzo(a) Pyrene (mg/kg)	Benzo(g,h,i) Perylene (mg/kg)	Indeno(1,2,3-c,d) Pyrene (mg/kg)	Dibenz(a,h) Anthracene (mg/kg)	1-Methylnaphthalene (mg/kg)	Lead (mg/kg)
HA-13-0 d	04/22/2013	0	---	---	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<8.4	---	---
HA-19	04/22/2013	0	120	90	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**10,000**
HA-20	04/22/2013	0	<5.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**170**
HA-21	04/22/2013	0	250	**100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**350**
HA-22	04/22/2013	0	93	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1,300**
HA-23	04/22/2013	0	160	97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1,200**
HA-24	04/22/2013	0	99	69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1,200**
MW-13	03/24/2015	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**190**
VP-12	03/24/2015	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	310
VP-13	03/24/2015	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	270
VP-14	03/24/2015	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11
Shallow Soils (≤10 fbg) Screening Level:																									
Residential [e]			***100***	***100***	***3.1***	***0.25***	***13***	***19***	***8.9***	***11***	***2.8***	***160***	***0.035***	***40***	***85***	***0.38***	***3.8***	***0.38***	***0.38***	***0.038***	***27***	***0.38***	***0.11***	***NA***	***80***
Commercial [f]			***500***	***110***	***4.8***	***0.25***	***13***	***19***	***8.9***	***11***	***2.8***	***220***	***0.035***	***40***	***85***	***0.45***	***4.5***	***0.45***	***0.45***	***0.045***	***27***	***0.45***	***0.13***	***NA***	***320***

Table 2
Historical Soil Data for TPHmo, TPHd, PAHs, and Lead
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Notes:

TPH = Total petroleum hydrocarbons as motor oil analyzed by EPA Method 8015B (M).

TPH = Total petroleum hydrocarbons as diesel analyzed by EPA Method 8015B.

Polycyclic aromatic hydrocarbons (PAHs) analyzed by EPA Method 8270C; before April 22, 2013, analyzed by EPA Method 8270C SIM PAHS. Individual constituents tabulated.

Lead analyzed by EPA Method 6010B.

fbg = Feet below grade.

mg/k = Milligrams per kilogram.

<x = Not detected at reporting limit x.

--- = Not analyzed.

ESLs = Environmental screening levels.

NA = No applicable ESL.

Results in bold equal or exceed applicable screening level.

Shading indicates that soil sample location was subsequently excavated; results are not representative of residual soil.

a = The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

b = Indicates an estimated value below method reporting limit.

c = Compound found in blank and in sample.

d = Boring drilled in same location as December 2010 boring.

e = San Francisco Bay Regional Water Quality Control Board (RWQCB) ESL for shallow soil where groundwater is not a current or potential source of drinking water with residential land use (Table B in User's Guide: Derivation and Application of Environmental Screening Levels, RWQCB, Interim Final 2013).

f = San Francisco Bay Regional Water Quality Control Board (RWQCB) ESL for shallow soil where groundwater is not a current or potential source of drinking water with commercial land use (Table B in User's Guide: Derivation and Application of Environmental Screening Levels, RWQCB, Interim Final 2013).

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-1	08/05/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	8.76	14.77	---
MW-1 (D)	08/05/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	---	---	---
MW-1	10/17/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	9.88	13.65	---
MW-1	01/08/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	6.82	16.71	---
MW-1	04/07/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	7.89	15.64	---
MW-1	07/02/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	8.71	14.82	---
MW-1	10/24/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	9.26	14.27	---
MW-1	01/09/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	7.94	15.59	---
MW-1	04/02/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	7.21	16.32	---
MW-1	07/14/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	7.78	15.75	---
MW-1	10/01/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	8.39	15.14	---
MW-1	01/18/1999	<50.0	<0.500	0.785	<0.500	<0.500	2.36	---	---	---	---	---	23.53	8.28	15.25	---
MW-1	04/29/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.53	8.41	15.12	---
MW-1	08/23/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.53	8.17	15.36	---
MW-1	10/06/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	---	---	---	---	---	23.53	9.37	14.16	---
MW-1	01/27/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.53	7.52	16.01	---
MW-1	04/18/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.53	7.66	15.87	---
MW-1	07/19/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.53	7.81	15.72	---
MW-1	10/24/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.53	8.33	15.20	---
MW-1	01/04/2001	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.53	8.33	15.20	---
MW-1	05/03/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.53	7.83	15.70	---
MW-1	07/09/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.53	8.60	14.93	---
MW-1	10/18/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.53	9.01	14.52	0.2
MW-1	01/24/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.53	7.68	15.85	2.1
MW-1	04/04/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.53	7.38	16.15	1.1
MW-1	07/18/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.53	7.75	15.78	2.2
MW-1	10/21/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	29.53	8.10	21.43	1.6
MW-1	01/21/2003	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	29.53	7.82	21.71	0.6
MW-1	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<5.0	---	---	---	---	29.53	7.76	21.77	1.7
MW-1	07/22/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	29.53	7.87	21.66	1.5

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-1	10/20/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	29.53	8.67	20.86	0.8
MW-1	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	29.53	8.28	21.25	---
MW-1	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	29.53	8.50	21.03	1.1
MW-1	04/01/2004	---	---	---	---	---	---	---	---	---	---	---	29.53	7.98	21.55	---
MW-1	07/13/2004	---	---	---	---	---	---	---	---	---	---	---	29.53	8.30	21.23	---
MW-1	10/26/2004	---	---	---	---	---	---	---	---	---	---	---	29.53	8.27	21.26	---
MW-1	01/13/2005	---	---	---	---	---	---	---	---	---	---	---	29.53	6.92	22.61	---
MW-1	04/28/2005	---	---	---	---	---	---	---	---	---	---	---	29.53	7.18	22.35	---
MW-1	08/01/2005	---	---	---	---	---	---	---	---	---	---	---	29.53	7.43	22.10	---
MW-1	10/05/2005	---	---	---	---	---	---	---	---	---	---	---	29.53	7.55	21.98	---
MW-1	01/11/2006	---	---	---	---	---	---	---	---	---	---	---	29.54	5.35	24.19	---
MW-1	05/26/2006	<50.0	<0.500	<0.500	<0.500	<0.500	---	<0.500	<10.0	<0.500	<0.500	<0.500	29.54	6.81	22.73	0.78
MW-1	08/30/2006	---	---	---	---	---	---	---	---	---	---	---	29.54	7.77	21.77	---
MW-1	11/08/2006	---	---	---	---	---	---	---	---	---	---	---	29.54	8.39	21.15	---
MW-1	02/22/2007	---	---	---	---	---	---	---	---	---	---	---	29.54	7.11	22.43	---
MW-1	05/29/2007	---	---	---	---	---	---	---	---	---	---	---	29.54	7.20	22.34	---
MW-1	08/27/2007	---	---	---	---	---	---	---	---	---	---	---	29.54	7.86	21.68	---
MW-1	11/08/2007	---	---	---	---	---	---	---	---	---	---	---	29.54	7.89	21.65	---
MW-1	02/20/2008	---	---	---	---	---	---	---	---	---	---	---	29.54	7.38	22.16	---
MW-1	05/01/2008	---	---	---	---	---	---	---	---	---	---	---	29.54	7.58	21.96	---
MW-1	08/12/2008	---	---	---	---	---	---	---	---	---	---	---	29.54	8.85	20.69	---
MW-1	11/26/2008	---	---	---	---	---	---	---	---	---	---	---	29.54	8.90	20.64	---
MW-1	02/03/2009	---	---	---	---	---	---	---	---	---	---	---	29.54	8.51	21.03	---
MW-1	06/02/2009	---	---	---	---	---	---	---	---	---	---	---	29.54	8.45	21.09	---
MW-1	11/10/2009	---	---	---	---	---	---	---	---	---	---	---	29.54	8.89	20.65	---
MW-1	05/10/2010	---	---	---	---	---	---	---	---	---	---	---	29.54	7.22	22.32	---
MW-1	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	29.54	7.88	21.66	---
MW-1	12/03/2010	---	---	---	---	---	---	---	---	---	---	---	29.54	7.98	21.56	---
MW-1	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	29.54	7.52	22.02	---
MW-1	05/31/2011	---	---	---	---	---	---	---	---	---	---	---	29.54	7.28	22.26	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-1	12/13/2011	---	---	---	---	---	---	---	---	---	---	---	29.54	7.64	21.90	---
MW-1	06/13/2012	---	---	---	---	---	---	---	---	---	---	---	29.54	7.56	21.98	---
MW-1	11/19/2012	---	---	---	---	---	---	---	---	---	---	---	29.54	8.48	21.06	---
MW-1	05/30/2013	---	---	---	---	---	---	---	---	---	---	---	29.54	7.32	22.22	---
MW-1	11/18/2013	---	---	---	---	---	---	---	---	---	---	---	29.54	9.11	20.43	---
MW-1	06/06/2014	---	---	---	---	---	---	---	---	---	---	---	29.54	8.40	21.14	---
MW-1	12/01/2014	---	---	---	---	---	---	---	---	---	---	---	29.54	9.37	20.17	---
MW-1	05/22/2015	---	---	---	---	---	---	---	---	---	---	---	29.54	7.45	22.09	---
MW-1	**12/18/2015**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**29.54**	**9.39**	**20.15**	**---**
MW-2	08/05/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	8.35	14.12	---
MW-2	10/17/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	9.32	13.15	---
MW-2 (D)	10/17/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	---	---	---
MW-2	01/08/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	6.80	15.67	---
MW-2 (D)	01/08/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	---	---	---
MW-2	04/07/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	7.81	14.66	---
MW-2	07/02/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	8.27	14.20	---
MW-2	10/24/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	9.12	13.35	---
MW-2	01/09/1998	<50	<0.50	<0.50	<0.50	<0.50	6.3	---	---	---	---	---	22.47	7.41	15.06	---
MW-2	04/02/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	6.59	15.88	---
MW-2	07/14/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	7.49	14.98	---
MW-2	10/01/1998	<50	<0.50	<0.50	<0.50	0.59	<2.5	---	---	---	---	---	22.47	8.58	13.89	---
MW-2	01/18/1999	<50.0	<0.500	0.971	<0.500	<0.500	2.47	---	---	---	---	---	22.47	8.68	13.79	---
MW-2	04/29/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	22.47	8.62	13.85	---
MW-2	08/23/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	22.47	7.43	15.04	---
MW-2	10/06/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	---	---	---	---	---	22.47	9.00	13.47	---
MW-2	01/27/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	22.47	8.15	14.32	---
MW-2	04/18/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	22.47	7.04	15.43	---
MW-2	07/19/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	22.47	7.13	15.34	---
MW-2	10/24/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	22.47	8.78	13.69	---
MW-2	01/04/2001	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	22.47	8.33	14.14	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-2	05/03/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.47	7.24	15.23	---
MW-2	07/09/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.47	8.55	13.92	---
MW-2	10/18/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.47	9.42	13.05	---
MW-2	01/24/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.47	7.23	15.24	---
MW-2	04/04/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.47	6.90	15.57	---
MW-2	07/18/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.47	7.97	14.50	---
MW-2	10/21/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	28.47	8.62	19.85	---
MW-2	01/21/2003	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	28.47	7.08	21.39	---
MW-2	04/17/2003	<50	<0.50	<0.50	0.98	2.5	---	<5.0	---	---	---	---	28.47	6.94	21.53	---
MW-2	07/22/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	28.47	8.10	20.37	---
MW-2	10/20/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	28.47	9.09	19.38	---
MW-2	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	28.47	7.28	21.19	---
MW-2	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	28.47	8.99	19.48	2.8
MW-2	04/01/2004	---	---	---	---	---	---	---	---	---	---	---	28.47	6.88	21.59	---
MW-2	07/13/2004	---	---	---	---	---	---	---	---	---	---	---	28.47	8.28	20.19	---
MW-2	10/26/2004	---	---	---	---	---	---	---	---	---	---	---	28.47	8.43	20.04	---
MW-2	01/13/2005	---	---	---	---	---	---	---	---	---	---	---	28.47	6.52	21.95	---
MW-2	04/28/2005	---	---	---	---	---	---	---	---	---	---	---	28.47	6.38	22.09	---
MW-2	08/01/2005	---	---	---	---	---	---	---	---	---	---	---	28.47	7.73	20.74	---
MW-2	10/05/2005	---	---	---	---	---	---	---	---	---	---	---	28.47	8.47	20.00	---
MW-2	01/11/2006	---	---	---	---	---	---	---	---	---	---	---	28.48	6.30	22.18	---
MW-2	05/26/2006	59.9	<0.500	<0.500	<0.500	<0.500	---	<0.500	<10.0	<0.500	<0.500	<0.500	28.48	6.84	21.64	3.02
MW-2	08/30/2006	---	---	---	---	---	---	---	---	---	---	---	28.48	8.11	20.37	---
MW-2	11/08/2006	---	---	---	---	---	---	---	---	---	---	---	28.48	8.61	19.87	---
MW-2	02/22/2007	---	---	---	---	---	---	---	---	---	---	---	28.48	6.92	21.56	---
MW-2	05/29/2007	---	---	---	---	---	---	---	---	---	---	---	28.48	7.32	21.16	---
MW-2	08/27/2007	---	---	---	---	---	---	---	---	---	---	---	28.48	8.38	20.10	---
MW-2	11/08/2007	---	---	---	---	---	---	---	---	---	---	---	28.48	8.58	19.90	---
MW-2	02/20/2008	---	---	---	---	---	---	---	---	---	---	---	28.48	6.48	22.00	---
MW-2	05/01/2008	---	---	---	---	---	---	---	---	---	---	---	28.48	19.00	9.48	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-2	08/12/2008	---	---	---	---	---	---	---	---	---	---	---	28.48	8.53	19.95	---
MW-2	11/26/2008	---	---	---	---	---	---	---	---	---	---	---	28.48	8.88	19.60	---
MW-2	02/03/2009	---	---	---	---	---	---	---	---	---	---	---	28.48	8.20	20.28	---
MW-2	06/02/2009	---	---	---	---	---	---	---	---	---	---	---	28.48	7.50	20.98	---
MW-2	11/10/2009	---	---	---	---	---	---	---	---	---	---	---	28.48	8.69	19.79	---
MW-2	05/10/2010	---	---	---	---	---	---	---	---	---	---	---	28.48	7.09	21.39	---
MW-2	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	28.48	8.70	19.78	---
MW-2	12/03/2010	---	---	---	---	---	---	---	---	---	---	---	28.48	8.22	20.26	---
MW-2	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	28.48	6.40	22.08	---
MW-2	05/31/2011	---	---	---	---	---	---	---	---	---	---	---	28.48	7.46	21.02	---
MW-2	12/13/2011	---	---	---	---	---	---	---	---	---	---	---	28.48	8.28	20.20	---
MW-2	06/13/2012	---	---	---	---	---	---	---	---	---	---	---	28.48	7.51	20.97	---
MW-2	11/19/2012	---	---	---	---	---	---	---	---	---	---	---	28.48	8.85	19.63	---
MW-2	05/30/2013	---	---	---	---	---	---	---	---	---	---	---	28.48	7.82	20.66	---
MW-2	11/18/2013	---	---	---	---	---	---	---	---	---	---	---	28.48	9.55	18.93	---
MW-2	06/06/2014	---	---	---	---	---	---	---	---	---	---	---	28.48	7.99	20.49	---
MW-2	12/01/2014	---	---	---	---	---	---	---	---	---	---	---	28.48	9.52	18.96	---
MW-2	05/22/2015	---	---	---	---	---	---	---	---	---	---	---	28.48	8.30	20.18	---
MW-2	**12/18/2015**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**28.48**	**10.86**	**17.62**	**---**
MW-3	04/25/2001	---	---	---	---	---	---	---	---	---	---	---	22.30	7.16	15.14	---
MW-3	05/03/2001	<100	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.30	7.28	15.02	---
MW-3	07/09/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.30	8.45	13.85	---
MW-3	10/18/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.30	9.44	12.86	---
MW-3	01/24/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.30	5.88	16.42	---
MW-3	04/04/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.30	6.68	15.62	---
MW-3	07/18/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	22.30	7.63	14.67	---
MW-3	10/21/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	28.30	8.56	19.74	---
MW-3	01/21/2003	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	28.30	6.95	21.35	---
MW-3	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<5.0	---	---	---	---	28.30	6.77	21.53	---
MW-3	07/22/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	28.30	7.92	20.38	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-3	10/20/2003	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	28.30	9.12	19.18	---
MW-3	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	28.30	7.21	21.09	---
MW-3	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	28.30	9.00	19.30	0.6
MW-3	04/01/2004	---	---	---	---	---	---	---	---	---	---	---	28.30	6.65	21.65	---
MW-3	07/13/2004	---	---	---	---	---	---	---	---	---	---	---	28.30	8.24	20.06	---
MW-3	10/26/2004	---	---	---	---	---	---	---	---	---	---	---	28.30	8.50	19.80	---
MW-3	01/13/2005	---	---	---	---	---	---	---	---	---	---	---	28.30	6.32	21.98	---
MW-3	04/28/2005	---	---	---	---	---	---	---	---	---	---	---	28.30	6.05	22.25	---
MW-3	08/01/2005	---	---	---	---	---	---	---	---	---	---	---	28.30	7.65	20.65	---
MW-3	10/05/2005	---	---	---	---	---	---	---	---	---	---	---	28.30	8.31	19.99	---
MW-3	01/11/2006	---	---	---	---	---	---	---	---	---	---	---	28.30	6.10	22.20	---
MW-3	05/26/2006	<50.0	<0.500	<0.500	<0.500	<0.500	---	<0.500	<10.0	2.87	<0.500	<0.500	28.30	6.72	21.58	1.46
MW-3	08/30/2006	---	---	---	---	---	---	---	---	---	---	---	28.30	8.12	20.18	---
MW-3	11/08/2006	---	---	---	---	---	---	---	---	---	---	---	28.30	8.71	19.59	---
MW-3	02/22/2007	---	---	---	---	---	---	---	---	---	---	---	28.30	6.78	21.52	---
MW-3	05/29/2007	---	---	---	---	---	---	---	---	---	---	---	28.30	7.20	21.10	---
MW-3	08/27/2007	---	---	---	---	---	---	---	---	---	---	---	28.30	8.18	20.12	---
MW-3	11/08/2007	---	---	---	---	---	---	---	---	---	---	---	28.30	8.41	19.89	---
MW-3	02/20/2008	---	---	---	---	---	---	---	---	---	---	---	28.30	6.31	21.99	---
MW-3	05/01/2008	---	---	---	---	---	---	---	---	---	---	---	28.30	7.52	20.78	---
MW-3	08/12/2008	---	---	---	---	---	---	---	---	---	---	---	28.30	8.32	19.98	---
MW-3	11/26/2008	---	---	---	---	---	---	---	---	---	---	---	28.30	8.71	19.59	---
MW-3	02/03/2009	---	---	---	---	---	---	---	---	---	---	---	28.30	8.08	20.22	---
MW-3	06/02/2009	---	---	---	---	---	---	---	---	---	---	---	28.30	7.28	21.02	---
MW-3	11/10/2009	---	---	---	---	---	---	---	---	---	---	---	28.30	8.72	19.58	---
MW-3	05/10/2010	---	---	---	---	---	---	---	---	---	---	---	28.30	6.71	21.59	---
MW-3	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	28.30	8.59	19.71	---
MW-3	12/03/2010	---	---	---	---	---	---	---	---	---	---	---	28.30	8.26	20.04	---
MW-3	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	28.30	6.12	22.18	---
MW-3	05/31/2011	---	---	---	---	---	---	---	---	---	---	---	28.30	7.32	20.98	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-3	12/13/2011	---	---	---	---	---	---	---	---	---	---	---	28.30	8.19	20.11	---
MW-3	06/13/2012	---	---	---	---	---	---	---	---	---	---	---	28.30	7.40	20.90	---
MW-3	11/19/2012	---	---	---	---	---	---	---	---	---	---	---	28.30	8.71	19.59	---
MW-3	05/30/2013	---	---	---	---	---	---	---	---	---	---	---	28.30	7.52	20.78	---
MW-3	11/18/2013	---	---	---	---	---	---	---	---	---	---	---	28.30	9.33	18.97	---
MW-3	06/06/2014	---	---	---	---	---	---	---	---	---	---	---	28.30	7.68	20.62	---
MW-3	12/01/2014	---	---	---	---	---	---	---	---	---	---	---	28.30	9.41	18.89	---
MW-3	05/22/2015	---	---	---	---	---	---	---	---	---	---	---	28.30	8.07	20.23	---
MW-3	**12/18/2015**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**28.30**	**9.84**	**18.46**	**---**
MW-4	04/25/2001	---	---	---	---	---	---	---	---	---	---	---	22.51	7.05	15.46	---
MW-4	05/03/2001	8,000	3,500	24	37	350	---	<200	---	---	---	---	22.51	6.66	15.85	---
MW-4	07/09/2001	16,000	4,100	32	890	790	---	<200	---	---	---	---	22.51	8.28	14.23	---
MW-4	10/18/2001	12,000	3,300	<20	430	220	---	<200	---	---	---	---	22.51	9.40	13.11	---
MW-4	01/24/2002	5,500	1,200	<5.0	280	240	---	<50	---	---	---	---	22.51	5.73	16.78	---
MW-4	04/04/2002	2,000	350	1.4	13	7.8	---	<10	---	---	---	---	22.51	5.62	16.89	---
MW-4	07/18/2002	3,400	440	1.3	200	98	---	<5.0	---	---	---	---	22.51	6.94	15.57	---
MW-4	10/21/2002	16,000	3,100	11	1,200	970	---	<5.0	---	---	---	---	28.51	8.04	20.47	---
MW-4	01/21/2003	3,600	720	3.9	110	58	---	<25	---	---	---	---	28.51	6.10	22.41	---
MW-4	04/17/2003	3,700	810	<5.0	140	17	---	<50	---	---	---	---	28.51	5.97	22.54	---
MW-4	07/22/2003	3,700	450	<2.5	110	7.9	---	<2.5	---	---	---	---	28.51	6.37	22.14	---
MW-4	10/20/2003	11,000 b	2,500	<20	550	95	---	<20	---	---	---	---	28.51	8.99	19.52	---
MW-4	01/13/2004	6,600	1,500	<10	41	37	---	<10	---	---	---	---	28.51	6.67	21.84	---
MW-4	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	28.51	8.80	19.71	0.3
MW-4	04/01/2004	9,500	2,100	12	170	30	---	---	---	---	---	---	28.51	6.28	22.23	0.1
MW-4	07/13/2004	12,000	3,600	39	160	58	---	<25	<250	<100	<100	<100	28.51	8.20	20.31	0.1
MW-4	10/26/2004	11,000	2,800	<25	100	<50	---	---	---	---	---	---	28.51	8.00	20.51	0.6
MW-4	01/13/2005	12,000	2,200	14	110	43	---	---	---	---	---	---	28.51	6.03	22.48	0.1
MW-4	04/28/2005	8,600	2,300	27	200	49	---	---	---	---	---	---	28.51	5.93	22.58	3.71
MW-4	08/01/2005	11,000	3,900	57	180	47	---	<10	<100	<40	<40	<40	28.51	6.20	22.31	---
MW-4	10/05/2005	9,400	3,300	45	88	33	---	---	---	---	---	---	28.51	8.22	20.29	2.76

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-4	01/11/2006	3,900 a	1,700 a	14	95	78	---	<0.50	32	7.4	<0.50	<0.50	28.51	4.25	24.26	0.6
MW-4	05/26/2006	6,730	455	1.90	56.7	44.8	---	<0.500	<10.0	4.36	<0.500	<0.500	28.51	5.90	22.61	0.54
MW-4	08/30/2006	29,600	2,740	30.0	448	237	---	<0.500	<10.0	<0.500	<0.500	<0.500	28.51	7.98	20.53	0.44/0.46
MW-4	11/08/2006	6,300	1,500	13	130	67	---	---	---	---	---	---	28.51	8.52	19.99	0.05/0.22
MW-4	02/22/2007	11,000	2,200	18	620	310	---	---	---	---	---	---	28.51	5.63	22.88	2.96/2.98
MW-4	05/29/2007	14,000 b, f	3,200	27	640	249.0	---	---	---	---	---	---	28.51	6.60	21.91	0.19/0.11
MW-4	08/27/2007	12,000 f	1,900	19 g	250	80.9 g	---	<25	<250	<50	<50	<50	28.51	8.50	20.01	0.85/1.71
MW-4	11/08/2007	6,400 f	1,400	11 g	70	37.9 g	---	---	---	---	---	---	28.51	8.21	20.30	1.09/2.63
MW-4	02/20/2008	12,000 f	2,700	<20	690	396	---	---	---	---	---	---	28.51	4.86	23.65	0.46/0.12
MW-4	05/01/2008	8,500	2,000	<20	260	62	---	---	---	---	---	---	28.51	7.00	21.51	0.2/0.2
MW-4	08/12/2008	8,400	1,800	22	<20	24	---	<20	<200	<40	<40	<40	28.51	8.31	20.20	0.21/0.68
MW-4	11/26/2008	6,900	1,800	<20	120	<20	---	---	---	---	---	---	28.51	8.94	19.57	0.88/2.18
MW-4	02/03/2009	8,800	1,800	<20	160	96	---	---	---	---	---	---	28.51	7.64	20.87	0.15/0.26
MW-4	06/02/2009	15,000	3,000	58	340	55	---	---	---	---	---	---	28.51	6.82	21.69	0.26/0.65
MW-4	11/10/2009	13,000	2,200	37	180	91	---	<20	<200	<40	<40	<40	28.51	8.38	20.13	0.61/0.57
MW-4	05/10/2010	12,000	3,100	37	570	140	---	---	---	---	---	---	28.51	5.42	23.09	0.26/2.84
MW-4	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	28.51	8.31	20.20	---
MW-4	12/03/2010	6,400	1,600	21	96	68	---	<20	<200	<40	<40	<40	28.51	7.75	20.76	0.52/0.45
MW-4	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	28.51	4.25	24.26	---
MW-4	05/31/2011	11,000	3,200	61	520	68	---	---	---	---	---	---	28.51	6.34	22.17	1.46/2.63
MW-4	12/13/2011	4,000	1,120	31.1	83.0	30.3	---	<0.500	<10.0	4.64	<0.500	<0.500	28.51	7.90	20.61	0.59/0.19
MW-4	06/13/2012	12,000	3,500	47	270	<50	---	---	---	---	---	---	28.51	6.90	21.61	1.03/0.96
MW-4	11/19/2012	8,300	1,800	88	120	310	---	<25	<500	<25	<25	<25	28.51	8.34	20.17	0.88/1.02
MW-4	05/30/2013	11,000	3,400	68	220	40	---	---	---	---	---	---	28.51	7.38	21.13	0.10/0.07
MW-4	11/18/2013	10,000	2,400	33	43	<40	---	<20	<400	<20	<20	<20	28.51	9.13	19.38	0.27/0.24
MW-4	06/06/2014	8,900	1,800	<25	110	55	---	---	---	---	---	---	28.51	7.28	21.23	0.46/0.50
MW-4	12/01/2014	8,500 i	1,400	17	33	91	---	<10	<200	<10	<10	<10	28.51	8.80	19.71	0.48/1.17
MW-4	05/22/2015	7,100	1,500	48	54	<40	---	---	---	---	---	---	28.51	7.50	21.01	1.01/0.73
MW-4	**12/18/2015**	**7,500**	**1,300**	**72**	**75**	**290**	**---**	**<10**	**<200**	**<10**	**<10**	**<10**	**28.51**	**9.28**	**19.23**	**1.58/2.35**
MW-5	04/25/2001	---	---	---	---	---	---	---	---	---	---	---	23.54	7.36	16.18	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-5	05/03/2001	160,000	12,000	20,000	3,600	23,000	---	<500	---	---	---	---	23.54	7.77	15.77	---
MW-5	07/09/2001	130,000	11,000	19,000	4,500	22,000	---	<500	---	---	---	---	23.54	9.32	14.22	---
MW-5	10/18/2001	120,000	12,000	23,000	4,200	21,000	---	<500	---	---	---	---	23.54	9.39	14.15	0.5
MW-5	01/24/2002	34,000	3,300	3,300	960	6,000	---	<100	---	---	---	---	23.54	7.05	16.49	4.0
MW-5	04/04/2002	32,000	2,100	2,800	730	6,400	---	<200	---	---	---	---	23.54	6.89	16.65	1.0
MW-5	07/18/2002	75,000	7,500	4,700	2,700	15,000	---	<500	---	---	---	---	23.54	8.48	15.06	1.2
MW-5	10/21/2002	140,000	13,000	18,000	4,000	26,000	---	<500	---	---	---	---	29.54	9.21	20.33	1.1
MW-5	01/21/2003	47,000	6,400	3,500	370	8,300	---	<500	---	---	---	---	29.54	7.23	22.31	0.8
MW-5	04/17/2003	93,000	9,700	16,000	3,200	20,000	---	<500	---	---	---	---	29.54	6.61	22.93	0.8
MW-5	07/22/2003	110,000	9,500	15,000	560	23,000	---	<50	---	---	---	---	29.54	8.68	20.86	1.2
MW-5	10/20/2003	88,000	6,600	12,000	1,900	16,000	---	<50	---	---	---	---	29.54	9.71	19.83	0.1
MW-5	01/13/2004	4,600	460	140	<10	930	---	<10	---	---	---	---	29.54	7.30	22.24	---
MW-5	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	29.54	9.51	20.03	0.3
MW-5	04/01/2004	70,000	7,900	11,000	2,100	17,000	---	---	---	---	---	---	29.54	6.80	22.74	0.1
MW-5	07/13/2004	66,000	5,900	10,000	1,900	16,000	---	<50	<500	<200	<200	<200	29.54	9.28	20.26	0.1
MW-5	10/26/2004	6,600	670	110	7.4	2,000	---	---	---	---	---	---	29.54	8.75	20.79	0.8
MW-5	01/13/2005	9,500	1,300	950	360	1,900	---	---	---	---	---	---	29.54	5.87	23.67	6.3
MW-5	04/28/2005	17,000	2,400	1,200	320	3,400	---	---	---	---	---	---	29.54	6.32	23.22	3.54
MW-5	08/01/2005	70,000	6,600	11,000	3,400	17,000	---	<50	<500	<200	<200	<200	29.54	8.27	21.27	---
MW-5	10/05/2005	93,000	8,600	15,000	4,500	23,000	---	---	---	---	---	---	29.54	9.12	20.42	1.43
MW-5	01/11/2006	12,000	1,900	550	2,400	3,800	---	<25	<250	<25	<25	<25	29.61	5.52	24.09	0.6
MW-5	05/26/2006	112,000	6,600	11,100	3,870	19,900 e	---	<0.500	<10.0	5.37	<0.500	<0.500	29.61	7.02	22.59	0.45
MW-5	08/30/2006	281,000	8,050	15,400	4,770	26,800	---	<0.500	<10.0	<0.500	<0.500	60.6	29.61	8.93	20.68	0.55/0.51
MW-5	11/08/2006	83,000	7,000	7,400	3,200	16,000	---	---	---	---	---	---	29.61	9.40	20.21	0.08/0.05
MW-5	02/22/2007	35,000	9,500	13,000	5,300	23,000	---	---	---	---	---	---	29.61	6.87	22.74	1.17/3.17
MW-5	05/29/2007	94,000 f	6,400	9,900	4,300	22,000	---	---	---	---	---	---	29.61	7.85	21.76	0.08/0.19
MW-5	08/27/2007	110,000 f	6,900	11,000	4,300	22,000	---	<100	<1000	<200	<200	<200	29.61	9.13	20.48	0.08/0.22
MW-5	11/08/2007	61,000 f	7,500	5,300	4,700	20,400	---	---	---	---	---	---	29.61	9.27	20.34	2.15/0.65
MW-5	02/20/2008	92,000 f	14,000	14,000	5,900	30,800	---	---	---	---	---	---	29.61	6.02	23.59	0.17/0.18
MW-5	05/01/2008	130,000	8,200	12,000	4,600	24,900	---	---	---	---	---	---	29.61	8.20	21.41	0.2/0.1

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-5	08/12/2008	150,000	7,600	12,000	8,900	24,800	---	<100	<1,000	<200	<200	<200	29.61	9.42	20.19	0.14/0.51
MW-5	11/26/2008	110,000	7,900	12,000	4,500	27,500	---	---	---	---	---	---	29.61	9.86	19.75	1.26/0.95
MW-5	02/03/2009	130,000	8,500	10,000	4,400	24,000	---	---	---	---	---	---	29.61	8.67	20.94	0.30/0.23
MW-5	06/02/2009	150,000	7,000	10,000	4,600	25,000	---	---	---	---	---	---	29.61	8.02	21.59	0.28/0.28
MW-5	11/10/2009	150,000	6,900	10,000	4,600	26,000	---	<100	<1000	<200	<200	<200	29.61	9.41	20.20	0.48/0.49
MW-5	05/10/2010	80,000	5,700	7,100	4,000	22,000	---	---	---	---	---	---	29.61	6.72	22.89	0.22/0.29
MW-5	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	29.61	9.51	20.10	---
MW-5	12/03/2010	73,000	5,400	8,500	4,100	21,000	---	<100	<1,000	<200	<200	<200	29.61	8.70	20.91	0.39/0.38
MW-5	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	29.61	5.04	24.57	---
MW-5	05/31/2011	72,000	5,800	7,000	4,400	23,000	---	---	---	---	---	---	29.61	7.52	22.09	0.92/1.21
MW-5	12/13/2011	130,000	9,070	10,900	7,200	38,000	---	<0.500	<10.0	<0.500	<0.500	<0.500	29.61	8.85	20.76	0.66/0.47
MW-5	06/13/2012	110,000	5,400	7,400	5,700	29,000	---	---	---	---	---	---	29.61	7.97	21.64	1.10/1.15
MW-5	11/19/2012	98,000	6,100	7,600	5,500	30,000	---	<50	<1,000	<50	<50	<50	29.61	9.30	20.31	1.45/1.27
MW-5	05/30/2013	96,000	6,000	7,200	5,700	30,000	---	---	---	---	---	---	29.61	8.43	21.18	0.07/0.10
MW-5	11/18/2013	74,000	5,000	5,300	4,400	24,000	---	<50	<1,000	<50	<50	<50	29.61	10.36	19.25	0.34/0.30
MW-5	06/06/2014	95,000 h	6,200	5,800	5,900	31,000	---	---	---	---	---	---	29.61	8.46	21.15	0.61/0.69
MW-5	12/01/2014	85,000	4,900	4,400	4,700	22,000	---	<50	<1,000	<50	<50	<50	29.61	9.84	19.77	0.47/0.29
MW-5	05/22/2015	99,000	5,300	4,100	5,000	27,000	---	---	---	---	---	---	29.61	8.64	20.97	0.33/0.29
MW-5	**12/18/2015**	**93,000**	**6,200**	**4,100**	**6,000**	**26,000**	**---**	**<100**	**<2,000**	**<100**	**<100**	**<100**	**29.61**	**10.16**	**19.45**	**0.70/0.55**
MW-6	01/09/2006	---	---	---	---	---	---	---	---	---	---	---	28.60	4.18	24.42	---
MW-6	01/11/2006	150,000	9,300	1,600	5,100	24,000	---	<2.5 a	51 a	17 a	<2.5 a	<2.5 a	28.60	4.50	24.10	3.6
MW-6	05/26/2006	67,300	6,930	870	2,440	7,590 e	---	<5.00	<100	10.1	<5.00	<5.00	28.60	6.10	22.50	0.49
MW-6	08/30/2006	7,060	6,090	1,180	2,040	7,200	---	<0.500	<10.0	<0.500	<0.500	<0.500	28.60	8.05	20.55	0.39/0.56
MW-6	11/08/2006	8,200	1,900	200	350	890	---	---	---	---	---	---	28.60	8.53	20.07	0.12/0.95
MW-6	02/22/2007	49,000	7,300	2,300	3,600	9,500	---	---	---	---	---	---	28.60	5.94	22.66	1.54/2.03
MW-6	05/29/2007	30,000 b, f	4,100	1,000	1,600	4,900	---	---	---	---	---	---	28.60	6.87	21.73	0.11/0.51
MW-6	08/27/2007	36,000 f	2,000	440	1,000	3,400	---	<25	<250	15 g	<50	<50	28.60	8.22	20.38	0.08/0.15
MW-6	11/08/2007	7,000 f	850	130	270	880	---	---	---	---	---	---	28.60	8.32	20.28	0.94/2.48
MW-6	02/20/2008	28,000 f	6,900	1,300	1,900	7,000	---	---	---	---	---	---	28.60	5.03	23.57	0.14/0.09
MW-6	05/01/2008	24,000	4,400	940	1,000	3,500	---	---	---	---	---	---	28.60	7.15	21.45	0.05/0.04

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Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-6	08/12/2008	30,000	1,900	380	1,300	3,600	---	<50	<500	<100	<100	<100	28.60	8.49	20.11	0.49/0.99
MW-6	11/26/2008	15,000	2,400	320	590	2,120	---	---	---	---	---	---	28.60	8.93	19.67	0.79/2.30
MW-6	02/03/2009	25,000	3,000	330	790	3,000	---	---	---	---	---	---	28.60	7.69	20.91	0.24/0.09
MW-6	06/02/2009	Well inaccessible		---	---	---	---	---	---	---	---	---	28.60	---	---	---
MW-6	11/10/2009	19,000	2,500	490	620	2,200	---	<25	<250	<50	<50	<50	28.60	8.47	20.13	2.82/1.98
MW-6	05/10/2010	15,000	4,100	700	790	2,300	---	---	---	---	---	---	28.60	5.64	22.96	0.21/0.35
MW-6	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	28.60	8.54	20.06	---
MW-6	12/03/2010	5,700	1,800	240	250	870	---	<25	<250	<50	<50	<50	28.60	7.88	20.72	0.38/0.53
MW-6	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	28.60	4.08	24.52	---
MW-6	05/31/2011	33,000	6,200	1,900	1,700	5,800	---	---	---	---	---	---	28.60	6.25	22.35	0.80/2.21
MW-6	12/13/2011	12,000	2,700	556	548	1,880	---	<0.500	<10.0	9.68	<0.500	<0.500	28.60	8.01	20.59	0.81/0.99
MW-6	06/13/2012	30,000	6,200	1,400	1,700	6,300	---	---	---	---	---	---	28.60	7.14	21.46	1.00/1.41
MW-6	11/19/2012	3,000	450	67	76	600	---	<2.5	<50	<2.5	<2.5	<2.5	28.60	8.34	20.26	2.04/2.90
MW-6	05/30/2013	<10,000	350	<100	<100	<200	---	---	---	---	---	---	28.60	7.59	21.01	0.38/2.76
MW-6	11/18/2013	3,500	460	15	150	130	---	<5.0	<100	<5.0	<5.0	<5.0	28.60	9.42	19.18	0.22/0.19
MW-6	06/06/2014	2,000	400	53	97	350	---	---	---	---	---	---	28.60	7.44	21.16	0.61/0.58
MW-6	12/01/2014	520 i	110	5.8	7.2	46	---	<1.0	<20	2.3	<1.0	<1.0	28.60	8.54	20.06	0.62/0.71
MW-6	05/22/2015	1,600	360	39	60	240	---	---	---	---	---	---	28.60	7.63	20.97	2.38/3.10
MW-6	**12/18/2015**	**510**	**110**	**5.5**	**11**	**64**	**---**	**<1.3**	**<25**	**1.9**	**<1.3**	**<1.3**	**28.60**	**9.39**	**19.21**	**1.72/3.35**
MW-7	01/09/2006	---	---	---	---	---	---	---	---	---	---	---	29.71	5.50	24.21	---
MW-7	01/11/2006	79,000	9,800	1,800	1,900	20,000	---	<5.0 a	64 a	28 a	<5.0 a	<5.0 a	29.71	5.70	24.01	1.0
MW-7	05/26/2006	98,200	9,620	1,150	3,490	13,400 e	---	<5.00	885	30.8	<5.00	<5.00	29.71	7.24	22.47	0.30
MW-7	08/30/2006	146,000	8,740	980	3,440	15,400	---	<0.500	<10.0	22.7	<0.500	<0.500	29.71	9.03	20.68	0.51/0.46
MW-7	11/08/2006	61,000	6,600	880	2,800	12,000	---	---	---	---	---	---	29.71	9.49	20.22	0.02/0.13
MW-7	02/22/2007	50,000	3,400	910	2,200	13,000	---	---	---	---	---	---	29.71	7.00	22.71	0.96/2.57
MW-7	05/29/2007	26,000 b, f	2,700	320	850	3,590	---	---	---	---	---	---	29.71	8.01	21.70	0.09/0.15
MW-7	08/27/2007	37,000 f	3,300	240	1,300	4,060	---	<25	<250	20 g	<50	<50	29.71	9.30	20.41	1.23/1.64
MW-7	11/08/2007	26,000 f	3,000	120	1,000	2,810	---	---	---	---	---	---	29.71	9.39	20.32	0.80/1.39
MW-7	02/20/2008	20,000 f	1,400	210	600	4,800	---	---	---	---	---	---	29.71	3.33	26.38	3.72/0.58
MW-7	05/01/2008	16,000	1,700	66	85	1,380	---	---	---	---	---	---	29.71	8.28	21.43	0.2/0.1

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-7	08/12/2008	27,000	1,700	73	1,100	2,490	---	<20	<200	<40	<40	<40	29.71	9.61	20.10	1.49/1.93
MW-7	11/26/2008	25,000	2,300	61	62	1,400	---	---	---	---	---	---	29.71	9.94	19.77	0.85/1.10
MW-7	02/03/2009	54,000	2,900	170	520	5,800	---	---	---	---	---	---	29.71	8.80	20.91	0.17/0.62
MW-7	06/02/2009	14,000	1,100	43	23	810	---	---	---	---	---	---	29.71	8.16	21.55	0.21/0.18
MW-7	11/10/2009	17,000	900	42	63	1,400	---	<10	<100	<20	<20	<20	29.71	9.56	20.15	0.54/0.33
MW-7	05/10/2010	6,900	650	24	24	610	---	---	---	---	---	---	29.71	6.86	22.85	0.37/0.19
MW-7	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	29.71	9.70	20.01	---
MW-7	12/03/2010	8,100	550	16	20	520	---	<5.0	<50	<10	<10	<10	29.71	8.95	20.76	0.41/0.37
MW-7	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	29.71	4.67	25.04	---
MW-7	05/31/2011	6,200	530	16	8.5	320	---	---	---	---	---	---	29.71	7.54	22.17	0.63/0.87
MW-7	12/13/2011	8,800	689	8.85	9.68	200	---	<0.500	<10.0	1.99	<0.500	<0.500	29.71	8.93	20.78	0.38/0.35
MW-7	06/13/2012	2,300	330	<5.0	<5.0	86	---	---	---	---	---	---	29.71	8.26	21.45	1.35/1.08
MW-7	11/19/2012	5,800	860	14	7.8	300	---	<5.0	<100	<5.0	<5.0	<5.0	29.71	9.51	20.20	0.96/1.10
MW-7	05/30/2013	3,200	420	11	<5.0	140	---	---	---	---	---	---	29.71	8.55	21.16	0.35/0.24
MW-7	11/18/2013	3,700	620	5.4	7.8	130	---	<5.0	<100	<5.0	<5.0	<5.0	29.71	10.41	19.30	0.19/0.17
MW-7	06/06/2014	2,000	140	<2.0	<2.0	16	---	---	---	---	---	---	29.71	8.52	21.19	0.41/0.44
MW-7	12/01/2014	2,900	490	7.1	<5.0	140	---	<5.0	<100	<5.0	<5.0	<5.0	29.71	10.12	19.59	0.41/0.78
MW-7	05/22/2015	2,100	210	3.0	<2.5	48	---	---	---	---	---	---	29.71	8.65	21.06	1.09/1.24
MW-7	**12/18/2015**	**2,900**	**520**	**7.1**	**5.8**	**110**	**---**	**<5.0**	**<100**	**<5.0**	**<5.0**	**<5.0**	**29.71**	**10.39**	**19.32**	**1.12/1.03**
MW-8	01/09/2006	---	---	---	---	---	---	---	---	---	---	---	29.54	5.56	23.98	---
MW-8	01/11/2006	32,000	2,400	180	66	5,500	---	<0.50 a	35 a	15 a	<0.50 a	<0.50 a	29.54	5.53	24.01	0.8
MW-8	05/26/2006	24,800	423	73.0	166	2,820 e	---	<0.500	<10.0	2.18	<0.500	<0.500	29.54	7.02	22.52	0.35
MW-8	08/30/2006	72,100	1,770	114	324	3,140	---	<0.500	<10.0	23.3	<0.500	<0.500	29.54	8.81	20.73	0.51/0.50
MW-8	11/08/2006	24,000	2,000	90	190	3,400	---	---	---	---	---	---	29.54	9.25	20.29	0.11/0.40
MW-8	02/22/2007	26,000	2,100	110	180	4,400	---	---	---	---	---	---	29.54	7.08	22.46	1.37/1.71
MW-8	05/29/2007	31,000 f	2,600	99	250	3,140	---	---	---	---	---	---	29.54	7.81	21.73	0.05/0.49
MW-8	08/27/2007	41,000 f	3,400	110	260	3,880	---	<20	<200	32 g	<40	<40	29.54	9.04	20.50	0.07/0.27
MW-8	11/08/2007	42,000 f	4,900	140	440	4,000	---	---	---	---	---	---	29.54	9.14	20.40	3.20/0.10
MW-8	02/20/2008	19,000 f	760	38	52	1,930	---	---	---	---	---	---	29.54	9.00	20.54	1.72/0.13
MW-8	05/01/2008	18,000	1,000	35	42	1,520	---	---	---	---	---	---	29.54	8.10	21.44	1.10/0.19

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-8	08/12/2008	33,000	1,600	69	1,100	2,730	---	<10	<100	<20	<20	<20	29.54	9.41	20.13	0.15/0.29
MW-8	11/26/2008	27,000	2,600	77	100	2,930	---	---	---	---	---	---	29.54	9.68	19.86	2.60/0.66
MW-8	02/03/2009	32,000	2,400	70	81	2,700	---	---	---	---	---	---	29.54	8.57	20.97	0.10/0.23
MW-8	06/02/2009	22,000	1,100	39	56	1,600	---	---	---	---	---	---	29.54	8.00	21.54	0.22/0.38
MW-8	11/10/2009	22,000	1,600	46	52	1,600	---	<25	<250	<50	<50	<50	29.54	9.32	20.22	0.45/0.29
MW-8	05/10/2010	9,800	340	15	21	700	---	---	---	---	---	---	29.54	6.74	22.80	0.28/0.54
MW-8	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	29.54	9.52	20.02	---
MW-8	12/03/2010	13,000	720	26	29	870	---	<5.0	<50	<10	<10	<10	29.54	8.67	20.87	0.90/0.27
MW-8	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	29.54	4.97	24.57	---
MW-8	05/31/2011	10,000	260	7.6	9.6	390	---	---	---	---	---	---	29.54	7.51	22.03	0.78/0.81
MW-8	12/13/2011	14,000	703	15.4	25.2	467	---	<0.500	<10.0	4.95	<0.500	<0.500	29.54	8.73	20.81	0.69/0.32
MW-8	06/13/2012	8,200	290	7.9	14	430	---	---	---	---	---	---	29.54	8.01	21.53	1.48/0.94
MW-8	11/19/2012	7,000	180	7.0	13	510	---	<2.5	<50	<2.5	<2.5	<2.5	29.54	9.28	20.26	0.79/0.70
MW-8	05/30/2013	7,900	190	5.7	8.7	270	---	---	---	---	---	---	29.54	8.37	21.17	0.17/0.07
MW-8	11/18/2013	11,000	240	8.2	11	630	---	<2.0	<40	<2.0	<2.0	<2.0	29.54	10.40	19.14	0.26/0.22
MW-8	06/06/2014	7,000	120	2.5	4.6	170	---	---	---	---	---	---	29.54	8.55	20.99	0.36/0.39
MW-8	12/01/2014	6,600	92	3.2	2.9	180	---	<2.5	<50	<2.5	<2.5	<2.5	29.54	9.69	19.85	0.36/0.42
MW-8	05/22/2015	6,800	80	2.6	4.3	140	---	---	---	---	---	---	29.54	8.59	20.95	0.69/0.50
MW-8	**12/18/2015**	**6,100**	**95**	**4.3**	**5.8**	**220**	**---**	**<1.3**	**<25**	**<1.3**	**<1.3**	**<1.3**	**29.54**	**9.99**	**19.55**	**1.52/1.43**
MW-9	08/27/2010	---	---	---	---	---	---	---	---	---	---	---	28.52	10.33	18.19	---
MW-9	09/09/2010	13,000	32	13	880	610	---	---	---	---	---	---	28.52	10.60	17.92	0.51/0.73
MW-9	12/03/2010	6,400	33	9.5	540	280	---	---	---	---	---	---	28.52	10.42	18.10	0.22/0.33
MW-9	03/02/2011	11,000	74	11	840	170	---	---	---	---	---	---	28.52	6.45	22.07	0.53/0.48
MW-9	05/31/2011	12,000	49	6.7	570	100	---	---	---	---	---	---	28.52	8.80	19.72	0.19/0.27
MW-9	12/13/2011	13,000	35.8	5.60	470	97.2	---	---	---	---	---	---	28.52	10.24	18.28	0.54/0.51
MW-9	06/13/2012	9,700	49	6.1	420	59	---	---	---	---	---	---	28.52	9.27	19.25	0.68/0.72
MW-9	11/19/2012	9,300	26	<5.0	340	68	---	---	---	---	---	---	28.52	10.55	17.97	1.35/0.76
MW-9	05/30/2013	7,200	19	3.4	160	36	---	---	---	---	---	---	28.52	9.32	19.20	0.41/0.59
MW-9	11/18/2013	760	<5.0	<5.0	19	<10	---	---	---	---	---	---	28.52	10.93	17.59	0.37/0.31
MW-9	06/06/2014	7,600	23	<5.0	190	31	---	---	---	---	---	---	28.52	9.60	18.92	0.16/0.20

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-9	12/01/2014	7,700	17	<5.0	110	17	---	---	---	---	---	---	28.52	10.96	17.56	0.15/0.19
MW-9	05/22/2015	Well inaccessible		---	---	---	---	---	---	---	---	---	28.52	---	---	---
MW-9	**12/18/2015**	**Well inaccessible**		**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**28.52**	**---**	**---**	**---**
MW-10	08/27/2010	---	---	---	---	---	---	---	---	---	---	---	28.70	10.21	18.49	---
MW-10	09/09/2010	2,600	1.9	1.3	40	170	---	---	---	---	---	---	28.70	10.70	18.00	1.43/1.67
MW-10	12/03/2010	1,600	2.0	<1.0	25	18	---	---	---	---	---	---	28.70	10.06	18.64	0.17/0.30
MW-10	03/02/2011	1,600	2.6	0.55	41	13	---	---	---	---	---	---	28.70	6.85	21.85	0.41/0.40
MW-10	05/31/2011	2,400	2.0	0.51	60	45	---	---	---	---	---	---	28.70	7.23	21.47	0.22/0.43
MW-10	12/13/2011	2,700	2.43	<0.500	20.2	2.70	---	---	---	---	---	---	28.70	9.50	19.20	0.69/0.62
MW-10	06/13/2012	2,200	2.5	0.53	48	46	---	---	---	---	---	---	28.70	10.41	18.29	0.81/0.92
MW-10	11/19/2012	980	1.6	<0.50	8.8	1.1	---	---	---	---	---	---	28.70	10.12	18.58	1.20/0.66
MW-10	05/30/2013	1,300	2.0	<0.50	34	5.1	---	---	---	---	---	---	28.70	9.02	19.68	1.38/0.44
MW-10	11/18/2013	5,400	9.8	<5.0	150	19	---	---	---	---	---	---	28.70	10.42	18.28	0.50/0.52
MW-10	06/06/2014	1,000	1.7	<0.50	21	2.3	---	---	---	---	---	---	28.70	8.93	19.77	0.18/0.25
MW-10	12/01/2014	890	1.3	<0.50	8.8	<1.0	---	---	---	---	---	---	28.70	11.15	17.55	0.19/0.35
MW-10	05/22/2015	Well inaccessible		---	---	---	---	---	---	---	---	---	28.70	---	---	---
MW-10	**12/18/2015**	**450**	**1.2**	**<0.50**	**4.1**	**1.1**	**---**	**---**	**---**	**---**	**---**	**---**	**28.70**	**14.18**	**14.52**	**1.10/1.35**
MW-11	08/27/2010	---	---	---	---	---	---	---	---	---	---	---	27.46	9.98	17.48	---
MW-11	09/09/2010	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	27.46	10.32	17.14	1.64/1.69
MW-11	12/03/2010	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	27.46	9.84	17.62	0.29/0.47
MW-11	03/02/2011	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	6.13	21.33	1.08/0.88
MW-11	05/31/2011	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	8.42	19.04	0.17/0.30
MW-11	12/13/2011	<50	<0.500	<0.500	<0.500	<0.500	---	---	---	---	---	---	27.46	9.93	17.53	0.36/0.52
MW-11	06/13/2012	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	9.98	17.48	0.54/0.91
MW-11	11/19/2012	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	10.16	17.30	0.60/0.88
MW-11	05/30/2013	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	8.74	18.72	0.74/0.59
MW-11	11/18/2013	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	10.32	17.14	0.90/0.45
MW-11	06/06/2014	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	9.25	18.21	0.47/0.27
MW-11	12/01/2014	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	27.46	10.63	16.83	0.45/0.30
MW-11	05/22/2015	Well inaccessible		---	---	---	---	---	---	---	---	---	27.46	---	---	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-11	**12/18/2015**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**---**	**---**	**---**	**---**	**---**	**---**	**27.46**	**10.93**	**16.53**	**1.58/2.88**
MW-12	05/19/2006	---	---	---	---	---	---	---	---	---	---	---	31.16	8.42	22.74	---
MW-12	05/26/2006	<50.0	<0.500	<0.500	<0.500	<0.500	---	<0.500	<10.0	<0.500	<0.500	<0.500	31.16	8.44	22.72	3.88
MW-12	08/30/2006	746	<0.500	<0.500	<0.500	<0.500	---	---	---	---	---	---	31.16	9.54	21.62	1.75/1.81
MW-12	11/08/2006	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	31.16	8.67	22.49	2.26/3.60
MW-12	02/22/2007	<50	<0.50	<1.0	<0.50	<1.0	---	---	---	---	---	---	31.16	7.72	23.44	1.60/2.91
MW-12	05/29/2007	<50 f	0.49 g	<1.0	0.14 g	0.48 g	---	---	---	---	---	---	31.16	9.00	22.16	0.60/0.61
MW-12	08/27/2007	<50 f	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	9.90	21.26	0.47/0.24
MW-12	11/08/2007	<50 f	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	9.90	21.26	3.8/3.1
MW-12	02/20/2008	<50 f	5.4	1.7	3.4	12.4	---	---	---	---	---	---	31.16	7.40	23.76	3.43/1.91
MW-12	05/01/2008	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	9.20	21.96	0.09/0.13
MW-12	08/12/2008	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	10.40	20.76	3.6/3.2
MW-12	11/26/2008	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	10.59	20.57	1.80/1.32
MW-12	02/03/2009	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	9.39	21.77	1.72/1.75
MW-12	06/02/2009	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	9.20	21.96	0.77/1.41
MW-12	11/10/2009	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	10.12	21.04	2.70/1.52
MW-12	05/10/2010	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	8.41	22.75	2.65/1.42
MW-12	09/09/2010	Unable to locate		---	---	---	---	---	---	---	---	---	31.16	---	---	---
MW-12	12/03/2010	<50	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	31.16	9.32	21.84	0.74/1.29
MW-12	03/02/2011	Unable to locate		---	---	---	---	---	---	---	---	---	31.16	---	---	---
MW-12	05/31/2011	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	31.16	8.80	22.36	0.59/0.91
MW-12	12/13/2011	<50	<0.500	<0.500	<0.500	<0.500	---	---	---	---	---	---	31.16	9.64	21.52	0.75/2.07
MW-12	06/13/2012	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	31.16	9.31	21.85	0.61/1.79
MW-12	11/19/2012	Well inaccessible		---	---	---	---	---	---	---	---	---	31.16	---	---	---
MW-12	05/30/2013	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	31.16	9.40	21.76	0.68/0.72
MW-12	11/18/2013	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	31.16	11.83	19.33	0.29/0.66
MW-12	06/06/2014	Well inaccessible		---	---	---	---	---	---	---	---	---	31.16	---	---	---
MW-12	12/01/2014	Well inaccessible		---	---	---	---	---	---	---	---	---	31.16	---	---	---
MW-12	05/22/2015	Well inaccessible		---	---	---	---	---	---	---	---	---	31.16	---	---	---
MW-12	**12/18/2015**	**Well inaccessible**		**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**31.16**	**---**	**---**	**---**

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-13	04/16/2015	---	---	---	---	---	---	---	---	---	---	---	29.70	9.31	20.39	---
MW-13	05/22/2015	4,100	430	5.9	16	<10	---	---	---	---	---	---	29.70	10.12	19.58	0.86/0.59
MW-13	08/14/2015	5,000	550	<5.0	8.5	<10	---	---	---	---	---	---	29.70	11.55	18.15	0.56/0.32
MW-13	**12/18/2015**	**3,800**	**200**	**<2.5**	**3.9**	**<5.0**	**---**	**---**	**---**	**---**	**---**	**---**	**29.70**	**11.41**	**18.29**	**1.62/1.97**
MW-14	05/19/2006	---	---	---	---	---	---	---	---	---	---	---	28.09	6.95	21.14	---
MW-14	05/26/2006	103,000	5,280	76.7	3,930	4,800 e	---	<5.00	895	49.7	<5.00	<5.00	28.09	7.05	21.04	3.60
MW-14	08/30/2006	10,200	1,260	12.5	1,310	1,330	---	<0.500	<10.0	<0.500	<0.500	<0.500	28.09	9.19	18.90	3.33/3.49
MW-14	11/08/2006	29,000	4,400 a	34	2,000	1,600	---	---	---	---	---	---	28.09	9.80	18.29	1.16/1.40
MW-14	02/22/2007	31,000	2,600	42	2,200	1,600	---	---	---	---	---	---	28.09	6.70	21.39	0.59/1.11
MW-14	05/29/2007	35,000 f	1,100	14	1,800	767	---	---	---	---	---	---	28.09	7.89	20.20	0.08/0.08
MW-14	08/27/2007	Well inaccessfble			---	---	---	---	---	---	---	---	---	---	---	---
MW-14	08/29/2007	45,000 f	1,000	11	870	367.8 g	---	<10	<100	20	<20	<20	28.09	9.25	18.84	0.09/0.16
MW-14	11/08/2007	32,000 f	1,600	22	1,500	889	---	---	---	---	---	---	28.09	9.21	18.88	0.04/0.35
MW-14	02/20/2008	23,000 f	1,800	32	1,600	1,021	---	---	---	---	---	---	28.09	6.34	21.75	0.09/0.08
MW-14	05/01/2008	16,000	830	15	870	452	---	---	---	---	---	---	28.09	7.95	20.14	0.12/0.09
MW-14	08/12/2008	34,000	1,400	26	550	1,151	---	<10	<100	<20	<20	<20	28.09	14.10	13.99	0.03/0.38
MW-14	11/26/2008	Well inaccessible			---	---	---	---	---	---	---	---	28.09	---	---	---
MW-14	02/03/2009	39,000	1,800	27	1,700	1,400	---	---	---	---	---	---	28.09	8.66	19.43	0.16/0.19
MW-14	06/02/2009	34,000	1,100	<25	1,200	710	---	---	---	---	---	---	28.09	8.21	19.88	0.16/0.26
MW-14	11/10/2009	39,000	2,300	35	2,100	1,200	---	<25	<250	<50	<50	<50	28.09	9.69	18.40	0.45/1.56
MW-14	05/10/2010	5,900	150	2.1	170	54	---	---	---	---	---	---	28.09	6.64	21.45	0.49/1.38
MW-14	09/09/2010	Well inaccessible			---	---	---	---	---	---	---	---	28.09	---	---	---
MW-14	12/03/2010	84,000	1,800	39	1,900	1,100	---	<5.0	<50	27	<10	<10	28.09	9.10	18.99	0.50/0.67
MW-14	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	28.09	5.60	22.49	---
MW-14	05/31/2011	21,000	460	10	930	460	---	---	---	---	---	---	28.09	8.85	19.24	0.47/0.77
MW-14	12/13/2011	30,000	1,370	23.8	1,590	871	---	<0.500	<10.0	17.8	<0.500	<0.500	28.09	9.35	18.74	0.67/0.65
MW-14	06/13/2012	26,000	1,100	13	1,400	630	---	---	---	---	---	---	28.09	8.34	19.75	0.54/0.75
MW-14	11/19/2012	27,000	1,700	30	2,800	1,200	---	<5.0	<100	23	<5.0	<5.0	28.09	9.78	18.31	2.84/3.10
MW-14	05/30/2013	34,000	1,300	23	2,100	920	---	---	---	---	---	---	28.09	8.78	19.31	0.97/1.02
MW-14	11/18/2013	33,000	1,200	23	2,700	950	---	<10	<200	16	<10	<10	28.09	10.41	17.68	0.21/0.33

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
MW-14	06/06/2014	68,000	900	<50	2,800	680	---	---	---	---	---	---	28.09	8.77	19.32	0.20/0.27
MW-14	12/01/2014	36,000	1,600	24	2,700	700	---	<20	<400	<20	<20	<20	28.09	9.50	18.59	0.18/0.25
MW-14	05/22/2015	5,200	320	<10	490	120	---	---	---	---	---	---	28.09	9.08	19.01	1.04/0.96
MW-14	**12/18/2015**	**18,000**	**1,200**	**<20**	**2,000**	**450**	**---**	**<20**	**<400**	**<20**	**<20**	**<20**	**28.09**	**10.43**	**17.66**	**2.83/3.17**
V-1	08/02/1996	---	---	---	---	---	---	---	---	---	---	---	23.26	---	---	---
V-1	08/05/1996	---	---	---	---	---	---	---	---	---	---	---	23.26	8.58	14.68	---
V-1	10/17/1996	---	---	---	---	---	---	---	---	---	---	---	23.26	10.02	13.24	---
V-1	01/16/1997	9,500	1,200	250	280	880	<50	---	---	---	---	---	23.26	5.55	17.71	---
V-1	04/07/1997	2,200	42	<5.0	130	15	<25	---	---	---	---	---	23.26	7.40	15.86	---
V-1	07/02/1997	2,600	340	5.8	49	12	74	<4.0	---	---	---	---	23.26	8.94	14.32	---
V-1	10/24/1997	57,000	5,200	2,300	3,600	16,000	1,900	<200	---	---	---	---	23.26	9.43	13.83	---
V-1	01/09/1998	23,000	2,400	1,700	1,300	2,300	310	---	---	---	---	---	23.26	6.81	16.45	---
V-1 (D)	01/09/1998	24,000	2,500	1,800	1,400	2,400	450	---	---	---	---	---	23.26	---	---	---
V-1	04/02/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.26	4.58	18.68	---
V-1 (D)	04/02/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.26	---	---	---
V-1	07/14/1998	160	1.9	<0.50	4.2	<0.50	6.1	---	---	---	---	---	23.26	7.51	15.75	---
V-1	10/01/1998	440	18	<0.50	11	0.80	7.9	---	---	---	---	---	23.26	8.49	14.77	---
V-1	01/18/1999	697	55.7	0.839	28.2	<0.500	9.35	---	---	---	---	---	23.26	8.59	14.67	---
V-1	04/29/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---	---	---	---	---	23.26	8.69	14.57	---
V-1	08/23/1999	457	33.4	3.59	16.3	<0.500	13.9	---	---	---	---	---	23.26	8.99	14.27	---
V-1	10/06/1999	714	53.7	0.740	8.69	<0.500	9.83	---	---	---	---	---	23.26	9.55	13.71	---
V-1	01/27/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.26	7.19	16.07	---
V-1	04/18/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	---	---	---	---	---	23.26	7.67	15.59	---
V-1	07/19/2000	255	21.7	<0.500	10.2	<0.500	7.33	<1.00 a	---	---	---	---	23.26	7.53	15.73	---
V-1	10/24/2000	200	4.05	0.566	<0.500	<0.500	7.82	---	---	---	---	---	23.26	7.38	15.88	---
V-1	01/04/2001	128	1.77	<0.500	<0.500	<0.500	6.40	<10.0	---	---	---	---	23.26	8.41	14.85	---
V-1	05/03/2001	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.26	7.20	16.06	---
V-1	07/09/2001	110	4.4	<0.50	0.88	1.7	---	<5.0	---	---	---	---	23.26	9.22	14.04	---
V-1	10/18/2001	1,500	180	12	43	46	---	<5.0	---	---	---	---	23.26	10.08	13.18	0.8
V-1	01/24/2002	210	7.1	15	4.6	32	---	<5.0	---	---	---	---	23.26	6.44	16.82	3.5

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
V-1	04/04/2002	<50	<0.50	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	23.26	6.18	17.08	1.0
V-1	07/18/2002	100	1.6	1.2	1.2	6.1	---	<5.0	---	---	---	---	23.26	8.08	15.18	1.7
V-1	10/21/2002	210	1.4	<0.50	1.0	1.3	---	<5.0	---	---	---	---	29.26	8.94	20.32	1.2
V-1	01/21/2003	61	5.2	<0.50	<0.50	<0.50	---	<5.0	---	---	---	---	29.26	6.62	22.64	0.6
V-1	04/17/2003	<50	<0.50	<0.50	<0.50	1.2	---	<5.0	---	---	---	---	29.26	6.00	23.26	1.3
V-1	07/22/2003	Well inaccessible		---	---	---	---	---	---	---	---	---	29.26	---	---	---
V-1	10/20/2003	540	11	1.6	6.0	8.9	---	<0.50	---	---	---	---	29.26	9.53	19.73	0.1
V-1	01/13/2004	<50	<0.50	<0.50	<0.50	<1.0	---	<0.50	---	---	---	---	29.26	6.62	22.64	---
V-1	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	29.26	9.08	20.18	0.1
V-1	04/01/2004	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	29.26	6.24	23.02	0.1
V-1	07/13/2004	120	1.8	<0.50	<0.50	<1.0	---	<0.50	<5.0	<2.0	<2.0	<2.0	29.26	8.78	20.48	0.1
V-1	10/26/2004	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	29.26	8.09	21.17	0.6
V-1	01/13/2005	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	29.26	4.30	24.96	0.1
V-1	04/28/2005	<50	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	29.26	5.27	23.99	3.34
V-1	08/01/2005	54	<0.50	<0.50	<0.50	<1.0	---	<0.50	<5.0	<2.0	<2.0	<2.0	29.26	7.77	21.49	---
V-1	10/05/2005	120 c	<0.50	<0.50	<0.50	<1.0	---	---	---	---	---	---	29.26	8.72	20.54	1.67
V-1	01/11/2006	<50	<0.50	<0.50	<0.50	<0.50	---	<0.50	<5.0	<0.50	<0.50	<0.50	29.24	4.78	24.46	0.3
V-1	05/26/2006	<50.0	<0.500	<0.500	<0.500	1.02 e	---	<0.500	<10.0	<0.500	<0.500	<0.500	29.24	6.61	22.63	1.94
V-1	08/30/2006	5,660	6.81	1.39	27.3	21.0	---	<0.500	<10.0	<0.500	<0.500	<0.500	29.24	8.46	20.78	0.33/0.33
V-1	11/08/2006	1,300	3.7	1.5	5.1	6.9	---	---	---	---	---	---	29.24	8.95	20.29	0.05/0.11
V-1	02/22/2007	<50	<0.50	<1.0	<0.50	<1.0	---	---	---	---	---	---	29.24	6.17	23.07	0.76/0.99
V-1	05/29/2007	650 f	0.64	<1.0	1.2	0.95 g	---	---	---	---	---	---	29.24	7.21	22.03	0.69/0.74
V-1	08/27/2007	510 b, f	0.24	<1.0	<1.0	<1.0	---	<1.0	<10	<2.0	<2.0	<2.0	29.24	8.78	20.46	0.12/0.57
V-1 d	11/08/2007	2,000 f	19	2.9	23	18.5	---	---	---	---	---	---	29.24	8.41	20.83	0.61/1.54
V-1	02/20/2008	54 f	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	29.24	5.11	24.13	0.13/0.22
V-1	05/01/2008	280	0.57	<1.0	<1.0	<1.0	---	---	---	---	---	---	29.24	7.60	21.64	0.08/0.08
V-1	08/12/2008	390	0.80	<1.0	<1.0	1.1	---	<1.0	<10	<2.0	<2.0	<2.0	29.24	9.00	20.24	0.81/1.51
V-1	11/26/2008	3,300	46	8.3	62	44.2	---	---	---	---	---	---	29.24	9.50	19.74	0.76/1.28
V-1	02/03/2009	450	0.98	<1.0	1.7	<1.0	---	---	---	---	---	---	29.24	8.18	21.06	0.13/0.39
V-1	06/02/2009	230	<0.50	<1.0	1.3	<1.0	---	---	---	---	---	---	29.24	7.45	21.79	0.25/0.31

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
V-1	11/10/2009	900	3.1	<1.0	6.5	2.0	---	<1.0	<10	<2.0	<2.0	<2.0	29.24	8.91	20.33	0.84/0.56
V-1	05/10/2010	81	<0.50	<1.0	<1.0	<1.0	---	---	---	---	---	---	29.24	5.94	23.30	0.17/0.43
V-1	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	29.24	8.95	20.29	---
V-1	12/03/2010	560	1.1	<1.0	3.2	<1.0	---	<1.0	<10	<2.0	<2.0	<2.0	29.24	8.25	20.99	0.47/0.95
V-1	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	29.24	4.18	25.06	---
V-1	05/31/2011	160	<0.50	<0.50	0.57	<1.0	---	---	---	---	---	---	29.24	6.82	22.42	0.69/1.26
V-1	12/13/2011	1,300	1.09	<0.500	5.63	0.980	---	<0.500	<10.0	<0.500	<0.500	<0.500	29.24	8.37	20.87	0.94/0.81
V-1	06/13/2012	410	0.63	<0.50	3.9	<1.0	---	---	---	---	---	---	29.24	7.52	21.72	1.65/1.73
V-1	11/19/2012	57	<0.50	<0.50	<0.50	<1.0	---	<0.50	<10	<0.50	<0.50	<0.50	29.24	8.35	20.89	1.48/1.37
V-1	05/30/2013	710	1.8	<0.50	9.3	<1.0	---	---	---	---	---	---	29.24	7.93	21.31	0.44/0.85
V-1	11/18/2013	610	1.7	<0.50	1.5	<1.0	---	<0.50	<10	<0.50	<0.50	<0.50	29.24	9.33	19.91	0.14/0.13
V-1	06/06/2014	410	1.7	<0.50	5.1	<1.0	---	---	---	---	---	---	29.24	7.85	21.39	0.11/0.65
V-1	12/01/2014	50	<0.50	<0.50	<0.50	<1.0	---	<0.50	<10	<0.50	<0.50	<0.50	29.24	8.45	20.79	0.10/0.60
V-1	05/22/2015	500	1.1	<0.50	2.3	<1.0	---	---	---	---	---	---	29.24	8.10	21.14	0.15/0.61
V-1	**12/18/2015**	**540**	**2.1**	**<0.50**	**9.2**	**6.9**	**---**	**<0.50**	**<10**	**<0.50**	**<0.50**	**<0.50**	**29.24**	**9.53**	**19.71**	**1.22/3.49**
V-2	08/02/1996	---	---	---	---	---	---	---	---	---	---	---	22.80	---	---	---
V-2	08/05/1996	---	---	---	---	---	---	---	---	---	---	---	22.80	7.94	14.86	---
V-2	10/17/1996	---	---	---	---	---	---	---	---	---	---	---	22.80	9.30	13.50	---
V-2	01/08/1997	69,000	4,800	2,800	2,700	13,000	750	---	---	---	---	---	22.80	5.82	16.98	---
V-2	04/07/1997	90,000	4,400	1,900	3,300	14,000	<500	---	---	---	---	---	22.80	7.10	15.70	---
V-2 (D)	04/07/1997	77,000	4,400	2,000	3,200	14,000	<250	---	---	---	---	---	22.80	---	---	---
V-2	07/02/1997	82,000	5,500	2,700	3,500	16,000	530	<100	---	---	---	---	22.80	8.35	14.45	---
V-2 (D)	07/02/1997	85,000	5,600	2,800	3,600	17,000	520	<100	---	---	---	---	22.80	---	---	---
V-2	10/24/1997	7,300	1,100	97	230	180	91	<12	---	---	---	---	22.80	10.03	12.77	---
V-2 (D)	10/24/1997	12,000	1,700	340	650	630	120	<20	---	---	---	---	22.80	---	---	---
V-2	01/09/1998	40,000	4,100	1,500	2,500	9,000	280	---	---	---	---	---	22.80	6.94	15.86	---
V-2	04/02/1998	62,000	6,800	2,400	3,400	14,000	<250	---	---	---	---	---	22.80	5.35	17.45	---
V-2	07/14/1998	43,000	4,700	1,100	2,500	6,600	<250	---	---	---	---	---	22.80	6.48	16.32	---
V-2 (D)	07/14/1998	48,000	5,100	1,300	2,600	8,100	<250	---	---	---	---	---	22.80	---	---	---
V-2	10/01/1998	53,000	5,200	1,800	3,200	10,000	83	---	---	---	---	---	22.80	8.41	14.39	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
V-2 (D)	10/01/1998	55,000	5,300	1,900	3,300	11,000	65	---	---	---	---	---	22.80	---	---	---
V-2	01/18/1999	47,100	5,800	1,960	3,450	10,200	<100	---	---	---	---	---	22.80	8.29	14.51	---
V-2	04/29/1999	65,000	6,100	2,800	3,200	12,000	540	---	---	---	---	---	22.80	8.19	14.61	---
V-2	08/23/1999	59,600	6,240	2,190	3,900	14,700	390	---	---	---	---	---	22.80	8.44	14.36	---
V-2	10/06/1999	63,800	4,820	1,860	2,840	11,100	<1000	---	---	---	---	---	22.80	8.96	13.84	---
V-2	01/27/2000	59,600	10,200	2,840	3,450	12,100	<500	---	---	---	---	---	22.80	7.57	15.23	---
V-2	04/18/2000	45,000	6,050	2,700	3,340	12,200	<250	---	---	---	---	---	22.80	8.14	14.66	---
V-2	07/19/2000	31,800	4,440	1,270	2,390	6,820	<500	---	---	---	---	---	22.80	8.21	14.59	---
V-2	10/24/2000	40,100	4,810	1,730	2,960	8,650	734	<10.0	---	---	---	---	22.80	8.53	14.27	---
V-2	01/04/2001	37,500	4,510	1,390	2,710	6,880	375	---	---	---	---	---	22.80	8.03	14.77	---
V-2	05/03/2001	51,000	4,000	1,900	2,800	8,200	---	<200	---	---	---	---	22.80	6.63	16.17	---
V-2	07/09/2001	9,600	710	190	180	1,400	---	<25	---	---	---	---	22.80	8.75	14.05	---
V-2	10/18/2001	20,000	2,000	540	560	6,000	---	<50	---	---	---	---	22.80	9.60	13.20	0.4
V-2	01/24/2002	36,000	2,900	870	1,700	5,900	---	<100	---	---	---	---	22.80	5.93	16.87	4.0
V-2	04/04/2002	49,000	3,900	1,500	2,900	9,300	---	<200	---	---	---	---	22.80	5.78	17.02	0.9
V-2	07/18/2002	50,000	3,600	1,300	2,800	9,300	---	<200	---	---	---	---	22.80	7.58	15.22	1.3
V-2	10/21/2002	86,000	6,000	1,900	4,200	20,000	---	<250	---	---	---	---	28.80	8.40	20.40	1.3
V-2	01/21/2003	13,000	630	200	300	2,400	---	<25	---	---	---	---	28.80	6.52	22.28	1.2
V-2	04/17/2003	26,000	2,000	570	750	6,000	---	<100	---	---	---	---	28.80	5.93	22.87	1.1
V-2	07/22/2003	6,800	130	34	150	440	---	<2.5	---	---	---	---	28.80	7.96	20.84	1.4
V-2	10/20/2003	14,000	660	160	260	2,400	---	<10	---	---	---	---	28.80	9.21	19.59	0.7
V-2	01/13/2004	20,000	1,400	410	700	4,200	---	<13	---	---	---	---	28.80	6.90	21.90	---
V-2	01/22/2004	---	---	---	---	---	---	---	---	---	---	---	28.80	8.50	20.30	0.1
V-2	04/01/2004	28,000	2,000	520	650	8,700	---	---	---	---	---	---	28.80	6.84	21.96	0.2
V-2	07/13/2004	21,000	1,900	460	1,000	4,300	---	---	---	---	---	---	28.80	8.28	20.52	0.1
V-2	10/26/2004	43,000	2,700	880	2,300	12,000	---	---	---	---	---	---	28.80	8.43	20.37	0.8
V-2	01/13/2005	23,000	1,400	330	1,800	5,800	---	---	---	---	---	---	28.80	6.67	22.13	0.6
V-2	04/28/2005	16,000	970	230	620	3,800	---	---	---	---	---	---	28.80	5.69	23.11	4.55
V-2	08/01/2005	14,000	610	190	450	3,600	---	---	---	---	---	---	28.80	5.25	23.55	---

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Well ID	Date	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	GW Elevation (ft MSL)	DO (mg/L)
V-2	10/05/2005	37,000	2,200	680	2,300	8,500	---	---	---	---	---	---	28.80	8.24	20.56	0.75
V-2	01/11/2006	45,000 a	1,900 a	720 a	3,000 a	13,000 a	---	<25 a	<250 a	<25 a	<25 a	<25 a	28.81	6.60	22.21	0.4
V-2	05/26/2006	66,600	1,300	400	2,950	9,700 e	---	<0.500	<10.0	<0.500	<0.500	<0.500	28.81	6.28	22.53	0.28
V-2	08/30/2006	7,290	2,390	750	4,680	17,000	---	---	---	---	---	---	28.81	8.03	20.78	0.37/0.31
V-2	11/08/2006	68,000	1,700	580	3,900	13,000	---	---	---	---	---	---	28.81	8.60	20.21	0.05/0.14
V-2	02/22/2007	57,000	1,300	600	4,000	15,000	---	---	---	---	---	---	28.81	5.88	22.93	1.23/2.50
V-2	05/29/2007	48,000 b, f	2,000	650	3,300	10,000	---	---	---	---	---	---	28.81	6.82	21.99	0.07/0.12
V-2	08/27/2007	55,000 f	1,600	520	2,900	8,000	---	---	---	---	---	---	28.81	8.22	20.59	0.22/0.48
V-2 d	11/08/2007	74,000 f	1,300	500	3,000	9,600	---	---	---	---	---	---	28.81	8.82	19.99	0.87/1.46
V-2	02/20/2008	52,000 f	1,200	560	3,200	12,400	---	---	---	---	---	---	28.81	5.13	23.68	0.16/0.05
V-2	05/01/2008	53,000	960	350	3,000	9,600	---	---	---	---	---	---	28.81	7.25	21.56	0.06/0.05
V-2	08/12/2008	55,000	950	230	2,700	6,030	---	---	---	---	---	---	28.81	8.50	20.31	0.53/1.47
V-2	11/26/2008	71,000	1,400	430	3,900	10,400	---	---	---	---	---	---	28.81	9.08	19.73	0.66/1.62
V-2	02/03/2009	81,000	1,100	340	3,700	11,000	---	---	---	---	---	---	28.81	7.78	21.03	0.48/0.15
V-2	06/02/2009	78,000	920	350	3,500	9,200	---	---	---	---	---	---	28.81	6.90	21.91	0.19/0.26
V-2	11/10/2009	66,000	890	310	3,400	7,900	---	---	---	---	---	---	28.81	8.62	20.19	0.44/0.98
V-2	05/10/2010	28,000	490	160	2,200	4,800	---	---	---	---	---	---	28.81	5.63	23.18	0.18/0.28
V-2	09/09/2010	---	---	---	---	---	---	---	---	---	---	---	28.81	8.49	20.32	---
V-2	12/03/2010	31,000	640	210	2,600	4,300	---	---	---	---	---	---	28.81	7.90	20.91	0.86/1.16
V-2	03/02/2011	---	---	---	---	---	---	---	---	---	---	---	28.81	3.95	24.86	---
V-2	05/31/2011	36,000	510	180	3,600	6,700	---	---	---	---	---	---	28.81	6.55	22.26	0.47/0.92
V-2	12/13/2011	51,000	652	129	3,760	5,040	---	---	---	---	---	---	28.81	7.96	20.85	0.60/1.51
V-2	06/13/2012	44,000	540	150	4,300	5,000	---	---	---	---	---	---	28.81	7.08	21.73	0.91/1.36
V-2	11/19/2012	43,000	530	170	4,100	5,700	---	---	---	---	---	---	28.81	8.73	20.08	0.99/0.82
V-2	05/30/2013	35,000	480	130	3,900	4,000	---	---	---	---	---	---	28.81	7.49	21.32	0.44/1.21
V-2	11/18/2013	45,000	460	140	4,500	4,400	---	---	---	---	---	---	28.81	9.33	19.48	0.19/1.33
V-2	06/06/2014	65,000	420	130	5,400	4,800	---	---	---	---	---	---	28.81	7.40	21.41	0.89/1.13
V-2	12/01/2014	42,000	470	140	3,900	3,600	---	---	---	---	---	---	28.81	9.42	19.39	0.62/0.74
V-2	**12/18/2015**	**34,000**	**400**	**99**	**4,700**	**2,100**	**---**	**---**	**---**	**---**	**---**	**---**	**28.81**	**9.35**	**19.46**	**0.82/1.83**

Table 3
Groundwater Data
Former Shell Service Station, 2703 Martin Luther King Jr. Way, Oakland, California

Notes:

TPHg	=	Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260B; prior to May 3, 2001, analyzed by EPA Method 8015 unless otherwise noted.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B; prior to May 3, 2001, analyzed by EPA Method 8020.
MTBE	=	Methyl tertiary-butyl ether analyzed as noted
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
TOC	=	Top of casing elevation, in feet relative to mean sea level
GW	=	Groundwater
DO	=	Dissolved oxygen concentrations in mg/L (Pre-purge/Post-purge)
µg/L	=	Micrograms per liter
ft	=	Feet
MSL	=	Mean sea level
<x	=	Not detected at reporting limit x
---	=	Not analyzed or available
mg/L	=	Milligrams per liter
(D)	=	Duplicate sample
a	=	Sample analyzed outside of EPA recommended holding time.
b	=	Hydrocarbon does not match pattern of laboratory's standard.
c	=	Quantity of unknown hydrocarbon(s) in sample based on gasoline.
d	=	Samples were switched in the field for wells V-1 and V-2 due to field error. Data corrected for this table.
e	=	Analyte was detected in the associated Method Blank.
f	=	Analyzed by EPA Method 8015B (M).
g	=	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
h	=	Concentration reported is due to the presence of discrete peaks of xylenes.
i	=	Concentration reported is due to the presence of discrete peak of benzene.

Site wells surveyed June 14, 2001 by Virgil Chavez Land Surveying

Site wells surveyed August 13, 2002 by Virgil Chavez Land Surveying

Wells MW-1 through MW-8, V-1, and V-2 surveyed on February 14, 2006 by Virgil Chavez Land Surveying

Wells MW-12 and MW-14 surveyed on April 19, 2006 by Virgil Chavez Land Surveying

Wells MW-9, MW-10, and MW-11 surveyed on August 18, 2010 by Virgil Chavez Land Surveying

Table 4
Evaluation of Remedial Alternatives
Former Shell Service Station, 2703 Martin Luther King Jr, Oakland, California

Remedial Alternative	Estimated Treatment Time	Technical Feasibility	Economic Feasibility	Anticipated Regulatory Acceptance	Sustainability	Estimated Cost
No Action	Not Applicable	Not Applicable	No Cost	Not acceptable	High	$0
Monitored Natural Attenuation[1]	15 years	Effective with conditions[1]	Low Cost	Currently not acceptable	High	$530,000
Excavation[2]	6 weeks	Effective	Medium	Acceptable	Low	$680,000
Bio-Sparge System[3]	2 years	Effective	Low Cost	Acceptable	Low	$532,500
Pulsed Oxygen Injection[4]	1 to 1.5 years	Effective	Low Cost	Acceptable	Medium	$505,000

1. MNA is seen as a very effective remediation alternative, but is currently estimated to take an additional 15 years and is not currently acceptable to regulators.
2. Excavation would include removing all contaminant source material from 0 to 20 feet below ground surface (bgs) in a 2,140 square foot footprint to remove the soil with COC concentrations greater than the environmental screening level (ESLs) (Appendix D). Excavation would include shoring and dewatering due to the site lithology and expected depth to groundwater of 3 to 10 feet bgs. To complete the excavation activities, five groundwater monitoring wells (MW-4, MW-5, and MW-6, V-1, and V-2) and two vapor well probes (VP-13 and VP-14) will have to be properly destroyed according to local regulatory requirements.
3. Bio-sparging will to stimulate aerobic biodegradation through dispersing air in the downgradient groundwater will treat remaining source mass. With the majority of the COC mass within the coarse-grained soils, the radius of influence is anticipated to be approximately 10 feet. Two wells are needed to clean up wells MW-4 and MW-5 on-site impacts. The estimated treatment time is 2 years.
4. Oxygen pulsing is a bioremediation technology that will stimulate aerobic biodegradation. With the majority of the COC mass within the coarse-grained soils, the radius of influence is estimated to be approximately 7 feet. The flow rates are lower than bio-sparging which would decrease the likelihood of plume migration underneath the residences, while still being effective in treating the two impacted wells MW-4 and MW-5. Pulsed oxygen injections are likely to be more effective than bio-sparging, and would more rapidly turn the aquifer into an oxidizing environment. It would provide a more efficient oxygen delivery system then using atmospheric air. The estimated time to closure is 1 to 1.5 years.

Appendix A.

Alameda County Environmental Health Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

January 19, 2016

Andrea Wing
Shell Oil Products US
20945 S. Wilmington Ave
Carson, CA 90810-1039
(*Sent via E-mail to: andrea.wing@shell.com*)

Rodney and Janet Kwan
1834 Alameda Ave.
Alameda, CA 94501

Subject: Case File Review for Fuel Leak Case No. RO0000145 and GeoTracker Global ID T0600101876, Shell/Auto Tech West, 2703 Martin Luther King, Jr. Way, Oakland, CA 94612

Dear Ms Wing and Mr. and Ms. Kwan:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the document entitled, "*Human Health Risk Assessment,*" dated November 30, 2015 (HHRA). The HHRA, which was prepared on Shell's behalf by AECOM, uses existing data to assess risks for on-site and off-site current and future receptors. Based on this assessment, the HHRA recommends re-sampling of soil vapor probes VP-7 and VP-13 and preparation of a revised Corrective Action Plan (CAP) to replace the 2008 CAP submitted by Conestoga-Rovers & Associates. We concur with these recommendations and request that you submit a Revised CAP no later than April 29, 2016.

TECHNICAL REPORT REQUEST

Please upload technical reports to ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website, in accordance with the specified naming convention below, according to the following schedule:

- **April 17, 2016** – First Quarter 2016 Groundwater Monitoring Report
  File to be named: GWM_R_yyyy-mm-dd_RO145

- **April 29, 2016** – Revised Corrective Action Plan
  File to be named: CAP_R_yyyy-mm-dd

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

I will be retiring from ACEH on January 22, 2016 and Ms. Dilan Roe will be the case worker responsible for this case after January 22, 2016. Therefore, if you have any questions in the future regarding this case, please call Dilan Roe (510) 567-6767 or send her an electronic mail message at dilan.roe@acgov.org.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Scott Merillat, 664 27th Street, Oakland, CA 94612 (Parcel #9-691-7)

Jack Chang, 559 9th Avenue, San Francisco, CA 94118-3716

Frank Bailey, 672 27th Street, Oakland, CA 94612 (Parcel #9-691-10)

Rafael Catapang, 668 27th Street, Oakland, CA 94612 (Parcel #9-691-8)

Monique Oatis, 670 27th Street, Oakland, CA 94612 (Parcel #9-691-9)

Wilfrid Kintonouza, 721 31st Street, Oakland, CA 94598 (Parcel #9-691-1-1)

Solomon Tesfa, 484 Lake Park Avenue #288, Oakland, CA 94610 (Parcel #9-691-2)

Novella Carpenter, 6645 28th Street, Oakland, CA 94609 (Parcel #9-691-1-2)

Teresa Miller, 673 28th Street, Oakland, CA 94609 (Parcel #9-691-42)

Thanh and Pham Phung, 2535 East 24th Street, Oakland, CA 94601 (Parcel #9-691-43)

Resident, 663 28th Street, Oakland, CA 94609 (Parcel #9-691-1)

Resident, 669 28th Street, Oakland, CA 94609 (Parcel #9-691-43)

Aubrey Cool, AECOM, 1333 Broadway, Suite 800, Oakland, CA 94612 (*Sent via E-mail to: Aubrey.Cool@aecom.com*)

Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

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

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

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

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

REQUIREMENTS

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

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

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

Heikkila, Sara

From:	Roe, Dilan, Env. Health <Dilan.Roe@acgov.org>
Sent:	Tuesday, April 05, 2016 1:40 PM
To:	Heikkila, Sara
Cc:	andrea.wing@shell.com; Cool, Aubrey
Subject:	Fuel Leak Case No. RO0000145, 2703 Martin Luther King Jr. Way, Oakland, CA Revised CAP Extension Request

Sara:

Your extension for submittal of a Revised Corrective Action Plan for the subject site is approved. Please submit the CAP by May27, 2016.

From: Heikkila, Sara [mailto:Sara.Heikkila@aecom.com]
Sent: Tuesday, April 5, 2016 10:09 AM
To: Roe, Dilan, Env. Health <Dilan.Roe@acgov.org>
Cc: andrea.wing@shell.com; Cool, Aubrey <Aubrey.Cool@aecom.com>
Subject: 2703 Martin Luther King Jr. Way, Oakland, CA (PlaNet Site ID 60482419): Revised CAP Extension Request

Hi Dilan,

Thanks for speaking with me this morning. As discussed, please approve a 4 week extension for submitting the Revised Corrective Action Plan (CAP) for the Former Shell Service Station located at 2703 Martin Luther King Jr. Way in Oakland (ACEH Case No. RO0000145). An additional 4 weeks is needed to complete a thorough evaluation of the data and develop the best strategy for the site, AECOM will submit the CAP by May 27, 2016.

Please let me know if you have any questions or need additional information.

Thanks again!

Sara Heikkila
Geoscience Remediation Division
D: 1-213-996-2285 C: 1-310-569-0209
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Appendix B.

Site History

B.1 Previous Work

B.1.1 1994 Underground Storage Tank (UST) Removal

The 2,000-gallon UST was removed on October 11, 1994 by KTW & Associates on behalf of Auto Tech West (ATW). Two soil samples (TP-1-N and TP-2-S) were collected from beneath the tank. Chemical analysis of the soil samples identified the presence of total petroleum hydrocarbons as gasoline (TPHg) at concentrations ranging from 870 milligrams per kilogram (mg/kg) to 18,000 mg/kg. Benzene concentrations in these samples ranged from 2.9 to 100 mg/kg. The tank pit remained open until March 19, 1996 when the excavation was backfilled subsequent to over-excavation by a Shell contractor.

B.1.2 1995 Phase I Environmental Site Assessment (ESA)

In August and September 1995, Enviros Inc. (Enviros) performed a Phase I ESA for this site. Available information collected during this ESA indicates that the subject property was occupied by residential housing prior to approximately 1959. A building permit to erect a building was obtained for Shell Oil Company in February 1959. A building permit to "close lube bays with sheet metal panels" was secured for Shell Oil Company in July 1976. In 1979, several building permits were secured for Acme to modify existing site structures. Two building permits were secured in 1979 related to the installation of a fuel pump at the Site. During a site survey in conjunction with the Phase I ESA, an excavation was observed near the southwest corner of the service building. The excavation was covered by a blue tarp. This excavation's location is consistent with that of the 2,000-gallon UST removed in 1994 by ATW, and with a large concrete slab observed in aerial photographs taken in 1971 and 1973, and a smaller concrete slab observed in aerial photographs taken in 1981 and 1985. The larger concrete slab observed in the aerial photographs was likely covering the USTs operated by Shell, and the smaller slab was likely covering the UST operated by Acme, confirming that the same location was used for both UST complexes.

B.1.3 1995 Subsurface Investigation

A site assessment was performed by ACC Environmental Consultants on May 23, 1995. This included drilling nine soil borings (B-1 through B-9) using a pneumatic sampling tool in the vicinity of the excavation (which formerly housed both Shell's and Acme's USTs) and the product dispenser islands, and collecting soil and groundwater samples for chemical analysis. TPHg concentrations in soil samples ranged from <20.0 to 830 mg/kg. Benzene concentrations ranged from <1.0 to 1.8 mg/kg. Separate phase hydrocarbons (SPH) were identified in water samples collected from four of the soil borings (B-1, B-5, B-6, and B-9). TPHg concentrations in the non-SPH grab groundwater samples submitted for chemical analysis ranged from <50 to 89,000 micrograms per liter (µg/L). Benzene concentrations in the grab groundwater samples ranged from <0.5 to 21,000 µg/L.

B.1.4 1996 Over-Excavation

Over-excavation and back-filling of Acme's former UST excavation were performed on March 19, 1996. The excavation, originally left open to 9 feet below ground surface (bgs), was over-excavated to approximately 11 feet bgs. Two soil samples (TP-3-W and TP-4-E) were collected from the bottom of the over-excavated former UST area. Soil sample TP-3-W, collected from the western end of the excavation, contained 560 mg/kg TPHg, and 3.1 mg/kg benzene. Soil sample TP-4-E, collected from the eastern end of the excavation, contained 2,700 mg/kg TPHg and <3.0 mg/kg benzene. The excavation was back-filled with clean imported fill material. Soil sampling and back-filling activities are documented in Enviros' May 10, 1996 correspondence.

B.1.5 1996 Subsurface Investigation

In July 1996, Enviros performed additional site assessment activities. Six exploratory borings (B-10, B-11, B-12, B-13, V-1, and V-2) were drilled and sampled on July 17 and 19, 1996 using a hollow-stem auger drill rig.

Borings B-11 and B-12 were completed as groundwater monitoring wells MW-1 and MW-2, and borings V-1 and V-2 were completed as soil vapor extraction wells V-1 and V-2, respectively. Soil sampling was not performed in boring V-1 due to the fact that it was installed into the back-fill material within the former UST excavation. A soil sample from below the saturated zone in boring V-2 was submitted for physical parameter analyses (porosity, permeability, fractional organic carbon content, and dry bulk density).

TPHg and benzene were not detected in soil samples collected from MW-1 (B-11), MW-2 (B-12), and B-13. TPHg was detected in soil samples collected from B-10 and V-2 at concentrations of 1.7 and 110 mg/kg, respectively. Benzene concentrations in soil samples from B-10 and V-2 were <0.0050 and 0.29 mg/kg, respectively.

Grab groundwater samples were collected from borings B-10, B-12 (MW-2), and B-13 at the depth of first encountered groundwater (approximately 8 to 11 feet bgs) for chemical analysis. Boring B-11 (MW-1) did not yield sufficient groundwater for grab groundwater sample collection. Monitoring wells MW-1 and MW-2 were developed and sampled on August 2, 1999 by Blaine Tech Services (Blaine) of San Jose, CA. TPHg concentrations in the groundwater samples ranged from <50 to 290,000 µg/L. Benzene concentrations ranged from <0.50 to 34,000 µg/L.

B.1.6 1997 Modified Phase I ESA

In February 1997, Enviros performed a modified Phase I ESA for the subject facility. A review of aerial photographs (1952 to 1994), city directories (1967 to 1993) and Sanborn maps (1912 to 1970) did not reveal evidence of an off-site source of petroleum hydrocarbons, which would have impacted groundwater on site. The properties located north and west of the subject facility appear to have been occupied by residential houses from at least 1912 to the present. The nearest gasoline stations identified in the vicinity of the subject facility were a

former Chevron station (740 27th Street at West) approximately 450 feet to the west, a former station (26th Street and Martin Luther King, Jr. Way) approximately 300 feet to the south, and a former Mobil station (554 27th Street) approximately 950 feet to the east.

B.1.7 2000 Sensitive Receptor Survey

In late 2000, Cambria Environmental Technology, Inc. (Cambria) performed a sensitive receptor survey (SRS), which attempted to identify wells and underground utility conduits. Cambria obtained utility conduit maps from the City of Oakland Engineering Department to locate and map underground utility conduits, which may act as preferential pathways for contaminant migration from the Site. These conduit trenches are typically back-filled with materials that are more permeable than the surrounding native soils, therefore providing a path of least resistance for petroleum hydrocarbon migration within the local groundwater.

Using these maps, Cambria identified the sanitary and storm sewer systems as the only utility conduits in the Site vicinity that may act as preferential pathways. All other utilities are typically buried at depths that are shallower than those of the sewer systems. Conduits identified in the area are located at depths of approximately 3.5 to 9 feet bgs. Therefore, the potential does exist for groundwater to flow within these conduit trenches. Groundwater depth on-site historically ranges from approximately 4.5 to 10 feet bgs. However, since the typical groundwater flow direction on site has generally been to the south, it is likely that any contaminant migration within the utility conduits would be limited, since the utility conduits located to the south of the Site are the shallowest of all the conduits identified adjacent to the Site at depths of 3.5 to 5.5 feet bgs. Cambria obtained well installation and destruction records from the California Department of Water Resources (DWR) in order to identify any active water producing wells in the vicinity of the Site, which may be at risk to petroleum hydrocarbon impact due to contaminant migration from the subsurface of the Site. DWR records did not identify any existing wells within a ½-mile radius of the Site.

B.1.8 2000 Subsurface Investigation

In November 2000, Cambria installed three soil borings (B-17, B-18 and B-19) and three groundwater monitoring wells (MW-3, MW-4 and MW-5). Up to 2,100 mg/kg TPHg and 3.3 mg/kg benzene were reported in soil samples collected. No TPHg or benzene was detected in soil samples collected from well MW-3. Except for 0.0070 mg/kg detected in soil sample B-18-7.0, no methyl tertiary-butyl ether (MTBE) was detected in any of the analyzed soil samples. Tertiary-butyl alcohol (TBA) was detected in soil samples MW-4-5.0 and B-19-5.0 at concentrations of 0.0079 and 0.0059 mg/kg, respectively.

Grab groundwater samples were collected from borings B-17 through B-19 at first encountered groundwater for analyses during the investigation. TPHg concentrations in grab water samples collected from the borings ranged from 58,000 to 190,000 µg/L. Benzene concentrations ranged from 4,400 to 13,000 µg/L. MTBE was detected in groundwater at concentrations of 16 and 300 µg/L from B-19 and B-17, respectively, and TBA was detected at 240 µg/L in B-19 only. No SPH was observed during the investigation.

B.1.9 2001 Oxygen Releasing Compound (ORC) Sock Installation

As approved by the ACEH, Blaine installed ORC socks in wells V-1 and V-2 during the second quarter monitoring event on May 2, 2001. ORCs were removed during the fourth quarter 2001 monitoring event. MTBE has not been detected in these two wells since the ORCs were installed.

B.1.10 2002 Site Investigation

In April 2002, Cambria installed borings B-20 through B-22. Groundwater was first encountered in the borings between 8.0 feet bgs (B-20) and 8.8 feet bgs (B-21 and B-22). The maximum TPHg and benzene concentrations detected in soil were 380 and 0.17 mg/kg, respectively, in the soil sample collected from 8.0 feet bgs in boring B-22, located behind the station building. No TPHg was detected in soil samples collected from boring B-21. No MTBE was detected in any of the analyzed soil samples collected from borings B-20, B-21, or B-22. Up to 160,000 µg/L TPHg and 18,000 µg/L benzene were reported in grab groundwater samples collected from borings B-20, B-21, and B-22. No MTBE was detected in grab groundwater samples collected from the borings. The complete report of findings was included in Cambria's June 21, 2002 Site Investigation Report. This document included recommendations for additional activities; however, a response from ACEH was never received.

B.1.11 2003 Door-to-Door Survey and Cross Sectional Diagram Preparation

During 2003, Cambria conducted a door-to-door survey of properties within 500 feet of the Site. No wells were identified, but seven structures with basements were identified and mapped. Additionally, two cross sectional diagrams were prepared for the Site. The complete report of findings is included in Cambria's December 16, 2003 Sensitive Receptor Survey, Geologic Cross Sections, and Fourth Quarter 2003 Groundwater Monitoring Report.

B.1.12 2003 - 2005 ORC Sock Installation

Although agency approval was not received, Shell proactively installed ORC in wells MW-5 and V-2 during first quarter of 2003. The ORCs were replaced on a semi-annual basis. The use of ORC was discontinued during the first quarter 2005, at Shell's request.

B.1.13 May 2005 Agency Meeting

Since no agency response was received to the June 2002 Site Investigation Report that contained recommendations for additional investigation, and since monitoring continued to indicate elevated concentrations of volatile constituents in groundwater, Shell authorized Cambria to prepare a work plan to investigate subsurface soil, groundwater, and soil vapor conditions along the property boundaries and at select locations on site. A new case worker was assigned to this project in early 2005, and following a meeting with the new case worker, technical comments and work plan approval were received in ACEH correspondence dated June 6, 2005. On August 15, 2005, Cambria submitted correspondence providing responses to the technical comments, notification of field work, and a request for extension for the report of findings. In correspondence dated August 19, 2005, ACEH granted the extension.

B.1.14 2005 Soil Vapor Investigation

From August 28 through 31, 2005, Cambria installed ten soil borings (GP-1 through GP-10). In soil, TPHg was detected from borings GP-1 at 10.0 feet bgs, GP-2 at 4.5 feet bgs, GP-3 at 5.0 and 8.5 feet bgs, GP-6 at 9.5 feet bgs, and GP-7 at 9.5 feet bgs at concentrations ranging from 1.5 to 3,300 mg/kg and benzene was detected from borings GP-2 at 4.5 feet bgs, and GP-3 at 5.0 and 8.5 feet bgs at concentrations ranging from 0.027 to 15 mg/kg. In groundwater, TPHg was detected in all four borings (GP-1, GP-3, GP-6, and GP-7) at concentrations ranging from 9,100 to 140,000 µg/L and benzene was also detected in all four groundwater samples at concentrations ranging from 320 to 17,000 µg/L. Soil vapor samples were collected from each boring and TPHg was detected in GP-1 through GP-10 at concentrations ranging from 350 to 71,000,000 micrograms per cubic meter (µg/m^3). Benzene was detected in soil samples collected from borings GP-1 through GP-3 and GP-5 through GP-10 at concentrations ranging from <4.1 to 170,000 µg/m^3. A complete discussion and presentation of these activities and findings is included in Cambria's November 15, 2005 Site Investigation Report. This report also included recommendations for performing a door-to-door survey within 300 feet of the Site to confirm basement locations, building construction, and potential sources; preparing work plans for pilot testing and plume delineation. Cambria submitted the November 22, 2005 Feasibility Study Work Plan and the December 16, 2005 Plume Delineation Work Plan, which Alameda County Environmental Health (ACEH) staff approved in their December 29, 2005 correspondence.

B.1.15 December 2005 - Door-to-Door Survey

Cambria conducted a door-to-door survey within 300-feet of the subject site for wells, basements, and foundation type to identify building construction and potential vapor receptors. Questionnaires were sent to 110 properties and responses for 25 properties were received as of January 13, 2006. Tabulated data and a list of properties included in the survey, and which completed surveys were received was included in our Door to Door Survey Report, Access Agreement Update, and Status/Schedule Update submittal dated January 15, 2006. Of the 25 responses received, none of the properties had basements. Three properties were denoted as vacant; nine properties contained buildings constructed with slab-on-grade foundations; three contained buildings constructed with perimeter foundations. Responses for the other 10 properties were either left blank, marked as unknown, or the response was contradictory or unclear. Regarding underground storage tanks, 17 responses were negative, four responses were marked as "unknown", and four responses were left blank. With the exception of the monitoring wells at the subject site, no wells were identified through the survey activities.

B.1.16 January 2006- Subsurface Investigation

On January 3 and 4, 2006, Cambria advanced three monitoring wells (MW-6 through MW-8), one soil boring (B-23), and six soil vapor probes (VP-1 through VP-6). In soil, TPHg was detected from borings MW-6 at 10.0 and 15.5 feet bgs, MW-7 at 11.5 and 16.5 feet bgs, MW-8 at 10.5 and 19 feet bgs, and B-23 at 10, 15.5, and 19.5 feet bgs at concentrations ranging from 7.1 to 3,800 mg/kg. Benzene was detected from borings MW-6 at 19.5 feet bgs,

MW-8 at 19.5 feet bgs, and B-23 at 15.5 and 19.5 feet bgs at concentrations ranging from 0.0090 to 33 mg/kg. The vapor probes were not installed due to saturated soil conditions. A complete discussion and presentation of these activities and findings is included in Cambria's April 14, 2006 Site Investigation Report, and First Quarter 2006-Groundwater Monitoring Report.

B.1.17 January 2006- DPE Pilot Test

Cambria conducted a five-day dual phase extraction pilot test the week of January 16, 2006. The details and results were presented in Cambria's Pilot Test Report dated March 14, 2006. DPE was performed on wells V-1, V-2, MW-6, MW-7, MW-4, MW-5, and MW-8. On January 20, 2006, a constant vacuum DPE test was conducted on well MW-6. The report concluded:

1) The absence of vapor phase concentrations (and groundwater concentrations) from well V-1 indicates that the former UST excavation does not contain residual source material;
2) High sustained and increasing vapor concentrations suggest source material is present in the vicinity of wells V-2, MW-5, and MW-8;
3) Variability in extraction flow rates across the Site may reflect heterogeneities in subsurface soils or may suggest preferential pathways; and
4) The extremely high effective radius of influence calculated for wells MW-5 and MW-8 during DPE testing on well MW-7 supports the presence of a preferential pathway in the vicinity of these wells.

The data from the DPE pilot test suggests that DPE is feasible at this site. The groundwater table was effectively drawn down by DPE and moderate vapor extraction flow rates were yielded from some of the extraction points. Although DPE is deemed feasible, Cambria did not recommend implementing DPE at this site. The extraction points that yielded the highest vapor concentrations did not yield an effective vapor extraction flow rate. Conversely, low vapor concentrations were yielded from the extraction point that did yield an effective vapor extraction flow rate. Therefore, DPE is not considered feasible in the target areas at this site.

B.1.18 February 2006- Install Off-Site Wells MW-12 and MW-14

The December 20, 2005 Plume Delineation Work Plan proposed off-site activities including the installation of seven off-site monitoring wells and eight soil vapor probes. Based on responses from only two of the off-site property owners, Cambria completed a portion of the scope of work recommended. Monitoring wells MW-12 and MW-14 were installed at two off-site properties to 20 and 14.5 feet bgs, respectively. Groundwater was first encountered during drilling activities in borings MW-12 and MW-14 at 14.0 and 11.0 feet bgs, respectively. None of the soil samples from well MW-12 indicated the presence of any TPHg or BTEX. The 5 foot bgs sample from MW-14 also did not contain any reportable concentrations. TPHg was reported in the 10 and 14 feet bgs samples from MW-14 at concentrations of 32 and 970 mg/kg, respectively. Benzene was reported in the same two samples at concentrations of

0.0083 and 2.3 mg/kg, respectively. Fuel oxygenates were requested on the 10 feet bgs and 14 feet bgs soil samples from MW-14, and none were reported above the detection limits. These activities are documented in Cambria's May 25, 2006 Subsurface Investigation Report.

B.1.19 April 2006 - Survey and Site Visit

In addition to surveying the new wells, Cambria identified historical boring locations from patches on the ground surface, historical excavation edges, trenches, and other site features, and requested that they be included in the survey. Report figures since May 2006 have included the new survey data. Also, during the Site visit, an inspection inside the building identified two bathrooms. A floor drain was observed in the northernmost bathroom. Standing liquid was present in the floor drain and automotive parts and cleaners were stored in this area. Thus, a sample from the floor drain was collected and submitted for analyses of volatile organic compounds (VOCs) by EPA Method 8260 and semi-volatile organic compounds (SVOCs) by EPA Method 8270. The floor drain sample was analyzed for VOCs and SVOCs. The results indicated the presence of carbon disulfide (3.69 µg/L), ethylbenzene (0.610 µg/L) and toluene (0.770 µg/L). This information was reported in Cambria's May 25, 2006 Subsurface Investigation Report.

B.1.20 May 2006- Geophysical Survey

As recommended in Cambria's May 25, 2006 Subsurface Investigation Report, a geophysical study was performed on May 22, 2006. The objectives of this effort were to determine whether or not a waste oil UST was in the ground in the northwest portion of the property, and to evaluate the presence of subsurface utilities in this area that may act as preferential pathways, including the mapping of the sewer line from the floor drain found inside the northwest comer of the building during the April 19, 2006 site inspection. The results did not identify the presence of a UST on the northwest comer of the Site, but did find another vent line located behind the northeast comer of the station building. A subsurface electric line was traced from the station building to the western property boundary, and an unidentified subsurface utility was traced from the northwest comer of the station building to the southwest, near MW-5 and toward MW-6. The presence of the unknown utility line in the northwest comer confirms the observations of a possible preferential pathway in this area based on the dual-phase extraction pilot test performed in January 2006.

NORCAL was unable to run a line down the floor drain inside of the building due to the trap in the line, so the sewer cleanout was found on the exterior of the building. Accessing the cleanout would have resulted in damage to the cap, and the property owner would not grant permission for Cambria to open the cleanout and repair any damage. Thus, the location, direction, and depth of the sewer line in this area are still unknown. However, based on the GPR survey that was performed to try to locate a non-metallic sewer line, NORCAL concludes that the sewer line may be more than 4 feet bgs, since the GPR was unable to identify the line. This information was presented in Cambria's July 25, 2006 Status Update, Report of Geophysical Survey, and Request for Agency Meeting.

B.1.21 August 2006 - Agency Meeting

On August 2, 2006, a meeting between Shell and the ACEH was held to discuss results of recent activities, the status of pending activities, and an agreed upon course for proposed additional activities. During that meeting, the parties agreed to a scope of work, which was presented in Cambria's August 31, 2006 Subsurface Investigation Work Plan. The objectives detailed in that work plan were to:

- Obtain detailed lithologic information on site and off site by continuous sampling using electronic logging by cone penetration testing (CPT) technique in five on-site and five off-site borings labeled CPT-1 through CPT-10;
- Collect shallow soil vapor samples from approximately 5 feet below grade (feet bgs) near off-site monitoring well MW-14 (CPT-8);
- Obtain groundwater samples from first encountered groundwater from areas where wells have not been installed (CPT-5 through CPT-7, CPT-9, and CPT-10);
- Collect groundwater from deeper within the first aquifer at all locations from approximately 20-25 feet bgs, depending on the CPT log results;
- Collect groundwater samples from a deeper interval at select locations for vertical groundwater profiling (CPT-4, CPT-6, CPT-8, and CPT-9);
- Install the on-site vapor probes to allow for the future collection of soil vapor samples near the western property boundary;
- Collect ambient air samples near the basement area at 664 27th Street for chemical analysis.

This scope of work was approved by the ACEH in correspondence dated September 5, 2006.

B.1.22 October 2006- CPT-1 through CPT-5 and VP-1 through VP-6

Cambria installed CPT-1 through CPT-5 and VP-1 through VP-6 on the subject site. Off-site borings were not successful due to concerns about property damage (CPT-8 and CPT-9), and utility conflicts (CPT-6 and CPT-7), and lack of access agreement (CPT-10). There was a lack of adequate groundwater recharge for many of the groundwater samples attempted between 15 and 29 feet bgs. Groundwater sample results from between 31-37 feet bgs confirm significant attenuation of contaminants of at least one order of magnitude from the interval monitored by the Site wells (5-20 feet bgs), thus nor further vertical delineation is warranted. Comparison of data from 1995, 2000, and 2006 in similar location (B-6 & B-9, B-19, and CPT-5, respectively) demonstrates attenuation of contaminant concentrations over time is occurring. The six on-site vapor probes could not be sampled due to the presence of water in some of the probes. A site inspection at the neighboring property was performed and revealed that due to significant ventilation and air exchange with outdoor ambient air, vapor sampling within the aboveground basement was no longer warranted. These activities are documented in Cambria's January 31, 2007 CPT Investigation and Vapor Probe Installation Report.

B.1.23 May and June 2007 CPT-6, CPT-7, and CPT-10 and VP-7 and VP-8

CRA drilled off-site borings CPT-6, CPT-7, and CPT-10 and installed off-site vapor probe pairs VP-7 and VP-8. No TPHg or benzene was detected in soil samples collected from VP-7 and VP-8, or from boring CPT-6. There was a lack of adequate groundwater recharge in the shallow groundwater sampling interval in boring CPT-6, and in both the shallow and deeper attempted intervals in boring CPT-7. Grab groundwater samples from boring CPT-10 contained 38,000 µg/L TPHg and 1,600 µg/L benzene at 13-17 feet bgs, and 640 µg/L TPHg and 3.8 µg/L benzene at 20-23 feet bgs. Soil vapor samples collected from both sampling intervals (approximately 2.5 and 4.5 feet bgs) in probes VP-7 and VP-8 did not contain TPHg or benzene concentrations above the RWQCB residential Environmental Screening Levels (ESLs). These activities are documented in CRA's August 27, 2007 Plume Delineation and Soil Vapor Sampling Report.

B.1.24 June 2015 – Subsurface Investigation Report

The purpose of the investigation was to further assess soil, groundwater, and soil vapor conditions on site and down gradient from the Site. One off-site groundwater monitoring well (MW-13), two nested off-site soil vapor probes (VP-12 and VP-13), and one on-site nested soil vapor probe (VP-14) were installed and sampled. On-site soil vapor probe VP-3 at 5 feet bgs was also sampled. One well and two soil vapor probes proposed in CRA's July 19, 2012 work plan were not installed because the off-site property owners would not allow access. One off-site probe (VP-13) was moved to an adjacent property. On-site soil vapor probes VP-2 at 3 and 5 feet bgs and VP-3 at 3 feet bgs could not be sampled due to water in the probes.

All TPHg and BTEX concentrations in soil samples collected from the well boring were below RWQCB ESLs. As requested, CRA collected surface soil samples from each of the soil vapor probe locations and the well boring for lead analyses. All lead concentrations were below the RWQCB ESL. COC concentrations in soil vapor samples exceeded the RWQCB ESLs in VP-3 at 5 feet bgs, VP-13 at 3 feet bgs, and VP-14 at 3 and 5 feet bgs. MW-13 was added to the groundwater monitoring program for this site, and the well will be monitored quarterly for at least one hydrologic cycle (one year).

B.1.25 October 2015 – Soil Vapor Sampling Report

GHD sampled on-Site soil vapor probes VP-3 and VP-14 and off-Site soil vapor probes VP-12 and VP-13 at 3 and 5 feet bgs. On-Site soil vapor probe VP-2 at 3 and 5 feet bgs could not be sampled because the location was inaccessible, and off-site soil vapor probe VP-7 was not sampled due to an administrative error. TPHg soil vapor sample concentrations in VP-3 at 5 feet bgs and VP-14 at 3 and 5 feet bgs exceeded RWQCB ESLs for residential and commercial land use in the April 16, 2015 and August 27, 2015 sampling events. Benzene concentrations in VP-14 at 3 and 5 feet bgs and ethylbenzene in VP-14 at 5 feet bgs also exceeded RWQCB ESLs for residential and commercial land use in both sampling events.

B.1.26 December 2015 – Human Health Risk Assessment

AECOM conducted a Human Health Risk Assessment (HHRA) in December 2015. The purpose of this investigation was to assess soil vapor concentrations for site characterization and estimate potential health risks to current and future commercial/industrial workers, future excavation workers, hypothetical future on-site residents, and current off-site residents. A HHRA for direct contact with soil and vapor intrusion of volatiles into indoor air was completed using maximum detected concentrations of VOCs, TPH, and lead from soil, groundwater, and soil vapor data.

Based on the results of the risk assessment, on-site sources may potentially pose unacceptable risk for vapor intrusion health risks to future commercial/industrial workers. There appeared to be no significant direct contact risk to current or future receptors. There also appeared to be no significant vapor intrusion risk to current or future off-site residents or current on-site commercial/industrial workers.

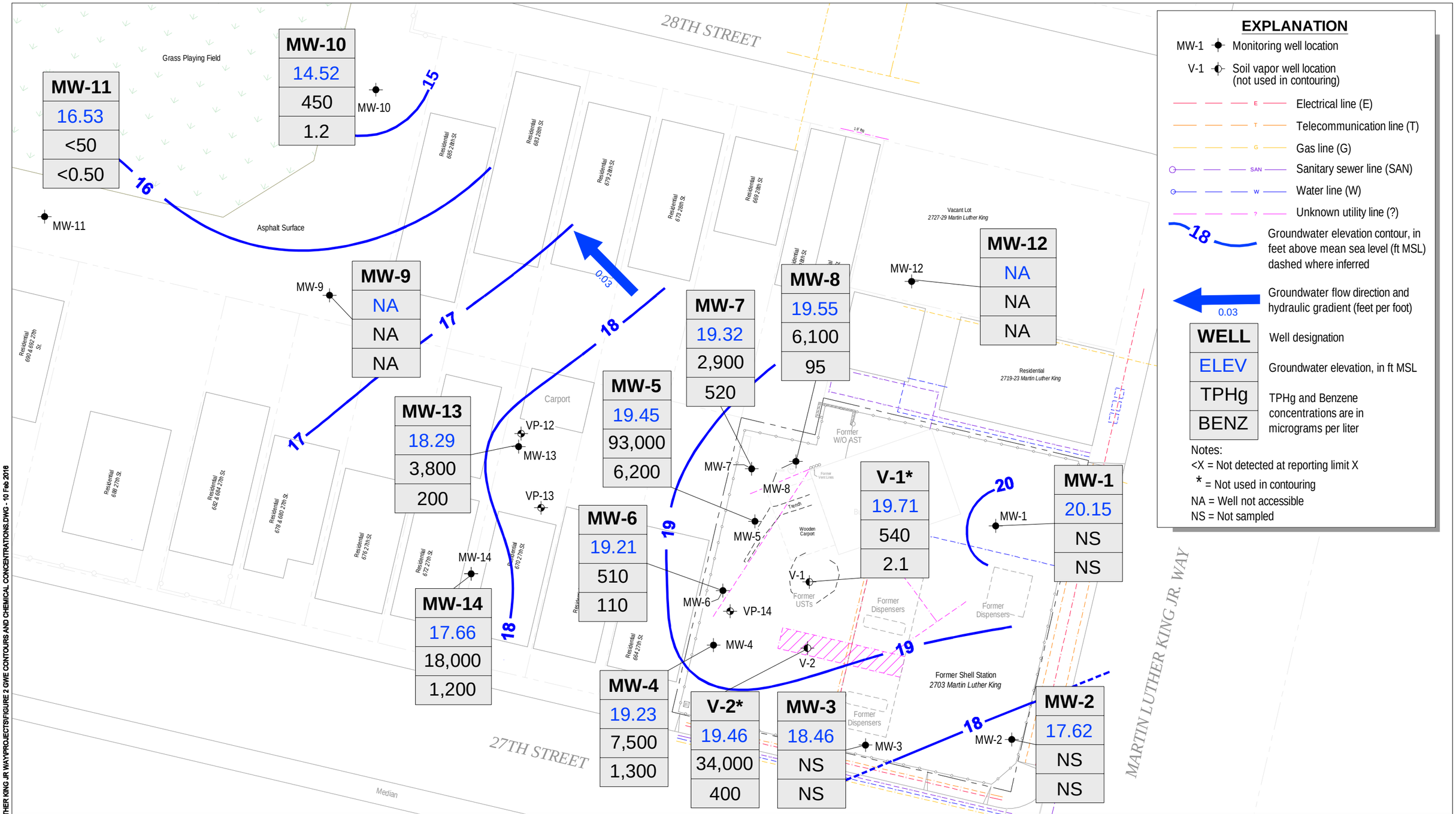
AECOM recommended further confirmation of off-site vapor intrusion by resampling soil vapor probes VP-7 and VP-13. In addition, AECOM recommended the 2008 *Corrective Action Plan* submitted by Conestoga-Rovers & Associates not be implemented due to submittal prior to the State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy (LTCP). AECOM proposed submitting a revised CAP that is consistent with the remedial goals in the Policy and adequately protects the receptors identified in the HHRA.

B.1.27 1996 to Present - Ongoing Groundwater Monitoring

Quarterly groundwater monitoring has been ongoing at the Site since August 1996 and currently includes onsite monitoring wells MW-1 through MW-8, VP-1, and VP-2, and off-site monitoring wells MW-12 and MW-14. Fuel oxygenates are not a significant component of the groundwater plumes, although some detections of di-isopropyl ether and TBA have been observed. Overall, the groundwater flow direction is primarily to the west, with some radial components on site to the northwest and southwest. Historically, monitoring wells MW-1, MW-2, MW-3, and MW-12 have shown little or no impact from petroleum hydrocarbons. Maximum historical concentrations of TPHg and benzene have been observed in on-site monitoring well MW-5.

Appendix C.

Site Background Information



EXPLANATION

- MW-1 — Monitoring well location
- V-1 — Soil vapor well location (not used in contouring)
- Electrical line (E)
- Telecommunication line (T)
- Gas line (G)
- Sanitary sewer line (SAN)
- Water line (W)
- Unknown utility line (?)
- 18 — Groundwater elevation contour, in feet above mean sea level (ft MSL) dashed where inferred
- 0.03 — Groundwater flow direction and hydraulic gradient (feet per foot)

WELL	
ELEV	Groundwater elevation, in ft MSL
TPHg	TPHg and Benzene concentrations are in micrograms per liter
BENZ	

Notes:
<X = Not detected at reporting limit X
* = Not used in contouring
NA = Well not accessible
NS = Not sampled

N

0 15 30
Feet

SOURCE: GHD BASEMAP AND WELL PLACEMENT
SITE WELLS SURVEYED JUNE 14, 2001 BY VIRGIL CHAVEZ LAND SURVEYING.
SITE WELLS SURVEYED AUGUST 13, 2002 BY VIRGIL CHAVEZ LAND SURVEYING.
WELLS MW-1 THROUGH MW-8, V-1, AND V-2 SURVEYED ON FEBRUARY 14, 2006 BY VIRGIL CHAVEZ LAND SURVEYING. WELLS MW-12 AND MW-14 SURVEYED ON APRIL 19, 2006 BY VIRGIL CHAVEZ LAND SURVEYING. WELLS MW-9, MW-10, AND MW-11 SURVEYED ON AUGUST 18, 2010 BY VIRGIL CHAVEZ LAND SURVEYING.

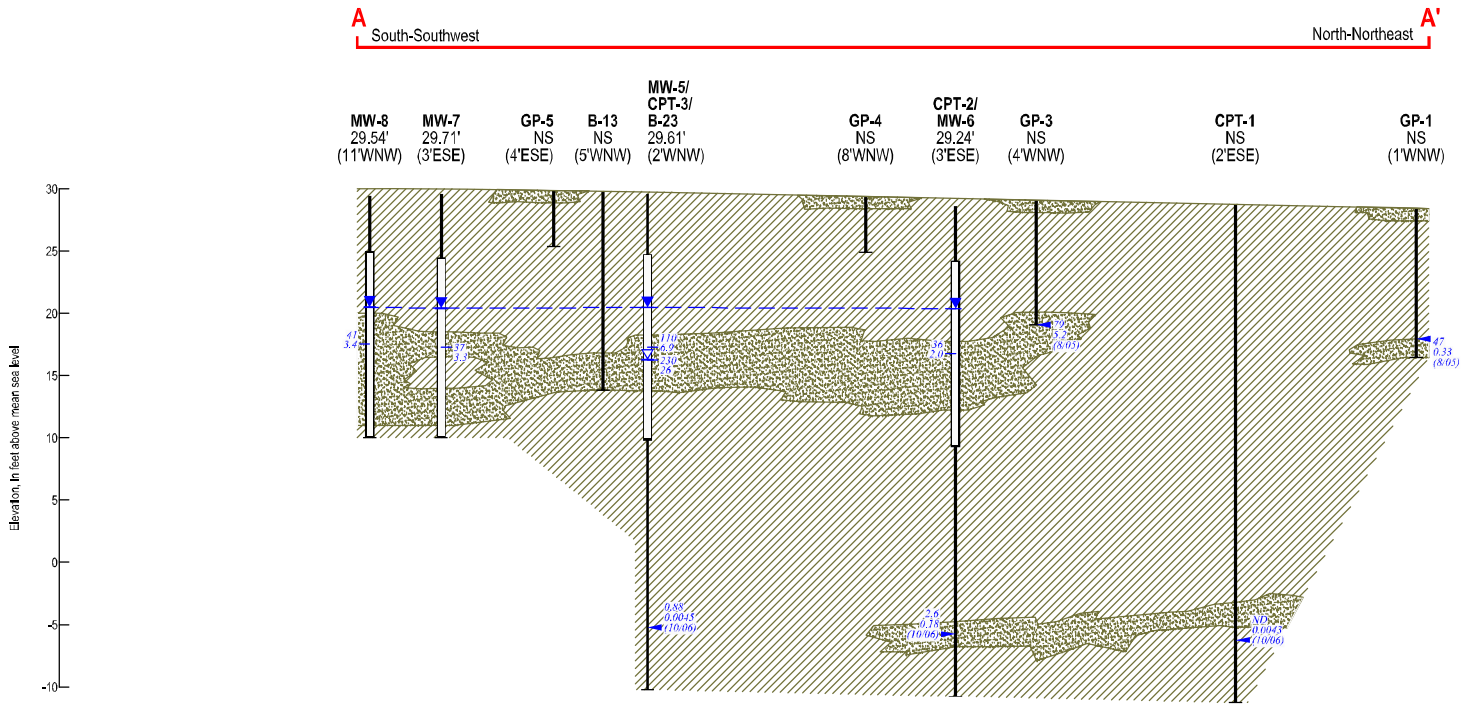
Figure 2
Groundwater Contour and Chemical Concentration Map
December 18, 2015

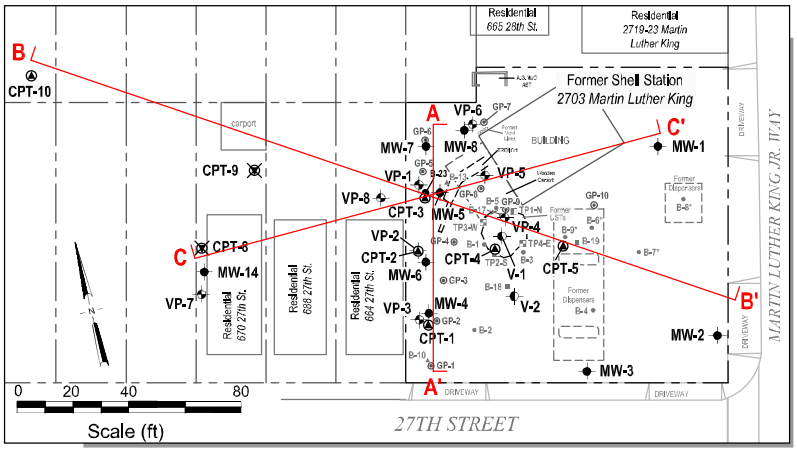
Former Shell Service Station
AECOM **2703 Martin Luther King Jr. Way, Oakland, California**

L:\ENV\ARCGIS\SHELL\2703 MARTIN LUTHER KING JR WAY\PROJECTS\FIGURE 2 GWE CONTOURS AND CHEMICAL CONCENTRATIONS.DWG - 10 Feb 2016

12/18/07

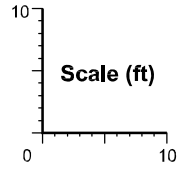
Geologic Cross Section A-A'
- Grab and QM Groundwater Results





EXPLANATION

- = Fine-Grained Soils
- = Coarse-Grained Soils
- TPHg / Benzene — Concentrations in Groundwater, in ppm (08/27/07)
- Depth of Groundwater (08/27/07)
- Inferred Groundwater Depth
- TPHg / Benzene (DATE) — Grab Groundwater Sample Depth
- Well ID / Elev. — Well Designation; TOC Elevation, in feet above msl (NS = Not Surveyed)
- (offset) — Offset distance and direction to cross-section line
- Groundwater Monitoring Well or Soil Boring
- Well Screen Interval
- Bottom of boring



FIGURE

3A

Former Shell Service Station

2703 Martin Luther King Jr. Way

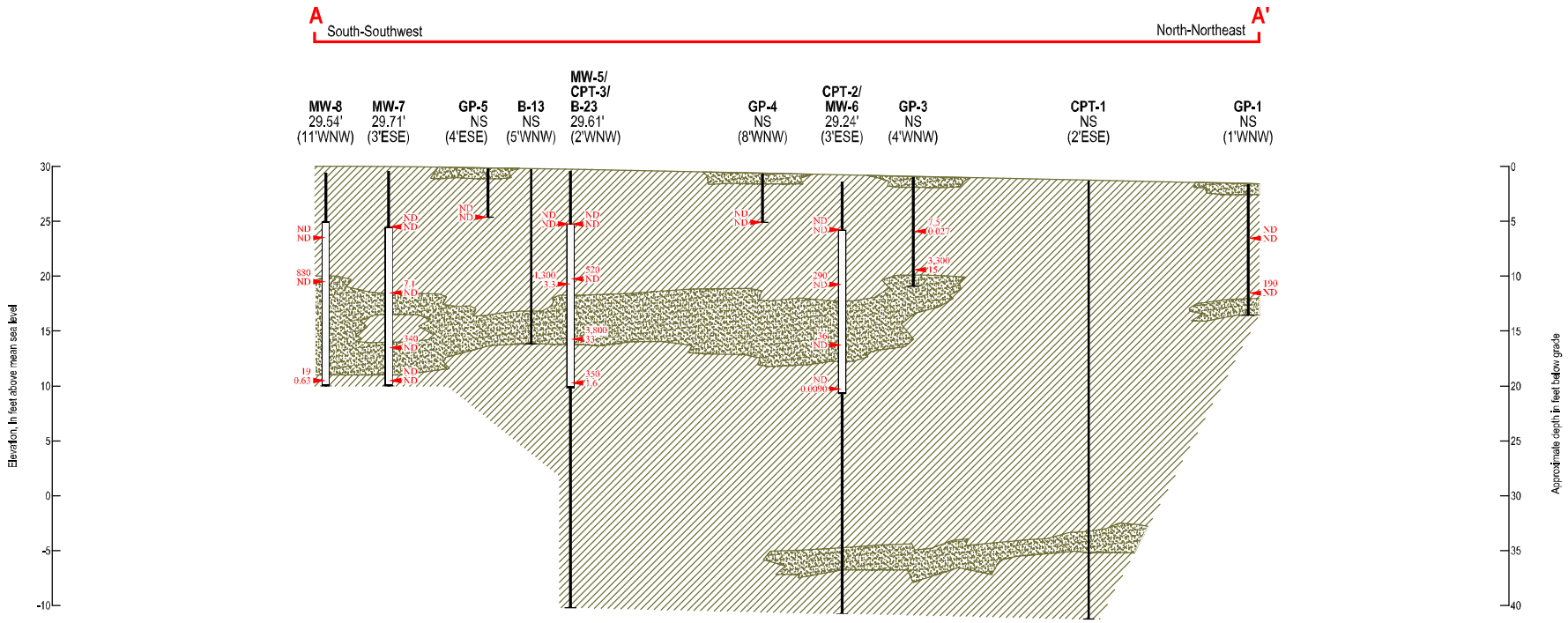
Oakland, California

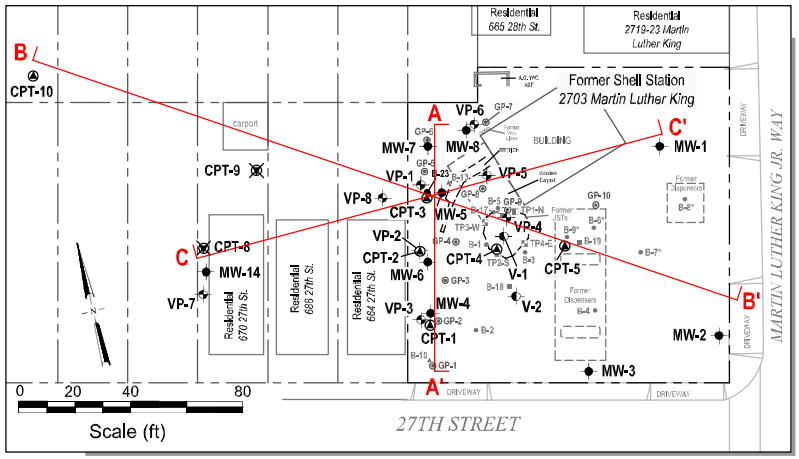
CONESTOGA-ROVERS & ASSOCIATES

I:\SONOMA\SHELL\OAKLAND 2703 MLK JR WAY\FIGURES\X-SECT A-A'.DWG

12/18/07

Geologic Cross Section A-A' - Soil Results





EXPLANATION

= Fine-Grained Soils

= Coarse-Grained Soils

Approximate Soil Sample Location

NA Not Analyzed

ND Not Detected

TPHg / Benzene — Concentrations in Soil, in mg/kg; (MTBE analyzed by EPA Method 8020 in parentheses, all others by EPA Method 8260 or NA)

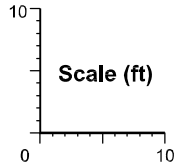
Well ID / Elev. — Well Designation / TOC Elevation, in feet above msl (NS = Not Surveyed)

(offset) — Offset distance and direction to cross-section line

Groundwater Monitoring Well or Soil Boring

Well Screen Interval

Bottom of boring



FIGURE

3B

Former Shell Service Station

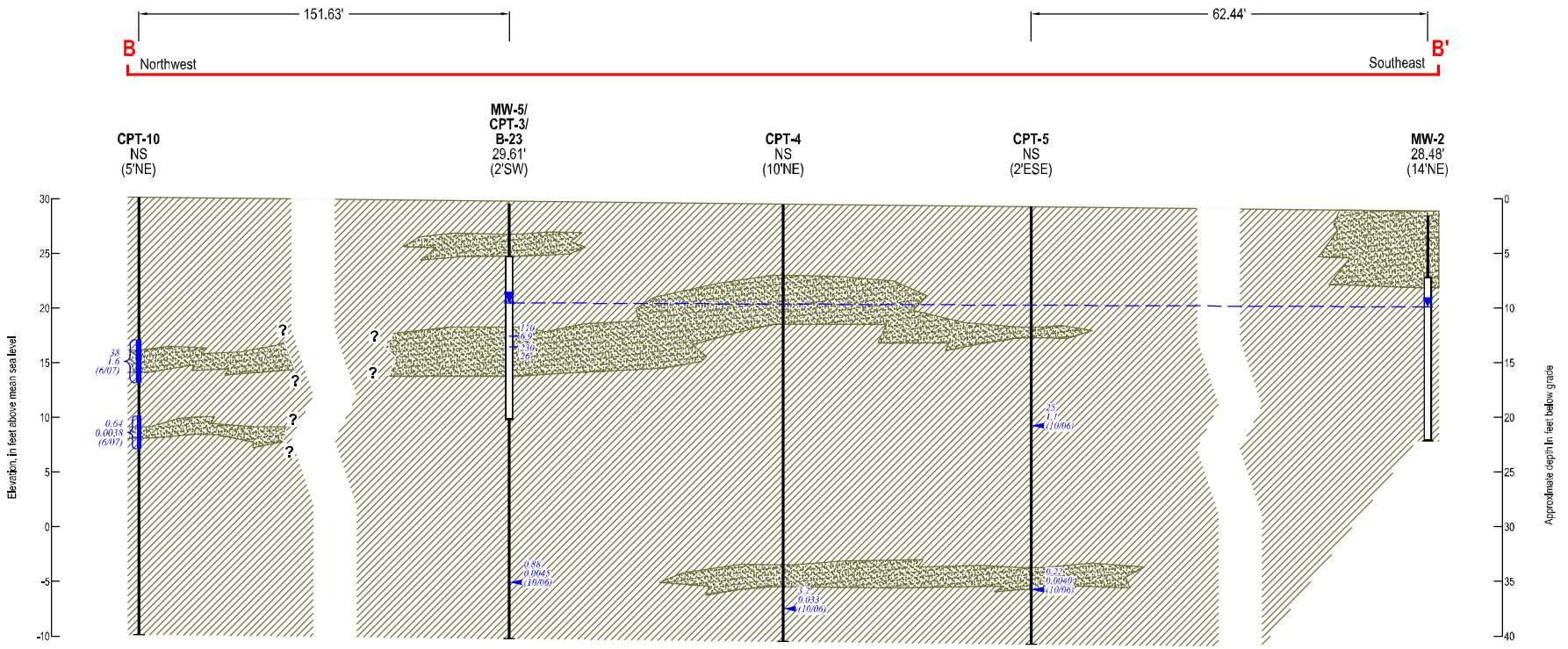
2703 Martin Luther King Jr. Way

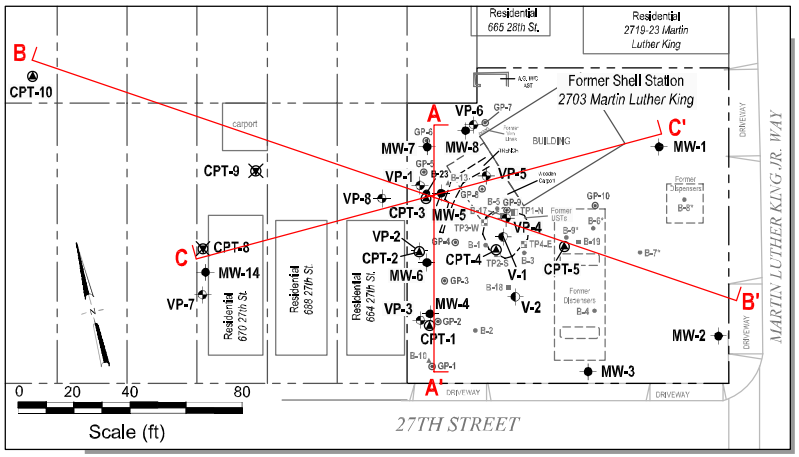
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

I:\SONOMA\SHELL\OAKLAND 2703 MLK JR WAY\FIGURES\X-SECT A-A'.DWG

12/18/07





EXPLANATION

- = Fine-Grained Soils
- = Coarse-Grained Soils
- TPHg / Benzene — Concentrations in Groundwater, in ppm (08/27/07)
- Depth of Groundwater (08/27/07)
- Inferred Groundwater Depth
- TPHg / Benzene (DATE) — Grab Groundwater Sample Depth
- TPHg / Benzene (DATE) — CPT Groundwater Sampling Interval and Concentrations, in ppm (DATE)

Well ID — Well Designation
Elev. — TOC Elevation, in feet above msl (NS = Not Surveyed)
(offset) — Offset distance and direction to cross-section line
Groundwater Monitoring Well or Soil Boring
Well Screen Interval
Bottom of boring

10
Scale (ft)
0
10

FIGURE
4A

Geologic Cross Section B-B'
- Grab and QM Groundwater Results

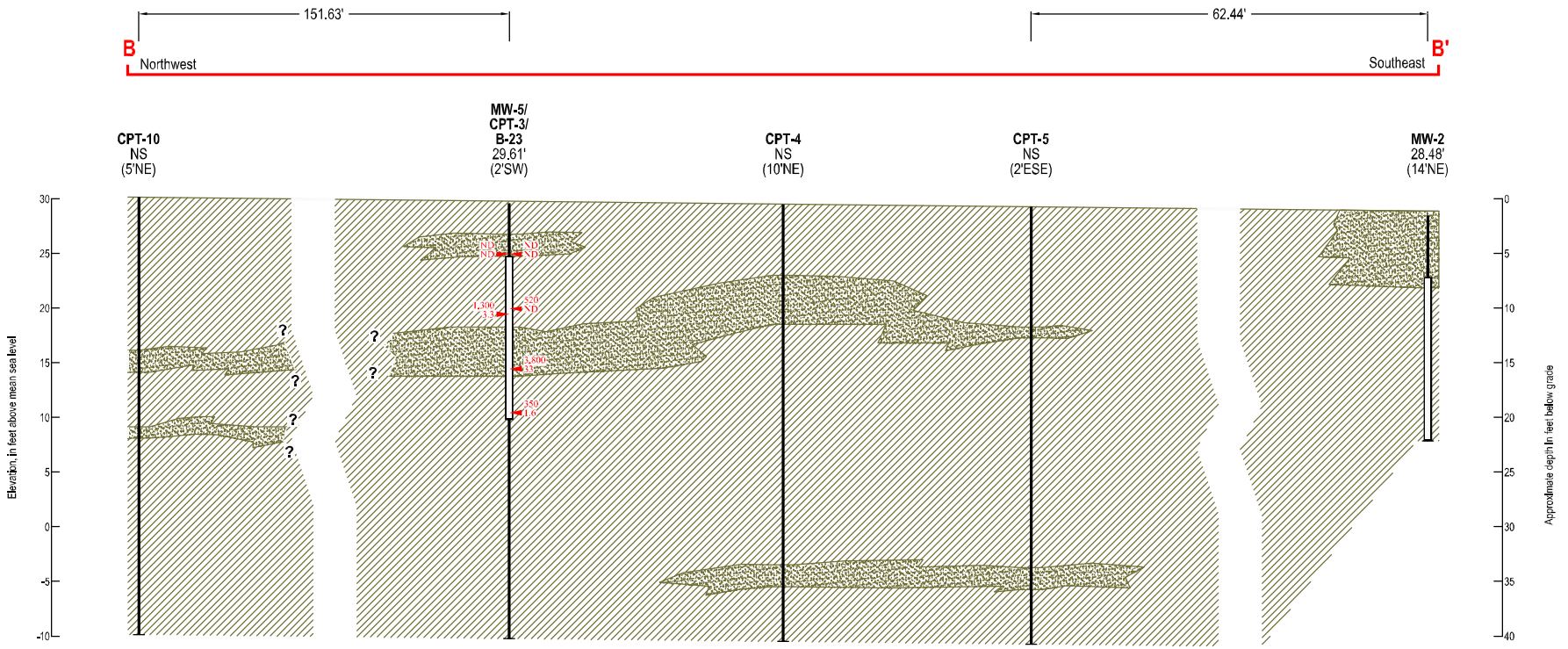
CONESTOGA-ROVERS & ASSOCIATES

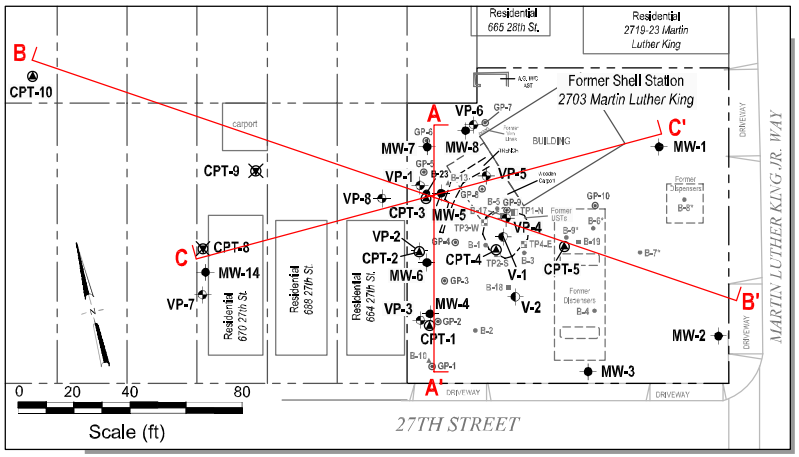
Former Shell Service Station
2703 Martin Luther King Jr. Way
Oakland, California

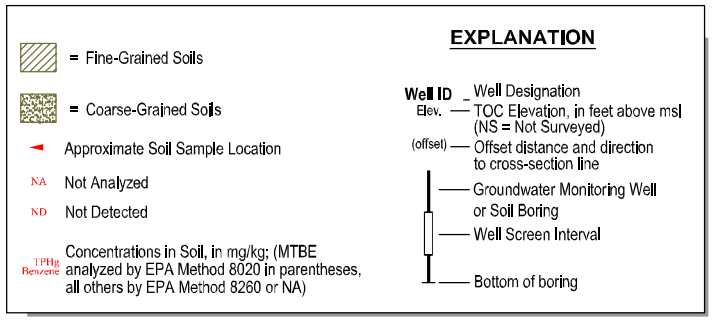
I:\SONOMA\SHELL\OAKLAND 2703 MLK JR WAY\FIGURES\X-SECT B-B'.DWG

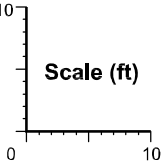
12/18/07

Geologic Cross Section B-B' - Soil Results









FIGURE

4B

Former Shell Service Station

2703 Martin Luther King Jr. Way

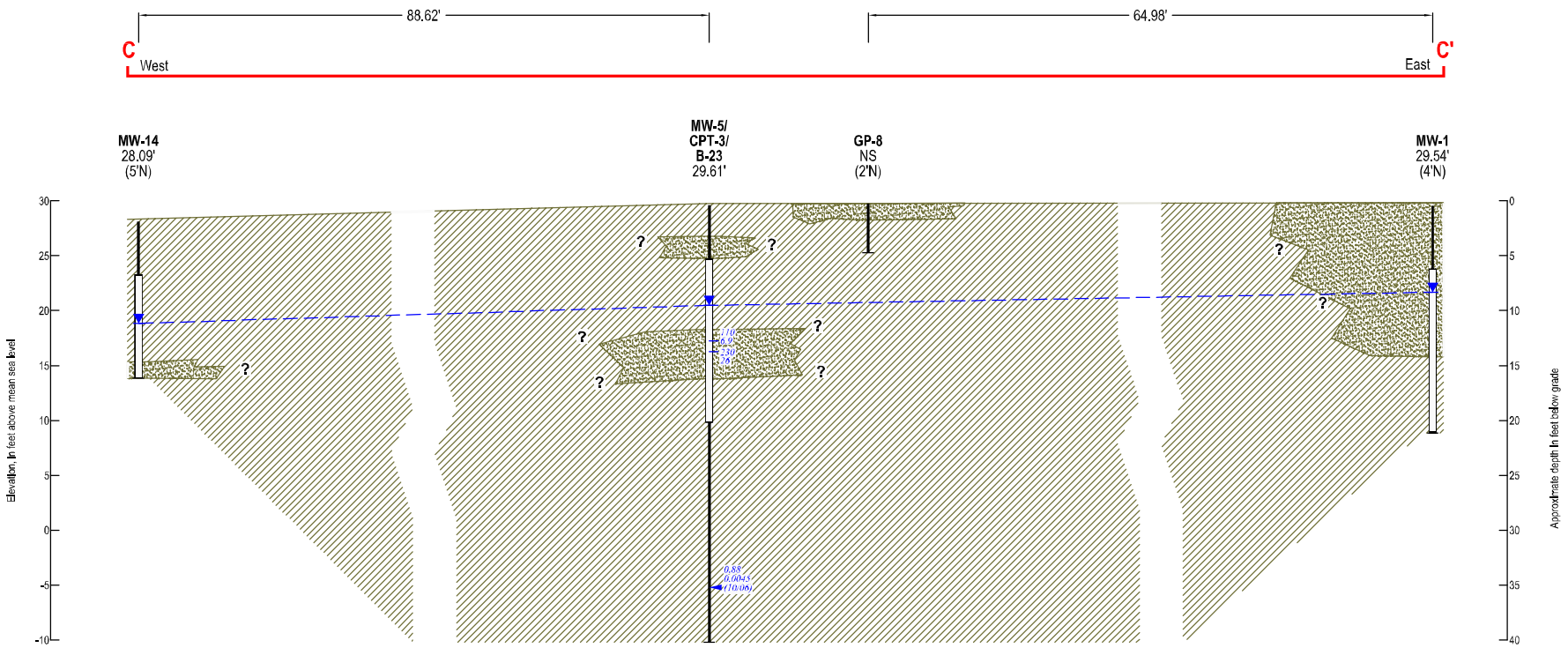
Oakland, California

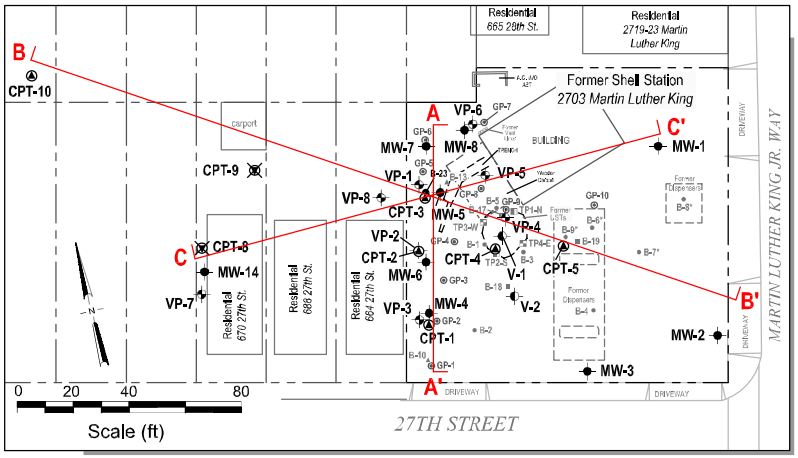
CONESTOGA-ROVERS & ASSOCIATES

I:\SONOMA\SHELL\OAKLAND 2703 MLK JR WAY\FIGURES\X-SECT B-B'.DWG

12/19/07

Geologic Cross Section C-C'
- Grab and QM Groundwater Results





EXPLANATION

= Fine-Grained Soils

= Coarse-Grained Soils

TPHg / Benzene — Concentrations in Groundwater, in ppm (08/27/07)

Depth of Groundwater (08/27/07)

Inferred Groundwater Depth

TPHg / Benzene / (DATE) — Grab Groundwater Sample Depth

Well ID / Elev. — Well Designation; TOC Elevation, in feet above msl (NS = Not Surveyed)

(offset) — Offset distance and direction to cross-section line

Groundwater Monitoring Well or Soil Boring

Well Screen Interval

Bottom of boring

10
Scale (ft)
0
10

FIGURE

5A

CONESTOGA-ROVERS & ASSOCIATES

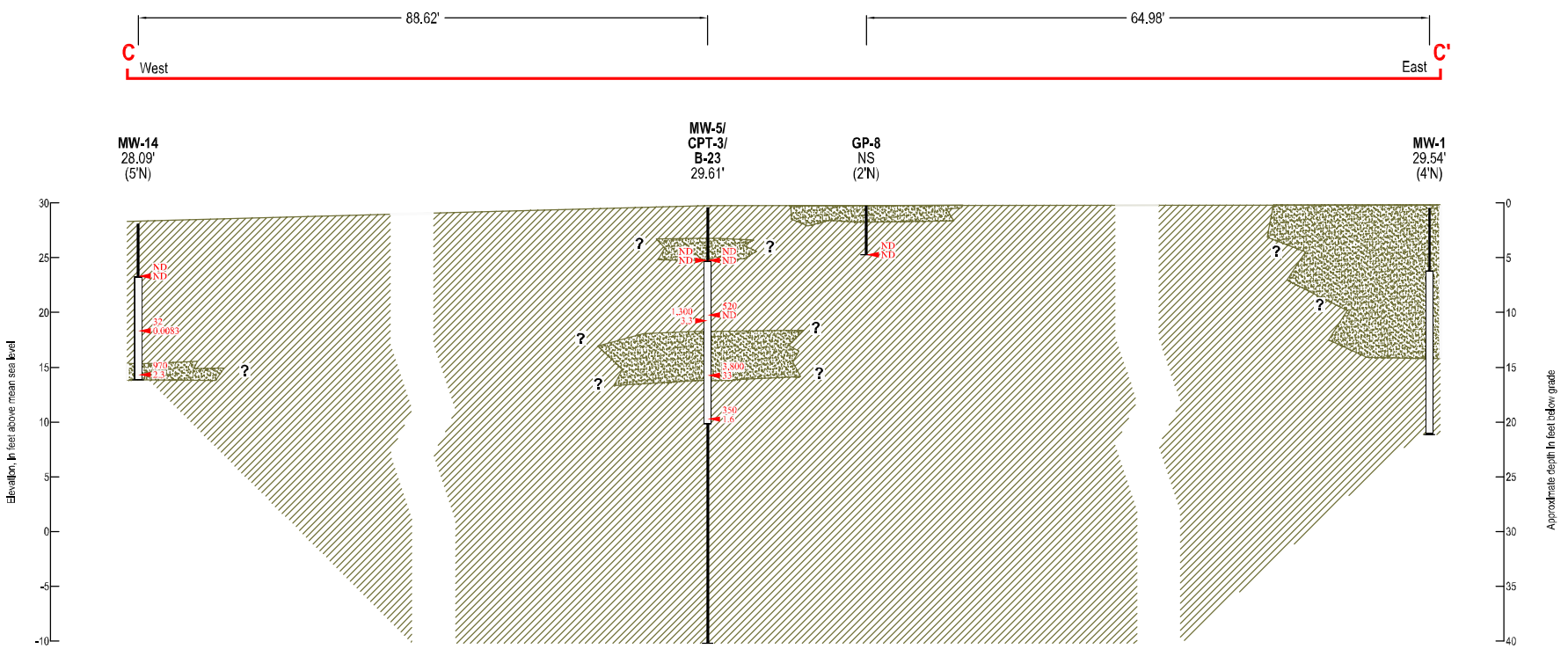
Former Shell Service Station

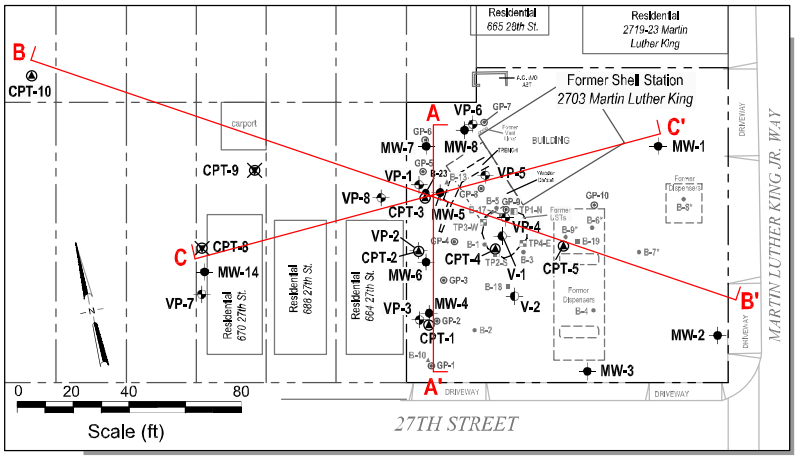
2703 Martin Luther King Jr. Way

Oakland, California

I:\SONOMA\SHELL\OAKLAND 2703 MLK JR WAY\FIGURES\X-SECT C-C'.DWG

12/19/07

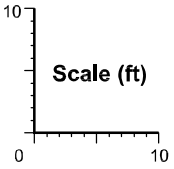




EXPLANATION

- = Fine-Grained Soils
- = Coarse-Grained Soils
- Approximate Soil Sample Location
- NA Not Analyzed
- ND Not Detected
- TPHg / Benzene — Concentrations in Soil, in mg/kg; (MTBE analyzed by EPA Method 8020 in parentheses, all others by EPA Method 8260 or NA)

Well ID _ Well Designation
Elev. — TOC Elevation, in feet above msl (NS = Not Surveyed)
(offset) — Offset distance and direction to cross-section line
— Groundwater Monitoring Well or Soil Boring
— Well Screen Interval
— Bottom of boring



FIGURE

5B

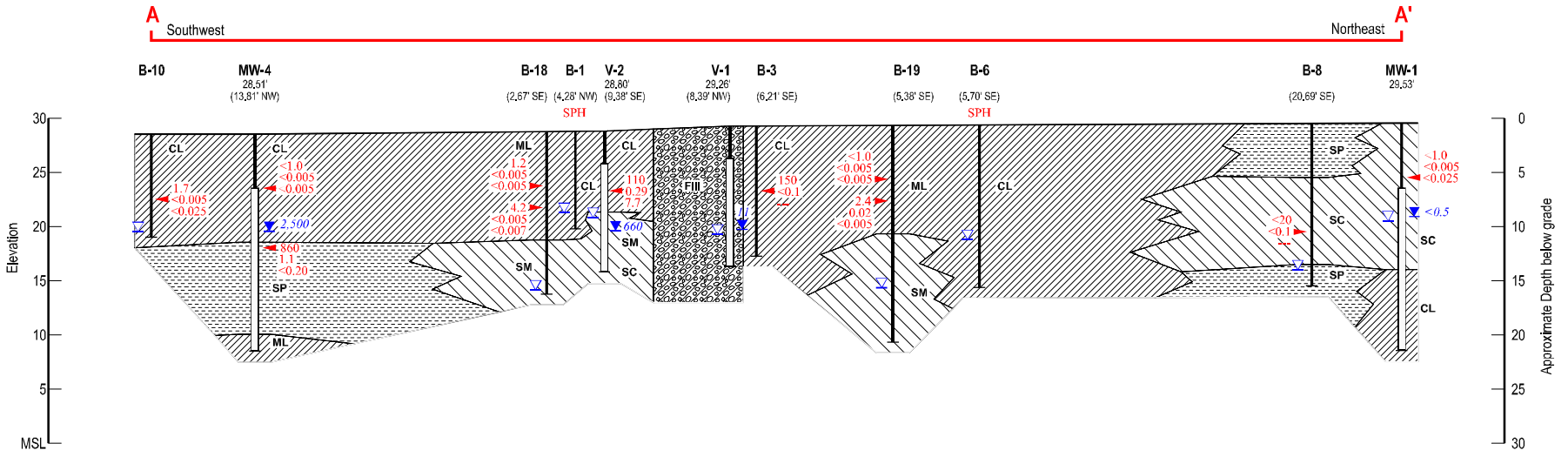
Geologic Cross Section C-C'
- Grab and QM Groundwater Results

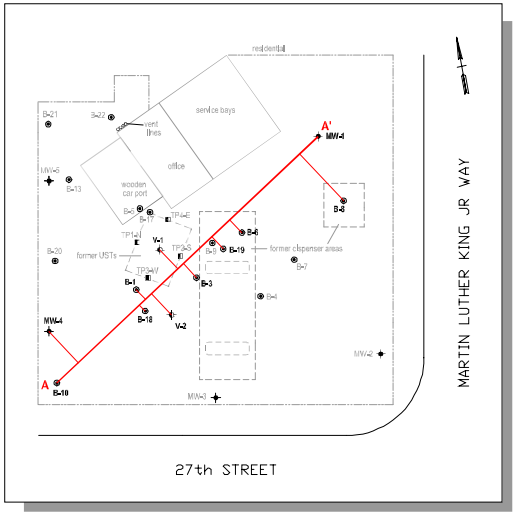
CONESTOGA-ROVERS & ASSOCIATES

Former Shell Service Station
2703 Martin Luther King Jr. Way
Oakland, California

I:\SONOMA\SHELL\OAKLAND 2703 M.L.K.JR WAY\FIGURES\X-SECT C-C'.DWG

12/12/03





EXPLANATION

- = Low Estimated Permeability Soils — CL, ML
- = Moderate Estimated Permeability Soils — SC, SM
- = High Estimated Permeability Soils — SP
- = Fill (Tank Pit)

CL = Clay
ML = Clayey Silt
SC = Clayey Sand
SM = Silty Sand
SP = Poorly Graded Sand

▼ Groundwater Elevation on 10/20/03

▽ Initial Groundwater level

Well ID / ELEV (projection) — Well Designation, GW Elevation, Projected distance from A-A'

Groundwater Monitoring Well

Well Screen Interval

Bottom of boring

TPHg / Benzene / MTBE — Hydrocarbon concentrations in soil, in mg/kg (ppm)

SPH — Seperate Phase Hydrocarbons detected during installation

Benzene — Benzene concentrations in groundwater in micrograms per liter (ppb) Sample taken on 10/20/03

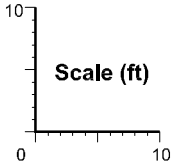


FIGURE
3

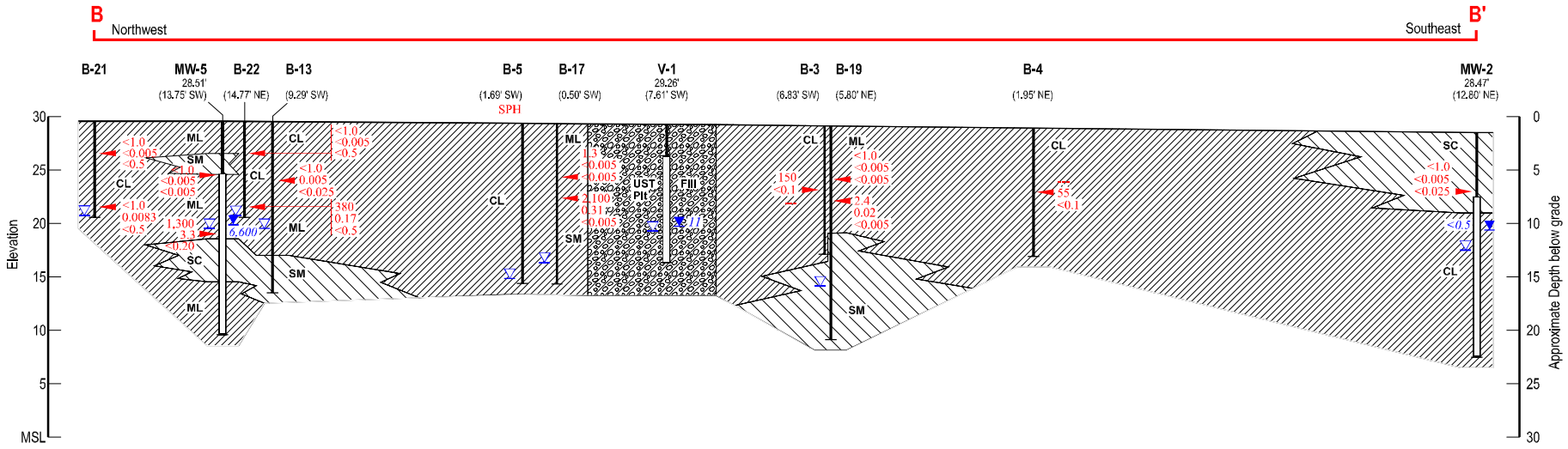
Geologic Cross Section A - A'

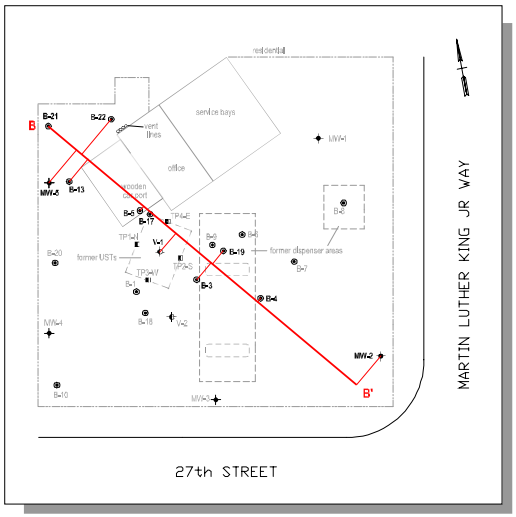
Former Shell Service Station
2703 Martin Luther King Jr. Way
Oakland, California

CAMBRIA

G:\OAKLAND 2703 MLK\FIGURES\<SECTION>-A.DWG

12/12/03





EXPLANATION

- = Low Estimated Permeability Soils — CL, ML
- = Moderate Estimated Permeability Soils — SC, SM
- = Fill (Tank Pit)

- CL = Clay
- SC = Clayey Sand
- SM = Silty Sand
- ML = Clayey Silt

- ▼ Depth of Groundwater on 10/20/03
- ▽ Initial Groundwater level

Well ID
ELEV
(projection)
Well Designation
GW Elevation
Projected distance from A-A'

Groundwater Monitoring Well

Well Screen Interval

Bottom of boring

TPHg
Benzene
MTBE
Hydrocarbon concentrations in soil, in mg/kg (ppm)

SPH
Seperate Phase Hydrocarbons detected during installation

Benzene
Benzene concentrations in groundwater in micrograms per liter (ppb)
Sample taken on 10/20/03

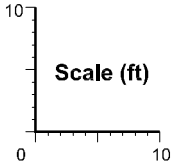


FIGURE
4

Geologic Cross Section B - B'

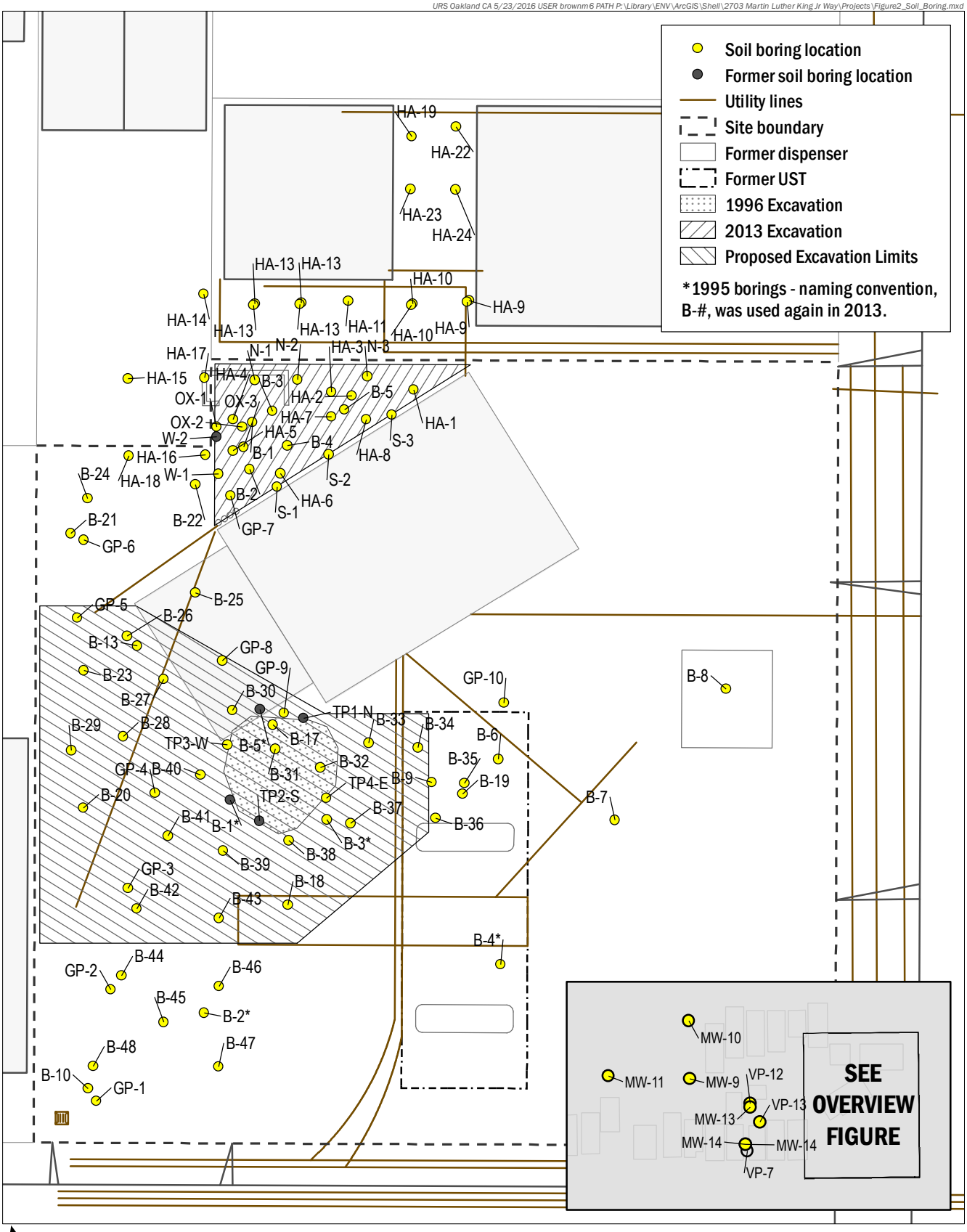
Former Shell Service Station
2703 Martin Luther King Jr. Way
Oakland, California

CAMBRIA

G:\OAKLAND\2703 MLK\FIGURES\XSECTION-A.DWG

Appendix D.

Remedial Alternative: Proposed Excavation Limits



Source: GHD, 2015; AECOM, 2015

AECOM

Shell

Former Shell Service Station

2703 MARTIN LUTHER KING JR. WAY

OAKLAND, CALIFORNIA

APPENDIX D

Remedial Alternative: Proposed Excavation Limits