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March 29, 2013

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Facility No. 21-1283
3810 Broadway, Oakland, California

Dear Mr. Detterman:

Attached for your review are the *Conceptual Site Model Report* and *Closure Request* for the above-referenced site. This report and closure request was prepared by ARCADIS, upon whose assistance and advice I have relied. I declare under penalty of perjury that the information and/or recommendations contained in the attached report and closure request are true and correct to the best of my knowledge. Should you have any further questions, please do not hesitate to contact me.

Very truly yours,

Kelly C. Esters
Project Manager

KCE:st
Encl.

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Chevron Environmental Management Company

Conceptual Site Model and Closure Request

Former Chevron Service Station
No. 21-1283
3810 Broadway
Oakland, California

March 29, 2013

ARCADIS

Toni DeMayo
Project Manager

Melissa Blanchette, P.G.
Principal Geologist

Conceptual Site Model and Closure Request

Former Chevron Service Station
No. 21-1383
3810 Broadway
Oakland, California

Prepared for:
Chevron Environmental Management Company

Prepared by:
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Our Ref.:
B0060901.1283

Date:
March 29, 2013

Tables

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Acronyms and Abbreviations

ACPWA	Alameda County Public Works Agency
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
Cu yd	cubic yards
CA MCL	California Maximum Contaminant Level
Cal/EPA	California Environmental Protection Agency
CEMC	Chevron Environmental Management Company
CHHSLs	California Human Health Screening Levels
COPC	constituent of potential concern
CPT	cone penetrometer test
CSM	conceptual site model
DIPE	di-isopropyl ether
DTSC	CA/EPA Department of Toxic Substances Control
DTW	depth to water
DWR	California Department of Water Resources
ESL	environmental screening level
ETBE	ethyl tertiary butyl ether
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram
MTBE	methyl tertiary butyl ether
NAPL	nonaqueous phase liquid
PID	photo-ionization detector
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State of California Water Resources Control Board
State Water Board	California State Water Resources Control Board

TAME	tert-amyl methyl ether
TBA	tertiary butyl alcohol
TPHd	total petroleum hydrocarbons as diesel
TPHg	total petroleum hydrocarbons as gasoline
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
VOCs	volatile organic compounds
WQO	water quality objective
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
ZIMAS	Zoning Information and Map Access System

1. Introduction

On behalf of Chevron Environmental Management Company (CEMC), ARCADIS U.S., Inc. (ARCADIS) has prepared this Conceptual Site Model (CSM) and Closure Request (report) for the former Chevron Service Station No. 21-1283, located at 3810 Broadway in Oakland, California ("the site; Figure 1). The purpose of this report is to summarize and present the existing site data that was evaluated and used to support a request for low-threat case closure. The site qualifies for closure as a low-threat fuel site, as described in the California State Water Resources Control Board (State Water Board) Low-Threat Underground Storage Tank (UST) Case Closure Policy (Low-Threat Closure Policy), which was adopted by the State Water Board on May 1, 2012, and became effective on August 17, 2012 (State Water Board 2012).

This report includes the following sections, in addition to this introductory section:

- Section 2 – A detailed site description
- Section 3 – A conceptual site model, including:
  - A discussion of regional geology and hydrology,
  - A summary of previous work conducted at the site and at nearby facilities,
  - A discussion of the nature of impacts, including a description of the distribution of fuel hydrocarbons and oxygenates in soil, groundwater, and soil gas,
  - A linear regression analysis of groundwater plume stability and discussion of the efficacy of monitored natural attenuation (MNA) at the site, and
  - An assessment of impacts on public health and the environment, including an analysis of sensitive receptors and potential exposure pathways.
- Section 4 – A detailed evaluation of current site conditions compared against closure criteria set forth in the newly adopted Low-Threat Closure Policy
- Section 5 – Recommendations
- Section 6 - References

2. Site Description

The site is an active service station and automobile repair shop located in a mixed commercial and residential area of Oakland, California; at the intersection of Broadway

and 38th Street (Figure 1). The site is bounded on the west by Broadway, to the south by 38th Street, to the east by second-story residential apartments with first-story carports and to the north by commercial and residential buildings. Current site features include a station building, automobile repair building, fuel dispenser islands and an underground storage tank (UST) complex. There are no current plans to redevelop the site. Thus, it is expected to remain commercial, i.e., an active service station, in the future.

The site operated as a Texaco Service Station from approximately 1963 to 1985. Site features included four 6,000-gallon USTs and one 550-gallon waste oil UST that were removed in February 1980 and May 1991, respectively. A total of 12 soil borings and 13 groundwater monitoring wells were installed at the site prior to recent investigative work in June and July 2012, which consisted of advancement of cone penetrometer test (CPT) borings, soil borings, temporary well construction and sampling, and soil vapor sampling. Nine groundwater monitoring wells are currently part of the semi-annual groundwater monitoring and sampling program.

Based on a review of relevant documentation and the data summarized in this report, impacts to soil and groundwater resulted from an undocumented release of fuel hydrocarbons and oxygenates from the former service station USTs. Site constituents of potential concern (COPCs) include total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as gasoline (TPHg), benzene, methyl tertiary butyl ether (MTBE), and tertiary butyl alcohol (TBA).

Soil and groundwater impacts have been characterized with samples collected from a series of soil borings between 1991 and 2012, and from 12 groundwater monitoring wells between June 1996 to December 2012. Soil gas impacts have been characterized at the site using data collected during a soil gas survey conducted in 2012. The current monitoring network includes 9 monitoring wells, which were sampled quarterly from June 1996 through December 2009 and then semiannually through the present. Monitoring wells MW-2, MW-3, and MW-8 were destroyed during the excavation that was conducted in 2000 (Section 3.4).

Table 1 presents historical soil analytical results from May 1991 through March 2000, Table 2 presents monitoring well construction details, Table 3 presents historical groundwater sampling analytical data from June 1996 through June 2010, Table 4 presents recent groundwater sampling analytical data from December 2010 through December 2012, and Table 5 presents recent soil sample analytical data collected in June 2012. Soil boring logs are presented in Appendix A.

3. Conceptual Site Model

As part of the CSM, the site geology and hydrogeology, the results from past investigations, the distribution of COPCs within the subsurface and groundwater, and the potential risks to human health and the environment were evaluated and are presented in the following sections.

3.1 Site Geology and Hydrogeology

The site is located in the Oakland Sub Basin of the East Bay Plain Groundwater Basin, which consists of unconsolidated sediments of Pleistocene and Holocene age overlying bedrock of Jurassic, Cretaceous and Tertiary age. The East Bay Plain overlies a flank of broad Franciscan bedrock. Unconsolidated sediments in the basin vary in thickness up to 1,000 feet. These unconsolidated sediments are commonly referred to, from oldest to youngest, as Santa Clara Formation, Alameda Formation, Temescal Formation, and artificial fill. The site is underlain primarily by unconsolidated fill material overlying sandy silts and clays, interbedded with well sorted sands and silty sands.

The site is roughly 85 feet above mean sea level. The closest stream is Glen Echo Creek, located approximately 1,500 feet south of the site. The nearest surface water body is Lake Merritt, located approximately 1.3 miles to the south of the site. Onsite depth to water (DTW) has historically ranged from approximately 13 feet to 34 feet below ground surface (bgs). Groundwater elevation beneath the site was significantly influenced in 2007 and 2008 due to local dewatering associated with Kaiser Permanente construction to the west of the Site. Since December 2010, DTW measurements have ranged from 17.37 to 29.58 feet bgs, and have been at an average of 23.40 feet bgs. Groundwater levels observed during the recent site assessment activities conducted in June and July, 2012 match these recent findings. Groundwater flow direction varies considerably between the north, west and south. Groundwater mounding and groundwater depressions have also been observed (ARCADIS 2012c).

In March 2013, ARCADIS conducted a well search to obtain updated information regarding the presence of nearby production wells. The well search was conducted to identify groundwater production wells in one mile radius of the site. ARCADIS contacted the City of Oakland and the SFBRWQCB. The City of Oakland did not have

access to the requested information. The SFBRWQCB indicated that a formal request with the CA DWR and Alameda County Public Works Agency (ACPWA) would be required.

The well search conducted by Alameda County indicated that two irrigation wells were located within one-quarter mile of the Site. These wells are located at 4082 Piedmont Ave and 360 42nd Street and are located approximately 1,570 ft east and 1,940 ft north of the Site. Based on recent groundwater flow direction (December 2012), these wells are not located downgradient of the site. The well search indicated that these wells are 65 ft deep and 198 ft deep respectively.

The well search conducted by CA DWR only identified the well located at 4082 Piedmont Ave; this well was designated as a domestic well. The irrigation well located at 360 42nd Street (identified in the Alameda County well search) was not identified by CA DWR. No other wells identified for production or domestic use were indentified in this well search.

3.2 Underground Storage Tank History

The site operated as a Texaco Service Station from approximately 1963 to 1985. Site features included four 6,000 gallon USTs and one 550 gallon waste oil UST that were removed in February 1980 and May 1991, respectively.

3.3 Site Assessment History

Environmental investigations began at the site in October 1991; historical soil analytical data are provided in Table 1, well construction details are included in Table 2, and current and historical groundwater analytical data are provided in Table 3 and Table 4, respectively. The locations of groundwater monitoring wells, soil borings, and soil samples are presented on Figure 2. Groundwater monitoring well and soil boring logs are included in Appendix A.

Details of the site assessments are summarized below:

- ***Kaldveer Associates 1991-1992***. Following the removal of the used-oil UST, MW-1 and MW-2 were installed to assess groundwater quality in the vicinity of the used-oil UST.

- ***McLaren Hart 1996.*** Soil borings B1 through B6 were advanced for characterization purposes. TPHg and benzene were detected in locations B-1, B-2, B-4, and B-5. MW-3 and MW-4 were installed and MW-1 and MW-2 were redeveloped. Following the redevelopment on MW-2, LNAPL was observed in the well.

- ***Fluor Daniel GTI 1996.*** Monitoring wells MW-5 through MW-10 were installed to delineate the extent of the dissolved petroleum hydrocarbon plume.

- ***Toxichem 1998.*** Soil borings SB-1 through SB-6 were advanced for additional soil characterization. Soil vapor samples were collected at 5 ft bgs from SB-1, SB-3, and SB-6.

- ***Toxichem 2000.*** Monitoring wells MW-3 and MW-8 were abandoned due to their location within the area of planned excavation (described in Section 3.4). MW-2 was damaged during this excavation and later abandoned.

- ***Toxichem 2000.*** Offsite monitoring well MW-11 was installed. Petroleum hydrocarbons were not detected in soil samples collected during installation.

- ***Delta 2002.*** Damaged monitoring well MW-5 was replaced and MW-12 was installed within the excavated area (described below).

3.4 Remediation History

As described in Section 3.2, the four 6,000-gallon USTs were excavated and removed from the Site in 1980. In 1991, the 550-gallon used waste oil UST was removed.

In 2000, the area was excavated to 22 ft bgs; approximately 1,400 cubic yards of petroleum hydrocarbon impacted soil were excavated and disposed of off-site.

3.5 Environmental Investigations at Nearby Facilities

Five open leaking underground storage tank (LUST) cleanup sites and five closed LUST cases are located within 1,000 ft of the site. Each site is summarized below (http://geotracker.waterboards.ca.gov/):

Firestone #3658 (3785 Broadway; RB Case No. 01-0638)

The Firestone property is a closed LUST case located approximately 125 feet northwest of the site. The property had a waste oil, motor oil, hydraulic fluids, or lubricating oil release and soil at the property was impacted. The release was reported in 1990 and impacted soil was excavated in 1991. According to Geotracker, the LUST case was closed in 1994. No other information is available.

Chevron #9-1026 (3701 Broadway; RB Case No. 01-0363)

The Chevron #9-1026 property is an open LUST case located approximately 200 feet southwest of the site. A former service station existed on the property from 1939 to 1988 (CAMBRIA 2007). The property was redeveloped and a commercial building was constructed in 2007. Prior to redevelopment, soil was excavated in 2006 for removal of soil impacted by petroleum hydrocarbons. No residual hydrocarbon constituents were detected during the most recent groundwater sampling event on March 21, 2011 (CRA 2011). Groundwater flows towards the southwest at the property, away from the site.

Kaiser Development / Val Strough Honda (3735-3799 Broadway; RB Case No. 01-1629)

The Kaiser Development / Val Strough Honda property is a closed LUST case located approximately 200 feet southwest of the site. Constituents of concern include chromium, diesel, gasoline, lead, nickel, waste oil, motor oil, hydraulic fluids, and lubricating fluids. This property includes the Chevron #9-1026 property, but the environmental cases are treated separately. The Kaiser Development / Val Strough Honda property was occupied by a car washing business that included three USTs. The environmental case was closed on November 7, 2012 (ACEH 2012). During the last groundwater sampling event, TPHg was detected at 38 µg/L, and TPHd was detected at 38 µg/L. Groundwater flows towards the south to southwest at the property, away from the site.

Glovatorium (3820 Manila Avenue; RB Case No. 01-2279)

The Glovatorium property is an open LUST case located approximately 300 feet northwest of the site. The property has six abandoned USTs. The USTs contained Stoddard solvent, fuel oil, and waste oil. A significant release of Stoddard solvent occurred in the 1970s. Groundwater, soil, and soil vapor is impacted at the property and offsite. Multi-phase extraction (soil vapor and groundwater) is ongoing at the property and a total mass of 8,110 pounds of Stoddard solvent has been removed by the extraction system. During the last groundwater monitoring event, Stoddard solvent

was detected at 230,000 µg/L, TPHg was detected at 340,000 µg/L, benzene was detected at 3.4 µg/L, MTBE was detected at 120 µg/L, tetrachloroethene was detected at 6.5 µg/L, trichloroethene was detected at 7.5 µg/L, cis-1,2-dichloroethene (DCE) was detected at 760 µg/L, trans-1,2-DCE was detected at 6.4 µg/L, and vinyl chloride was detected at 0.7 µg/L (SOMA 2012). Groundwater flows towards the southwest at the property, away from the site.

UNOCAL #0746 (3943 Broadway; RB Case No. 01-1596)

The UNOCAL #0746 property is an open LUST case located approximately 500 feet north of the site. The property consists of an active service station including two USTs containing gasoline and one UST containing waste oil (Delta 2009). Environmental investigation activities began in 1989 during UST removal and replacement. Currently, groundwater monitoring is conducted semi-annually and product removal is conducted monthly. During the last groundwater sampling event on June 1, 2012, TPHg was detected at 4,300 µg/L, benzene was detected at 140 µg/L, ethylbenzene was detected at 56 µg/L, and MTBE was detected at 19 µg/L (ARCADIS 2012b). Groundwater flows towards the southwest at the property, away from the site.

Dodson Ltd (240 W Macarthur Blvd; RB Case No. 01-2434)

The Dodson Ltd property is an open LUST case located approximately 650 feet southeast of the site. Three fuel USTs and one waste oil UST were present at the site until 1996 (Stellar 2013). Gasoline and diesel related petroleum hydrocarbon constituents have been detected in soil and groundwater at the property and an environmental investigation has been ongoing since 1991. During the last groundwater sampling event on September 7, 2012, TPHg was detected at 1,300 µg/L, TPHd was detected at 950 µg/L, benzene was detected at 43 µg/L, toluene was detected at 6.8 µg/L, ethylbenzene was detected at 19 µg/L, total xylenes were detected at 47 µg/L, MTBE was detected at 1.1 µg/L, and naphthalene was detected at 4.0 µg/L. Groundwater flows towards the northwest at the property, generally toward the site. A corrective action plan was submitted in February 2013 for the installation of a groundwater and soil vapor extraction system to remove an estimated 500 to 800 pounds of residual petroleum hydrocarbon constituents.

Accutane (4045 Broadway; RB Case No. 01-2417)

The Accutane property is a closed leaking underground storage tank (LUST) case located approximately 750 feet northeast of the site. According to the case summary

available on Geotracker, a release of waste oil, motor oil, hydraulic fluids, or lubricating fluids occurred in 1965. The environmental case was opened in 1996 and closed in 2001 after an excavation was completed. No other information is available.

Shell #13-5676 (230 W Macarthur; RB Case No. 01-1345)

The Shell #13-5676 property is a closed LUST case located approximately 850 feet south of the site. The property is an active service station and constituents of concern consist of gasoline related residual petroleum hydrocarbons. Groundwater and soil are impacted at the property. The environmental investigation began in 1986 and the environmental case was granted closure in January 2013 (ACEH 2013). During the last groundwater sampling event, TPHg was detected at 7,600 µg/L, benzene was detected at 150 µg/L, toluene was detected at 10 µg/L, ethylbenzene was detected at 270 µg/L, total xylenes were detected at 43 µg/L, and MTBE was detected at 2.3 µg/L. Groundwater flows towards the west at the property, away from the site. Case closure was granted for the current commercial land use but may be re-opened if the property is redeveloped.

Chevron #9-0517 / Homestead Federal Savings (3900 Piedmont Avenue; RB Case No. 01-2440)

The Chevron #9-0517 / Homestead Federal Savings property is an open LUST case located approximately 950 feet southeast of the site. The property was a former service station that was active from approximately 1940 to 1978 (CRA 2010). In 1978, the service station was demolished and the property was redeveloped into a commercial building. The former service station included a lubrication building with two hydraulic lifts, USTs, and dispensers. The environmental investigation began in 1993 and has included soil and groundwater investigations. Currently, groundwater monitoring is conducted annually and soil vapor sampling is proposed for future work (CRA 2012). During the most recent groundwater sampling event, TPHg was detected at 6,700 µg/L, benzene was detected at 110 µg/L, toluene was detected at 32 µg/L, ethylbenzene was detected at 7 µg/L, total xylenes was detected at 34 µg/L, and MTBE was detected at 1 µg/L (CRA 2012). Groundwater flows towards the southwest at the property, away from the site.

Five C Group (4101 Broadway; RB Case No. 01-0641)

The Five C Group property is a closed LUST case located approximately 1,000 feet northeast of the site. The property had a gasoline release and soil and groundwater at

the property was impacted. According to Geotracker, the leak was reported in 1991, an excavation occurred, and the case was closed in 1998. No other information is available.

3.6 Current and Historical Distribution of Residual Hydrocarbons and Oxygenates

Fuel hydrocarbon and oxygenate impacts to site soil and groundwater appear to have resulted from an undocumented release from the former USTs at the site. In general, at the site boundaries, subsurface fuel hydrocarbon and oxygenate concentrations have decreased over time, and are likely to continue decreasing. The current distribution of residual petroleum hydrocarbons and fuel oxygenates in soil, groundwater, and soil gas are described in the following sections.

3.6.1 Soil

Between 1991 and 2012, 91 soil samples have been collected at the site at depths ranging from 5 to 35 ft bgs to characterize lateral and vertical concentrations of fuel hydrocarbons and oxygenates in site soils. Historical soil data is presented in Table 1 from May 1991 through 2000. Recent soil sample data (June 2012) is presented in Table 5. Soil sample locations are presented in Figure 2.

Maximum historical concentrations of fuel hydrocarbons and oxygenates in soil samples are summarized below:

- TPHg (65,000 mg/kg) was detected in the soil sample collected at MW-3 at approximately 8.5 ft bgs in October 1995, located within the former source area (this depth interval has since been excavated and removed).

- Benzene (88 mg/kg) was detected in the soil sample collected at MW-3 at approximately 8.5 ft bgs in October 1995 (this depth interval has since been excavated and removed).

- Ethylbenzene (160 mg/kg) was detected in the soil sample collected at MW-8 at approximately 15 ft bgs in September 1996, located within the former source area (this depth interval has since been excavated and removed).

- Toluene (550 mg/kg) was detected in the soil sample collected at MW-3 at approximately 8.5 ft bgs in October 1995 (this depth interval has since been excavated and removed).

- Total xylenes (840 mg/kg) was detected in the soil sample collected at MW-8 at approximately 15 ft bgs in September 1996 (this depth interval has since been excavated and removed).

- MTBE (4.2 mg/kg) was detected in the soil sample collected at EX-1 at approximately 20 ft bgs in March 2000, collected from the sidewall of the excavation conducted in 2000.

- TBA was not detected in any of the historical soil samples collected and analyzed for TBA.

3.6.1.1 Recent Soil Investigative Results

In 2012, twelve soil samples were collected for chemical analysis. These samples were targeted to the zones of highest apparent impact, based on photo-ionization detector (PID) screening, staining, and odors. In the event of limited observable impacts, a sample was collected from the zone of highest apparent impact and the zone immediately above saturated soil.

Soil analytical results were compared to the Regional Water Quality Control Board (RWQCB) - San Francisco Bay Region (2013) Environmental Screening Levels (ESLs) for commercial and industrial land use where groundwater is a potential use drinking water resource. Results of this comparison are presented in Table 5 and on Figure 5. A detailed evaluation of this data is provided in the Site Assessment Report (ARCADIS 2012c).

The soil data indicate that concentrations of TPHg and BTEX are present in soil above the ESLs at depths ranging from 6.5 ft bgs to 18 ft bgs. The highest concentrations of these COPCs are present at 17 to 18 ft bgs, just above the approximate water table elevation in DP-3 and DP-6 (located within and adjacent to the former excavation area) and at DP-5 (located adjacent to MW-6). Data indicate that residual source material may remain that could be contributing to COPC groundwater concentrations detected above the laboratory reporting limit at the site.

Soil analytical results are presented on Figure 5 in plan view and in cross-section on Figures 7 – 9; locations of cross-sections are presented on Figure 6.

3.6.2 Nonaqueous Phase Liquid

During the most recent groundwater sampling event (December 2012), nonaqueous phase liquid (NAPL) was not present at a measurable thickness in any of the monitoring wells associated with the site. NAPL has not historically been observed at the site, with the exception of former MW-2 prior to the excavation and soil removal that was conducted in 2000.

3.6.3 Groundwater

Concentrations of fuel hydrocarbons and oxygenates in groundwater were first sampled in June 1996 and were sampled and analyzed quarterly from June 1996 to June 2009 and then semiannually through the most recent monitoring event during the fourth quarter of 2012 (December, 2012). Historical analytical and gauging results are summarized in Table 3 and Table 4. Historical data were reviewed to evaluate the spatial extent of fuel hydrocarbons and oxygenate impacts in groundwater and concentration trends through time. In general, decreasing or stable COPC groundwater concentration trends have been observed at the property boundaries, however, an increasing trend is present beneath the former source area (MW-12).

From February 2007 to March 2009, dewatering activities were being conducted at a neighboring property (3701 – 3799 Broadway). Due to these dewatering activities, the water table elevation at the site dropped up to approximately 10 ft in elevation, as observed during well gauging activities conducted during monitoring activities. Concentrations of petroleum hydrocarbons increased in site monitoring wells, especially in MW-12 (beneath the former excavation area). This trend is further described in Section 3.7. Increased observed concentrations of petroleum hydrocarbons upon the lowering of the water table may indicate the presence of remaining residual source material.

To evaluate the distribution of fuel hydrocarbons and oxygenates in groundwater, concentrations of COPCs were compared to California Maximum Contaminant Levels (CA MCLs, California Department of Public Health, 2013) where these values have been established. Since there are no established CA MCLs for TPHg and TBA, concentrations of these constituents were compared to the San Francisco Regional Water Quality Control Board (SFRWQCB) groundwater environmental screening levels (ESLs) for groundwater that is a current or potential drinking water resource (SFRWQCB 2008). The CA MCLs and ESLs are considered to represent the water quality objectives (WQO) for the site.

COPC	WQO (µg/L)
TPHg	100 (SFRWQCB ESL)
TPHd	100 (SFRWQCB ESL)
Benzene	1 (CA Primary MCL)
Ethylbenzene	300 (CA Primary MCL)
Toluene	150 (CA Primary MCL)
Total Xylenes	1,750 (CA Primary MCL)
MTBE	13 (CA Primary MCL)
TBA	12 (SFRWQCB ESL)

Historical maximum and recent (December 2012) COPC concentrations in groundwater are described below:

- *TPHd.* The historical maximum concentration of TPHd was 6,100,000 µg/L, measured in the sample collected from monitoring well MW-3, located in the source area within the former excavation, during the December 1997 sampling event. MW-3 was destroyed during excavation activities. The maximum concentration during the most recent sampling event (December 2012) was 240 µg/L without silica gel cleanup (120 µg/L with cleanup) in the sample collected from MW-12, adjacent to the former source area.

- *TPHg.* The historical maximum concentration of TPHg was 180,000 µg/L, measured in the sample collected from former monitoring well MW-3, located in the source area within the former excavation, during the December 1997 sampling event. The maximum concentration during the most recent sampling event (December 2012) was 3,900 µg/L in the sample collected from MW-12.

- *Benzene.* The historical maximum concentration of benzene was 12,000 µg/L, measured in the sample collected from monitoring well MW-6, located on-site to the east of the former excavation area, during the December 1997 sampling event. The maximum concentration during the most recent sampling event (December 2012) was 850 µg/L in the sample collected from MW-12.

- *Toluene.* The historical maximum concentration of toluene was 16,000 µg/L, measured in the sample collected from monitoring well MW-3, located in the source area within the former excavation, during the October 1996 and December 1997 sampling events. The maximum concentration during the most recent

sampling event (December 2012) was 38 µg/L in the sample collected from MW-12.

- *Ethylbenzene.* The historical maximum concentration of ethylbenzene was 4,600 µg/L, measured in the sample collected from former monitoring well MW-3, located in the source area within the former excavation, during the December 1997 sampling event. The maximum concentration during the most recent sampling event (December 2012) was 34 µg/L in the sample collected from MW-12.

- *Total xylenes.* The historical maximum concentration of total xylenes was 23,000 µg/L, measured in the sample collected from former monitoring well MW-3, located in the source area within the former excavation, during the December 1997 sampling event. The maximum concentration during the most recent sampling event (December 2012) was 29 µg/L in the sample collected from MW-12.

- *MTBE.* The historical maximum concentration of MTBE was 2,400 µg/L, measured in the sample collected from former monitoring well MW-8, located in the source area within the former excavation, during the June 1998 sampling event. The maximum concentration during the most recent sampling event (December 2012) was 43 µg/L in the sample collected from MW-9, located to the west of the former source area.

- *TBA.* The historical maximum concentration of TBA was 65 µg/L, measured in the sample collected from monitoring well MW-6, located on-site to the east of the former excavation area, during the June 2012 sampling event (TBA was not analyzed as part of groundwater monitoring until December 2010). The maximum concentration during the most recent sampling event (December 2012) was 58 µg/L in the sample collected from MW-6.

Data from the most recent monitoring event (December 2012) are presented on Figure 4. Delineation of dissolved-phase COPCs is discussed below.

Total Petroleum Hydrocarbons as Diesel Delineation

- TPHd groundwater impacts are delineated to the north by monitoring wells MW-4 and MW-5B, both located along the northern site boundary. During the most recent monitoring event (December 2012), TPHd was detected at concentrations of 90 µg/L and 61 µg/L, respectively.

- TPHd is delineated to the east by monitoring well MW-1 and MW-6. Due to insufficient water available for sampling in MW-1, this well has not been sampled since June 2011. TPHd was not detected in MW-1 during this sampling event. TPHd has not exceeded the WQO since June 2010 (TPHd was detected at a concentration of 340 µg/L in June 2010). In MW-6, upgradient to the southeast, TPHd was detected at 100 µg/L during the most recent sampling event (December 2012), which meets the WQO for TPHd.

- TPHd is delineated to the south by monitoring wells MW-7 and MW-11. During the most recent sampling event (December 2012), TPHg was not detected in either of these monitoring wells.

- TPHd is delineated to the west by monitoring well MW-9 and MW-10 located along the western site boundary and west of the former excavation area. During the December 2012 monitoring event, TPHd was not detected in MW-9, and detected at 100 µg/L in MW-10, which meets the WQO.

Total Petroleum Hydrocarbons as Gasoline Delineation

- TPHg groundwater impacts are delineated to the north by monitoring wells MW-4 and MW-5B, both located along the northern site boundary. During the most recent monitoring event (December 2012), TPHg was not detected in MW-4 and MW-5B.

- TPHg is delineated to the east by monitoring well MW-1. Due to insufficient water available for sampling in this well, this well has not been sampled since June 2011. TPHg was not detected in MW-1 during this sampling event. TPHg has not exceeded the WQO since September 2008 (TPH was detected at 190 µg/L, which is slightly above the WQO for TPHg). However, TPHg exceeds the WQO in MW-6 located upgradient to the southeast. TPHg was detected at a concentration of 2,100 µg/L. As described in Section 3.7, the linear regression analysis indicates a significantly decreasing trend, with a projected year of 2023 to meet the screening level in MW-6.

- TPHg is delineated to the south by monitoring wells MW-7 and MW-11. During the most recent sampling event (December 2012), TPHg was not detected in either of these monitoring wells.

- TPHg is delineated to the west by monitoring well MW-9 located along the western site boundary and west of the former excavation area. TPHg was not detected in this well during the December 2012 monitoring event. To the southwest in MW-10, TPHg is detected at 340 µg/L, which exceeds the WQO. As described in Section 3.7, the linear regression analysis indicates a decreasing trend (non-significant).

Benzene Delineation

- Benzene groundwater impacts are delineated to the north by MW-4 and MW-5B, located along the northern site boundary. During the most recent monitoring event (December 2012), benzene was not detected in MW-4 and MW-5B.

- Benzene is delineated to the east by monitoring well MW-1. Due to insufficient water available for sampling in this well, this well has not been sampled since June 2011. Benzene was not detected in MW-1 during this sampling event. Benzene has not exceeded the WQO since December 2001 (benzene was detected at 1.7 µg/L, which is slightly above the WQO). However, benzene exceeds the WQO in MW-6 located upgradient to the southeast. Benzene was detected at a concentration of 460 µg/L. As described in Section 3.7, the linear regression analysis indicates a significantly decreasing trend, with a projected year of 2027 to meet the screening level in MW-6.

- Benzene is delineated to the south by monitoring wells MW-7 and MW-11. During the most recent sampling event (December 2012), benzene was not detected in either of these monitoring wells.

- Benzene is delineated to the northwest by monitoring well MW-9 located along the western site boundary and east of the former excavation area and the southwest by monitoring well MW-10. Benzene was not detected in either of these wells during the December 2012 monitoring event.

Toluene Delineation

- Toluene concentrations in groundwater did not exceed the WQO for the site for toluene (150 µg/L).

Ethylbenzene Delineation

- Ethylbenzene concentrations in groundwater did not exceed the WQO for the site for ethylbenzene (300 µg/L).

Total Xylenes Delineation

- Total xylenes concentrations in groundwater did not exceed the WQO for the site for total xylenes (1,750 µg/L).

MTBE Delineation

- MTBE groundwater impacts are delineated to the north by MW-4, located along the northern site boundary. During the most recent monitoring event (December 2012), MTBE was not detected in MW-4. However, In MW-5B, also located along the northern site boundary, MTBE was detected at 14 µg/L, which slightly exceeds the WQO of 13 µg/L. As described in Section 3.7, the linear regression analysis indicates a significantly decreasing trend, with a projected year of 2010 to meet the screening level in MW-5B based on the trend using groundwater monitoring data from December 2002 through December 2012.

- MTBE is delineated to the east by monitoring well MW-1 and MW-6. MTBE was not detected in MW-6 during the December 2012 sampling event. Due to insufficient water available for sampling in MW-1, this well has not been sampled since June 2011. MTBE has not exceeded the WQO in MW-1 since March 2000 at a concentration of 21.5 µg/L.

- MTBE is delineated to the south by monitoring wells MW-7 and MW-11. During the most recent sampling event (December 2012), MTBE was not detected in either of these monitoring wells.

- MTBE is delineated to the southwest by monitoring well MW-10 located along the western site boundary and west of the former excavation area. MTBE was not detected in MW-10 during the December 2012 monitoring event. However, to the northwest in MW-9, MTBE is detected at a concentration of 43 µg/L. As described in Section 3.7, the linear regression analysis indicates a significantly stable trend.

Tertiary-Butyl Alcohol Delineation

- TBA groundwater impacts are delineated to the north by MW-4 and MW-5B, located along the northern site boundary. During the most recent monitoring event (December 2012), TBA was not detected in MW-4 and MW-5B.

- Delineation of TBA is incomplete to the east. TBA has never been analyzed in groundwater collected from MW-1. Upgradient, to the southeast, in MW-6, TBA was detected at a concentration of 58 µg/L. As described in Section 3.7, there are not sufficient data points to complete a linear regression analysis for TBA in MW-6.

- TBA is delineated to the south by monitoring wells MW-7 and MW-11. During the most recent sampling event (December 2012), TBA was not detected in either of these monitoring wells.

- TBA is delineated to the southwest by monitoring well MW-10 located along the western site boundary and west of the former excavation area. TBA was not detected in MW-10 during the most recent monitoring event (December 2012). To the northwest in MW-9, TBA was detected at 16 µg/L, which slightly exceeds the WQO for TBA. As described in Section 3.7, there are not sufficient data points to complete a linear regression analysis for TBA in MW-9.

3.6.3.1 Recent Grab Groundwater Results

Nine grab groundwater samples were collected from temporary wells for chemical analysis. Analytical data are presented in Table 6. Grab groundwater samples were collected from similar locations as the soil sample collection locations presented in Figure 5. A detailed evaluation of the grab groundwater data is provided in the Site Assessment Report (ARCADIS 2012c).

Grab groundwater results within the former source area (DP-4 and DP-6) indicate that exceedances to the WQO remain in this area, likely originating from residual source material. To a lesser degree, exceedances of TPHg and TBA are present at DP-5, located adjacent to MW-6.

3.6.4 Soil Vapor

In July 2012, ARCADIS conducted soil vapor sampling at vapor probe locations SV-1, SV-2, and SV-3, each of which contains a shallow (S) probe at 5 ft bgs and a deep (D) probe at 10 ft bgs (Figure 10).

3.6.4.1 Investigative Methods

Soil vapor samples were collected as described in Site Assessment Report (ARCADIS 2012c).

A total of 4 of the 6 vapor probes were sampled (ARCADIS 2012c). Two locations, SV-1D and SV-2D, could not be sampled (Figure 10), due to water encountered in the sample tubing during purging or sample collection. The soil vapor samples were analyzed for TPHg, BTEX, MTBE, TBA, di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tert-amyl methyl ether (TAME), 1,2-dicholoroethane (1,2-DCA), ethylene dibromide (EDB), and naphthalene.

3.6.4.2 Soil Vapor Investigation Results

Four soil vapor samples were collected for laboratory analysis. Soil vapor analytical results were compared to the Regional Water Quality Control Board - San Francisco Bay Region (2013) ESLs for soil gas based on commercial and industrial land use sites and California Human Health Screening Levels (CHHSLs) for soil gas. Results of these comparisons are presented in Table 7 and summarized below:

- TPHg, benzene, toluene, and m,p-xylene were detected at concentrations above laboratory reporting limits in all four soil vapor samples collected during this event. None of these constituents were detected above the applicable ESLs or CHHSLs.

- Ethylbenzene was detected at a concentration above the laboratory reporting limit in a single soil vapor sample (SV-3S) collected during this event. This detection was below the applicable ESLs and CHHSLs.

- o-Xylene was detected at concentrations exceeding the laboratory reporting limit in three of the four soil vapor samples collected during this event. None of these detections were above the applicable ESLs or CHHSLs.

- MTBE, TAME, TBA, ETBE, DIPE, EDB, EDC, and naphthalene were not detected at concentrations above the laboratory reporting in any of the four soil vapor samples collected during this event. No laboratory detection limits exceed ESLs or CHHSLs for the constituents that have established screening levels.

Analytical data are presented on Figure 10.

3.7 Linear Regression Analysis and Plume Stability

A statistical analysis of the historical groundwater monitoring data was completed to assess trends in COPC concentrations with time. Concentration vs. time charts were created, and a linear regression trend test was utilized to evaluate the statistical significance of both increasing and decreasing COPC concentration trends (Appendix B). This statistical analysis was based on a review of the available historical groundwater monitoring data since the soil excavation was completed in 2001 (June 2002 through December 2012) for five of the monitoring wells (MW-5, MW-6, MW-9, MW-10, MW-12), which are currently sampled as part of the semiannual monitoring events and that contain concentrations of COPCs exceeding WQOs. Monitoring well and COPC combinations were deemed appropriate candidates for a linear regression trend analysis if:

1. Concentrations were above laboratory reporting limits for at least 75 percent of the monitoring history, and

2. WQO exceedances were observed during at least one-half of the monitoring events during the last three years of monitoring, or in at least one-half of the last 12 samples collected.

The monitoring locations and location of selected specific COPCs for which the linear regression analyses were performed are listed in the table below.

Well	COPC
MW-5B	MTBE
MW-6	TPHd, TPHg, benzene
MW-9	MTBE
MW-10	TPHd, TPHg, benzene
MW-12	TPHd, TPHg, benzene

3.7.1 Linear Regression Methodology

Linear regression analyses using natural log-normalized concentration data were conducted to estimate trend direction, attenuation rates, and approximate time to achieve cleanup goals for the selected locations and constituents (USEPA 2002a). Results of the linear regression analyses, including coefficients of determination (R^2 values), p-values of the correlation, and trend directions, are summarized in Table 8; individual analyses are included in Appendix B. The R^2 value is a measure of how well the linear regression fits the site data; R^2 values <0.1 indicate weak model fits, 0.1> R^2 <0.5 indicate moderate model fits, and R^2 >0.5 indicate stronger model fits. The p-value of the correlation provides a measure of the level of significance of the statistical test. Correlations were accepted as significant for p-values less than or equal to 0.05 (95 percent confidence level) and were considered not significant for p-values greater than 0.05. The trend direction was defined as decreasing if the slope of the linear regression was negative and increasing if the slope of the regression was positive.

Where non-detect or qualified values were used in computations, the concentrations were set equal to the laboratory reporting limits or reported value, where available. Use of the laboratory reporting limit for concentrations that were below detection provides a conservative estimate for evaluating the concentration trends through time.

3.7.2 Linear Regression Results

Results of the linear regression analysis are summarized in Table 8, and indicate the following:

- Statistically significant decreasing trends for:
  - TPHd at monitoring wells MW-6;
  - TPHg at monitoring wells MW-6;
  - Benzene at monitoring wells MW-6; MW-10
  - MTBE at monitoring wells MW-5B;
- Statistically significant increasing trends for:
  - TPHg at monitoring wells MW-12 (less than 75% of the analytical data consisted of detected concentrations);
- Statistically significant stable trend for:

  - MTBE at monitoring well MW-9;

- Statistically insignificant decreasing trends for:
  - TPHg at monitoring well MW-10;
- Statistically insignificant increasing trends for:
  - TPHd at monitoring well MW-10;
  - Benzene at monitoring well MW-12;
- No trend for:
  - TPHd at monitoring well MW-12;

A projected date at which the relevant WQO is expected to be reached, based on historical concentration trends, was determined for each statistically significant decreasing trend. Predictions of the time to reach a WQO were not made for statistically insignificant decreasing trends, or for any increasing trends. Concentration trends and projected times to reach WQO are discussed in detail below for each selected COPC.

Total Petroleum Hydrocarbons as Diesel

Results of the linear regression analyses indicate a statistically significant decreasing trend in TPHd concentrations at MW-6, and an increasing (non-significant) trend at MW-10. These wells are located on the eastern and western site boundaries, respectively. During the most recent sampling event (December 2012), concentrations of TPHd in both of these wells met the WQO (100 µg/L). The significantly decreasing concentrations at MW-6 on the eastern site boundaries indicate a stable TPHg plume with gradually decreasing concentrations (Appendix B) in this direction. TPHd concentrations are expected to naturally attenuate within a reasonable time frame; the time to reach the applicable WQO at monitoring well MW-6 is 2018. At MW-10 on the western site boundary, the WQO was met during the most recent sampling event. The increasing trend in MW-10 is likely due to increased concentrations detected during the dewatering conducted at the neighboring site in 2007.

The only other location on site that contains TPHd at a concentration above the WQO is at MW-12. At this location, the linear regression analysis indicates no trend. TPHd does not exceed the WQO at any of the remaining wells on site.

Total Petroleum Hydrocarbons as Gasoline

Results of the linear regression analyses indicate a statistically significant decreasing trend in TPHg concentrations at MW-6 and a decreasing (non-significant) trend at MW-10. These wells both contain WQO exceedances for TPHg; these wells are located on the eastern and western site boundaries, respectively. MW-12 contains a significant increasing trend; however this well is not located at the property boundary and is located within the former excavation area. The significantly decreasing concentrations at MW-6 and MW-10 on the eastern and western site boundaries indicate a stable TPHg plume with gradually decreasing concentrations (Appendix B). Based on the linear regression analysis at MW-6, TPHg concentrations are expected to naturally attenuate within a reasonable time frame; the time to reach the applicable WQO at monitoring well MW-6 is 2023. At MW-10, the decreasing trend is not significant; therefore a projected year to reach the WQO is not given.

Benzene

Results of the linear regression analyses indicate a statistically significant decreasing trend in MW-6, located on the eastern site boundary and at MW-10, located on the western site boundary. Based on the linear regression analysis at MW-6, benzene is

expected to naturally attenuate within a reasonable time frame; the time to reach the applicable WQO at monitoring well MW-6 is 2027. Benzene was not detected at MW-10 during the most recent groundwater monitoring event; however there have been exceedances of the WQO for benzene in the last three years. The linear regression indicates a significantly decreasing trend in MW-10.

The only other location on site that contains benzene at a concentration above the WQO is at MW-12. At this location, the linear regression analysis contains an increasing trend (non-significant). Benzene is not detected at any of the remaining wells on site.

MTBE

Results of the linear regression analyses indicate a statistically significant decreasing trend in MW-5B, located on the northern site boundary. Based on the linear regression analysis at MW-5B, MTBE is expected to reach the applicable WQO at monitoring well MW-5B is 2010, indicating that the recent MTBE concentration of 14 µg/L is elevated compared to the recent trend.

The only other location on site that contains MTBE at a concentration above the WQO is at MW-9. At this location, the linear regression analysis contains a significantly stable trend. MTBE is not detected at any of the remaining seven wells on site. The linear regression analysis indicates that the MTBE plume is stable and/or decreasing in nature.

Tertiary-Butyl Alcohol

TBA analysis of ground water samples has only been conducted three times, beginning October 2011. Consequently, there is not enough TBA data available to complete a linear regression analysis for TBA at the site.

3.8 Assessment of Impacts of Residual Constituents on Public Health and the Environment

Based on the assessment of data presented in this CSM and Closure Request, the residual concentrations of COPCs in site environmental media are unlikely to pose adverse effects to human health and the environment. This section summarizes sensitive receptors observed near the site, as well as a water supply well survey,

potential exposure pathways, and comparison of residual COPC concentrations in site media to human health risk-based screening levels.

3.8.1 Sensitive Receptors and Water Supply Well Survey

The site is bounded on the west by Broadway, to the south by 38th Street, to the east by second-story residential apartments with first-story carports and to the north by commercial and residential buildings. The site is an active service station and automobile repair shop. Current site features include a station building, automobile repair building, fuel dispenser islands and an underground storage tank (UST) complex.

According to information available online in ZIMAS (ZIMAS 2013), the site is currently zoned as Community Commercial (CC-2). There are no current plans to redevelop the site and it is expected to remain commercial, i.e., an active service station, in the future.

Groundwater beneath the site has historically ranged from approximately 13 feet to 34 feet bgs. Groundwater elevation beneath the site was significantly influenced in 2007 and 2008 due to local dewatering associated with Kaiser Permanente construction across Broadway. Since December 2010, DTW measurements have ranged from 17.37 to 29.58 feet bgs, and have been at an average of 23.40 feet bgs.

The East Bay Municipal Utility District currently supplies water to the site and surrounding properties and is expected to provide water to these areas in the future. Groundwater beneath the site is not currently used as a potable source and is not expected to be used as a drinking water source in the future. As described in Section 3.1, the well search conducted by Alameda County indicated that two irrigation wells were located within one-quarter mile of the Site. These wells are located at 4082 Piedmont Ave and 360 42nd Street and are located approximately 1,570 ft east and 1,940 ft north of the Site. Based on recent groundwater flow direction (December 2012), these wells are not located downgradient of the site. The well search indicated that these wells are 65 ft deep and 198 ft deep respectively.

The well search conducted by CA DWR only identified the well located at 4082 Piedmont Ave; this well was designated as a domestic well. The irrigation well located at 360 42nd Street (identified in the Alameda County well search) was not identified by CA DWR. No other wells identified for production or domestic use were indentified in this well search.

The site is devoid of ecological habitat and surface water and is expected to remain the same in the future. Glen Echo Creek is located approximately 1,500 feet south of the site. As described in Section 3.1, groundwater flow varies, but is typically to the west, north, and south. South of the source area (toward Glen Echo Creek), COPCs are not detected in MW-7 and MW-11. The nearest surface water body is Lake Merritt, located approximately 1.3 miles to the south of the site. Therefore, it is anticipated that ecological receptors are absent from the site and will continue to remain absent in the future.

3.8.2 Previous Health Assessments

In 2012, ARCADIS performed a soil gas survey on the site. The purpose of the survey was to evaluate site-specific potential human health risks to current or future commercial or industrial workers on and off site as a result of vapor migration.

An evaluation of soil vapor analytical data concluded that there were no potential health risks to current or future commercial or industrial workers on and off site as a result of vapor migration (ARCADIS 2012c).

3.8.3 Potential Transport and Release Mechanisms and Receptors

This section discusses the potential transport and release mechanisms and receptors at the site.

3.8.3.1 Volatilization

A potential release mechanism at the site may include volatilization of COPCs in subsurface soil to outdoor air or air within a trench use by a future on-site and off-site utility worker.

In many petroleum release cases, potential human exposures to petroleum vapors migrating from soil or groundwater to indoor air are mitigated by bioattenuation processes as vapors migrate toward the ground surface. Given that there is no NAPL in site soils (based on evaluation of boring and well installation logs); that no NAPL has been observed in groundwater since 2000 (NAPL was observed in former MW-2 prior to excavation and soil removal), the potential for vapor migration into offsite buildings is low. Therefore, the exposure pathway for inhalation of indoor air from volatilization of groundwater COPCs is likely incomplete for current and future off-site commercial workers and residents. Based on the results of recent sampling, the exposure pathway

for inhalation of trench air from volatilization of soil and groundwater COPCs is potentially complete for future on-site utility workers.

Although COPCs may volatilize from subsurface soil and/or groundwater to outdoor air and may be inhaled by potential onsite or offsite receptors, this exposure pathway is insignificant given atmospheric dilution effects. Additionally, soil vapor samples were collected and analyzed for COPCs, as described in Section 3.6.4. None of the samples contained detections of COPCs above the applicable ESLs and CHHSLs.

3.8.3.2 Leaching to Groundwater

Petroleum hydrocarbons that were released from former USTs and associated piping may leach from soil to groundwater. This release mechanism is likely responsible for the majority of historical groundwater impacts and may still be contributing to the fluctuating groundwater concentrations detected in MW-12 beneath the former excavation area. However, general decreasing and/or stable petroleum hydrocarbon trends in groundwater are observed at the property boundaries (Section 3.7) and indicate that this release mechanism has likely been mitigated through remediation (excavation), and natural attenuation.

3.8.3.3 Direct Contact with Groundwater

As described in Section 3.9.1, groundwater at the site and surrounding properties is currently not used as a potable source and is not expected to be used as a drinking water source in the future. Drinking water is supplied by East Bay Municipal Utility District. Therefore, potential direct contact exposures to COPCs in groundwater, such as tap water ingestion, dermal contact with tap water, and inhalation of volatile organic compounds released from tap water, are not expected to occur for current and future off-site commercial workers and residents

In the future, on-site utility workers may be directly exposed to groundwater while performing routine utility activities in subsurface trenches. Typically, utility trenches are located at a depth of no greater than 8 ft bgs. Since 2010, the depth to groundwater ranged from approximately 17 to 30 ft bgs (local dewatering associated with neighboring construction significantly influenced groundwater elevations prior to 2010). In general, at construction sites when groundwater is exposed, dewatering occurs or workers are not required to work in standing water. Thus, it is unlikely that future on-site utility workers will be directly exposed to COPCs in groundwater that has pooled in a trench.

3.8.3.4 Direct Contact with Soil

Given that the site contains structures and is completely covered with paving, it is anticipated that current and future on-site visitors and off-site commercial workers and residents will not exposed to constituents in soil via direct contact exposure pathways (i.e., incidental ingestion, dermal contact, and inhalation of particulates, including particulates generated by wind erosion and transported offsite). However, direct contact exposure pathways are potentially complete for future on-site utility workers who may contact subsurface soil in a utility trench.

3.8.3.5 Potential Ecological Receptors

Because the site is devoid of ecological habitat and surface water is absent, it is reasonable to assume that ecological receptors are absent from the site and will not be present in the future. Furthermore, the closest stream is Glen Echo Creek, located approximately 1,500 feet south of the site, and the nearest surface water body is Lake Merritt, located approximately 1.3 miles to the south of the site. Based on this information, potential exposure pathways for ecological receptors are incomplete.

3.8.4 Summary of Potential Exposure Pathways

Potential receptors were identified based on current and future land use(s) and zoning at the site. As discussed previously, redevelopment of the site is not currently planned and it is expected to remain an active service station and asphalt-paved lot. Potential human receptors at the site include commercial workers and future onsite utility workers.

Based on the information presented in the previous sections, the following potential exposure pathways may be complete for the site:

Current and Future On- and Off-Site Commercial Workers

- Inhalation of vapors migrating from the subsurface (i.e., groundwater) into buildings

Future On-Site Utility Workers

- Incidental ingestion of surface and subsurface soil
- Dermal contact with surface and subsurface soil

- Inhalation (outdoor air) of dust particles
- Inhalation (trench air) of vapors

3.8.5 Comparisons with Human Health Risk-Based Screening Levels

Based on the potentially complete exposure pathways described in Section 3.8.4, the most recent on-site soil (June 2012) and on-site groundwater (December 2012) analytical data collected at the site were compared with human health risk-based environmental screening levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB 2013). The ESLs were developed using USEPA and Cal/EPA Department of Toxic Substances Control (DTSC) human health risk assessment methodologies. Under most circumstances, it can be assumed that the presence of a chemical in soil or groundwater at concentrations below the corresponding ESL does not pose an unacceptable risk to human health.

As summarized in the tables below, the maximum detected concentrations of COPCs in groundwater collected in December 2012 and in soil at 0 to 10 ft bgs collected in 2012 are well below human health risk-based ESLs for potentially complete exposure pathways at the site, with the exception of benzene in groundwater. However, as described in Section 3.6.4, concentrations of benzene in soil vapor samples are below the applicable ESLs.

An evaluation of soil vapor analytical data concluded that there were no potential health risks to current or future commercial or industrial workers on and off site as a result of vapor migration (ARCADIS 2012c).

Table A

Maximum Detected COPCs in Groundwater and Comparison to Human Health Based ESLs

Detected Groundwater Constituent	Current Maximum Concentration (December 2012) (µg/L)	Groundwater ESLs for Evaluation of Potential Vapor Intrusion Concerns– Residential Land Use (µg/L) [1]	Groundwater ESLs for Evaluation of Potential Vapor Intrusion Concerns– Commercial Land Use (µg/L) [1]
TPHd	120	NA	NA
TPHg	3,900	NA	NA
Benzene	850	27	270
Toluene	38	95,000	NA
Ethylbenzene	34	310	3,100
Total Xylenes	29	37,000	NA
MTBE	43	9,900	100,000
TBA	58	NA	NA

Notes:

NA = Not available

MTBE = Methyl tert-butyl ether

TPHg = Total petroleum hydrocarbons gasoline range organics

TBA = Tert-butyl alcohol

1. As defined in Table E-1 (SFBRWQCB 2013) for fine-course soil mixtures.

Table B

Maximum Detected COPCs in Soil and Comparison to Human Health Based ESLs

Detected Soil Constituent	Maximum Concentration (0-10 ft bgs) (mg/kg) [1]	Soil ESLs for Direct Exposure – Construction/Trench Worker Exposure Scenario (mg/kg) [2]
TPHd	10	12,000
TPHg	91	6,200
Ethylbenzene	0.57	28
Total Xylenes	2.6	1,500

Notes:

1. Includes data from three 2012 on-site soil borings collected from 3.5 – 4 ft bgs (DP-1), 6.5 – 7.5 ft bgs (DP-5), and 10 – 10.5 ft bgs (DP-2).
2. As defined in Table K-3 (SFBRWQCB 2013) as field screening level

4. Assessment of Site Conditions Relative to Low-Threat Closure Policy

On July 31, 2012, the Low-Threat Closure Policy issued by the State Water Board was adopted by the Office of Administrative Law. This policy outlines eight General Criteria to assess whether sites are candidates for low-threat case closure and three categories of Media-Specific Criteria that also must be met. Current site conditions provided herein are evaluated against the corresponding General Criteria and Media-Specific criteria. Based on this evaluation, ARCADIS concludes that the site meets the requirements for low-threat case closure.

4.1 Evaluation of Low-Threat Closure General Criteria

4.1.1 Criteria A – The unauthorized release is located within the service area of a public water system

As described in Section 3.8, the groundwater in this area is provided by East Bay Municipal Utility District and groundwater is not used for drinking.

4.1.2 Criteria B – The unauthorized release consists only of petroleum.

As described in Section 2.0, a service station historically operated at the site. Based on a review of relevant documentation and the data summarized in this report, impacts

to soil and groundwater resulted from an undocumented release of fuel hydrocarbons and oxygenates from the former service station USTs (two 6,000 gallon USTs and one 500 gallon waste oil UST), which were removed in February 1980 and May 1991. Aside from this petroleum release, no other releases (petroleum or non-petroleum) have been reported.

4.1.3 Criteria C – The unauthorized release has been stopped

The former USTs were excavated and removed from the site in 1980 and 1991. Based on these activities, the potential unauthorized release of petroleum hydrocarbons from an onsite source does not exist.

4.1.4 Criteria D – Free product has been removed to the Maximum Extent Practicable

NAPL has not been observed since November 2000. NAPL was present in former monitoring well MW-2 prior to the excavation and soil removal that was conducted in 2000.

4.1.5 Criteria E – A conceptual site model has been developed

Section 3 of this report provides the current CSM updated with the most recent data collected at the site.

4.1.6 Criteria F – Secondary source removal has been addressed

Secondary source removal has been addressed through soil excavation conducted in 2000. As described in Section 3.4, the area was excavated to 22 ft bgs. Approximately 1,400 cu yd of petroleum hydrocarbon impacted soil were excavated and disposed of off-site.

4.1.7 Criteria G – Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15.

Both soil and groundwater samples have been analyzed for MTBE. In groundwater, during the most recent monitoring event, MTBE was detected in MW-5B and MW-9, at concentrations of 14 µg/L and 43 µg/L, respectively. In soil, MTBE was detected in two of the soil samples collected in 2000, following completion of the excavation. MTBE was detected at concentrations of 4.2 µg/kg and 0.3 µg/kg, at depths of 20 ft bgs and

22 ft bgs, respectively. During the most recent soil sampling conducted in June 2012, MTBE was not detected in any of the soil samples collected.

4.1.8 Criteria H – Nuisance as defined by Water Code section 13050 does not exist at the site

Remaining fuel hydrocarbons and oxygenates are not injurious to health, offensive to the sense, and will not obstruct the use of the property or surrounding neighborhood and therefore are not a nuisance.

4.2 Evaluation of Low-Threat Closure Media-Specific Criteria

The following sections describe how the site meets the Media Specific Criteria outlined in the Low-Threat Closure Policy.

4.2.1 Groundwater

Site groundwater does not currently pose a risk to the existing or anticipated future beneficial uses of groundwater and meets the groundwater specific criteria as outlined by the Low-Threat Closure Policy. The Low-Threat Closure Policy states that "the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites" (State Water Board 2012a). The following section summarizes the plume stability and additional groundwater specific criteria.

4.2.1.1 Plume Stability

Groundwater monitoring data and the linear regression analysis (Section 3.7) show that the groundwater plume is stable. According to the Technical Justification for Groundwater Media-Specific Criteria (State Water Board 2012b), plume stability can be demonstrated in one of two ways: 1) "routinely observe non-detect values for groundwater parameters in down-gradient wells" or 2) "to show stable or decreasing concentration levels in down-gradient wells." As described in Section 3.1, the groundwater flow direction is to the north, west, and south, indicating that groundwater flow directions vary. Plume stability is demonstrated by the results of the linear regressions in monitoring wells at the property boundaries in the west and east directions from the former source area. WQOs for COPCs at the northern and southern site boundaries are generally not exceeded.

- At the property boundaries, TPHd meets the WQO in all directions. To the east and west (MW-6 and MW-10), the significantly decreasing concentrations at MW-6 on the eastern site boundaries indicate a stable TPHg plume with gradually decreasing concentrations in this direction. TPHd concentrations are expected to naturally attenuate within a reasonable time frame; the time to reach the applicable WQO at monitoring well MW-6 is 2018. At MW-10 on the western site boundary, the increasing trend in MW-10 is likely due to increased concentrations detected during the dewatering conducted at the neighboring site in 2007. The WQO was met in MW-10 for TPHd during the December 2012 sampling event.

- The significantly decreasing TPHg concentrations at MW-6 and MW-10 on the eastern and western site boundaries indicate a stable TPHg plume with gradually decreasing concentrations. Based on the linear regression analysis at MW-6, TPHg concentrations are expected to naturally attenuate within a reasonable time frame.

- Results of the linear regression analyses for benzene indicate a statistically significant decreasing trend in MW-6, located on the eastern site boundary and at MW-10, located on the western site boundary. Additionally, benzene was not detected at MW-10 during the most recent groundwater monitoring event.

- Results of the linear regression analyses for MTBE indicate a statistically significant decreasing trend in MW-5B, located on the northern site boundary. The only other location on site that contains MTBE at a concentration above the WQO is at MW-9. At this location, the linear regression analysis contains a significantly stable trend.

- TBA has only been analyzed during the last three monitoring events. TBA is only typically detected in one monitoring well (MW-6 on the eastern boundary). TBA is detected slightly above the WQO in MW-6.

4.2.1.2 Additional Groundwater Specific Criteria

As described in the Low-Threat Closure Policy, sites can meet the Groundwater Media-Specific Criteria through five main classes. This site meets Criteria 4, where a) the contaminant plume is less than 1,000 ft in length, b) there is no free product on the site, c) the nearest water supply well is greater than 1,000 ft away, and d) benzene and

MTBE concentrations are both less than 1,000 µg/L (State Water Board 2012a). The site meets these criteria as described in detail below.

- Under groundwater Criteria 4a the contamination plume that exceeds WQO (outlined in Section 3.6.3) must be less than 1,000 ft in length. As described in the Technical Justification for Groundwater Media-Specific Criteria (State Water Board 2012b), the policy defines the length of the plume as "the maximum extent from the point of release of any petroleum related constituent in groundwater that exceeds the WQOs and the plume boundary is where the constituent(s) furthest from the point of release concentration level equals the WQOs."

  Based on recent data (Figure 4), delineation is not complete to the east (MW-6) and west (MW-10) for TPHg, to the east (MW-6) for benzene, to the west (MW-9) for MTBE, and to the west and east for TBA (MW-9 and MW-6, respectively). However, in most cases, the linear regression analysis indicates significantly decreasing trends in these wells for these COPCS.

- Site requirements listed under Criteria 4b of the groundwater section state that there must be no free product. As described in Section 3.6.2, measureable free product has not been observed in monitoring wells onsite since November 2000.

- Site requirements listed under Criteria 4c of the groundwater section state that the nearest existing water supply well or surface water body must be greater than 1,000 ft from the defined plume boundary. According to the well survey, no wells are located within 1,000 ft of the site (see Section 3.1)

- Site requirements listed under Criteria 4d of the groundwater section state that the dissolved concentration of benzene must be less than 1,000 µg/L and the dissolved concentration of MTBE must be less than 1,000 µg/L. During the last sampling event in December 2012, the maximum concentration of benzene was 850 µg/L and the maximum concentration of MTBE was 43 µg/L.

4.2.2 Vapor Intrusion to Indoor Air

The Low-Threat Closure Policy states that sites shall satisfy the Media-Specific Criteria for the vapor-intrusion-to-indoor-air pathway if 1) "site-specific conditions at the release site satisfy all of the characteristics and screening criteria of scenarios 1 through 3, or all of the characteristics and screening criteria of scenario 4 as applicable or 2) a site-specific risk assessment for the vapor intrusion pathway is conducted and

demonstrates that human health is protected to the satisfaction of the regulatory agency" (State Water Board 2012a). This site meets the second criteria because none of the detected COPCs in soil vapor samples collected by ARCADIS in June 2012 exceeded the Commercial/Industrial ESLs or CHHSLs (Section 3.6.4.2). In addition, maximum soil vapor concentrations of benzene, ethylbenzene and naphthalene were below soil gas criteria presented in Appendix 4 of the Low-Threat Closure Policy assuming no bioattenuation zone for a site with engineered fill below sub-slab.

4.2.3 Direct Contact and Outdoor Air Exposure

Sites will meet the Media-Specific Criteria for direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air if 1) the maximum concentrations of COPCs in soil are less than or equal to those listed in Table 1 of the Low-Threat Closure Policy, 2) a site-specific risk assessment shows that COPCs present in soil will not adversely affect human health, or 3) exposure to COPCs is mitigated through engineering controls (State Water Board 2012a).

Based on the potentially complete direct contact exposure pathways described in Section 3.8.4, site soil data collected from 0 to 10 ft bgs were compared with utility worker criteria presented in Table 1of the policy; this site meets the first Media-Specific criterion listed for direct contact with soil.

Moreover, as described in Section 3.8.5, residual concentrations of COPCs in soil are not expected to pose adverse health effects to future onsite utility workers based on comparison with human health risk-based ESLs for construction worker direct contact exposure pathways.

5. Recommendations

Based on the evaluation of the site information and data presented in the CSM and the results from the comparison of the site information and data against closure criteria (Section 4.2) set forth in the newly adopted Low-Threat Closure Policy, ARCADIS recommends that the site be closed.

Available data from the site suggest that the site is adequately characterized. Additionally, the site appears to be a candidate for closure as a low-risk fuel site as described in the State Water Board Low-Threat Closure Policy (2012a). An evaluation of the site data indicates that both the general and applicable media-specific criteria are satisfied according to the measures within State Water Board Low-Threat Closure

Policy, and therefore, the leaking UST case is generally considered to present a low threat to human health, safety, and the environment:

- Petroleum hydrocarbon sources, including free product and other potential secondary sources, have been removed to the extent practical.

- Current groundwater concentrations are: TPHd ranging from below detection (<48 µg/L) to 120 µg/L, TPHg ranging from below detection (<50 µg/L) to 3,900 µg/L, benzene ranging from below detection (<0.50 µg/L) to 850 µg/L, MTBE ranging from below detection (<0.50 µg/L) to 43 µg/L, and TBA ranging from below detection (<10 µg/L) to 58 µg/L. Based on the groundwater data collected at the site boundaries, the concentrations of COPCs (TPHd, TPHg, benzene, and MTBE) appear to be non-detectable, significantly decreasing, or stable. TBA trends were not able to be evaluated due to limited data.

- The site has been adequately characterized.

- The dissolved TPHd, TPHg, benzene, MTBE, and TBA plumes exhibit relatively low and/or decreasing concentrations.

- No sensitive receptors are likely to be impacted, including surface-water bodies, municipal wells and drinking water sources based on the limited historical extent of the dissolved TPHd, TPHg, benzene, MTBE, and TBA plumes and plume stability.

- Residual concentrations of COPCs in site environmental media are not expected to pose adverse effects to human health or the environment.

ARCADIS recommends that a status of no further action be received, and the site be granted regulatory closure. Suspension of groundwater monitoring and reporting is also recommended during the case closure evaluation process. A work plan for monitoring well destruction and decommissioning will be prepared following the case closure evaluation process and upon site closure approval from the ACEH

Groundwater data, as presented in this report, support a conclusion that the site and the impacted groundwater pose no significant threat to human health or the environment. Therefore, effective immediately, Chevron shall cease groundwater monitoring and sampling activities pending a response and further direction from the ACEH.

6. References

ACEH 2012. *Closure Transmittal, Kaiser Development / Val Strough Honda, Oakland, California*. Alameda County Environmental Health Department. November 7.

ACEH 2013. *Case Closure for Shell No. 13-5676, Oakland, California*. Alameda County Environmental Health Services Department. January 23.

Alameda County Environmental Health. 2012. Conditional Approval of Work Plan, Fuel Leak Case No. RO0000056 and GeoTracker Global ID T0600101108, Chevron #21-1283 / Express Auto Clinic, 3810 Broadway, Oakland, CA 94611. May 10, 2012, revised June 20, 2012.

ARCADIS. 2012. *Work Plan for Soil Vapor, Soil, and Groundwater Investigation*, Former Texaco Service Station No. 21-1283, 3810 Broadway, Oakland, California, Fuel Leak Case No. RO0000056. March 16, 2012.

ARCADIS. 2012b. *First Semi-Annual 2012 Monitoring Report, Union Oil of California No. 0746, Oakland, California.* Former Texaco Service Station No. 21-1283, 3810 Broadway, Oakland, California, Fuel Leak Case No. RO0000056. July 15.

ARCADIS. 2012c. *Site Assessment Report*. Former Texaco Service Station No. 21-1283, 3810 Broadway, Oakland, California, Fuel Leak Case No. RO0000056. September 10.

California Environmental Protection Agency. 2005. Use of California Human Health Screening Levels in Evaluation of Contaminated Properties. January 2005.

California Environmental Protection Agency. 2009. California Human Health Screening Levels for Ethylbenzene, Draft Report. November 2009.

California Regional Water Quality Control Board: San Francisco Bay Region. 2008. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater: Interim Final. November 2007, revised May 2008.

California Department of Public Health. 2013. California Maximum Contaminant Levels. January 30. http://www.cdph.ca.gov/certlic/drinkingwater/Pages/MCLsandPHGs.aspx

CAMBRIA 2007. *Site Investigation and Remedial Excavation Report, Former Chevron Service Station No. 9-1026, Oakland, California*. CAMBRIA Environmental Technology, Inc. January 22.

Conestoga-Rovers & Associates (CRA). 2009a. *Work Plan for Soil Vapor Survey*. Prepared for Chevron Environmental Management Company, Former Texaco Service Station 21-1283, California. June 26, 2009.

CRA. 2009b. *Site Conceptual Model*. Prepared for Chevron Environmental Management Company, Former Texaco Service Station 21-1283, California. June 29, 2009.

CRA 2010. *Case Closure Request, Former Chevron Service Station 9-0517, 3900 Piedmont Avenue, Oakland, California*. October 12.

CRA 2011. *First Quarter 2011 Groundwater Monitoring and Sampling Report, Former Chevron Station No. 9-1026, Oakland, California*. May 23.

CRA 2012. *2012 Annual Groundwater Monitoring Report, Former Chevron Service Station 9-0517, Oakland, California*. March 23.

Delta Environmental Consultants, Inc. (Delta) 2009. *Soil and Groundwater Investigation Report, 76 Service Station No. 0746, Oakland, California*. October 12.

Robertson, P.K., Campanella, R.G., Gillespie, D. and Greig, J. 1986. Use of piezometer cone data. Proceedings of the ASCE Specialty Conference In Situ '86: Use of In Situ Tests in Geotechnical Engineering. ASCE. 1986.

SFRWQCB. 2007. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. November (revised 2008).

SFRWQCB. 2013. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. February. http://www.swrcb.ca.gov/rwqcb2/water_issues/available_documents/ESL_May_2008.pdf.

SOMA Environmental Engineering, Inc. (SOMA) 2012. *First Semi-Annual 2012 Groundwater Monitoring and Interim Remedial Action Report, Former Glovatorium Facility, Oakland, California*. May 1.

State Water Board. 2012a. Low-Threat UST Closure Policy to State Water Board. May 1. (http://www.swrcb.ca.gov/ust/lt_cls_plcy.shtml).

State Water Board. 2012b. Technical Justification for Groundwater Media Specific Criteria. April 24. (http://www.swrcb.ca.gov/ust/docs/gw_tecjust.pdf).

Stellar Environmental Solutions, Inc. (Stellar) 2013. *Dual-Phase Interim Corrective Action Plan for Remediation of Hydrocarbon Contamination Related to Leaking Underground Storage Tanks, Oakland Auto Works, Oakland, California*. February 5.

USEPA. 2002a. Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies. EPA/540/S-02/500, National Risk Management Research Laboratory, Office of Research and Development, Cincinnati, OH. November. www.epa.gov/swerust1/oswermna/mna_epas.htm.

USEPA. 2002b. Region 9 Preliminary Remediation Goals Table. October 1.

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Tables

TABLE 1
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Sample ID	*Date*	*Depth (fbg)*	*TOG*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*1,2-DCA*	*HVOCs*	*Notes*
						Reported in milligrams per kilogram (mg/kg)								
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
Toxichem 2000 Soil Excavation Report														
EX-1	03/07/00	20	---	---	**1,900***	**3,100****	**14**	**92**	**34**	**200**	**4.2**	---	---	Edge of excavation shoring
EX-2	03/07/00	22	---	---	18*	23**	**0.048**	0.40	0.17	1.1	<0.12	---	---	Edge of excavation shoring
EX-3	03/07/00	22	---	---	26*	**230****	**0.80**	**3.2**	2.1	**10**	**0.3**	---	---	Edge of excavation shoring
EX-4	03/07/00	20	---	---	<1*	12**	**0.08**	0.11	0.49	0.13	<0.05	---	---	Edge of excavation shoring
EX-5	03/08/00	20	---	---	<1*	7**	0.019	0.074	0.041	0.22	<0.05	---	---	Edge of excavation shoring
EX-6	03/08/00	20	---	---	26*	**150****	**0.40**	1.4	2.0	**7.9**	<0.25	---	---	Middle of excavation
EX-7	03/08/00	22	---	---	<1*	2**	0.028	0.027	0.018	0.04	<0.05	---	---	Edge of excavation shoring
EX-8	03/08/00	22	---	---	13*	**150****	**0.66**	**4.6**	2.1	**9.5**	<0.25	---	---	Edge of excavation shoring
EX-9	03/08/00	22	---	---	19*	31**	**0.32**	0.18	0.41	1.6	<0.12	---	---	Edge of excavation shoring
EX-10	03/08/00	23	---	---	17*	36**	**0.14**	0.082	0.69	**3.2**	<0.05	---	---	Edge of excavation shoring
S-1	04/27/00	16	---	---	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
S-2	04/27/00	16	---	---	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
S-3	04/27/00	16	---	---	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
S-4	04/27/00	16	---	---	**2,400**	**2,100**	<0.005	<0.005	**7.4**	**40**	<0.05	---	---	Edge of owner's excavation for new UST p
S-5	04/27/00	16	---	---	<1	<1	0.035	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
Toxichem 1998 Additional Site Characterization														
SB-3	07/03/98	14	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	
SB-5	07/03/98	8	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	
SB-6	07/03/98	10	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	0.0087	---	---	---	

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						Reported in milligrams per kilogram (mg/kg)								
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
Toxichem 1998 Additional Site Characterization - Overexcavated in 2000														
SB-1	07/03/98	8	---	---	---	**430**	**28**	**5.0**	**4.8**	**23**	---	---	---	Overexcavated
SB-2	07/03/98	14	---	---	---	**2,900**	**16**	**19**	**54**	**250**	---	---	---	Overexcavated
SB-4	07/03/98	15	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	Overexcavated
Fluor Daniel 1996 Soil and Groundwater Assessment Report														
MW-5	09/19/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	15	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	25	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-6	09/20/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-6	09/20/96	20	---	---	<10	1	0.032	<0.005	<0.005	0.0075	---	---	---	
MW-6	09/20/96	25	---	---	<10	<1	0.027	<0.005	<0.005	<0.005	---	---	---	
MW-6	09/20/96	30	---	---	<10	<1	**0.110**	0.0053	0.0058	0.0094	---	---	---	
MW-6	09/20/96	35	---	---	<10	1.3	<0.005	0.010	0.014	0.120	---	---	---	
MW-7	09/20/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	0.0089	---	---	---	
MW-7	09/20/96	15	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-7	09/20/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-7	09/20/96	30	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-7	09/20/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-8	09/23/96	25	---	---	<10	53	**0.08**	0.63	0.20	1.1	---	---	---	
MW-8	09/23/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	

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						Reported in milligrams per kilogram (mg/kg)								
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
MW-9	09/19/96	5	---	---	62	11	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	10	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	15	---	---	69	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	25	---	---	<10	<1	<0.005	<0.005	<0.005	0.025	---	---	---	
MW-10	09/19/96	30	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
Fluor Daniel 1996 Soil and Groundwater Assessment Report - Overexcavated in 2000														
MW-8	09/23/96	5	---	---	<10	**120**	**0.77**	**3.5**	1.2	**7.3**	---	---	---	Overexcavated
MW-8	09/23/96	10	---	---	<10	**520**	**2.6**	0.66	**5.6**	**10**	---	---	---	Overexcavated
MW-8	09/23/96	15	---	---	53	**14,000**	**25**	**7.1**	**160**	**840**	---	---	---	Overexcavated
McLaren 1996 Supplemental Site Investigation														
B-1	09/11/95	26.5	---	---	---	1.1	**0.27**	0.06	0.018	0.023	---	---	---	
B-2	09/11/95	26.5	---	---	---	<1	<0.005	0.011	<0.005	<0.005	---	---	---	
B-3	09/11/95	27	---	1.3	<1	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
B-4	09/11/95	12.5	---	---	---	83	0.06	<0.005	1.2	**7.2**	---	---	---	In former UST pit
B-4	09/11/95	18	---	---	---	**1,400**	**3.8**	**44**	**18**	**101**	---	---	---	In former UST pit
B-4	09/11/95	26.5	---	<20	<20	1.9	**0.52**	0.078	0.039	0.07	---	---	---	In former UST pit
B-5	09/12/95	29.5	---	---	---	<1	**0.055**	0.009	<0.005	<0.005	---	---	---	
B-6	09/12/95	12.5	---	---	---	<1	<0.005	0.009	<0.005	<0.005	---	---	---	
MW-4	10/26/95	29	---	---	---	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	

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			Reported in milligrams per kilogram (mg/kg)											
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
McLaren 1996 Supplemental Site Investigation - Overexcavated in 2000														
B-1	09/11/95	12.5	---	---	---	**310**	**0.15**	0.29	**6.2**	**31.2**	---	---	---	In former UST pit, overexcavated
B-1	09/11/95	19	---	---	---	**3600**	**33**	**310**	**67**	**361**	---	---	---	In former UST pit, overexcavated
B-2	09/11/95	12.5	---	---	---	3.1	**0.69**	0.11	0.69	0.103	---	---	---	Overexcavated
B-2	09/11/95	16.5	---	---	---	**2,200**	**15**	**120**	**37**	**445**	---	---	---	Overexcavated
B-5	09/12/95	12.5	---	---	---	**4,800**	**48**	**390**	**93**	**466**	---	---	---	Overexcavated
MW-3	10/26/95	8.5	---	---	---	**65,000**	**88**	**550**	**140**	**690**	---	---	---	Overexcavated
MW-3	10/26/95	15.5	---	---	---	1.4	<0.005	0.027	0.0064	0.0265	---	---	---	Overexcavated
MW-3	10/26/95	19.5	---	---	---	6.2	**1.3**	1.5	0.11	0.43	---	---	---	Overexcavated
Kaldveer 1992 Soil and Groundwater Quality Investigation														
MW-2	01/28/92	30	<10	**---**	**---**	<0.2***	<1	<1	<1	<3	**---**	---	**---**	
MW-1	10/17/91	10.5	<10	**---**	**---**	<0.2***	<0.001	<0.001	<0.001	<0.003	**---**	---	**---**	
MW-1	10/17/91	15.5	<10	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	---	**---**	
MW-1	10/17/91	20.5	<10	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	---	**---**	
MW-1	10/17/91	25.5	<10	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	---	**---**	
SEMCO 1991 Tank Removal Report														
#1	05/15/91	8	630	**---**	66	<1	**3**	<3	<3	**13**	**---**	<0.005	ND (b)	
#2	05/15/91	8	83	**---**	<10	<1	<3	<3	<3	<3	**---**	<0.005	ND	
#3	05/15/91	10.5	69	**---**	<10	<1	<3	<3	<3	<3	**---**	<0.005	ND	
#4	05/15/91	10.5	<50	**---**	<10	<1	<3	<3	<3	<3	**---**	<0.005	ND	

TABLE 1
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Soil Analytical Results (May 1991 - March 2000)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Sample ID	Date	Depth (fbg)	TOG	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	1,2-DCA	HVOCs	Notes
			Reported in milligrams per kilogram (mg/kg)											
ESL's - Shallow Soil		---	NE	370	83	83	0.044	2.9	2.3	2.3	0.023	0.0045	0.077a	
ESL's - Deep Soil		---	NE	5,000	83	83	0.044	2.9	3.3	2.3	0.023	0.0045	0.077a	

Notes:

Total oil and grease (TOG) analyzed by EPA Method 5520E and 5520F unless otherwise noted
Total petroleum hydrocarbons as motor oil (TPHmo) analyzed by EPA Method 8015 Modified unless otherwise noted
Total petroluem hydrocarbons as diesel (TPHd) analyzed by EPA Method 8015 unless otherwise noted
Total petroluem hydrocarbons as gasoline (TPHg) analyzed by EPA Method 8015 unless otherwise noted
Benzene, toluene, ethylbenzene and total zylenes analyzed by EPA Method 8020 unless otherwise noted
Methyl tertiary butyl ether (MTBE) analyzed by EPA Method 8020 unless otherwise noted
Halogenated valotile organic compounds (HVOCs) by EPA Method 8015 unless otherwise noted
Environmental Screening Levels (ESL's) for residential land use, groundwater is a current or potential drinking water source from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* prepared by the California Regional Water Quality Control Board - San Francisco Bay Region Interim Final November 2007, revised May 2008 (Tables A-1, C-1)
NE = not established
ND = nto detected above various laboratory method detection limits
--- = not analyzed or applicable
<x = not detected above laboratory method detection limit

a = lowest ESL listed for detected compounds
b= 0.039 mg/kg methylene chloride and 0.008 mg/kg 1,2-Dichlorobenzene
* = Concentrations originally quantified as total extractable petroleum hydrocarbons by EPA Method 8015 Modified
** = Concentrations originally quantified as total purgeable petroleum hydrocarbons by EPA Method 8015 Modified
*** = Samples analyzed for TPHg by EPA Method 5030

TABLE 2
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Well Construction Details
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Well ID	*Date Installed*	*Date Destroyed*	*Well Modifications*	*Well Casing Diameter (inches)*	*Screen Interval (fbg)*	*TOC (ft-msl)*	*Current Condition/ Condition Prior to Destruction*
MW-1	10/17/91	---	SSI	2	10 - 35	86.69	Good
MW-2	10/17/91	March 2000	SSI	2	10 - 35	85.83	Good
MW-3	10/17/91	March 2000	SSI	2	10 - 35	86.69	Good
MW-4	10/26/95	---	None	2	25.5 - 35.5	83.31	Submerged
MW-5B	09/19/96	---	Modified 05/30/02: Screen shortened	2	10 - 30	85.36	Good
MW-6	09/20/96	---	None	2	10 - 35	86.06	Good
MW-7	09/20/96	---	None	2	10 - 35	84.11	Good
MW-8	09/23/96	March 2000	None	2	10 - 35	84.01	Good
MW-9	09/19/96	---	None	2	10 - 35	82.17	Good
MW-10	09/19/96	---	None	2	10 - 35	81.83	Good
MW-11	08/04/00	---	None	2	15 - 40	NA	Good
MW-12	05/30/02	---	None	2	10 - 29.5	84.19	Good

Notes:

TOC = Top of casing
Fbg = Feet below grade
Ft-msl = Feet above mean sea level
-- = Not applicable
NA = Not available

TABLE 3
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (June 1996 - June 2010)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-1													
06/28/96	86.69	21.77	64.92	--	<50	<100	<0.5	<1.0	<1.0	<2.0	--	--	--
10/10/96	86.69	23.26	63.43	--	<400	520	9.2	53	17	70	22	16[1]	--
11/07/96	86.69	23.27	63.42	--	--	--	--	--	--	--	--	--	--
12/18/97	86.69	19.70	66.99	--	<50	2,200	<3.0	<3.0	<3.0	<3.0	<200	--	--
04/06/98	86.69	16.88	69.81	--	<50	1,600	16.4	0.8	<0.5	<0.5	38.3	--	--
06/18/98	86.69	19.78	66.91	--	280	330	7.8	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98	86.69	21.71	64.98	--	150	<50	1.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98	86.69	22.15	64.54	--	130	130	2.3	0.90	<0.5	<0.5	110	13	--
03/24/99	86.69	19.55	67.14	--	305	1,520	11.7	<2.50	<2.50	<2.50	21.6	<25.0	--
06/25/99	86.69	21.60	65.09	--	207	231	5.29	<0.500	<0.500	<0.500	3.94	1.01	--
09/24/99	86.69	22.58	64.11	--	71.7	58.6	6.03	<0.500	<0.500	<0.500	3.70	--	--
12/29/99	86.69	22.81	63.88	--	345	117	4.26	<0.500	<0.500	1.97	26.2	<0.500	--
03/21/00	86.69	19.00	67.69	--	319	834	<0.500	<0.500	<0.500	<0.500	21.5	--	--
07/26/00	86.69	21.50	65.19	--	125	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
09/06/00	86.69	21.90	64.79	--	192	88.1	15.60	<0.500	<0.500	<0.500	--	--	--
11/29/00	86.92	22.05	64.87	--	331	<50.0	3.52	<0.500	<0.500	<0.500	--	--	--
03/06/01	86.92	19.79	67.13	--	--	--	--	--	--	--	--	--	--
03/23/01	86.92	20.15	66.77	--	--[5]	204	10.7	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	86.92	21.78	65.14	--	330	<50	<0.50	<0.50	<0.50	<0.50	--	0.87	--
09/05/01[6]	86.92	24.37	62.55	--	400	74	<0.50	0.63	<0.50	2.7	--	<5.0	--
12/20/01[6]	86.92	20.25	66.67	--	530	59	1.7	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	86.69	21.64	65.05	0.00	490[9]	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	86.69	22.44	64.25	0.00	180	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	86.69	21.49	65.20	0.00	320	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	86.69	20.92	65.77	0.00	UNABLE TO SAMPLE - BEND IN WELL				--	--	--	--	--
06/23/03[10]	86.69	21.34	65.35	0.00	310	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	86.69	22.46	64.23	0.00	150	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/03[10]	86.69	22.10	64.59	0.00	350	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/22/04[10]	86.69	20.42	66.27	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
06/21/04[10]	86.69	21.93	64.76	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	86.69	22.99	63.70	0.00	240	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/20/04[10]	86.69	21.78	64.91	0.00	320[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/28/05[10]	86.69	19.28	67.41	0.00	400[9]	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50

TABLE 3
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (June 1996 - June 2010)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

WELL ID/ DATE		TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-1 (cont)														
06/27/05[10]		86.69	20.82	65.87	0.00	200[12]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]		86.69	22.17	64.52	0.00	62	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/19/05[10]		86.69	22.06	64.63	0.00	360[16]	<50	<0.5	0.8	<0.5	<0.5	--	<0.5	<50
03/27/06[10]		86.69	18.27	68.42	0.00	320	77	<0.5	0.5	2	4	--	0.7	<50
06/26/06[10]		86.69	20.20	66.49	0.00	290	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]		86.69	21.86	64.83	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06		86.69	21.60	65.09	UNABLE TO SAMPLE - DUE TO BENT WELL CASING					--	--	--	--	--
03/19/07[10]	NP[18]	86.69	20.82	65.87	0.00	630	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	NP[18]	86.69	28.62	58.07	0.00	4,100[19]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/24/07		86.69	DRY	--	--	--	--	--	--	--	--	--	--	--
12/18/07		86.69	29.35	57.34	UNABLE TO SAMPLE - DUE TO INSUFFICIENT WATER					--	--	--	--	--
03/11/08		86.69	28.41	58.28	UNABLE TO SAMPLE - DUE TO BENT WELL CASING					--	--	--	--	--
06/11/08[10]	NP[18]	86.69	25.87	60.82	0.00	2,200	760	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	NP[18]	86.69	24.18	62.51	0.00	700	190	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/08[10]		86.69	23.30	63.39	0.00	290	65	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/23/09[10]	NP[18]	86.69	21.35	65.34	0.00	1,500	<50	<0.5	<0.5	<0.5	<0.5	--	0.9	<50
06/22/09[10]	NP[18]	86.69	22.06	64.63	0.00	87	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/02/09[10]		86.69	25.02	61.67	0.00	530	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/10[10]	**NP[18]**	**86.69**	**24.83**	**61.86**	**0.00**	**340**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**<0.5**	**<50**
MW-4														
06/28/96		83.31	18.83	64.48	--	<50	<100	<0.5	<1.0	<1.0	<2.0	--	--	--
10/10/96		83.31	19.84	63.47	--	<50	650	3.9	65	22	120	<5.0	--	--
11/07/96		83.31	19.84	63.47	--	--	--	--	--	--	--	--	--	--
12/18/97		83.31	17.77	65.54	--	2,000	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
04/06/98		83.31	15.45	67.86	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
06/18/98		83.31	16.89	66.42	--	53	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98		83.31	18.48	64.83	--	60	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98		83.31	18.80	64.51	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/24/99		83.31	16.70	66.61	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
06/25/99		83.31	18.16	65.15	--	128	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
09/24/99		83.31	19.12	64.19	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--

TABLE 3
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (June 1996 - June 2010)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-4 (cont)													
12/29/99	83.31	19.08	64.23	--	169	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--	--
03/21/00	83.31	16.10	67.21	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
07/26/00	83.31	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
09/06/00	83.31	18.52	64.79	--	--[5]	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00	83.63	18.75	64.88	--	183	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	83.63	17.81	65.82	--	50.9	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	83.63	18.55	65.08	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	83.63	19.10	64.53	--	710	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
12/20/01[6]	83.63	17.55	66.08	--	460	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	83.31	18.39	64.92	0.00	250	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	83.31	19.16	64.15	0.00	160	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	83.31	18.14	65.17	0.00	56	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	83.31	17.76	65.55	0.00	180	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	83.31	18.13	65.18	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	83.31	19.08	64.23	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/03[10]	83.31	18.78	64.53	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/22/04[10]	83.31	17.31	66.00	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/21/04[10]	83.31	18.67	64.64	0.00	87	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	83.31	19.58	63.73	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/20/04[10]	83.31	18.59	64.72	0.00	66[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/28/05[10]	83.31	16.82	66.49	0.00	71[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/27/05[10]	83.31	17.61	65.70	0.00	120[12]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]	83.31	19.00	64.31	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/19/05[10]	83.31	18.69	64.62	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/27/06[10]	83.31	15.05	68.26	0.00	160	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/06[10]	83.31	16.81	66.50	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	83.31	18.59	64.72	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	83.31	18.26	65.05	0.00	250	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/19/07[10]	83.31	17.62	65.69	0.00	93	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	83.31	24.82	58.49	0.00	4,600[19]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/24/07[10]	83.31	26.76	56.55	0.00	4,300	94	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
12/18/07[10]	83.31	25.91	57.40	0.00	3,700	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
03/11/08[10]	83.31	25.15	58.16	0.00	430	54	<0.5	<0.5	<0.5	<0.5	--	0.6	<50

TABLE 3
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (June 1996 - June 2010)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-4 (cont)													
06/11/08[10]	83.31	22.53	60.78	0.00	520	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	83.31	20.99	62.32	0.00	59	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/08[10]	83.31	19.93	63.38	0.00	260	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/23/09[10]	83.31	18.17	65.14	0.00	74	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/22/09[10]	83.31	18.90	64.41	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/02/09[10]	83.31	21.63	61.68	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/10[10]	**83.31**	**21.56**	**61.75**	**0.00**	**56**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--	**<0.5**	**<50**
MW-5B													
06/25/02[7]	85.36	20.48	64.88	0.00	320	660	89	1.9	39	11	130	--	--
09/18/02	85.36	21.18	64.18	0.00	480	1,100	220	1.2	19	<1.5	35	--	--
12/19/02	85.36	20.36	65.00	0.00	330	<50	<0.50	<0.50	<0.50	<1.5	190	--	--
03/20/03	85.36	INACCESSIBLE - VEHICLE OVER WELL				--	--	--	--	--	--	--	--
06/23/03[10]	85.36	20.18	65.18	0.00	300	<50	<0.5	<0.5	<0.5	<0.5	--	290	--
09/22/03[10]	85.36	21.19	64.17	0.00	200	91	19	<0.5	3	<0.5	--	260	<50
12/22/03[10]	85.36	20.85	64.51	0.00	410	99	18	<0.5	<0.5	<0.5	--	52	<50
03/22/04[10]	85.36	19.26	66.10	0.00	400	<50	<0.5	<0.5	<0.5	<0.5	--	210	<50
06/21/04[10]	85.36	20.70	64.66	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	100	<50
09/20/04[10]	85.36	21.69	63.67	0.00	430	<50	<0.5	<0.5	<0.5	<0.5	--	9	<50
12/20/04[10]	85.36	20.56	64.80	0.00	400[9]	<50	<0.5	<0.5	<0.5	<0.5	--	48	<50
03/28/05[10]	85.36	18.12	67.24	0.00	480[9]	<50	<0.5	<0.5	<0.5	<0.5	--	67	<50
06/27/05[10]	85.36	19.61	65.75	0.00	350[13]	<50	<0.5	<0.5	<0.5	<0.5	--	57	<50
09/19/05[10]	85.36	20.88	64.48	0.00	220	<50	<0.5	<0.5	<0.5	<0.5	--	32	<50
12/19/05[10]	85.36	20.74	64.62	0.00	330[16]	<50	<0.5	<0.5	<0.5	<0.5	--	21	<50
03/27/06[10]	85.36	17.10	68.26	0.00	550	<50	<0.5	<0.5	<0.5	<0.5	--	31	<50
06/26/06[10]	85.36	19.05	66.31	0.00	410	<50	<0.5	<0.5	<0.5	<0.5	--	30	<50
09/25/06[10]	85.36	20.61	64.75	0.00	320	<50	<0.5	<0.5	<0.5	<0.5	--	25	<50
12/18/06[10]	85.36	20.35	65.01	0.00	580	<50	<0.5	<0.5	<0.5	<0.5	--	14	<50
03/19/07[10]	85.36	19.62	65.74	0.00	170	<50	<0.5	<0.5	<0.5	<0.5	--	24	<50
06/25/07[10]	85.36	26.94	58.42	0.00	950[19]	250[19]	2	<0.5	0.6	1	--	15	<50
09/24/07[10]	85.36	28.78	56.58	0.00	1,300	1,900	5	0.6	3	5	--	25	<50
12/18/07[10]	85.36	27.98	57.38	0.00	560	2,100	19	<0.5	2	4	--	28	<50

TABLE 3
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Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-5B (cont)													
03/11/08[10]	85.36	27.17	58.19	0.00	290	640	16	<0.5	4	0.5	--	38	<50
06/11/08[10]	85.36	24.51	60.85	0.00	280	1,100	20	<0.5	6	1	--	21	<50
09/22/08[10]	85.36	22.85	62.51	0.00	110	280	9	<0.5	<0.5	<0.5	--	22	<50
12/22/08[10]	85.36	22.00	63.36	0.00	220	200	2	<0.5	<0.5	<0.5	--	25	<50
03/23/09[10]	85.36	20.20	65.16	0.00	240	97	<0.5	<0.5	<0.5	<0.5	--	11	<50
06/22/09[10]	85.36	20.92	64.44	0.00	97	220	<0.5	<0.5	<0.5	<0.5	--	7	<50
12/02/09[10]	85.36	23.74	61.62	0.00	130	130	<0.5	<0.5	<0.5	<0.5	--	8	<50
06/26/10[10]	**85.36**	**23.60**	**61.76**	**0.00**	**130**	**160**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**17**	**<50**
MW-6													
10/10/96	86.09	22.44	63.65	--	500	45,000	8,300	2,900	810	3,100	190	40[1]	--
11/07/96	86.09	22.60	63.49	--	--	--	--	--	--	--	--	--	--
12/18/97	86.09	22.28	63.81	--	1,900	60,000	12,000	9,800	1,800	8,600	<2,000	--	--
04/06/98	86.09	19.90	66.19	--	<50	30,500	5,950	3,720	952	3,750	<1,000	--	--
06/18/98	86.09	20.49	65.60	--	1,100	23,000	2,600	540	410	1,300	<250	--	--
08/31/98	86.09	21.05	65.04	--	1,800	17,000	3,400	460	530	1,800	<250	--	--
12/21/98	86.09	21.74	64.35	--	930	7,900	1,900	510	280	730	150	2.6	--
03/24/99	86.09	21.18	64.91	--	763	12,200	1,970	327	338	794	<40.0	<50.0	--
06/25/99	86.09	21.34	64.75	--	1,050	14,800	2,040	1,080	406	1,430	<40.0	--	--
09/24/99	86.09	22.28	63.81	--	1,720	17,200	2,810	1,330	489	2,340	<50.0	--	--
12/29/99	86.09	24.96	61.13	--	1,480	14,700	2,790	974	469	1,720	<500	--	--
03/21/00	86.09	18.70	67.39	--	1,120	20,000	4,160	962	719	2,330	<250	--	--
07/26/00	86.09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
09/06/00	86.09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
11/29/00	86.48	21.30	65.18	--	2,060	22,800	4,120	2,010	872	3,180	--	--	--
03/06/01	86.48	19.05	67.43	--	2,220	32,100	3,760	4,590	1,160	5,360	--	--	--
06/19/01[6]	86.48	21.11	65.37	--	<1,500	40,000	2,800	6,000	1,200	5,300	--	<25	--
09/05/01[6]	86.48	21.37	65.11	--	<1,000	18,000	3,800	800	730	1,400	--	<200	--
12/20/01[6]	86.48	19.80	66.68	--	<1,300	29,000	2,600	3,700	1,100	4,100	--	<100	--
06/25/02	86.09	21.13	64.96	0.00	2,500	21,000	2,200	1,800	850	2,100	<100	--	--
09/18/02	86.09	22.00	64.09	0.00	1,300	13,000	1,700	480	610	970	110	--	--
12/19/02	86.09	20.98	65.11	0.00	2,700	20,000	2,900	620	770	2,100	<20	--	--

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-6 (cont)													
03/20/03	86.09	20.23	65.86	0.00	2,600	23,000	1,500	2,200	920	3,400	<100	--	--
06/23/03[10]	86.09	20.96	65.13	0.00	2,400	21,000	2,000	1,400	890	2,500	--	6	--
09/22/03[10]	86.09	21.95	64.14	0.00	1,800	7,400	920	220	360	580	--	5	<50
12/22/03[10]	86.09	21.63	64.46	0.00	2,300	9,700	1,700	240	450	1,000	--	6	<100[11]
03/22/04[10]	86.09	20.31	65.78	0.00	2,700	23,000	1,500	1,400	830	2,800	--	4	<250
06/21/04[10]	86.09	20.64	65.45	0.00	2,800	20,000	2,000	2,300	1,100	3,800	--	4	<130
09/20/04[10]	86.09	22.29	63.80	0.00	1,300	4,600	480	65	200	260	--	4	<100
12/20/04[10]	86.09	21.33	64.76	0.00	1,500	9,500	1,500	220	450	840	--	5	<250
03/28/05[10]	86.09	19.65	66.44	0.00	2,400[9]	13,000	1,100	550	600	1,600	--	3	<250
06/27/05[10]	86.09	19.86	66.23	0.00	2,100[14]	15,000	1,100	1,300	790	2,600	--	3	<100
09/19/05[10]	86.09	20.49	65.60	0.00	2,300	18,000	1,300	1,200	800	2,500	--	3	<100
12/19/05[10]	86.09	21.49	64.60	0.00	1,900[14]	13,000	1,900	190	620	890	--	5	110
03/27/06[10]	86.09	18.28	67.81	0.00	1,300	14,000	740	420	600	1,400	--	2	<50
06/26/06[10]	86.09	19.08	67.01	0.00	2,300	23,000	660	1,700	870	3,000	--	<3	<250
09/25/06[10]	86.09	20.02	66.07	0.00	2,100	18,000	580	1,200	760	2,600	--	1	<100
12/18/06[10]	86.09	20.57	65.52	0.00	2,700	14,000	1,200	370	680	1,300	--	4	<50
03/19/07[10]	86.09	20.56	65.53	0.00	2,700	17,000	990	560	840	2,100	--	3	<100
06/25/07	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
09/24/07	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
12/18/07	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
03/11/08	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
06/11/08[10]	86.09	25.35	60.74	0.00	820	1,400	110	<0.5	6	0.8	--	4	<50
09/22/08[10]	86.09	23.51	62.58	0.00	780	1,400	52	<0.5	6	1	--	6	<50
12/22/08[10]	86.09	22.75	63.34	0.00	880	1,100	39	<0.5	1	<0.5	--	6	<50
03/23/09[10]	86.09	20.48	65.61	0.00	2,100	7,900	460	140	470	1,200	--	3	<50
06/22/09[10]	86.09	21.40	64.69	0.00	1,900	7,300	370	210	330	810	--	4	<50
12/02/09[10]	86.09	24.48	61.61	0.00	1,200	3,200	170	10	39	42	--	3	<50
06/26/10[10]	**86.09**	**24.14**	**61.95**	**0.00**	**1,300**	**2,800**	**230**	**14**	**110**	**120**	--	**3**	**<50**

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-7													
10/10/96	84.11	20.78	63.33	--	<50	<50	0.6	<0.5	<0.5	<0.5	<5.0	--	--
11/07/96	84.11	20.80	63.31	--	--	--	--	--	--	--	--	--	--
12/18/97	84.11	17.27	66.84	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
04/06/98	84.11	15.91	68.20	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
06/18/98	84.11	17.95	66.16	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98	84.11	19.40	64.71	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98	84.11	19.75	64.36	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/24/99	84.11	17.54	66.57	--	51.3	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
06/25/99	84.11	19.22	64.89	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
09/24/99	84.11	20.18	63.93	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
12/29/99	84.11	20.15	63.96	--	99.0	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--	--
03/21/00	84.11	16.35	67.76	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
07/26/00	84.11	18.99	65.12	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
09/06/00	84.11	19.49	64.62	--	--[5]	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00	84.44	19.52	64.92	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	84.44	17.15	67.29	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	84.44	19.30	65.14	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	84.44	20.22	64.22	--	<50	<50	0.64	0.84	0.94	5.2	--	<5.0	--
12/20/01[6]	84.44	17.85	66.59	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	84.11	19.30	64.81	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	84.11	20.10	64.01	0.00	170	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	84.11	18.73	65.38	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	84.11	18.86	65.25	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	84.11	19.00	65.11	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	84.11	20.05	64.06	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/03[10]	84.11	19.72	64.39	0.00	72	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/22/04[10]	84.11	17.94	66.17	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/21/04[10]	84.11	19.53	64.58	0.00	73	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	84.11	20.59	63.52	0.00	69	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/20/04[10]	84.11	19.43	64.68	0.00	67[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/28/05[10]	84.11	16.68	67.43	0.00	69[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/27/05[10]	84.11	18.43	65.68	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50

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WELL ID/ DATE		TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-7 (cont)														
09/19/05[10]		84.11	19.77	64.34	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/19/05[10]		84.11	19.38	64.73	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/27/06[10]		84.11	15.51	68.60	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/06[10]		84.11	17.85	66.26	0.00	70	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]		84.11	19.53	64.58	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]		84.11	19.28	64.83	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/19/07[10]		84.11	18.32	65.79	0.00	81	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]		84.11	26.92	57.19	0.00	65	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/24/07[10]		84.11	28.32	55.79	0.00	<150	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
12/18/07[10]		84.11	27.61	56.50	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
03/11/08[10]		84.11	26.63	57.48	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
06/11/08[10]		84.11	23.43	60.68	0.00	98	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]		84.11	21.69	62.42	0.00	54	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/08[10]		84.11	20.78	63.33	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/23/09[10]	NP[22]	84.11	18.45	65.66	0.00	58	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/22/09[10]		84.11	19.70	64.41	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/02/09[10]		84.11	22.40	61.71	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/10[16]		**84.11**	**22.44**	**61.67**	**0.00**	**68**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--	**<0.5**	**<50**
MW-9														
10/10/96		82.17	18.62	63.55	--	520	80	2.5	13	2.2	13	<5.0	--	--
11/07/96		82.17	63.53	18.64	--	--	--	--	--	--	--	--	--	--
12/18/97		82.17	16.42	65.75	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
04/06/98		82.17	14.00	68.17	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
06/18/98		82.17	15.33	66.84	--	100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98		82.17	17.14	65.03	--	57	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98		82.17	17.40	64.77	--	71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/24/99		82.17	16.22	65.95	--	84.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
06/25/99		82.17	16.90	65.27	--	92.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
09/24/99		82.17	17.89	64.28	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
12/29/99		82.17	18.01	64.16	--	52.8	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--	--
03/21/00		82.17	14.80	67.37	--	72.4	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--

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Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-9 (cont)													
07/26/00	82.17	17.17	65.00	--	83.6	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
09/06/00	82.17	17.95	64.22	--	74.3	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00	82.52	18.10	64.42	--	96.2	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	82.52	16.75	65.77	--	94.2	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	82.52	17.83	64.69	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	82.52	17.98	64.54	--	<50	<50	<0.50	<0.50	<0.50	1.6	--	<5.0	--
12/20/01[6]	82.52	16.85	65.67	--	84	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	82.17	17.12	65.05	0.00	100	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	82.17	17.76	64.41	0.00	170	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	82.17	16.83	65.34	0.00	73	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	82.17	16.61	65.56	0.00	87	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	82.17	17.14	65.03	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	--
09/22/03[10]	82.17	17.72	64.45	0.00	66	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
12/22/03[10]	82.17	17.44	64.73	0.00	94	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
03/22/04[10]	82.17	16.07	66.10	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
06/21/04[10]	82.17	17.38	64.79	0.00	80	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/20/04[10]	82.17	18.14	64.03	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
12/20/04[10]	82.17	17.15	65.02	0.00	74[9]	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/28/05[10]	82.17	15.47	66.70	0.00	84[9]	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
06/27/05[10]	82.17	16.41	65.76	0.00	140[12]	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
09/19/05[10]	82.17	17.42	64.75	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	5	<50
12/19/05[10]	82.17	17.93	64.24	0.00	52[17]	<50	<0.5	<0.5	<0.5	<0.5	--	5	<50
03/27/06[10]	82.17	13.75	68.42	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	7	<50
06/26/06[10]	82.17	15.90	66.27	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	9	<50
09/25/06[10]	82.17	17.27	64.90	0.00	57	<50	<0.5	<0.5	<0.5	<0.5	--	8	<50
12/18/06[10]	82.17	16.67	65.50	0.00	220	<50	<0.5	<0.5	<0.5	<0.5	--	7	<50
03/19/07[10]	82.17	16.16	66.01	0.00	210	<50	<0.5	<0.5	<0.5	<0.5	--	9	<50
06/25/07[10]	82.17	23.84	58.33	0.00	74	<50	<0.5	<0.5	<0.5	<0.5	--	6	<50
09/24/07[10]	82.17	25.68	56.49	0.00	280	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/18/07	82.17	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
03/11/08[10]	82.17	24.07	58.10	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/11/08[10]	82.17	21.23	60.94	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	82.17	19.52	62.65	0.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-9 (cont)													
11/06/08[10]	82.17	19.15	63.02	0.00	<50[21]	--	--	--	--	--	--	--	--
12/22/08[10]	82.17	18.58	63.59	0.00	190	<50	<0.5	<0.5	<0.5	<0.5	--	7	<50
03/23/09	82.17	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
06/22/09[10]	82.17	17.60	64.57	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	29	<50
12/02/09[10]	82.17	20.44	61.73	0.00	90	<50	<0.5	<0.5	<0.5	<0.5	--	21	<50
06/26/10[10]	**82.17**	**20.38**	**61.79**	**0.00**	**120**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--	**13**	**<50**
MW-10													
10/10/96	81.83	18.40	63.43	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--
11/07/96	81.83	18.43	63.40	--	--	--	--	--	--	--	--	--	--
12/18/97	81.83	16.18	65.65	--	<50	350	6.9	0.87	0.88	0.77	<30	--	--
04/06/98	81.83	14.39	67.44	--	<50	2,300	224	168	81.4	253	<30	--	--
06/18/98	81.83	15.11	66.72	--	320	7,200	310	210	83	280	<0.5	--	--
08/31/98	81.83	17.03	64.80	--	120	460	51	8.2	5.1	10	<5.0	--	--
12/21/98	81.83	17.32	64.51	--	79	120	5.5	<1.0	<1.0	<1.0	8.7	<2.0	--
03/24/99	81.83	15.25	66.58	--	923	1,330	85.9	42.9	29.7	95.2	20.4	<25.0	--
06/25/99	81.83	16.82	65.01	--	167	1,130	115	32.6	17.2	36.3	<4.00	--	--
09/24/99	81.83	17.75	64.08	--	76.7	382	20.0	<1.00	2.21	1.37	8.83	--	--
12/29/99	81.83	18.13	63.70	--	107	114	9.03	<0.500	0.531	<0.500	<5.00	--	--
03/21/00	81.83	14.22	67.61	--	194	1,270	86.3	52.3	38.1	102	19.5	--	--
07/26/00	81.83	16.61	65.22	--	192	562	74.8	7.51	24.3	14.8	13.3	<1.00[4]	--
09/06/00	81.83	17.08	64.75	--	205	606	93.4	5.36	16.7	38.9	--	--	--
11/29/00	82.16	16.90	65.26	--	258	583	40.0	1.46	4.69	15.8	--	--	--
03/06/01	82.16	14.80	67.36	--	199	837	34.2	26.4	20.8	27.5	--	--	--
06/19/01[6]	82.16	16.85	65.31	--	<50	400	47	2.6	8.8	17	--	0.60	--
09/05/01[6]	82.16	17.87	64.29	--	<100	230	20	<0.50	1.2	5.3	--	<5.0	--
12/20/01[6]	82.16	15.54	66.62	--	110	300	13	2.5	1.7	4.6	--	<5.0	--
06/25/02	81.83	16.93	64.90	0.00	180	810	180	3.2	17	8.0	<2.5	--	--
09/18/02	81.83	17.68	64.15	0.00	200	260	24	<2.0	2.5	5.0	2.9	--	--
12/19/02	81.83	16.36	65.47	0.00	86	360	25	0.60	<0.50	1.5	<5.0	--	--
03/20/03	81.83	16.32	65.51	0.00	200	620	21	5.3	6.0	13	<10	--	--
06/23/03[10]	81.83	16.57	65.26	0.00	290	1,500	170	23	40	93	--	0.7	--

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-10 (cont)													
09/22/03[10]	81.83	17.60	64.23	0.00	180	480	48	3	7	17	--	0.8	<50
12/22/03[10]	81.83	17.31	64.52	0.00	120	230	7	<0.5	<0.5	1	--	0.9	<50
03/22/04[10]	81.83	15.58	66.25	0.00	230	1,500	72	26	30	82	--	0.7	<50
06/21/04[10]	81.83	17.12	64.71	0.00	220	1,000	120	29	47	73	--	2	<50
09/20/04[10]	81.83	18.12	63.71	0.00	230	470	36	5	6	20	--	2	<50
12/20/04[10]	81.83	17.01	64.82	0.00	170[9]	480	13	2	1	7	--	2	<50
03/28/05[10]	81.83	14.64	67.19	0.00	450[9]	1,900	64	46	55	140	--	1	<50
06/27/05[10]	81.83	15.99	65.84	0.00	400[13]	1,700	140	61	33	180	--	3	<50
09/19/05[10]	81.83	17.35	64.48	0.00	170	1,200	98	35	58	110	--	5	<50
12/19/05[10]	81.83	17.12	64.71	0.00	160[14]	1,000	61	23	20	47	--	5	<50
03/27/06[10]	81.83	13.35	68.48	0.00	180	670	6	4	8	11	--	5	<50
06/26/06[10]	81.83	15.10	66.73	0.00	580	4,700	220	110	150	390	--	0.8	<50
09/25/06[10]	81.83	17.10	64.73	0.00	480	4,400	290	180	200	350	--	4	<50
12/18/06[10]	81.83	16.75	65.08	0.00	2,900	2,500	270	97	97	170	--	1	<50
03/19/07[10]	81.83	15.91	65.92	0.00	650	2,000	150	43	52	88	--	1	<50
06/25/07[10]	81.83	24.41	57.42	0.00	7,600[19]	<50[19]	<0.5	<0.5	<0.5	<0.5	--	4	<50
09/24/07[10]	81.83	25.96	55.87	0.00	8,400	88	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/18/07	81.83	INACCESSIBLE - WELL UNDER WATER			--	--	--	--	--	--	--	--	--
03/11/08[10]	81.83	24.56	57.27	0.00	1,200	190	1	<0.5	<0.5	<0.5	--	2	<50
06/11/08[10]	81.83	20.97	60.86	0.00	2,500	190	2	<0.5	<0.5	<0.5	--	2	<50
09/22/08[10]	81.83	19.27	62.56	0.00	--	500	2	<0.5	<0.5	<0.5	--	0.7	<50
11/06/08[10]	81.83	18.92	62.91	0.00	550[21]	--	--	--	--	--	--	--	--
12/22/08[10]	81.83	18.38	63.45	0.00	750	530	1	<0.5	<0.5	<0.5	--	0.8	<50
03/23/09	81.83	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
06/22/09[10]	81.83	17.45	64.38	0.00	1,100	970	26	14	46	79	--	0.6	<50
12/02/09[10]	81.83	20.12	61.71	0.00	86	170	1	<0.5	<0.5	0.9	--	0.9	<50
06/26/10[10]	**81.83**	**20.14**	**61.69**	**0.00**	**93**	**160**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--	**2**	**<50**
MW-11													
08/08/00	--	25.61	--	--	--	--	--	--	--	--	--	--	--
08/16/00	--	25.50	--	--	56.80	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
09/06/00	--	25.90	--	--	--[5]	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--

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MW-11 (cont)													
11/29/00	90.63	25.80	64.83	--	63.8	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	90.63	23.32	67.31	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	90.63	25.57	65.06	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	90.63	26.42	64.21	--	<50	<50	<0.50	<0.50	<0.50	0.68	--	<5.0	--
12/20/01[6]	90.63	24.27	66.36	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	--[8]	25.51	--[8]	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	--[8]	26.31	--[8]	0.00	80	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	--[8]	25.08	--[8]	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	--[8]	24.87	--[8]	0.00	<50	<50	<0.50	0.51	<0.50	<1.5	<2.5	--	--
06/23/03[10]	--[8]	25.21	--[8]	0.00	140	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	--[8]	26.26	--[8]	0.00	52	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
12/22/03[10]	--[8]	25.97	--[8]	0.00	69	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/22/04[10]	--[8]	24.13	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/21/04[10]	--[8]	25.74	--[8]	0.00	79	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	--[8]	26.83	--[8]	0.00	140	<50	<0.5	<0.5	<0.5	<0.5	--	4	<50
12/20/04[10]	--[8]	25.67	--[8]	0.00	54[9]	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
03/28/05[10]	--[8]	23.03	--[8]	0.00	58[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/27/05[10]	--[8]	24.61	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]	--[8]	25.98	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
12/19/05[10]	--[8]	25.93	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/27/06[10]	--[8]	21.81	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/06[10]	--[8]	24.00	--[8]	0.00	64	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	--[8]	25.75	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	--[8]	25.55	--[8]	0.00	140	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/19/07[10]	--[8]	24.58	--[8]	0.00	63	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	--[8]	32.81	--[8]	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/24/07[10]	--[8]	34.24	--[8]	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/18/07[10]	--[8]	33.52	--[8]	0.00	90	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/11/08[10]	--[8]	32.55	--[8]	0.00	52	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/11/08[10]	--[8]	29.77	--[8]	0.00	96	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	--[8]	27.91	--[8]	0.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
11/06/08[10]	--[8]	27.65	--[8]	0.00	<50[21]	--	--	--	--	--	--	--	--
12/22/08[10]	--[8]	27.03	--[8]	0.00	61	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50

TABLE 3
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Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-11 (cont)													
03/23/09[10]	--[8]	25.03	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/22/09[10]	--[8]	25.84	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/02/09[10]	--[8]	28.54	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	0.8	--	<0.5	<50
06/26/10[10]	**--[8]**	**28.58**	**--[8]**	**0.00**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**<0.5**	**<50**
MW-12													
06/25/02[7]	84.19	18.65	65.54	0.00	410	1,000	340	8.2	16	8.3	11	--	--
09/18/02	84.19	19.67	64.52	0.00	230	130	52	<0.50	<0.50	<1.5	9.8	--	--
12/19/02	84.19	18.67	65.52	0.00	450	<50	11	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	84.19	17.97	66.22	0.00	300	280	120	1.9	11	<1.5	2.6	--	--
06/23/03[10]	84.19	18.27	65.92	0.00	400	400	130	4	1	0.7	--	14	--
09/22/03[10]	84.19	19.52	64.67	0.00	270	<50	9	<0.5	<0.5	<0.5	--	9	<50
12/22/03[10]	84.19	19.75	64.44	0.00	130	720	130	29	10	46	--	2	<50
03/22/04[10]	84.19	17.06	67.13	0.00	240	<50	3	<0.5	<0.5	1	--	0.5	<50
06/21/04[10]	84.19	18.82	65.37	0.00	350	140	43	<0.5	<0.5	<0.5	--	8	<50
09/20/04[10]	84.19	19.99	64.20	0.00	340	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/20/04[10]	84.19	19.46	64.73	0.00	160[9]	1,300	400	28	31	31	--	1	<50
03/28/05[10]	84.19	16.42	67.77	0.00	440[9]	90	24	<0.5	<0.5	<0.5	--	1	<50
06/27/05[10]	84.19	17.53	66.66	0.00	170[13]	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/19/05[10]	84.19	19.04	65.15	0.00	190	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
12/19/05[10]	84.19	19.41	64.78	0.00	340[13]	330	94	5	1	3	--	2	<50
03/27/06[10]	84.19	15.45	68.74	0.00	140	130	33	0.7	1	4	--	0.8	<50
06/26/06[10]	84.19	16.70	67.49	0.00	220	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	84.19	18.81	65.38	0.00	200	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	84.19	18.94	65.25	0.00	410	240	68	5	1	1	--	1	<50
03/19/07[10]	84.19	17.83	66.36	0.00	200	55	7	<0.5	<0.5	<0.5	--	2	<50
06/25/07[10]	84.19	25.80	58.39	0.00	1,600[19]	5,500[19]	1,000[19]	190[19]	170[19]	320[19]	--	2	<100
09/24/07[10]	84.19	27.88	56.31	0.00	2,300	<50	0.7	<0.5	<0.5	<0.5	--	1	<50
12/18/07[10]	84.19	27.06	57.13	0.00	550	230	17	<0.5	<0.5	<0.5	--	<0.5	<50
03/11/08[10]	84.19	25.60	58.59	0.00	1,100	7,000	960	330	410	860	--	<1	<100
06/11/08[10]	84.19	23.04	61.15	0.00	1,700	7,100	2,400	170	210	270	--	<1	<130

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-12 (cont)													
09/22/08[10]	84.19	21.48	62.71	0.00	--	13,000	1,800	93	480	1,200	--	16	<100
11/06/08[10]	84.19	21.20	62.99	0.00	1,600[21]	--	--	--	--	--	--	--	--
12/22/08[10]	84.19	20.90	63.29	0.00	1,800	7,700	1,400	220	310	560	--	7	<100
03/23/09[10]	84.19	18.02	66.17	0.00	3,400	4,900	620	170	170	320	--	3	<50
06/22/09[10]	84.19	18.83	65.36	0.00	500	1,100	100	19	35	43	--	1	<50
12/02/09[10]	84.19	22.61	61.58	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/10[10]	**84.19**	**21.83**	**62.36**	**0.00**	**1,200**	**7,600**	**580**	**47**	**36**	**1,400**	--	**<1**	**<100**
MW-2													
06/28/96	85.83	22.10	63.73	1.35	--	--	--	--	--	--	--	--	--
10/10/96	85.83	22.36	63.47	--	1,800	99,000	4,100	9,400	2,300	9,900	390	<25[1]	--
11/07/96	85.83	22.39	63.45**	0.01	--	--	--	--	--	--	--	--	--
12/18/97	85.83	20.19	65.64	--	4,700	24,000	600	1,800	750	2,400	<2,000	--	--
04/06/98	85.83	18.00	67.83	--	9.5	20,100	252	448	430	1,410	<200	--	--
06/18/98	85.83	19.63	66.20	--	5,200	20,000	240	370	270	790	<50	--	--
08/31/98	85.83	21.01	64.82	--	19,000	72,000	270	990	630	1,700	<125	--	--
12/21/98	85.83	21.31	64.52	--	13,000	290	8.7	18	9.7	38	10	29	--
03/24/99	85.83	19.18	66.65	--	5,590	80,400	651	1,860	1,120	3,730	<40.0	<100	--
06/25/99	85.83	20.78	65.05	--	12,100	34,700	504	1,300	716	2,160	<40.0	--	--
09/24/99	85.83	21.82	64.01	--	108	6,510	1,030	350	183	680	<50.0	--	--
12/29/99	85.83	22.17	63.90**	0.30	--	--	--	--	--	--	--	--	--
01/07/00	85.83	22.84	63.30**	0.39	--	--	--	--	--	--	--	--	--
03/21/00	--[3]	18.19	--	--	41,100	54,100	1,260	3,320	2,180	8,200	<1,250	--	--
DESTROYED													
MW-3													
06/28/96	83.18	19.04	64.14	--	--	--	--	--	--	--	--	--	--
10/10/96	83.18	19.51	63.67	--	1,200	110,000	6,600	16,000	2,200	12,000	<250	--	--
11/07/96	83.18	19.40	63.78	--	--	--	--	--	--	--	--	--	--
12/18/97	83.18	18.79	64.39	--	6,100,000	180,000	1,500	16,000	4,600	23,000	<3,000	--	--
04/06/98	83.18	16.58	66.64	0.05	--	--	--	--	--	--	--	--	--
06/18/98	83.18	--	--	>2.0[2]	--	--	--	--	--	--	--	--	--

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Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-3 (cont)													
08/31/98	83.18	19.56	63.68	0.07	--	--	--	--	--	--	--	--	--
12/21/98	83.18	20.23	65.13	2.73	--	--	--	--	--	--	--	--	--
03/24/99	83.18	16.76	67.11	0.86	--	--	--	--	--	--	--	--	--
06/25/99	83.18	18.47	64.95	0.30	--	--	--	--	--	--	--	--	--
09/24/99	83.18	19.43	63.81	0.08	--	--	--	--	--	--	--	--	--
12/29/99	83.18	19.25	63.96	0.04	--	--	--	--	--	--	--	--	--
01/07/00	83.18	19.87	63.37	0.07	--	--	--	--	--	--	--	--	--
DESTROYED													
MW-5													
10/10/96	85.41	21.93	63.48	--	<50	1,800	34	4.7	11	44	21	5.0[1]	--
11/07/96	85.41	21.96	63.45	--	--	--	--	--	--	--	--	--	--
12/18/97	85.41	19.81	65.60	--	<50	1,200	15	<1.0	15	<1.0	72	--	--
04/06/98	85.41	17.43	67.98	--	<50	1,000	126	0.5	0.8	1.5	<30	--	--
06/18/98	85.41	19.15	66.26	--	100	110	6.9	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98	85.41	20.46	64.95	--	120	480	5.3	<2.5	<2.5	<2.5	<12	--	--
12/21/98	85.41	20.91	64.50	--	100	270	16	2.9	1.3	<1.0	34	<2.0	--
03/24/99	85.41	18.74	66.67	--	93.3	143	2.80	<0.500	0.749	<0.500	<2.00	<5.00	--
06/25/99	85.41	20.31	65.10	--	125	847	6.61	<0.500	0.611	<0.500	2.69	<2.00	--
09/24/99	85.41	21.36	64.05	--	94.0	563	6.00	<2.50	<2.50	<2.50	25.1	--	--
12/29/99	85.41	21.41	64.00	--	173	896	16.6	1.48	8.92	2.67	61.1	<0.500	--
03/21/00	85.41	18.13	67.28	--	158	858	53.7	<1.00	21.4	8.00	11.6	--	--
07/26/00	85.41	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
09/06/00	85.41	20.33	65.08	--	231	670	153	<2.50	7.87	<2.50	--	--	--
11/29/00	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
03/06/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
06/19/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
09/05/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
12/02/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
DESTROYED													

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-8													
10/10/96	84.01	20.82	63.19	--	110	17,000	1,300	1,200	64	1,300	110	<5.0[1]	--
11/07/96	84.01	20.44	63.57	--	--	--	--	--	--	--	--	--	--
12/18/97	84.01	19.36	64.65	--	630	15,000	3,600	1,800	410	930	<600	--	--
04/06/98	84.01	16.19	67.82	--	<50	32,300	8,230	5,900	718	2,120	<1,000	--	--
06/18/98	84.01	17.75	66.26	--	<50	74,000	5,400	4,500	700	2,200	2,400	--	--
08/31/98	84.01	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
12/21/98	84.01	19.48	64.53	--	1,200	9,600	2,600	410	220	300	700	<2.0	--
03/24/99	84.01	17.44	66.57	--	2,890	86,100	9,890	11,700	1,650	7,130	<200	<250	--
06/25/99	84.01	20.69	63.40**	0.10	--	--	--	--	--	--	--	--	--
07/01/99	84.01	20.45	65.07**	1.89	--	--	--	--	--	--	--	--	--
09/24/99	84.01	20.98	64.25**	1.53	--	--	--	--	--	--	--	--	--
12/29/99	84.01	20.25	63.97**	0.26	--	--	--	--	--	--	--	--	--
01/07/00	84.01	21.00	63.33**	0.40	--	--	--	--	--	--	--	--	--
DESTROYED													
TRIP BLANK													
QA													
06/25/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/22/03[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/22/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/21/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/20/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/20/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/28/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/27/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/19/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/19/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--

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QA (cont)													
03/27/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/26/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/25/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/18/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/19/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/25/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/24/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/18/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/11/08[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/11/08[20]	--	--	--	--	--	--	--	--	--	--	--	--	--
09/22/08[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/22/08[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/23/09[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/22/09[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/02/09[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/26/10[10]	--	--	--	--	--	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--	**<0.5**	--

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Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to June 25, 2002, were compiled from reports prepared by Toxichem Management Systems, Inc.

TOC = Top of Casing
(ft.) = Feet
DTW = Depth to Water
GWE = Groundwater Elevation
(msl) = Mean Sea Level
SPH = Separate-phase hydrocarbons
SPHT = Separate-phase hydrocarbon thickness

TPH = Total Petroleum Hydrocarbons
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes

MTBE = Methyl Tertiary Butyl Ether
(ppb) = Parts per billion
(µg/L) = Micrograms per liter
-- = Not Measured/Not Analyzed
QA = Quality Assurance/Trip Blank
NP= No Purge

* TOC elevations were surveyed June 24, 2002, by Morrow Surveying, and are based on City of Oakland Benchmark.
** GWE corrected for the presence of SPH; correction factor = [(TOC - DTW)+(0.80 x SPHT)].
♦ Prior to June 25, 2002, MTBE was analyzed by EPA Method 8020.

1 MTBE confirmed by EPA Method 8240.
2 Free product could not be accurately measured.
3 TOC altered.
4 Analyzed outside EPA recommended hold time.
5 Sample containers broken during transport to laboratory.
6 TPH-GRO and BTEX analyzed by EPA Method 8260.
7 Well development performed.
8 MW-11 was inaccessible during the re-surveying. TOC was not measured.
9 Laboratory report indicates the observed sample pattern is not typical of diesel/#2 fuel oil.
10 BTEX analyzed by EPA Method 8260.
11 Ethanol was previously reported as <50 ppb.
12 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range later than #2 fuel.
13 Laboratory report indicates the observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes later in the DRO range.
14 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range earlier than #2 fuel.
15 Laboratory report indicates the observed sample patterns are not typical of #2 fuel/diesel. They elute in the DRO range earlier and later than #2 fuel.
16 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range later than #2 fuel and contains individual peaks eluting in the DRO range.
17 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. The reported result is due to an individual peak (s) eluting in the DRO range.
18 No purge due to bent casing.
19 Laboratory confirmed analytical result.
20 Sample containers not received at laboratory.
21 Laboratory report indicates the DRO analysis was performed on a resample due to a laboratory error during the extraction / analysis of the first submission.
22 No purge due to wells location in active construction zone.

TABLE 4
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (December 2010 - December 2012)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Location	Date	*TOC*	*DTW*	*GWE*	*TPH-DRO w/ Clean-Up*	*TPH-DRO w/o Clean-Up*	*TPH-GRO*	*Benzene*	*Toluene*	*Ethylbenzene*	*Total Xylenes*	*MTBE*	*DIPE*	*ETBE*	*TAME*	*TBA*	*Ethanol*
	Units	*(ftamsl)*	*(ft)*	*(ft amsl)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*
MW-1	12/20/10	86.69	29.58	57.11			INSUFFICIENT WATER TO COLLECT A SAMPLE										
MW-1	06/20/11	86.69	23.91	62.78	<50	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-1	10/24/11	86.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	06/13/12	86.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	**12/28/12**	**86.69**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/20/10	83.31	21.90	61.41	--	170	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-4	06/20/11	83.31	20.60	62.71	<50	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-4	10/24/11	83.31	21.97	61.34	<53	61	<50	<0.50	<0.50	<0.50	<1.5	0.67	<0.50	<0.50	<0.50	<10	<150
MW-4	06/13/12	83.31	19.67	63.64	<47	130	100	<0.50	<0.50	<0.50	<1.0	0.65	<0.50	<0.50	<0.50	<10	<150
MW-4	**12/28/12**	**83.31**	**19.30**	**64.01**	**90**	**210**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**0.55**	**<0.50**	**<0.50**	**<0.50**	**<10**	**<150**
MW-5B	12/20/10	85.36	24.00	61.36	--	370	150	3	<0.5	<0.5	<0.5	24	--	--	--	--	<50
MW-5B	06/20/11	85.36	22.80	62.56	73	--	76	<0.5	<0.5	<0.5	<0.5	3	--	--	--	--	<50
MW-5B	10/24/11	85.36	24.24	61.12	<51	<51	63	<0.50	<0.50	<0.50	<1.5	19	<0.50	<0.50	<0.50	<10	<150
MW-5B	06/13/12	85.36	21.86	63.50	86	120	70	<0.50	<0.50	<0.50	<1.0	16	<0.50	<0.50	<0.50	<10	<150
MW-5B	**12/28/12**	**85.36**	**20.52**	**64.84**	**61**	**72**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**14**	**<0.50**	**<0.50**	**<0.50**	**<10**	**<150**
MW-6	12/20/10	86.09	24.70	61.39	--	1,000	1,900	150	3	2	4	3	--	--	--	--	<50
MW-6	06/20/11	86.09	23.49	62.60	960	--	2,500	290	12	77	120	3	--	--	--	--	<50
MW-6	10/24/11	86.09	24.91	61.18	<53	120	1,600	63	2.7	1.9	6.0	1.7	<0.50	<0.50	<0.50	30	<150
MW-6	06/13/12	86.09	22.38	63.71	160	280	1,200	130	9.5	75	36	3.1	<0.50	<0.50	<0.50	65	<150
MW-6	**12/28/12**	**86.09**	**21.39**	**64.70**	**100**	**230**	**2,100**	**460**	**6.5**	**13**	**9.9**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	**58**	**<750**

TABLE 4
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (December 2010 - December 2012)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Location	Date	*TOC*	*DTW*	*GWE*	*TPH-DRO w/ Clean-Up*	*TPH-DRO w/o Clean-Up*	*TPH-GRO*	*Benzene*	*Toluene*	*Ethylbenzene*	*Total Xylenes*	*MTBE*	*DIPE*	*ETBE*	*TAME*	*TBA*	*Ethanol*
	Units	*(ftamsl)*	*(ft)*	*(ft amsl)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*
MW-7	12/20/10	84.11	28.36	55.75	--	52	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-7	06/20/11	84.11	21.50	62.61	<50	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-7	10/24/11	84.11	23.05	61.06	<53	<53	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<10	<150
MW-7	06/13/12	84.11	20.65	63.46	<50	<48	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150
MW-7	**12/28/12**	**84.11**	**19.18**	**64.93**	**<48**	**<48**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<10**	**<150**
MW-9	12/20/10	82.17	20.79	61.38	--	58	<50	<0.5	<0.5	<0.5	<0.5	1	--	--	--	--	<50
MW-9	06/20/11	82.17	19.53	62.64	<50	--	<50	<0.5	<0.5	<0.5	<0.5	42	--	--	--	--	<50
MW-9	10/24/11	82.17	21.04	61.13	<53	<53	<50	<0.50	<0.50	<0.50	<1.5	26	<0.50	<0.50	<0.50	<10	<150
MW-9	06/13/12	82.17	18.62	63.55	110	130	51	1.6	<0.50	<0.50	<1.0	67	<0.50	<0.50	2.0	<10	<150
MW-9	**12/28/12**	**82.17**	**17.37**	**64.80**	**<48**	**88**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**43**	**<0.50**	**<0.50**	**1.1**	**16**	**<150**
MW-10	12/20/10	81.83	20.45	61.38	--	1,200	300	0.6	<0.5	<0.5	<0.5	3	--	--	--	--	<50
MW-10	06/20/11	81.83	19.27	62.56	160	--	730	16	3	14	46	<0.5	--	--	--	--	<50
MW-10	10/24/11	81.83	20.72	61.11	<52	70	300	1.2	<0.50	<0.50	<1.5	3.2	<0.50	<0.50	<0.50	<10	<150
MW-10	06/13/12	81.83	18.40	63.43	440	440	260	1.0	<0.50	0.73	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150
MW-10	**12/28/12**	**81.83**	**19.19**	**62.64**	**100**	**150**	**340**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<10**	**<150**
MW-11	12/20/10	--	29.05	--	--	150	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-11	06/20/11	--	27.65	--	<50	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-11	10/24/11	--	29.27	--	<53	<53	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<10	<150
MW-11	06/13/12	--	26.76	--	<47	<48	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<10**	**<150**
MW-11	**12/28/12**	**--**	**25.55**	**--**	**<48**	<48	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<10**	**<150**
MW-12	12/20/10	84.19	22.07	62.12	--	1,100	4,800	500	82	260	800	<0.5	--	--	--	--	<50
MW-12	06/20/11	84.19	20.52	63.67	<50	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
MW-12	10/24/11	84.19	22.92	61.27	59	290	7,900	650	170	520	2,000	<5.0	<5.0	<5.0	<5.0	<100	<1,500
MW-12	06/13/12	84.19	20.10	64.09	63	140	450	99	2.1	34	23	<0.50	<0.50	<0.50	<0.50	<10	<150
MW-12	**12/28/12**	**84.19**	**19.60**	**64.59**	**120**	**240**	**3,900**	**850**	**38**	**34**	**29**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<100**	**<1,500**

TABLE 4
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Historical Groundwater Analyses and Gauging Results (December 2010 - December 2012)
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Location	Date	*TOC*	*DTW*	*GWE*	*TPH-DRO w/ Clean-Up*	*TPH-DRO w/o Clean-Up*	*TPH-GRO*	*Benzene*	*Toluene*	*Ethylbenzene*	*Total Xylenes*	*MTBE*	*DIPE*	*ETBE*	*TAME*	*TBA*	*Ethanol*
	Units	*(ftamsl)*	*(ft)*	*(ft amsl)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*	*(µg/l)*
QA	12/20/10	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
QA	06/20/11	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
QA	10/24/11	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<10	<150
QA	06/13/12	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150
QA	**12/28/12**	**--**	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150

Abbreviations and Notes:

TOC = Top of casing

DTW = Depth to Water (measured from top of casing)

GWE = Groundwater elevation

TPH-GRO = Total petroleum hydrocarbons as gasoline [C_6 - C_{12}]

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-Butyl Ether

TAME = tert-Amyl Methyl Ether

TBA = tert-Butanol or tertiary butyl alcohol

Ft amsl = Feet above mean sea level

Ft = Feet

µg/l = micrograms per liter

< = Not detected above detection limit indicated

TABLE 5
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Soil Analytical Results
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Location	Sampling Depth (feet bgs)	Sample Date	Analyzed by USEPA Method 8015B		Analyzed by USEPA Method 8260B											
			TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	m+p-Xylene (µg/kg)	o-Xylene (µg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Ethanol (mg/kg)
DP-1	3.5-4	06/29/2012	<0.39	**10**	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.099*	<0.3
	20.5-21	06/29/2012	<0.39	<5.0	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.099*	<0.3
(DUP)	20.5-21	06/29/2012	<0.38	<5.0	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.099*	<0.3
DP-2	10-10.5	06/29/2012	**83**	<15	<0.002	<0.002	**0.028**	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.1*	<0.3
	30.5-31	06/29/2012	<0.37	<5.0	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.099*	<0.3
DP-3	15-16	06/29/2012	**2,500**	**69**	*<1*	**15**	**43**	**210**	**150,000**	**61,000**	<2.5	<2.5	<2.5	<2.5	*<50*	<150
	28-28.5	06/29/2012	<0.40	<5.0	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.1*	<0.3
DP-4	11.5-12.5	06/28/2012	<0.40	<5.0	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.0049	<0.0049	<0.0049	<0.0049	*<0.099*	<0.3
	18-19	06/28/2012	<0.39	<5.0	<0.002	<0.002	<0.002	<0.004	<2.0	<2.0	<0.005	<0.005	<0.005	<0.005	*<0.1*	<0.3
DP-5	6.5-7.5	07/02/2012	**91***	<5.0	*<.2*	*<.2*	**0.57**	**2.6**	--	--	<0.2	<0.2	<0.2	<0.2	*<0.4*	<7.9
	17-18	07/02/2012	**310***	**18**	*<1.9*	**3.4**	**6.4**	**34**	--	--	<1.9	<1.9	<1.9	<1.9	*<3.9*	<77
DP-6	10.5-11.5	06/28/2012	**220**	**29**	<0.0049	<0.0049	**0.013**	<0.0099	<4.9	<4.9	<0.0012	<0.0012	<0.0012	<0.0012	*<0.25*	<0.74
	17-17.5	06/28/2012	**4,400**	**72**	**0.82**	**28**	**25**	**130**	**86,000**	**40,000**	<1.2	<1.2	<1.2	<1.2	*<25*	<74
Commercial/Industrial ESLs for Shallow Soils (≤10 feet bgs): Groundater is not a Current or Potential Source of Drinking Water			420	530	1.2	9.3	4.7	11	NE	NE	8.4	NE	NE	NE	110	NE
Commercial/Industrial ESLs for Deep Soils (>10 feet bgs): Groundater is not a Current or Potential Source of Drinking Water			420	530	1.2	9.3	4.7	11	NE	NE	8.4	NE	NE	NE	110	NE

< = Not detected above laboratory reporting limit shown
-- = not analyzed or applicable
DIPE = di-isopropyl ether
DUP = blind duplicate sample
ESL = Environmental Screening Level
ETBE = ethyl tertiary butyl ether
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MTBE = methyl tertiary butyl ether
NE = not established
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
TPH-DRO = Total Petroleum Hydrocarbons as Diesel Range Organics with silica gel cleanup
TPH-GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics
ug/kg = micrograms per kilogram
* = Analyzed by USEPA Method 8260B
Notes:
1. Bold concentrations indicate detections above the laboratory reporting limit.
2. Highlighted concentrations meet or exceed their respective ESL.
3. Italicized results indicate reporting limits which exceed their respective ESL.
4. ESLs from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, California RWQCB-San Francisco Bay Region, Tier I ESLs Tables B-2 and D-2, Revised February 2013.

TABLE 6
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Grab Groundwater Analytical Results
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Location	Sampling Depth (feet bgs)	Sample Date	Analyzed by USEPA Method 8015B		Analyzed by USEPA Method 8260B									
			TPH-GRO (µg/L)	**TPH-DRO** (µg/L)	**Benzene** (µg/L)	**Toluene** (µg/L)	**Ethylbenzene** (µg/L)	**Total Xylenes** (µg/L)	**MTBE** (µg/L)	**DIPE** (µg/L)	**ETBE** (µg/L)	**TAME** (µg/L)	**TBA** (µg/L)	**Ethanol** (µg/L)
DP-1	21-26	06/29/2012	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150
	29-34	06/29/2012	<50	<48	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150
(DUP)	29-34	06/29/2012	<50	**51**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<10	<150
DP-2	29-34	06/29/2012	**60**	**53**	<0.50	<0.50	<0.50	<1.0	**0.78**	<0.50	<0.50	<0.50	**11**	<150
DP-3	25-30	06/29/2012	**85**	<49	<0.50	**4.8**	**3.1**	**18**	<0.50	<0.50	<0.50	<0.50	<10	<150
DP-4	20-25	06/28/2012	**250**	**77**	**61**	<0.50	**16**	**6.3**	<0.50	<0.50	<0.50	<0.50	<10	<150
	28-32	06/28/2012	**71**	**95**	**8.5**	**0.77**	**3.2**	**3.5**	**2.8**	<0.50	<0.50	<0.50	<10	<150
DP-5	31-35	07/02/2012	**180**	**79**	**17**	**0.51**	**2.1**	**2.5**	**1.9**	<0.50	<0.50	<0.50	**49**	<150
DP-6	20-25	06/28/2012	**210**	**250**	**5,000**	**700**	**1,100**	**2,100**	*<50*	<50	<50	<50	*<1000*	<15,000
	28-32	06/28/2012	**520**	**74**	**56**	**55**	**27**	**120**	**0.66**	<0.50	<0.50	<0.50	<10	<150
Commercial/Industrial ESLs for Groundwater as a Current or Potential Source of Drinking Water (ug/L)			100	100	1.0	40	30	20	5.0	NE	NE	NE	12	NE
Water Quality-Based Assessment Thresholds (based on CA Primary MCLs)			NE	NE	1.0	150	300	1,750	13	NE	NE	NE	NE	NE
Water Quality-Based Assessment Thresholds (Taste & odor threshold (USEPA Health Advisory)			NE	100	1.0	150	300	1,750	13	NE	NE	NE	NE	
Water Quality-Based Assessment Thresholds (California Public Health Goal for Drinking Water (for MTBE))			NE	NE	NE	NE	NE	NE	NE	NE	13	13	NE	NE
Water Quality-Based Assessment Thresholds (California DPH Notification Level for drinking water)			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	NE

< = Not detected above laboratory reporting limit shown
-- = not analyzed or applicable
DIPE = di-isopropyl ether
DUP = blind duplicate sample
ESL = Environmental Screening Level
ETBE = ethyl tertiary butyl ether
MCL = Maximum Contaminant Level
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MTBE = methyl tertiary butyl ether
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
TPH-DRO = Total Petroleum Hydrocarbons as Diesel Range Organics with silica gel cleanup
TPH-GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics
ug/L = micrograms per liter

Notes:

1. Bold concentrations indicate detections above the laboratory reporting limit.
2. Highlighted concentrations meet or exceed their respective ESL or Water Quality-Based Assessment Thresholds.
3. Italicized results indicate reporting limits which exceed their respective ESL or MCL.
4. ESLs from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, California RWQCB-San Francisco Bay Region, Tier I ESLs, Revised February 2013.

TABLE 7
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST
Soil Vapor Analytical Results
Former Texaco Service Station 211283
3810 Broadway
Oakland, California

Location ID	Sample ID	Vapor Probe Depth (feet bgs)	Date Sampled	Analysis by USEPA TO-15													Analysis by ASTM D-1946			
				TPH-GRO ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m^3$)	m,p-Xylene ($\mu g/m^3$)	o-Xylene ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	DIPE ($\mu g/m^3$)	ETBE ($\mu g/m^3$)	TAME ($\mu g/m^3$)	TBA ($\mu g/m^3$)	EDB ($\mu g/m^3$)	EDC ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	Helium (%)
SV-1	SV-1S	4.75 - 5.25	7/2/2012	**1,300**	**8.2**	**6.2**	<3.6	**9.9**	**4.8**	<3.0	<14	<14	<14	<25	<6.4	<3.4	<18	**16**	**2.8**	<0.00017	<0.084
	SV-1D*	9.75 - 10.25	7/2/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SV-2	SV-2S	4.75 - 5.25	7/2/2012	**5,800**	**26**	**33**	<5.8	**13**	<5.8	<4.8	<22	<22	<22	<41	<10	<5.4	<28	**17**	**0.49**	**0.00045**	<0.086
	SV-2D*	9.75 - 10.25	7/2/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SV-3	SV-3S	4.75 - 5.25	7/2/2012	**3,100**	**44**	**16**	**5.6**	**19**	**6.8**	<3.2	<15	<15	<15	<27	<6.9	<3.6	<19	**17**	**0.68**	<0.00018	<0.090
	BD-1 (SV-3S)	4.75 - 5.25	7/2/2012	**2,300**	**65**	**15**	**5.6**	**18**	**7.0**	<3.1	<14	<14	<14	<26	<6.6	<3.5	<18	**18**	**0.69**	<0.00017	<0.086
	SV-3D	9.75 - 10.25	7/2/2012	**3,200**	**25**	**34**	**8.8**	**26**	**9.4**	<3.2	<15	<15	<15	<27	<6.9	<3.6	<19	**12**	**1.5**	**0.00021**	<0.090
EB-1	EB-1	--	7/2/2012	**730**	**42**	<3.2	<3.7	<3.7	<3.7	<3.0	<14	<14	<14	<26	<6.5	<3.4	<18	**0.65**	<0.017	<0.00017	<0.084
Commercial/Industrial ESLs for Soil Gas[4]				3,100,000	420	1,300,000	4,900	440,000	440,000	47,000	NE	NE	NE	NE	170	580	360	NE	NE	NE	NE
Commercial/Industrial CHHSLs for Soil Gas[5]				NE	122	378,000	3,556	887,000	879,000	13,400	NE	NE	NE	NE	NE	167	106	NE	NE	NE	NE

% = Percent
-- = Analysis not performed or not applicable.
ASTM = American Society for Testing and Materials.
bgs = below ground surface.
CHHSL = California Human Health Screening Level.[1]
DIPE = di-isopropyl ether
EDB = ethylene dibromide (1,2-dibromoethane)
EDC = ethylene dichloride (1,2-dichloroethane)
* = Samples SV-1D and SV-2D were not collected due to liquid water observed in the vapor probe tubing.

ESL = Environment Screening Level.[2]
ETBE = ethyl tertiary butyl ether
MTBE = Methyl tertiary butyl ether.
NE = Not Established
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
TPH-GRO = Total petroleum hydrocarbon as gasoline.
$\mu g/m^3$ = Micrograms per cubic meter.
USEPA = United States Environmental Protection Agency

Notes:
1. Bold concentrations indicate detections above the laboratory reporting limit.
2. No soil vapor concentrations met or exceeded their respective ESL or CHHSL.
3. No soil vapor reporting limits met or exceeded their respective ESL or CHHSL.
4. ESLs from California Regional Water Quality Control Board San Francisco Bay Region. 2013. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Table E- Environmental Screening Levels for Indoor Air and Soil Gas (Revised February 2013).
5. CHHSLs from California Environmental Protection Agency. 2005. Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, Table 2 - California Human Health Screening Levels for Indoor Air and Soil Gas. California: January 2005. CHHSLs for ethylbenzene are based on the OEHHA November 2009 Draft Report for Ethylbenzene CHHSLs.

Table 8
Summary of Statistical Analysis of Groundwater Analytical Data
Conceptual Site Model and Closure Request
Former Texaco Service Station 21-1283
3810 Broadway, Oakland, California

Constituent	Well	Cleanup Goal/Screening Level/Remediation goal (µg/L)[1]	Data Range						Linear Regression Analysis					
			Minimum Concentration (µg/L)	Maximum Concentration (µg/L)	Concentration Measured Most Recently (µg/L)	% of Data Above Laboratory Reporting Limit	Start Date	End Date	Coefficient of Determination, R-squared[2]	p-value of Correlation (Significance of Slope)	Attenuation Half-life (days)	Trend Direction	Significance of Trend[3]	Projected Year to Screening Level
MTBE	MW 5B	13	3	290	14	100	12/19/2002	12/28/2012	0.533	1.44E-06	917	Decreasing	Significant	2010
TPHd	MW 6	100	53	2,800	100	97	6/25/2002	12/28/2012	0.525	4.05E-06	1,102	Decreasing	Significant	2018
TPHg	MW 6	100	1,100	23,000	2,100	100	6/25/2002	12/28/2012	0.626	7.02E-08	949	Decreasing	Significant	2023
Benzene	MW 6	1	39	2,900	460	100	6/25/2002	12/28/2012	0.617	9.93E-08	835	Decreasing	Significant	2027
MTBE	MW 9	13	1	67	43	79	6/25/2002	12/28/2012	0.379	1.05E-04	NA	Stable	Significant	NA
TPHd	MW 10	100	*52*	8,600	100	97	6/25/2002	12/28/2012	0.009	6.05E-01	NA	Increasing	NS	NA
TPHg	MW 10	100	*50*	4,700	340	97	6/25/2002	12/28/2012	0.089	8.57E-02	2,396	Decreasing	NS	NA
Benzene	MW 10	1	1	290	1	91	6/25/2002	12/28/2012	0.438	2.02E-05	513	Decreasing	Significant	2012
TPHd	MW 12	100	*50*	3,400	120	97	6/25/2002	12/28/2012	0.002	8.22E-01	17,729	No Trend	No Trend	NA
TPHg	MW 12	100	*50*	13,000	3,900	69	6/25/2002	12/28/2012	0.217	4.76E-03	NA	Increasing	Significant	NA
Benzene	MW 12	1	1	2,400	850	81	6/25/2002	12/28/2012	0.054	1.72E-01	NA	Increasing	NS	NA

Notes, Abbreviations and Assumptions:
µg/L = micrograms per liter
NS = not significant
NA = not applicable due to increasing trend or non-significant trend
TPHd = Total petroleum hydrocarbons as diesel
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether

[1] The screening levels are equivalent to California Maximum Contaminant Levels (CA MCLs) for Benzene and MTBE and San Francisco Regional Water Quality Control Board (SFRWQCB) groundwater environmental screening levels (ESLs) for groundwater that is a current or potential drinking water resource for TPHd and TPHg.

[2] Linear regression analysis with R^2 values <0.1 and wide variation in concentrations were defined as having no apparent trend (No Trend).

[3] Statistically significant trend defined as having p-value ≤ 0.05.

Data in italics ND taken at reporting limit/reported value
Data is underlined Qualified data converted to reported value
Less than 75 percent of analytical data were detected.

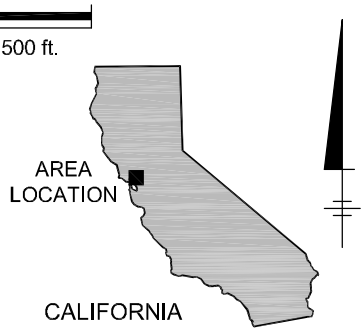
ARCADIS

Figures

REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND WEST, CA, 1993.

0 1500' 3000'

Approximate Scale: 1 in. = 1500 ft.



FORMER TEXACO SERVICE STATION NO. 21-1283
3810 BROADWAY, OAKLAND, CA

CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

SITE LOCATION MAP

ARCADIS

FIGURE 1

CITY: SYRACUSE, NY DIV/GROUP: ENV/REM-WMM-DV DB: D. HOWES, P. LISTER PM: B. WALL TM/TR: R. SHATT LYR:ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0060901\1283\000008\DWG\60901X01.dwg LAYOUT: 1 SAVED: 3/6/2013 12:53 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/6/2013 12:53 PM BY: LISTER, PAUL
XREFS: IMAGES: PROJECTNAME: --
60901X01.tif

LEGEND:

- PROPERTY LINE
- SOIL VAPOR PROBE LOCATIONS
- MONITORING WELL LOCATION
- FORMER WELL LOCATION
- CPT LOCATION
- SOIL BORING LOCATION
- SOIL BORING LOCATION (BY OTHERS)
- UST — FORMER UNDERGROUND STORAGE TANK
- UST — EXISTING UNDERGROUND STORAGE TANK

NOTE:

1. ALL LOCATIONS ARE APPROXIMATE.
2. SOIL VAPOR PROBES ARE CONSTRUCTED WITH A SHALLOW (5') AND DEEP (10') PROBE IN EACH LOCATION.
3. CPT = CONE PENETROMETER TEST.
4. CPT–2 LOCATION NOT COMPLETED DUE TO REFUSAL AT 9 FEET BELOW GROUND SURFACE. CPT–6 LOCATION NOT COMPLETED DUE TO PEA GRAVEL ENCOUNTERED DURING MANUAL BORING CLEARANCE AND LIMITED ALTERNATE LOCATIONS AVAILABLE DUE TO UTILITIES.

0 20' 40'

GRAPHIC SCALE

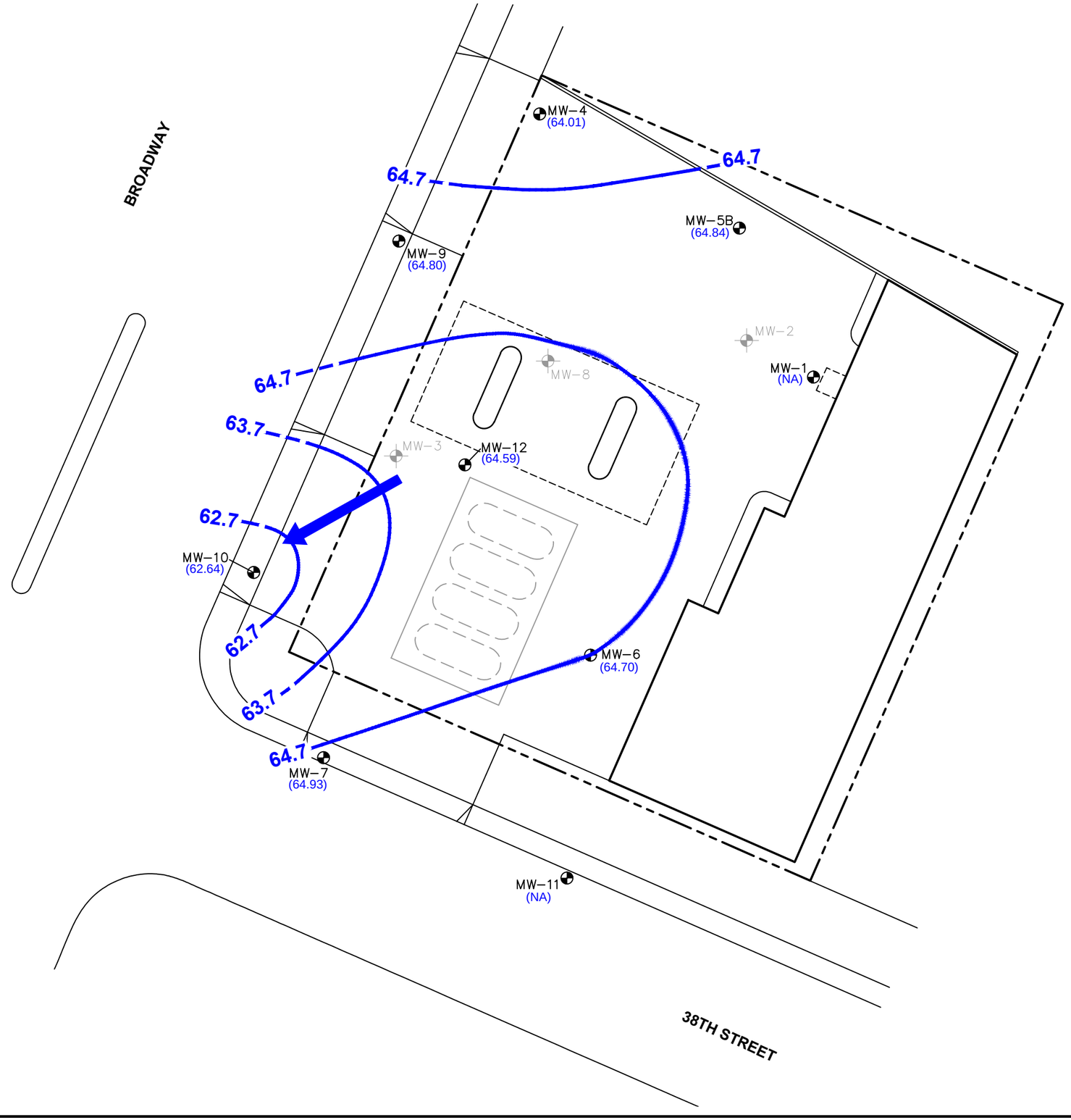
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA

CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

SITE FEATURES

ARCADIS

FIGURE 2



LEGEND:

- PROPERTY LINE
- MONITORING WELL LOCATION
- FORMER WELL LOCATION
- UST — UNDERGROUND STORAGE TANK
- (62.64) — GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (FT AMSL)
- 64.7 — GROUNDWATER ELEVATION CONTOUR, DASHED WHERE INFERRED (FT AMSL)
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW. HYDRAULIC GRADIENT IS APPROXIMATELY 0.09 FEET PER FOOT (FT/FT)
- NA — NOT AVAILABLE

NOTES:

1. BASE MAP DIGITIZED FROM A DRAWING BY CONESTOGA-ROVERS & ASSOCIATES, INC., TITLED "GROUNDWATER ELEVATION AND HYDROCARBON CONCENTRATION MAP", DATED AUGUST 11, 2011.
2. WELL LOCATION COORDINATES FROM WELL SURVEY COMPLETED JUNE 24, 2002 BY MORROW SURVEYING OF WEST SACRAMENTO, CA. HORIZONTAL COORDINATE SYSTEM IS NORTH AMERICAN DATUM OF 1983, CALIFORNIA STATE PLANE ZONE 3. ELEVATIONS REFERENCED TO OAKLAND BENCHMARK, FEET ABOVE MEAN SEA LEVEL.

0 20' 40'

GRAPHIC SCALE

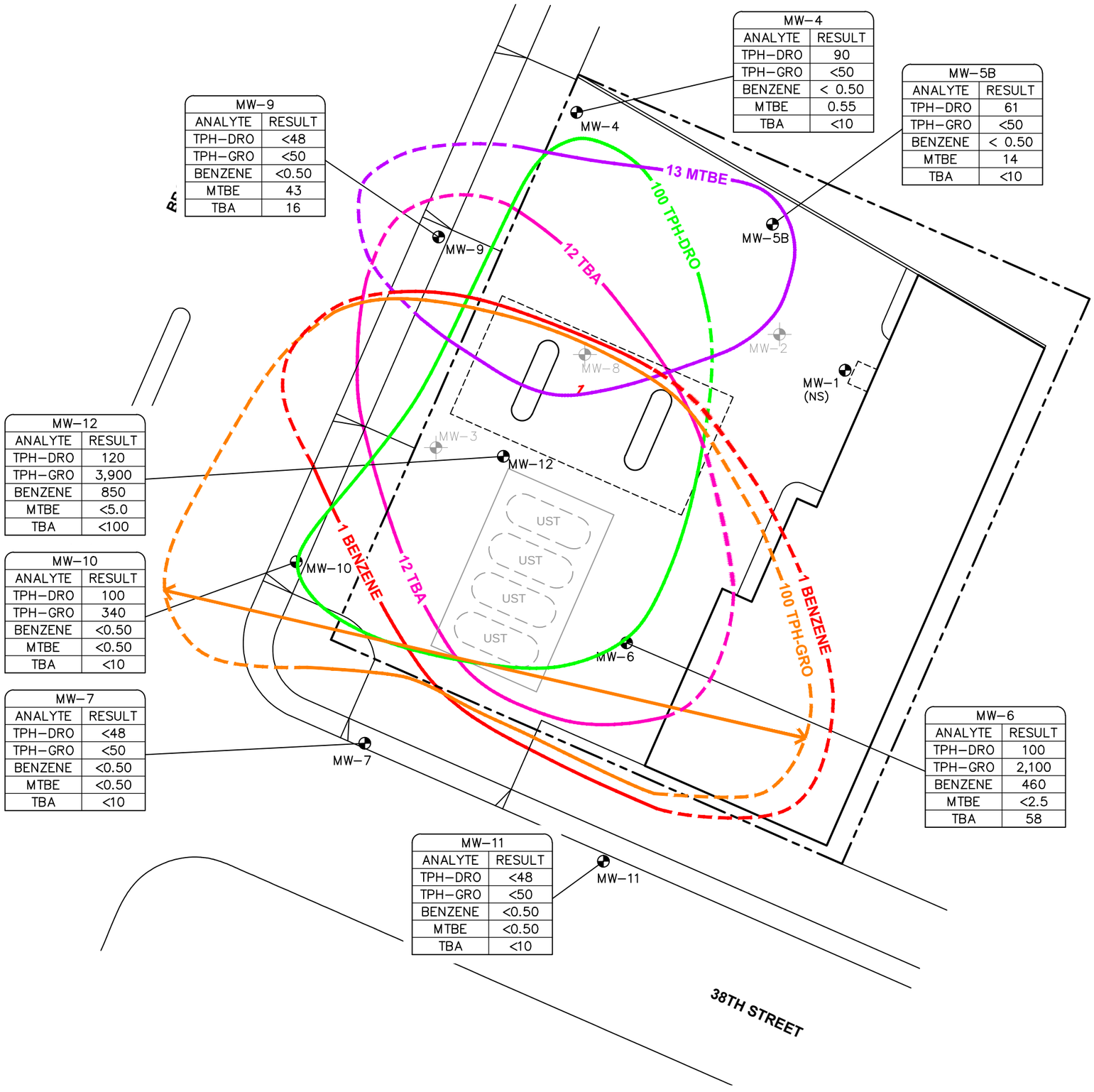
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA

CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

GROUNDWATER ELEVATION CONTOUR MAP - DECEMBER 28, 2012

ARCADIS

FIGURE 3



LEGEND:

- PROPERTY LINE
- MONITORING WELL LOCATION
- FORMER WELL LOCATION
- UST — UNDERGROUND STORAGE TANK
- ISOCONCENTRATION CONTOURS (DASHED WHERE INFERRED)
- TPH-GRO PLUME LENGTH

ABBREVIATIONS:

TPH-DRO	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
TPH-GRO	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
MTBE	METHYL TERTIARY BUTYL ETHER
TBA	TERTIARY BUTYL ALCOHOL
NS	NOT SAMPLED

NOTES:

1. BASE MAP DIGITIZED FROM A DRAWING BY CONESTOGA-ROVERS & ASSOCIATES, INC., TITLED "GROUNDWATER ELEVATION AND HYDROCARBON CONCENTRATION MAP", DATED AUGUST 11, 2011.
2. WELL LOCATION COORDINATES FROM WELL SURVEY COMPLETED JUNE 24, 2002 BY MORROW SURVEYING OF WEST SACRAMENTO, CA. HORIZONTAL COORDINATE SYSTEM IS NORTH AMERICAN DATUM OF 1983, CALIFORNIA STATE PLANE ZONE 3. ELEVATIONS REFERENCED TO OAKLAND BENCHMARK, FEET ABOVE MEAN SEA LEVEL.
3. ALL CONCENTRATIONS ARE MICROGRAMS PER LITER (ug/L).
4. TPH-DRO PERFORMED WITH SILICA GEL CLEAN-UP.

0 20' 40'

GRAPHIC SCALE

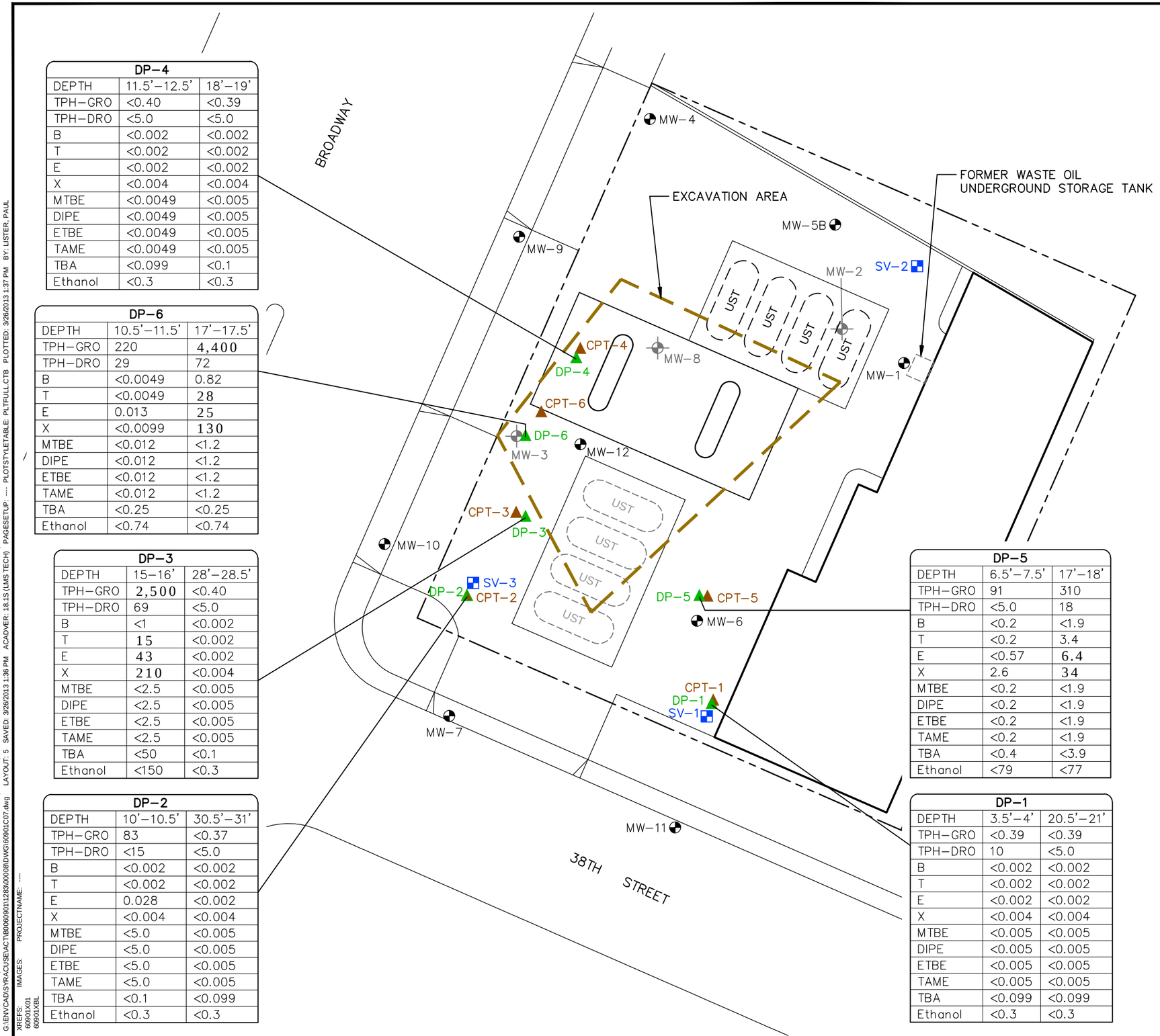
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA

CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

GROUNDWATER ANALYTICAL RESULTS AND ISOCONCENTRATION CONTOUR MAP - DECEMBER 2012

ARCADIS

FIGURE 4



DP-4		
DEPTH	11.5'–12.5'	18'–19'
TPH–GRO	<0.40	<0.39
TPH–DRO	<5.0	<5.0
B	<0.002	<0.002
T	<0.002	<0.002
E	<0.002	<0.002
X	<0.004	<0.004
MTBE	<0.0049	<0.005
DIPE	<0.0049	<0.005
ETBE	<0.0049	<0.005
TAME	<0.0049	<0.005
TBA	<0.099	<0.1
Ethanol	<0.3	<0.3

DP-6		
DEPTH	10.5'–11.5'	17'–17.5'
TPH–GRO	220	**4,400**
TPH–DRO	29	72
B	<0.0049	0.82
T	<0.0049	**28**
E	0.013	**25**
X	<0.0099	**130**
MTBE	<0.012	<1.2
DIPE	<0.012	<1.2
ETBE	<0.012	<1.2
TAME	<0.012	<1.2
TBA	<0.25	<0.25
Ethanol	<0.74	<0.74

DP-3		
DEPTH	15–16'	28'–28.5'
TPH–GRO	**2,500**	<0.40
TPH–DRO	69	<5.0
B	<1	<0.002
T	**15**	<0.002
E	**43**	<0.002
X	**210**	<0.004
MTBE	<2.5	<0.005
DIPE	<2.5	<0.005
ETBE	<2.5	<0.005
TAME	<2.5	<0.005
TBA	<50	<0.1
Ethanol	<150	<0.3

DP-2		
DEPTH	10'–10.5'	30.5'–31'
TPH–GRO	83	<0.37
TPH–DRO	<15	<5.0
B	<0.002	<0.002
T	<0.002	<0.002
E	0.028	<0.002
X	<0.004	<0.004
MTBE	<5.0	<0.005
DIPE	<5.0	<0.005
ETBE	<5.0	<0.005
TAME	<5.0	<0.005
TBA	<0.1	<0.099
Ethanol	<0.3	<0.3

DP-5		
DEPTH	6.5'–7.5'	17'–18'
TPH–GRO	91	310
TPH–DRO	<5.0	18
B	<0.2	<1.9
T	<0.2	3.4
E	<0.57	**6.4**
X	2.6	**34**
MTBE	<0.2	<1.9
DIPE	<0.2	<1.9
ETBE	<0.2	<1.9
TAME	<0.2	<1.9
TBA	<0.4	<3.9
Ethanol	<79	<77

DP-1		
DEPTH	3.5'–4'	20.5'–21'
TPH–GRO	<0.39	<0.39
TPH–DRO	10	<5.0
B	<0.002	<0.002
T	<0.002	<0.002
E	<0.002	<0.002
X	<0.004	<0.004
MTBE	<0.005	<0.005
DIPE	<0.005	<0.005
ETBE	<0.005	<0.005
TAME	<0.005	<0.005
TBA	<0.099	<0.099
Ethanol	<0.3	<0.3

LEGEND:

- PROPERTY LINE
- SOIL VAPOR PROBE LOCATIONS
- MONITORING WELL LOCATION
- FORMER WELL LOCATION
- CPT LOCATION
- SOIL BORING LOCATION
- UST — FORMER UNDERGROUND STORAGE TANK
- UST — EXISTING UNDERGROUND STORAGE TANK
- DP — DIRECT PUSH BORING

TPH–GRO = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
TPH–DRO = TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS WITH SILICA GEL CLEANUP
B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
X = TOTAL XYLENES
MTBE = METHYL TERTIARY BUTYL ETHER
DIPE = DI–ISOPROPYL ETHER
ETBE = ETHYL TERTIARY BUTYL
TAME = TERTIARY AMLY METHYL ETHER
TBA = TERTIARY BUTYL ALCOHOL

NOTES:

1. TPH–GRO, TPH–DRO, BTEX, MTBE, DIPE, ETBE, TAME, TBA AND ETHANOL CONCENTRATIONS ARE REPORTED IN MILLIGRAMS PER KILOGRAM.
2. BOLDED CONCENTRATIONS EXCEED THEIR RESPECTIVE ENVIRONMENTAL SCREENING LEVEL (ESL).

0 20' 40'
GRAPHIC SCALE

FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

SOIL CONCENTRATION DISTRIBUTION MAP JUNE 2012

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FIGURE 5

CITY: SYRACUSE, NY DIV/GROUP: ENV/REM-WIM-DV DB: P. LISTER, R. ALLEN, P. LISTER PM/TM: R. ANDRESEN TR: R. SHATT LYR: ON=*;OFF=REF
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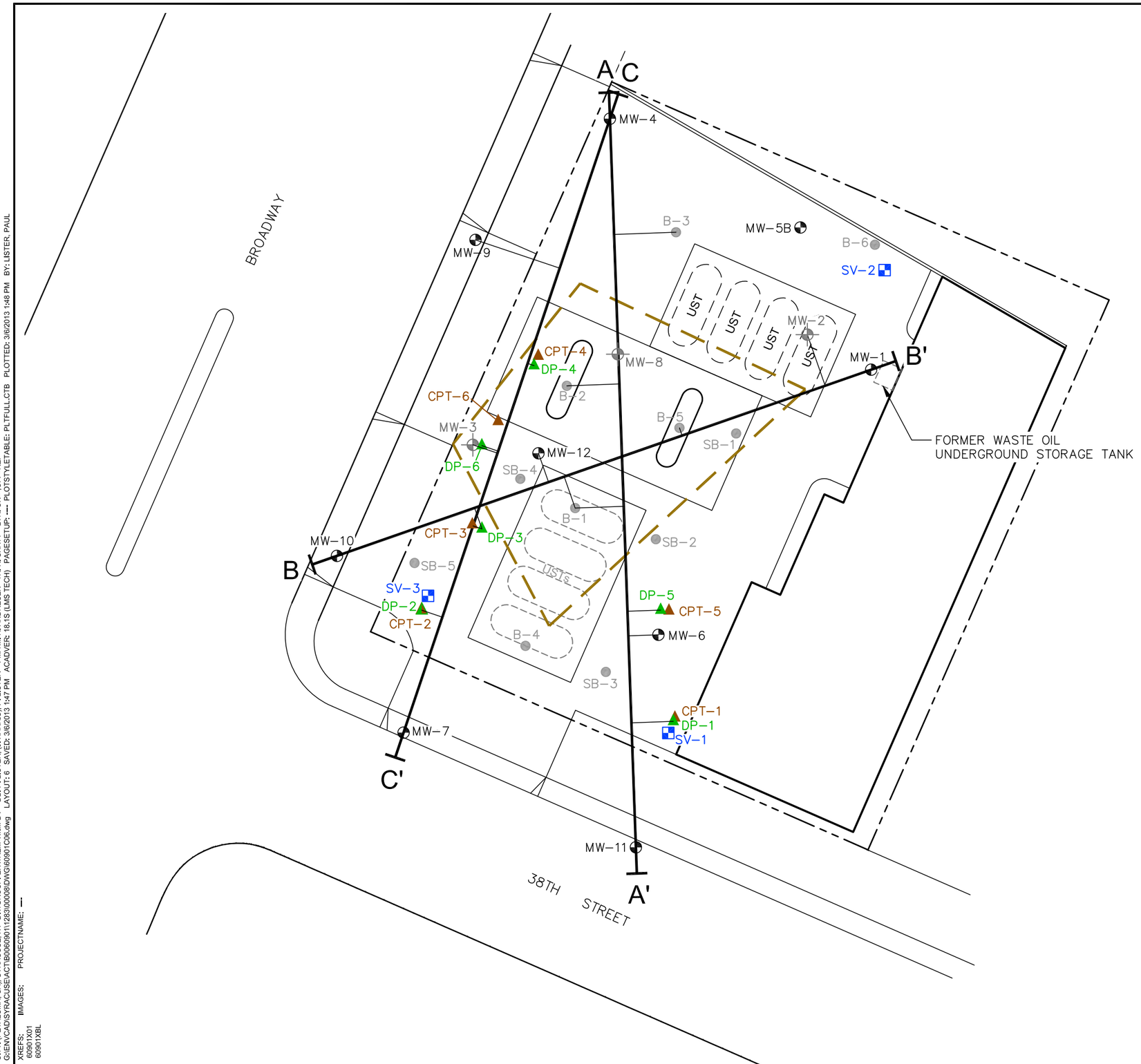
60901XBL



LEGEND:

- PROPERTY LINE
- SOIL VAPOR PROBE LOCATIONS
- MONITORING WELL LOCATION
- FORMER WELL LOCATION
- CPT LOCATION
- SOIL BORING LOCATION
- SOIL BORING LOCATION (BY OTHERS)
- UST FORMER UNDERGROUND STORAGE TANK
- UST EXISTING UNDERGROUND STORAGE TANK
- EXCAVATION BOUNDARY (APPROXIMATE)
- CROSS SECTION LOCATION

NOTE:

1. ALL LOCATIONS ARE APPROXIMATE.
2. SOIL VAPOR PROBES ARE CONSTRUCTED WITH A SHALLOW (5') AND DEEP (10') PROBE IN EACH LOCATION.
3. CPT = CONE PENETROMETER TEST.
4. CPT–2 LOCATION NOT COMPLETED DUE TO REFUSAL AT 9 FEET BELOW GROUND SURFACE. CPT–6 LOCATION NOT COMPLETED DUE TO PEA GRAVEL ENCOUNTERED DURING MANUAL BORING CLEARANCE AND LIMITED ALTERNATE LOCATIONS AVAILABLE DUE TO UTILITIES.

0 20' 40'

GRAPHIC SCALE

FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

CROSS SECTION LOCATIONS (LINE OF SECTION PLAN)

ARCADIS

FIGURE 6

CITY: (PETALUMA, CA); SYRACUSE, NY DIV/GROUP: ENV/REM+WIM-DIV DB: P. LISTER, (J. HARRIS), P. LISTER PM/TM: R. ANDRESEN TR: R. SHATT LYR: ON=*;OFF=REF
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XREFS: 609011X01
609011XBL
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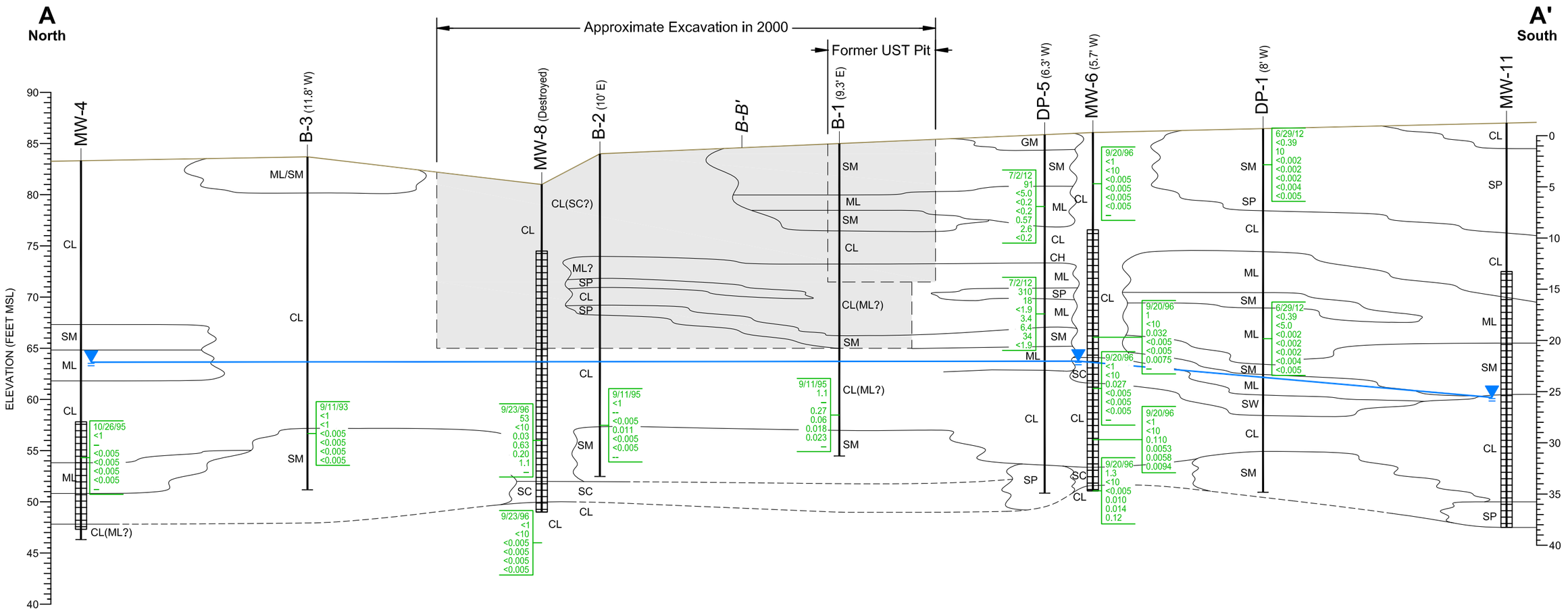
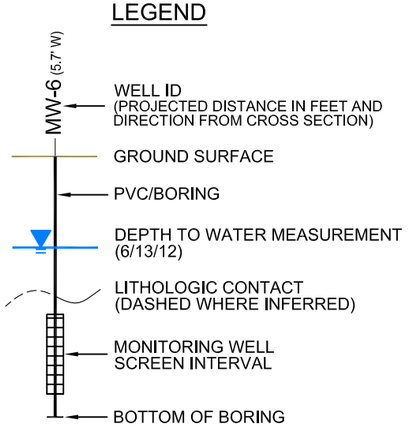


LEGEND



SOIL CONCENTRATION DATA REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

6/29/12	DATE OF SOIL SAMPLE COLLECTION
<0.39	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
<5.0	TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS
<0.002	BENZENE
<0.002	TOLUENE
<0.002	ETHYLBENZENE
<0.004	TOTAL XYLENES
<0.005	METHYL TERTIARY BUTYL ETHER

< BELOW LABORATORY REPORTING LIMIT

– NOT ANALYZED/AVAILABLE

0 10' 20'
HORIZONTAL SCALE

0 10' 20'
VERTICAL SCALE

NOTES:

1. BASED ON FIGURE 9 (CRA, 6/29/2009) GEOLOGICAL CROSS SECTION B-B'.
2. LOCATIONS OF WELLS AND ELEVATIONS ARE APPROXIMATE.
3. EXCAVATED AND FORMER UST AREAS ARE NOW FILLED WITH PEA GRAVEL.
4. SOIL CLASSIFICATIONS:
   - GM = GRAVEL; SILTY
   - SP, SW, SM, SC = SAND: POORLY SORTED, WELL SORTED, SILTY, CLAYEY
   - ML = SILT
   - CL = CLAY
   - (?) = OTHER POSSIBLE LITHOLOGY BASED OFF BORING LOG DESCRIPTIONS
5. THE BACKFILL USED FOR THE 2000 EXCAVATION CONSISTED OF PEA GRAVEL FROM 7 FT BGS, REUSED NATIVE SOIL FROM 5 TO 5.5 FT BGS AND CLEAN IMPORTED FILL FOR THE REMAINDER OF THE EXCAVATION. THE BACKFILL USED FOR THE THE USED OIL UST IS UNKNOWN.

FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

CROSS SECTION A-A'

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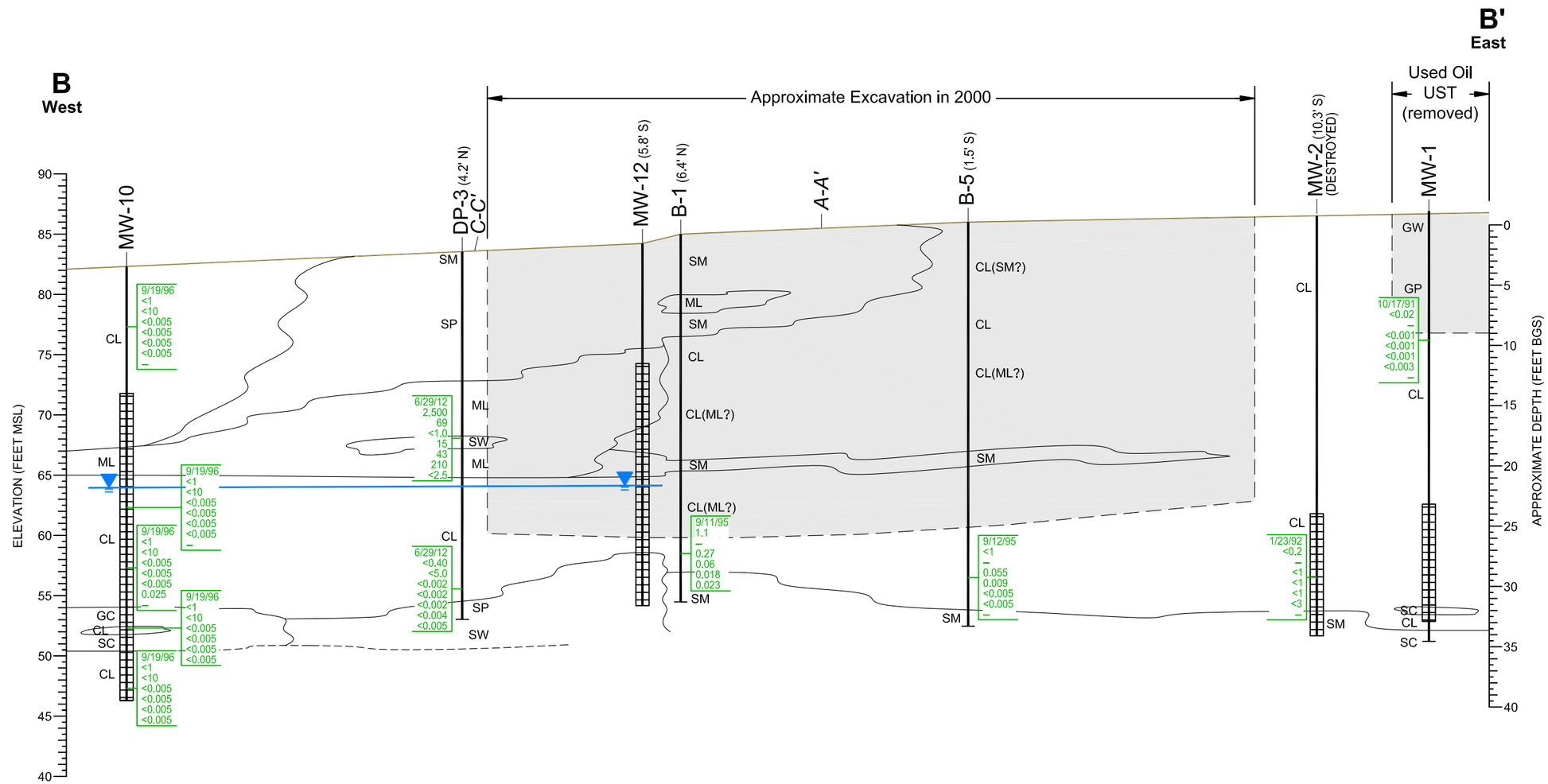
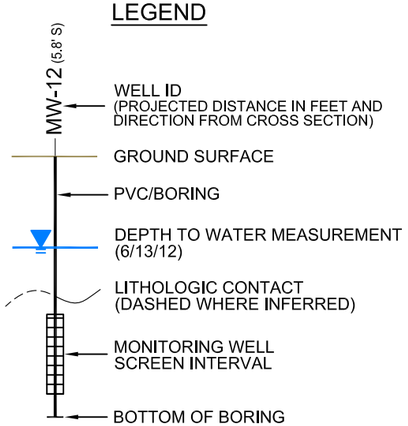
FIGURE
7



LEGEND



SOIL CONCENTRATION DATA REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

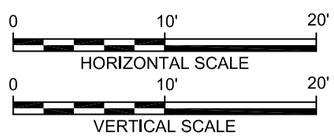
9/12/95	DATE OF SOIL SAMPLE COLLECTION
<1	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
–	TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS
0.055	BENZENE
0.009	TOLUENE
<0.005	ETHYLBENZENE
<0.005	TOTAL XYLENES
–	METHYL TERTIARY BUTYL ETHER

< BELOW LABORATORY REPORTING LIMIT

– NOT ANALYZED/AVAILABLE

NOTES:

1. BASED ON FIGURE 9 (CRA, 6/29/2009) GEOLOGICAL CROSS SECTION B-B'.
2. LOCATIONS OF WELLS AND ELEVATIONS ARE APPROXIMATE.
3. EXCAVATED AND FORMER UST AREAS ARE NOW FILLED WITH PEA GRAVEL.
4. SOIL CLASSIFICATIONS:
   - GM = GRAVEL; SILTY
   - SP, SW, SM, SC = SAND: POORLY SORTED, WELL SORTED, SILTY, CLAYEY
   - ML = SILT
   - CL = CLAY
   - (?) = OTHER POSSIBLE LITHOLOGY BASED OFF BORING LOG DESCRIPTIONS
5. THE BACKFILL USED FOR THE 2000 EXCAVATION CONSISTED OF PEA GRAVEL FROM 7 FT BGS, REUSED NATIVE SOIL FROM 5 TO 5.5 FT BGS AND CLEAN IMPORTED FILL FOR THE REMAINDER OF THE EXCAVATION. THE BACKFILL USED FOR THE THE USED OIL UST IS UNKNOWN.

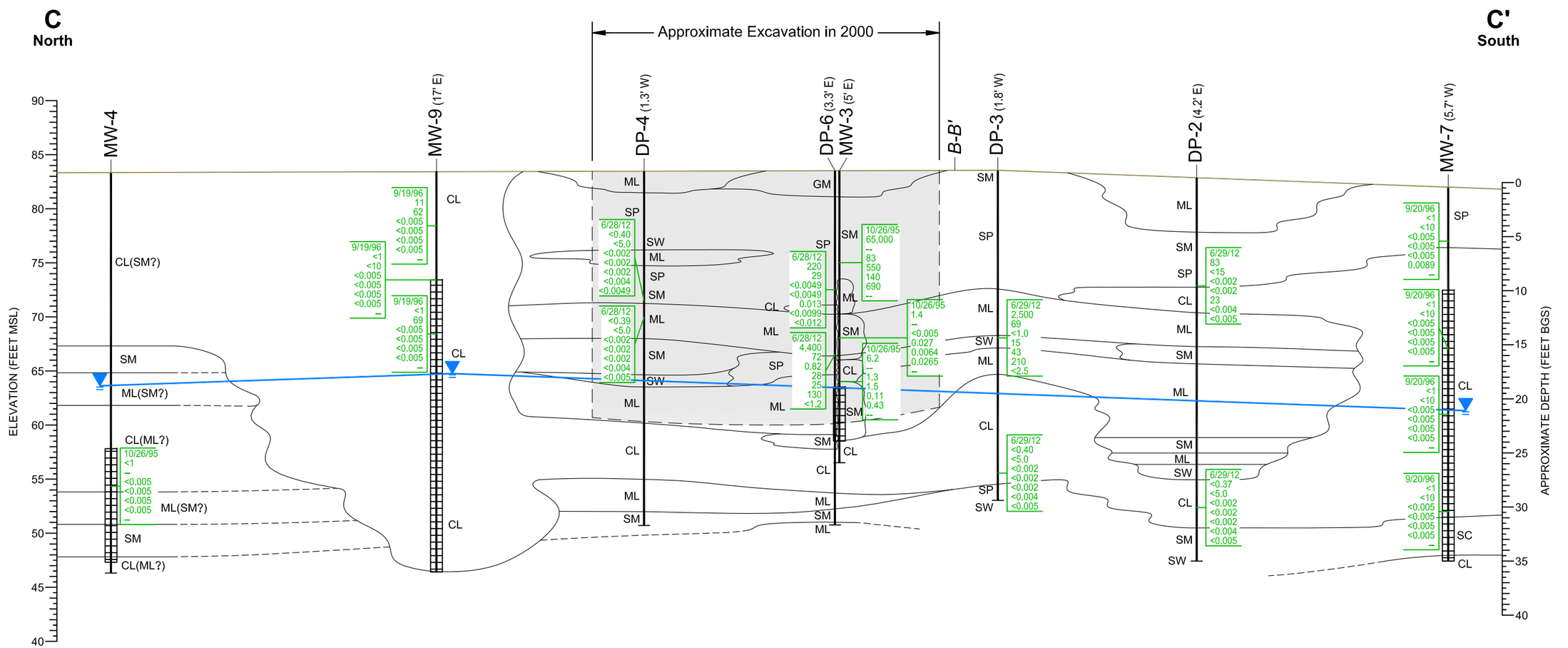


FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

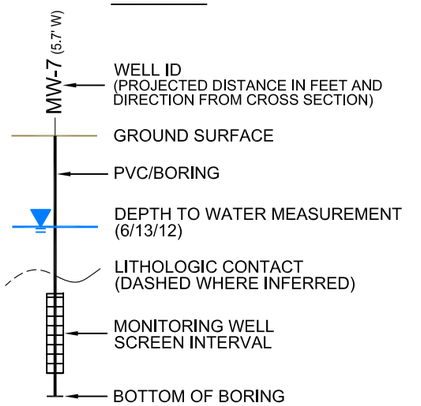
CROSS SECTION B-B'

ARCADIS

FIGURE
8



LEGEND

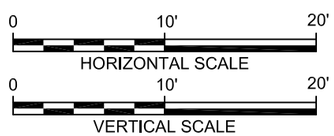


SOIL CONCENTRATION DATA REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

6/29/12	DATE OF SOIL SAMPLE COLLECTION
2,500	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
69	TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS
<1.0	BENZENE
15	TOLUENE
43	ETHYLBENZENE
210	TOTAL XYLENES
<2.5	METHYL TERTIARY BUTYL ETHER
<	BELOW LABORATORY REPORTING LIMIT
–	NOT ANALYZED/AVAILABLE

NOTES:

1. LOCATIONS OF WELLS AND ELEVATIONS ARE APPROXIMATE.
2. EXCAVATED AND FORMER UST AREAS ARE NOW FILLED WITH PEA GRAVEL.
3. SOIL CLASSIFICATIONS:
   - GM = GRAVEL; SILTY
   - SP, SW, SM, SC = SAND: POORLY SORTED, WELL SORTED, SILTY, CLAYEY
   - ML = SILT
   - CL = CLAY
   - (?) = OTHER POSSIBLE LITHOLOGY BASED OFF BORING LOG DESCRIPTIONS
4. THE BACKFILL USED FOR THE 2000 EXCAVATION CONSISTED OF PEA GRAVEL FROM 7 FT BGS, REUSED NATIVE SOIL FROM 5 TO 5.5 FT BGS AND CLEAN IMPORTED FILL FOR THE REMAINDER OF THE EXCAVATION. THE BACKFILL USED FOR THE THE USED OIL UST IS UNKNOWN.



FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA

CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

CROSS SECTION C-C'

ARCADIS

FIGURE **9**

SV–2		
DEPTH	S	D
TPH–DRO	5,800	NA
B	26	NA
T	33	NA
E	<5.8	NA
m,p–X	13	NA
o–X	<5.8	NA
MTBE	<4.8	NA
DIPE	<22	NA
ETBE	<22	NA
TAME	<22	NA
TBA	<41	NA
EDB	<10	NA
EDC	<5.4	NA
Napthalene	<28	NA

SV–3		
DEPTH	S	D
TPH–DRO	3,100	3,200
B	44	25
T	16	34
E	5.6	8.8
m,p–X	19	26
o–X	6.8	9.4
MTBE	<3.2	<3.2
DIPE	<15	<15
ETBE	<15	<15
TAME	<15	<15
TBA	<27	<27
EDB	<6.9	<6.9
EDC	<3.6	<3.6
Napthalene	<19	<19

SV–1		
DEPTH	S	D
TPH–DRO	1,300	NA
B	8.2	NA
T	6.2	NA
E	<3.6	NA
m,p–X	9.9	NA
o–X	4.8	NA
MTBE	<3.0	NA
DIPE	<14	NA
ETBE	<14	NA
TAME	<14	NA
TBA	<25	NA
EDB	<6.4	NA
EDC	<3.4	NA
Napthalene	<18	NA

LEGEND:

- PROPERTY LINE
- SOIL VAPOR PROBE LOCATIONS
- MONITORING WELL LOCATION
- FORMER WELL LOCATION
- CPT LOCATION
- SOIL BORING LOCATION
- UST — FORMER UNDERGROUND STORAGE TANK
- UST — EXISTING UNDERGROUND STORAGE TANK
- SV — SOIL VAPOR WELL

TPH–GRO = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
X = TOTAL XYLENES
MTBE = METHYL TERTIARY BUTYL ETHER
DIPE = DI–ISOPROPYL ETHER
ETBE = ETHYL TERTIARY BUTYL
TAME = TERTIARY AMLY METHYL ETHER
TBA = TERTIARY BUTYL ALCOHOL
EDB = ETHYLENE DIBROMIDE (1,2–DIBROMETHANE)
EDC = ETHYLENE DICHLORIDE (1,2–DICHLOROETHANE)
NA = NOT APPLICABLE/SAMPLED

NOTES:

1. ALL CONCENTRATIONS ARE REPORTED IN MICROGRAMS PER CUBIC METER.
2. SV–1D AND SV–2D WERE NOT SAMPLED DUE TO WATER OBSERVED IN TUBING DURING THE SAMPLING EVENT.

0 20’ 40’
GRAPHIC SCALE

FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY, OAKLAND, CA
CONCEPTUAL SITE MODEL AND CLOSURE REQUEST

SOIL VAPOR CONCENTRATION DISTRIBUTION MAP JUNE 2012

ARCADIS

FIGURE 10

ARCADIS

Appendix A

Groundwater Monitoring Well and Soil Boring Logs

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-1
D- 17352
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/11/95 TOTAL DEPTH 31.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 6' SILTY SAND: (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
2.5							
			0.0				
5.0							2" Borehole
				6 - 7' SANDY SILT: (10,30,40,20); brown (10YR5/3); slight plasticity; slightly stiff; fine grained sand; moist.	ML		
			0.0	7 - 8.5' SILTY SAND: (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
7.5							
				8.5 - 19.5' SILTY CLAY with SAND: (0,20,50,30): grayish brown (10YR5/2); low to medium plasticity; slightly stiff to stiff; fine grained sand; moist.	CL		
10.0			425				Portland Cement
12.5		52401					
			210				
15.0							

See Following Page...

FRIED,1/16/96 AUGNBPS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT 9/96

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-1
D- 17352
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT	Friedkin/Becker	LOCATION	3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Borehole Abandonment/ Well Construction Details
15.0		214	SILTY CLAY with SAND continued.		
17.5					
	52402	127	19.5 - 20.5' SILTY SAND: (0,70,20,10); grayish brown (10YR5/2); fine grained sand; poorly graded; saturated.	SM	
20.0			20.5 - 29' SILTY CLAY with SAND: (0,20,50,30); light olive brown (2.5Y5/4); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL	2" Borehole
22.5		107			
25.0		68			Portland Cement
	52405				
27.5					
			29 - 31'SILTY SAND: (0,70,20,10); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM	
30.0					31.0

FRIED,16696 AUGNBPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-2
D- 23500
Page 1 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/11/95 TOTAL DEPTH 32.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' CONCRETE	CC		
			0.0	1 - 10' SANDY CLAY: (5,35,30,30); grayish brown (2.5Y5/2); medium plasticity; stiff; fine to coarse grained sand; fine to coarse gravel; well graded; slightly moist.	CL		
-2.5				3 - 3.5' SILTY SAND (SM)lens.			
			0.0				
-5.0							2" Borehole
			0.0				
-7.5				@ 9 - 10' Increase in coarse sand and fine gravel.			
-10.0			420	10 - 13' SANDY CLAY: (0,30,30,40); light yellowish brown (2.5YR6/4); medium to high plasticity; stiff; fine grained sand; slightly moist.	CL CH		Portland Cement
-12.5		51496					
			395	13 - 28.2' SANDY CLAY: (0,30,40,30); light yellowish brown (2.5YR6/4); low plasticity; stiff to hard: fine grained sand; slightly moist.	CL		
-15.0				@ 14.5 - 15' SANDY SILT: fine to medium sand; slightly			

See Following Page...

FRIED,11696,AUGNBPS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6275 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

Brad Wright
SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

SB/MW #: B-2
D- 23500
Page 2 of 2
Geologist: C. Warwick

C Warwick
SIGNATURE OF GEOLOGIST

McLaren Hart

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0				moist.			
		51497	153	@ 16.5 - 17' SAND (SP) lens; slightly moist.			
17.5							
			76				
20.0							2" Borehole
			0.0				
22.5							
25.0			0.0				Portland Cement
		51498					
27.5							
				28.2 - 32' SILTY SAND: (0,70,20,10); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							
							32.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #627? Exp. 9/9? BRADLEY D. WRIGHT

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 1 of 3
Geologist: C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 34.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 4' SANDY SILT; (0,40,40,20); yellowish brown (10YR5/4); low plasticity; slightly stiff to stiff; fine to coarse grained sand; moist.	ML CL		
2.5							
			0.0	4 - 11' SANDY CLAY: (0,30,30,40); yellowish brown (10YR5/4); medium to high plasticity; stiff to hard; fine grained sand; slightly moist.	CL CH		2" Borehole
5.0							
			0.0				
7.5							
10.0			2.3				Portland Cement
				11 - 29' SILTY CLAY with SAND; (0,20,50,30); brown (10YR5/3); low to medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
12.5		52409					
			0.0				
15.0							

See Following Page...

FRIED,/ / AUG/95

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST BRADLEY D. WRIGHT #6276

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 2 of 3
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0			2.3				
17.5				SILTY CLAY with SAND continued.			
20.0							2" Borehole
22.5							
25.0							
27.5		52410-11	3.9				
				29 - 31.5' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							Portland Cement
32.5				See Following Page...			

STATE OF CALIFORNIA REGISTERED GEOLOGIST BRADLEY D. WRIGHT #6276 REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 3 of 3
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
32.5							34.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6270 BRADLEY D. WRIGHT CERTIFIED ENGINEERING GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-4
D- 23499
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 27.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 5.5' SILTY SAND; (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
2.5							
			0.0				
5.0							2" Borehole
				5.5 - 8' SANDY SILT: (0,25,60,15); low plasticity; slightly stiff; fine grained sand; moist.	ML		
7.5			0.0				
				8 - 13' SILTY SAND: (0,55,30,15); yellowish brown (10YR5/4); medium dense; fine to coarse grained sand; well graded; slightly moist.	SM		
10.0			282				Portland Cement
12.5		51494					
			484	13 - 18' SILTY CLAY with SAND: (0,20,50,30); grayish brown (10YR5/2); low to medium plasticity; slightly stiff; fine grained sand; moist.	CL		

See Following Page...

STATE OF CALIFORNIA REGISTERED GEOLOGIST Exp. REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-4
D- 23499
Page 2 of 2
Geologist: C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0							
			68	SILTY CLAY with SAND continued.			
17.5							
		51495		18 - 19' SILTY SAND: (0,70,20,10); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
				19 - 20.5' SILTY CLAY with SAND: (0,20,50,30); grayish brown (10YR5/2); low to medium plasticity; slightly stiff; fine grained sand; moist.	CL		
20.0							2" Borehole
				20.5 - 21.5' SILTY SAND: (0,55,30,15); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
			0.0	21.5 - 27' SILTY CLAY with SAND : (0,20,50,30); brown (10YR5/3); low to medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
22.5							
							Portland Cement
25.0							
		52403-04	0.0				
				@ 27' Refusal			27.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-5
D- 17354
Page 1 of 2
Geologist: C. Warwick
C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 33.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' CONCRETE	CC		
			580	1 - 7' SANDY CLAY: (5,40,35,20); medium plasticity; slightly stiff to stiff; fine to coarse grained sand; fine grained gravel; slightly moist.	CL		
2.5							
			488				
5.0							2" Borehole
			388	7 - 10' SILTY CLAY with SAND: (0,25,35,40); reddish yellow (7.5YR6/6); medium to high plasticity; slightly stiff to stiff; fine grained sand; moist.	CL CH		
7.5							
10.0			840	10 - 18.5' SILTY CLAY with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; slightly moist.	CL		Portland Cement
12.5	☒	52406					
			355				
15.0							

See Following Page...

FRIED/BECKER

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY B. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-5
D- 17354
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
16.0			90	@ 16 - 17' Increase in sand.			
17.5				SILTY CLAY with SAND continued.			
				18.5 - 19.5' SILTY SAND : (0,70,20,10); brown (10YR5/3); medium dense to dense; fine to medium sand: moderately graded; slightly moist.	SM		
20.0				19.5 - 32' SILTY CLAY with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; moist.	CL		2" Borehole
22.5							
			16				
25.0							Portland Cement
27.5			0.0				
30.0		52407-08					
32.5				32 - 33' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		33.0

FRIED,16...

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRAD WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

SB/MW #: B-6
D- 17356
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

McLaren Hart

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 29.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 3' SILTY SAND: (5,50,30,15); yellowish brown (10YR5/6); dense; moderately graded; fine to coarse grained sand; fine grained gravel; slightly moist.	SM		
2.5							
				3 - 5' CLAYEY SILT with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low plasticity; slightly stiff to stiff; slightly moist.	ML		
			0.0				
5.0				5 - 27' SANDY CLAY: (0,35,30,35); yellowish brown (10YR5/6); medium plasticity; stiff to hard; fine to coarse grained sand; moderately graded; slightly moist.	CL		2" Borehole
			0.0				
7.5							
10.0			3.4				Portland Cement
12.5		52412					
			3.4				
15.0							

See Following Page...

FRIED,INGRAM&COMPS Exp. 9/30/96

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WARWICK REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-6
D- 17356
Page 2 of 2
Geologist: C. Warwick
C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0			0.0	SANDY CLAY continued.			
17.5							
20.0							2" Borehole
22.5			0.0				
25.0		52413-14	0.0				Portland Cement
27.5				27 - 29' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		29.0

FRIED.JK06 AUGNBPS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp 2/9/96 REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	At Grade	LOGGED BY	MJ
DEPTH TO GROUNDWATER	31 ft.	BORING DIAMETER	2-inch	DATE DRILLED	10/17/91

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
GRAVEL (GW), red-gray, dry, loose, sandy,						Well Construction Details	
FILL						Cement grout surface seal with steel, traffic rated cover	
GRAVEL (GP), tan, dry, loose, pea-size subround gravel, not crushed, no odor							
		5				2-inch PVC, Schedule 40 solid casing	
Gravel and sampler becoming wet with depth, perched water at the bottom of tank excavation							
FILL		10					
CLAY (CL), tan, with red mottling, damp, very stiff, silty, moderate to high plasticity, no odor				20			
		15					
Same as above with black oxidation mottling, grading to sandy Clay, fine-grained sand				31			

Kaldveer Associates
Geoscience Consultants
A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1-1009	November 1991	MW-1

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	At Grade	LOGGED BY	MJ
DEPTH TO GROUNDWATER	31 ft.	BORING DIAMETER	2-inch	DATE DRILLED	10/17/91

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Same as above, with fine-grained sand stringers, very stiff, damp				29		Bentonite pellet plug	
CLAY (CL), brown, moist, silty, very stiff		25		21		2/12 washed sand filter pack	
Clay with silty sand lenses (to 2" thick) with fine-grained sand, free water in lenses		30		27		2-inch PVC, Schedule 40 slotted (0.020-inch) casing	
Clay grading to sand (fine-grained), moist, very stiff		35		30		Sand backfill in bottom of boring	

Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. Ground water was measured at 31 feet at time of drilling. After 5 hours, ground water was measured at 11.8 feet.
3. N.S. = Not Surveyed

Kaldveer Associates
Geoscience Consultants
A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1-1009	November 1991	MW-1

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Tan-red Silty clay turning tan-brown, slight smell		25		30	0	Bentonite pellet plug 2/12 washed sand filter pack	
Same as above, grading sandy (fine-grained), red mottling, moist, black oxidation specks, no odor		30		22	5	2-inch PVC, Schedule 40 slotted (0.010-inch) casing	
SAND (SM/SC), tan-brown, fine-grained, with clay and silt, wet		35		N.C.	0		
Bottom of Boring = 35 feet. Notes: 1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual. 2. For an explanation of penetration resistance values marked with an asterisk (*), see first page Appendix A. 3. Ground water level was measured at 31 feet at time of drilling. After 24 hours, ground water level was measured at 22.5 feet.							

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Geoscience Consultants
A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
3" Asphalt 3" **GRAVEL (GW)**, gray, sandy, fill material						Well Construction Details	
CLAY (CL), tan-red, damp, very stiff, silty, with some sand (fine-grained), light gray silt mottling, moderate to high plasticity, no odor						Cement grout surface seal with steel, traffic rated cover	
		5		18	0		
						2-inch PVC, Schedule 40 solid casing	
Same as above, with black rootlets, red flecks, very stiff							
		10		26	0		
Silty Clay turning gray with tan-red mottling, black oxidation flecks							
		15		26	0		
Same as above, becoming moist, with sand (fine-grained)							
				20	0		

Kaldveer Associates
Geoscience Consultants
A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-3
D- 17357
Page 1 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION 86.43 (MSL) DATE(S) 10/26/95 TOTAL DEPTH 27.5'
MONITORING DEVICE OVM SCREENED INTERVAL 20' - 25'
SAMPLING METHOD Cal. Mod. Split Spoon SUBCONTRACTOR & EQPT Gregg/M-11
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water ▼ =Static Water (10/30/95)
MEMO Hand augered to 2.5'.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
0						0 - 1' ASPHALT and ROADBASE	RB	
						1 - 4' SANDY FILL	FL	
2.5	7-12-16	28			10.2			
	7-14-14	28			15.0	4 - 10' SILTY SAND: (0,50,30,20); brown (7.5Y5/4); loose to medium dense; fine grained sand; poorly graded; slightly moist.	SM	
5.0								
	10-12-17	29			32.0			
	8-17-20	37			64.0			
7.5								
	11-15-20	35		52416	498			
10.0	15-27-24	51			102	10 - 13' SANDY SILT: (0,30,50,20); reddish yellow (7.5Y6/6); low plasticity; slightly stiff to stiff; fine grained sand; slightly moist.	ML	
	7-14-19	33			33			
12.5								
	7-11-20	31			34	13 - 18' SILTY SAND: (0,60,20,20); brown (7.5Y5/4); medium dense; fine to medium grained sand; moderately graded; moist.	SC	

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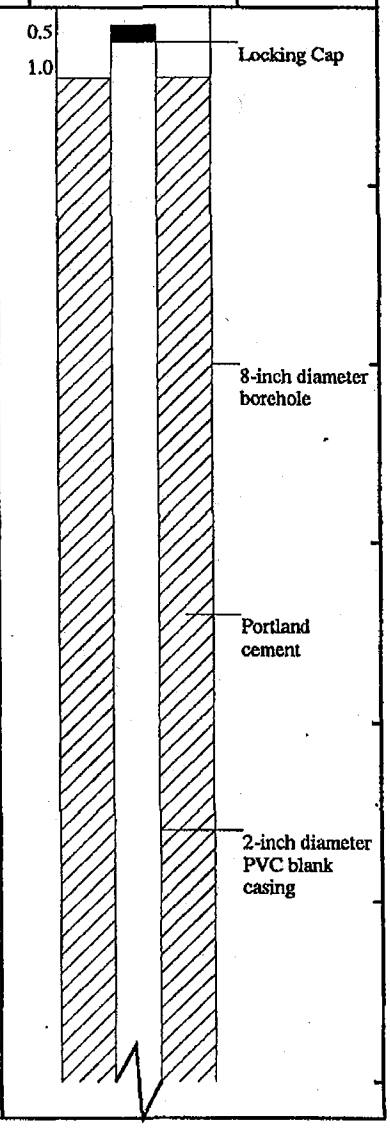
Borehole Abandonment/ Well Construction Details



STATE OF CALIFORNIA
REGISTERED GEOLOGIST
#6276
Exp. 3-31-97
BRADLEY D. WRIGHT
REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

TITLE

SOIL DRILLING LOG

SB/MW #: MW-3
D- 17357
Page 2 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

McLaren Hart

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0	6-10-14	24		52417	412	SILTY SAND continued.			Portland cement
	11-10-12	22			105				8-inch diameter borehole
17.5									17.0
	10-17-18	35		52418	60	18 - 20' SANDY CLAY: (0,30,40,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; moist.	CL		Hydrated bentonite
									19.0
20.0	4-6-10	16			40	@ 20' Sand (SP) lens, saturated.			20.0
	6-10-15	25			54	20.5 - 24.5' SILTY SAND: (0,50,30,20); medium dense; fine to medium grained sand; moderately graded; very moist to saturated. @ 20.5' Increasing fine, well-rounded gravel from 20.5' to 21'.	SM		12/20 Mesh sand pack
22.5									
	12-12-16	28			27				2-inch diameter PVC screen .020 slot
	11-6-16	22			21	24.5 - 27.5' SANDY CLAY: (0,30,30,40); brown (7.5YR5/4); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		25.0 Endcap
25.0									25.5
	6-12-6	18			0.0				26.0
27.5									Hydrated bentonite 27.5

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WARK REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

TITLE

SOIL DRILLING LOG

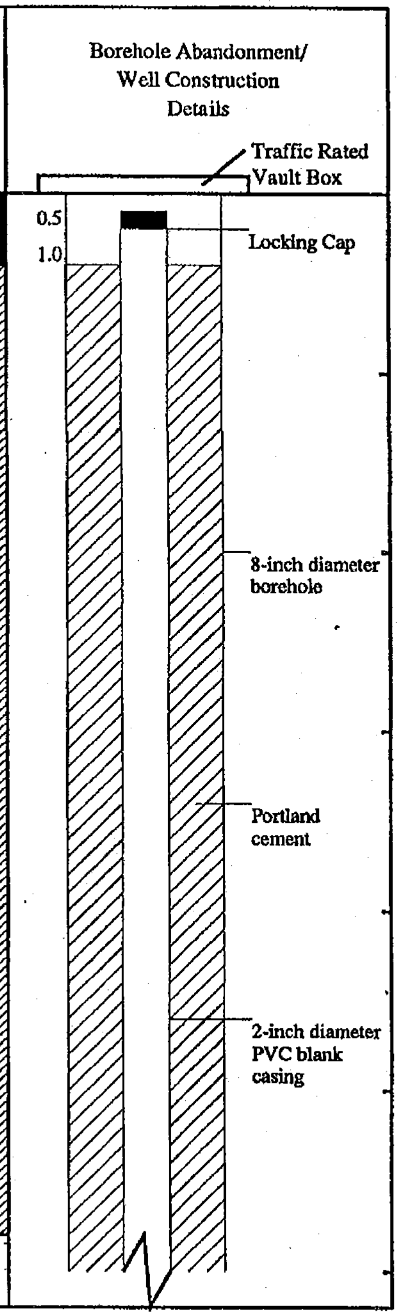
McLaren Hart

SB/MW #: MW-4
D- 17359

Geologist: C. Warwick
C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION 86.62 (MSL) DATE(S) 10/26/95 TOTAL DEPTH 37.0'
MONITORING DEVICE OVM SCREENED INTERVAL 25.5-35.5
SAMPLING METHOD Cal. Mod. split spoon SUBCONTRACTOR & EQPT Gregg/M-11
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water ▼ =Static Water (10/30/95)
MEMO Hand augered to 2'.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
						0 - 1' ASPHALT and ROADBASE	RB	
						1 - 14.5' SANDY CLAY: (0,40,35,25); brown (7.5Y5/4); medium plasticity; slightly stiff; fine grained sand; slightly moist.	CL	
2.5	8-10-14	24			0.0			
	4-16-15	31			0.0			
5.0	9-12-18	30			0.0			
	6-10-15	25			0.0			
7.5						@ 7.5 - 9.5' Decreasing sand content.		
	7-14-16	30			0.0			
10.0	6-10-13	23			0.0	@ 9.5 - 10' Increasing medium grained sand.		
	7-12-14	26			0.0			
12.5								
	5-8-11	19			0.0			
15.0						14.5 - 16.5' SILTY SAND: (0,55,30,15);	SM	



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STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF REG. SUPERVISOR AND REVIEWER
Senior Geologist
TITLE

SOIL DRILLING LOG

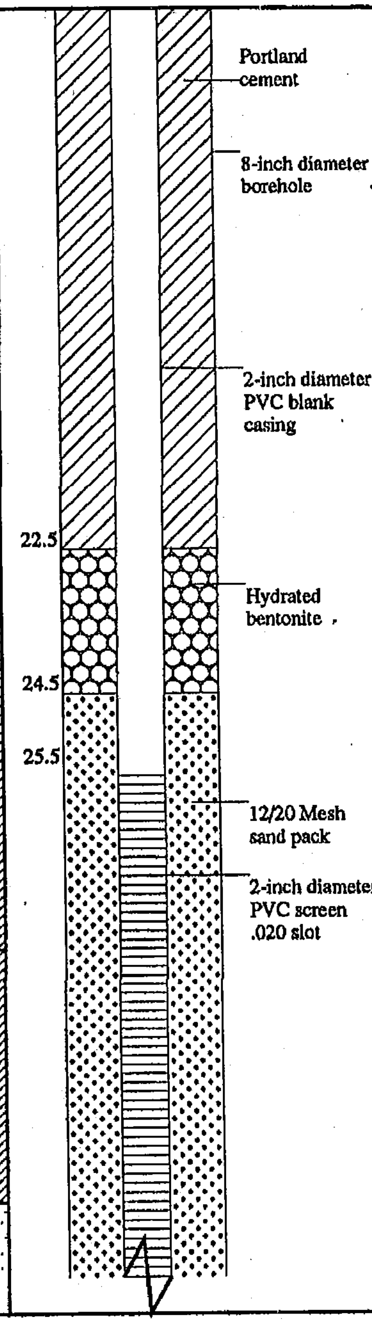
McLaren Hart

SB/MW #: MW-4
D- 17359
Page 2 of 3
Geologist: C. Warwick
[signature]
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	BPF	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification
15.0	6-10-11	21		0.0	reddish yellow (5YR6/6); loose to medium dense; fine to medium grained sand; moderately graded; moist to very moist.	
	7-8-11	19		0.0	16.5 - 20' SANDY SILT with CLAY: (0,40,35,25); brown (7.5YR5/4); low plasticity; slightly stiff; fine grained sand; moist. @ 17.5 - 18' Sand (SC) lens; saturated.	ML
17.5	5-7-12	19		0.0		
	8-8-14	22		0.0		
20.0	5-8-12	20		0.0	20 - 28' SANDY CLAY: (0,30,40,30); yellowish red (5YR5/6); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL
22.5	6-6-11	18		0.0		
	7-10-14	24		0.0		
25.0	6-12-15	27		0.0		
27.5	10-9-13	22		0.0		
	7-10-12	22	52415	0.0	28 - 31.5' SANDY SILT: (0,45,35,20); yellowish red (5YR5/6); low plasticity; slightly stiff; fine grained sand; moist.	ML CL
30.0	10-12-16	28		0.0		
32.5				0.0	31.5 - 35' SILTY SAND: (0,70,20,10); yellowish red (5YR5/6); loose to medium dense; fine to medium grained sand;	SM

Borehole Abandonment/ Well Construction Details



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FRIED,1/5/95,AUGPS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT EXP.

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-4
D- 17359
Page 3 of 3
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
32.5	8-9-10	19			0.0	moderately graded; very moist.			2-inch diameter PVC screen .020 slot; 12/20 Mesh sand pack
	7-10-16	26			0.0	@ 34.5 - 35' Decreasing silt and clay content; saturated.			
35.0						35 - 37' SANDY CLAY: (0,30,40,30); yellowish red (5YR5/6); medium plasticity; stiff; fine grained sand; moist.	CL		35.5 Endcap; 36.0 Hydrated bentonite; 37.0
		29			0.0				

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WHITE REGISTERED GEOLOGIST

FIELD TRANSLOGGER: ____

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

Drilling Log

Monitoring Well MW-5

FLUOR DANIEL GTI

Project Former Texaco Facility — Owner Equiva
Location 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth 35 ft. — Diameter 8.5 in
Top of Casing ____ — Water Level Initial 18 ft — Static ____
Screen: Dia 2 in. — Length 25 ft. — Type/Size 0.020 in.
Casing: Dia 2 in — Length 10 ft — Type PVC Riser
Fill Material Lonestar 2/12 — Rig/Core Mobile B-61
Drill Co. Westex — Method Hollow Stem Auger
Driller Mike Noble — Log By Bob Fehr — Date 09/19/96 — Permit # X9600747
Checked By Ed Simonis — License No. RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal.

Depth (Ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asph	Asphalt
4		0	MW-5 (5)	15 40 40			Sandy Silty CLAY, brown, stiff, moist, no odor
8				15 30 45		CL	
10		0					Grades to Silty CLAY, light greenish gray, hard, damp
14		7	MW-5 (15')	20 20 45			Grades with trace dark brown spots and medium brown mottling
18						SP	Groundwater encountered at 1515
20		0		20			Grades to fine, wet sorted SAND with some Clay, brown, dense, saturated, no odor
22						CL	Grades to trace Silt, brown with trace dark brown spots, medium stiff, plastic, no odor
24				18 20			

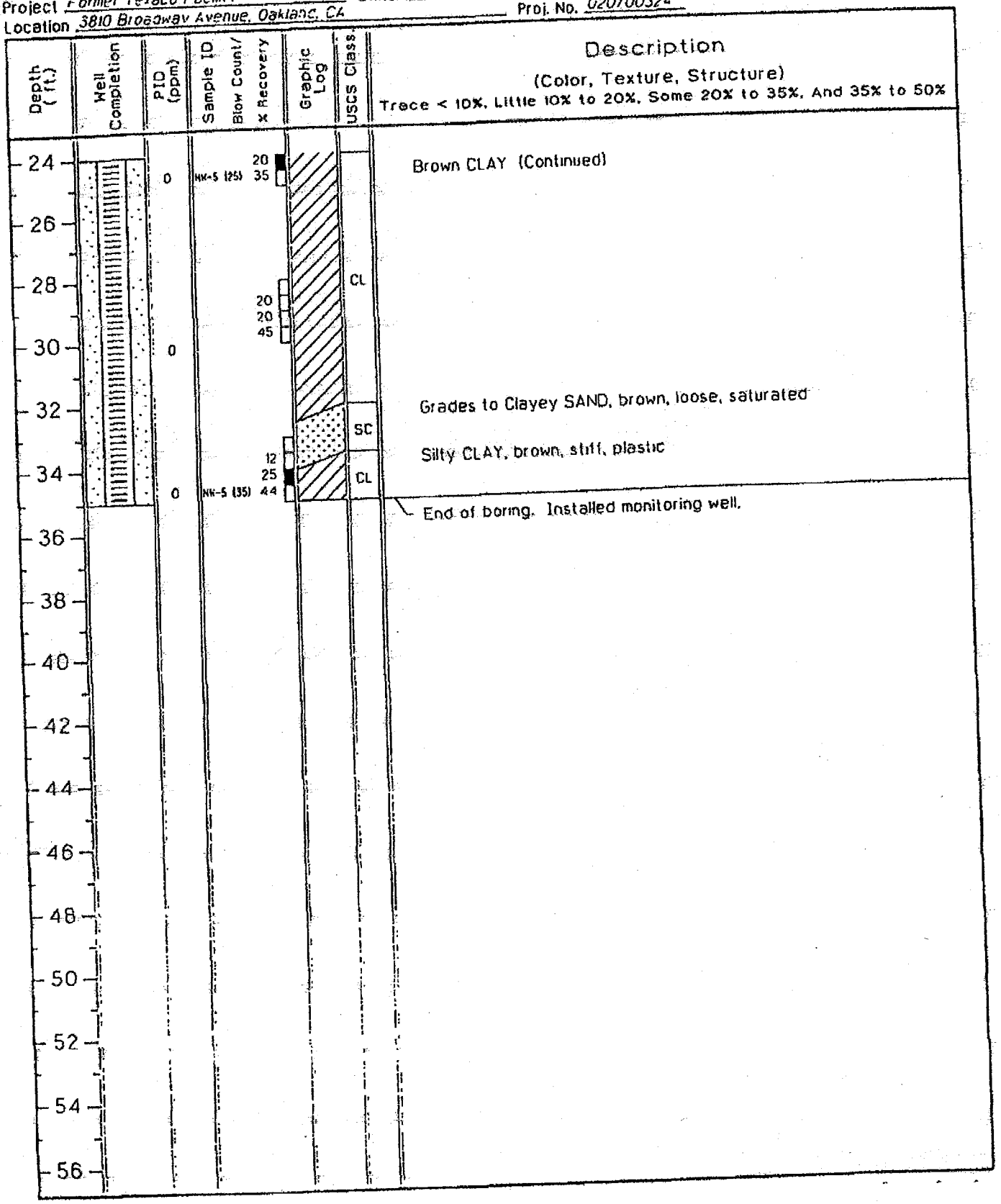
FLUOR DANIEL GTI

Drilling Log

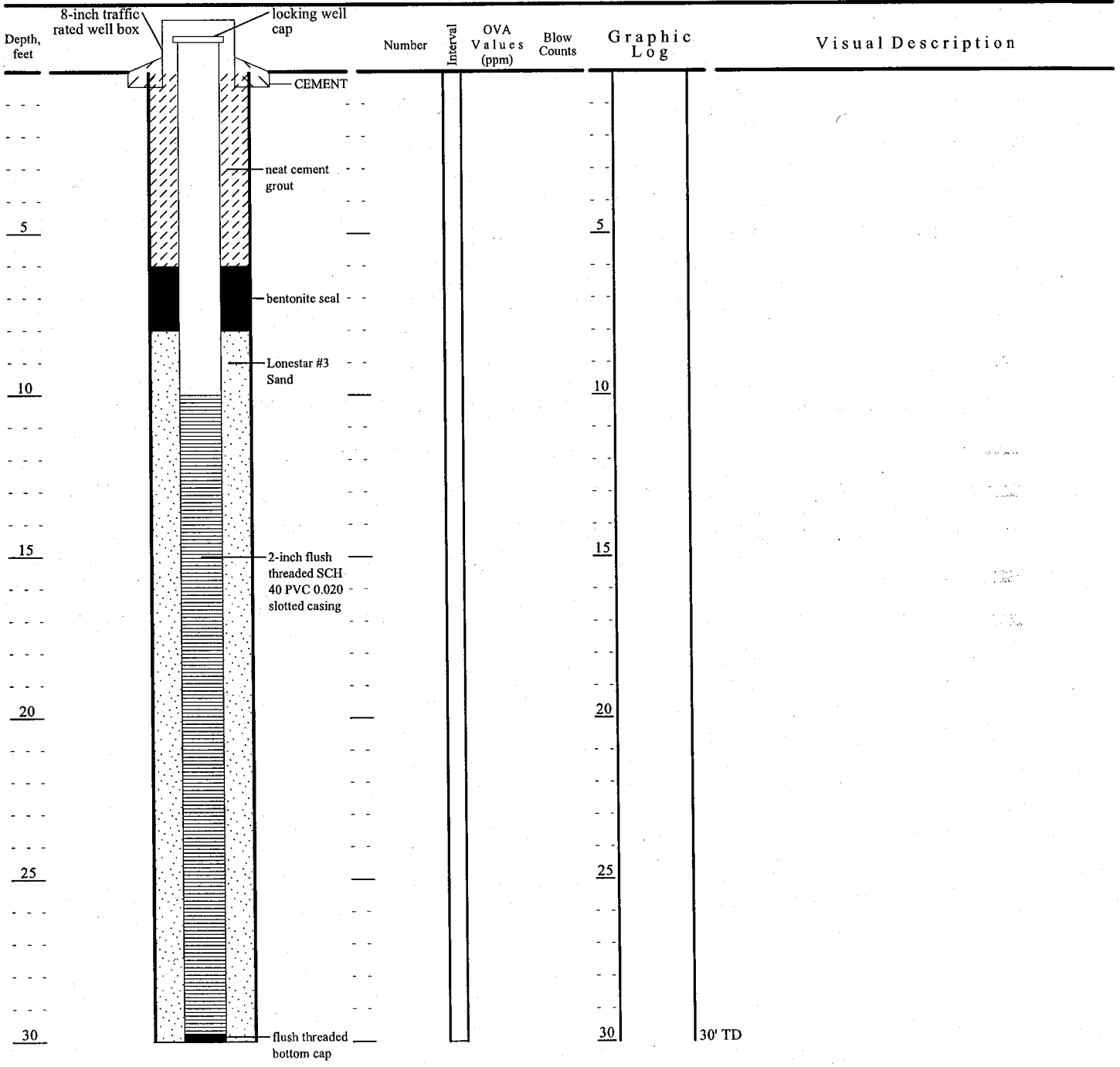
Monitoring Well MW-5

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324



Delta Environmental Consultants, Inc.	Street Address **3810 Broadway**	Project ID **Former Texaco #211283**	
	City & State **Oakland, California**	Surface Elev.	Well / Boring ID **MW-5 (B)**
	Delta Project # **D211-283**	Casing Elev.	Total Depth **30'**



Dates and Times	Logger **Will Slowik**	Sampling Method & Diameter **2-Inch Split Spoon**	Permitting Agency **Alameda County Public Works Agency**
Start **5/30/02 1130**	Drilling Company & Driller **Cascade Drilling, Inc., Jaydean**	Bore Hole Diameter **8-inches**	Permit # **W02-0509**
Total Depth **5/30/02 1225**	Drillers C-57# **717510**	Diameter, Type & Slot Size of Casing **2-inch SCH 40 PVC/0.020 slot**	
Completion or backfill **5/30/02 1320**	Drilling Equipment and method **LAR HSA, Hollow Stem Auger**		**Page 1 of 1**

WELL 211-283.GPJ 8/14/02

Drilling Log

Monitoring Well MW-6

FLUOR DANIEL GTI

Project Former Texaco Facility Owner Friedkin
Location 3541 Broadway Avenue, Oakland, CA Proj. No. 020700324
Surface Elev. ____ Total Hole Depth 35 ft. Diameter 8.5 in
Top of Casing ____ Water Level Initial 23 ft Static ____
Screen: Dia 2 in Length 25 ft. Type/Size 0.020 in
Casing: Dia 2 in Length 10 ft. Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Westex Method Hollow Stem Auger
Driller Mike Noble Log By Bob Fehr Date 09/20/96 Permit # X9600747
Checked By Ed Simonis License No. RG #4422

See Site Map For Boring Location

COMMENTS

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asph	Asphalt
4		8	MW-6 (5)	10 20 40			Silty CLAY, greenish gray, medium stiff, plastic, damp, no odor
8		11		10 30 35		CL	Grades to CLAY with Silt, brown with trace dark greenish gray, mottling, hard, plastic, damp, slight odor
14		5		17 30			Grades greenish gray/greenish brown, stiff, no odor
18							Grades moist
22						SC	Grades to Clayey fine SAND, medium brown, loose, saturated
							Groundwater encountered at 1050
24						CL	

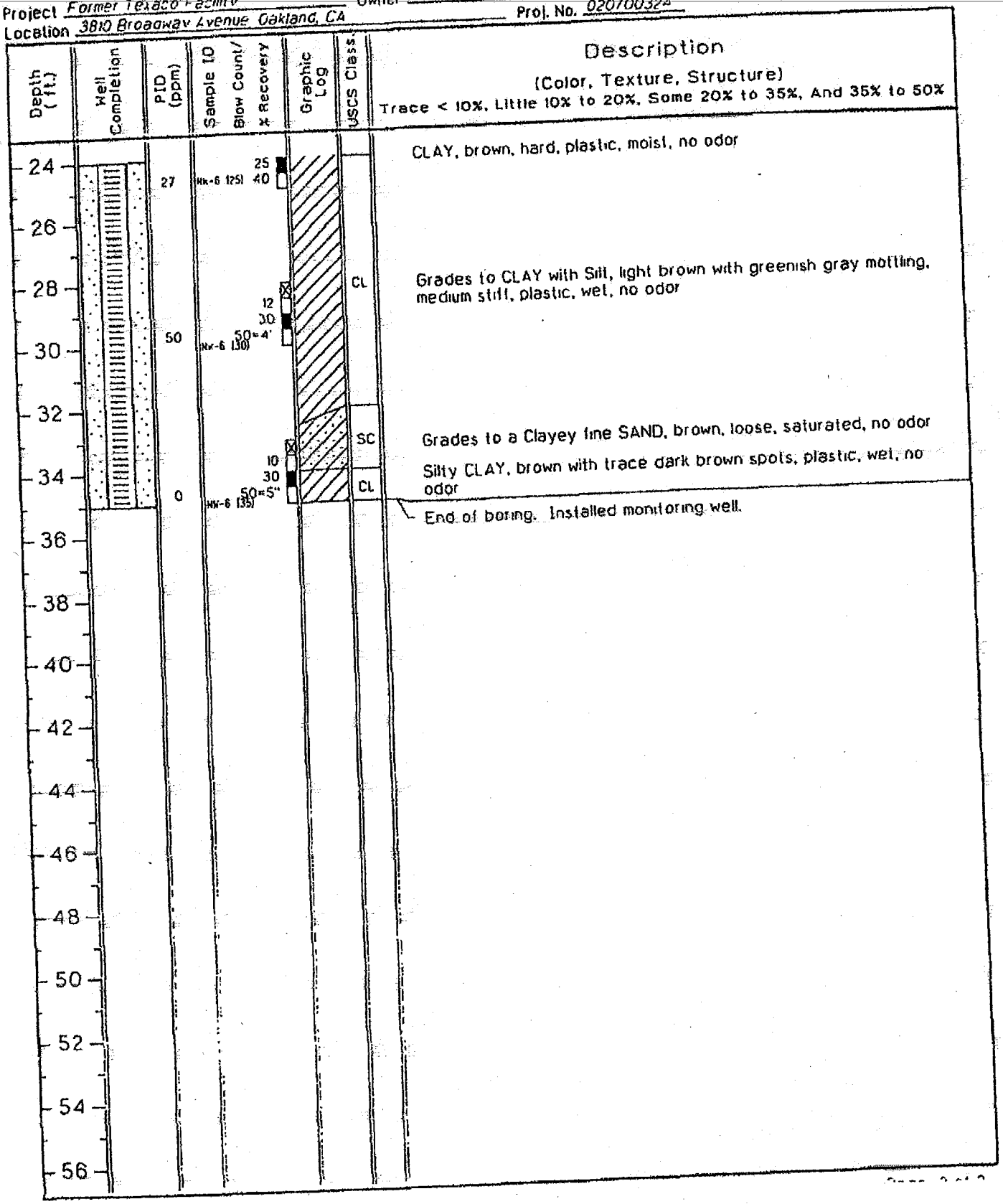
Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-6

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue Oakland, CA Proj. No. 020700324



Drilling Log

Monitoring Well MW-7

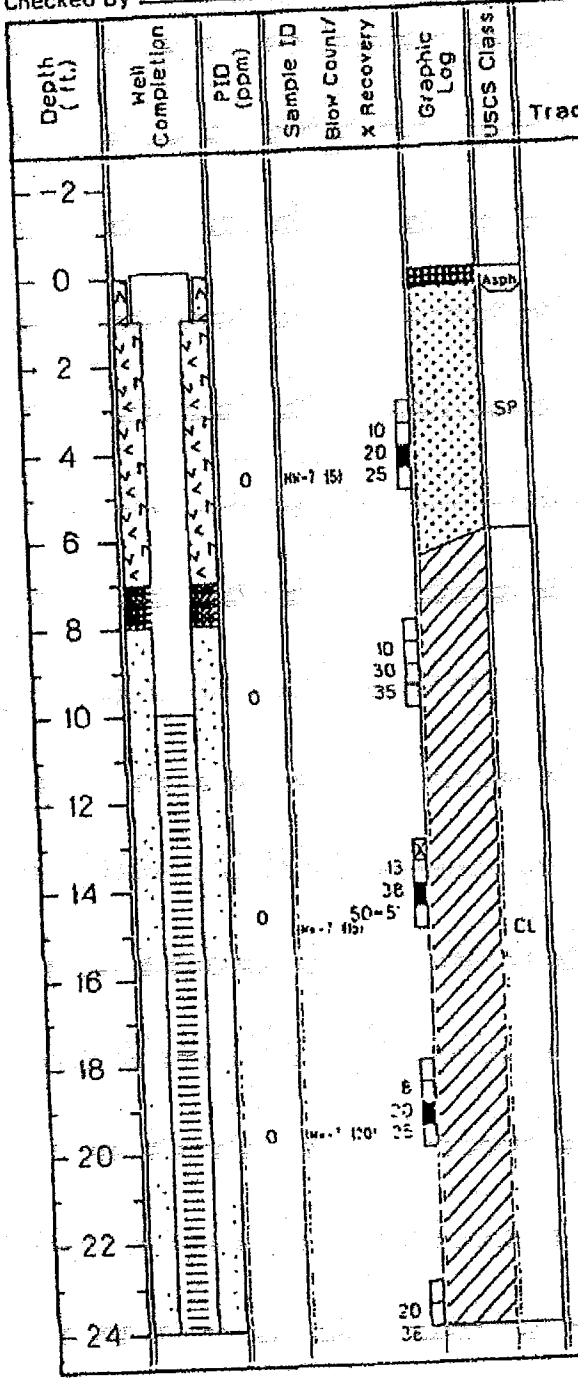
FLUOR DANIEL GTI

Project Former Texaco Facility Owner Friedkin
Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324
Surface Elev. ____ Total Hole Depth 35 ft. Diameter 8.5 in.
Top of Casing ____ Water Level Initial 33 ft. Static ____
Screen: Dia 2 in. Length 25 ft. Type/Size 0.020 in
Casing: Dia 2 in. Length 10 ft. Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Westex Method Hollow Stem Auger
Driller Mike Noble Log By Bob Fehr Date 09/20/96 Permit # X9800747
Checked By Ed Simonis License No. RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal



Description

(Color, Texture, Structure)

Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Asphalt

Fine SAND, well sorted, light brown with gray mottling, medium dense, damp, no odor

CLAY with trace Silt, brown with trace dark brown spots and trace gray mottling, medium stiff, plastic, damp, no odor

Grades to Silty CLAY with trace Sand, light brown with some light gray mottling, medium stiff, plastic, damp, no odor

Grades to less Silt, no sand, moist

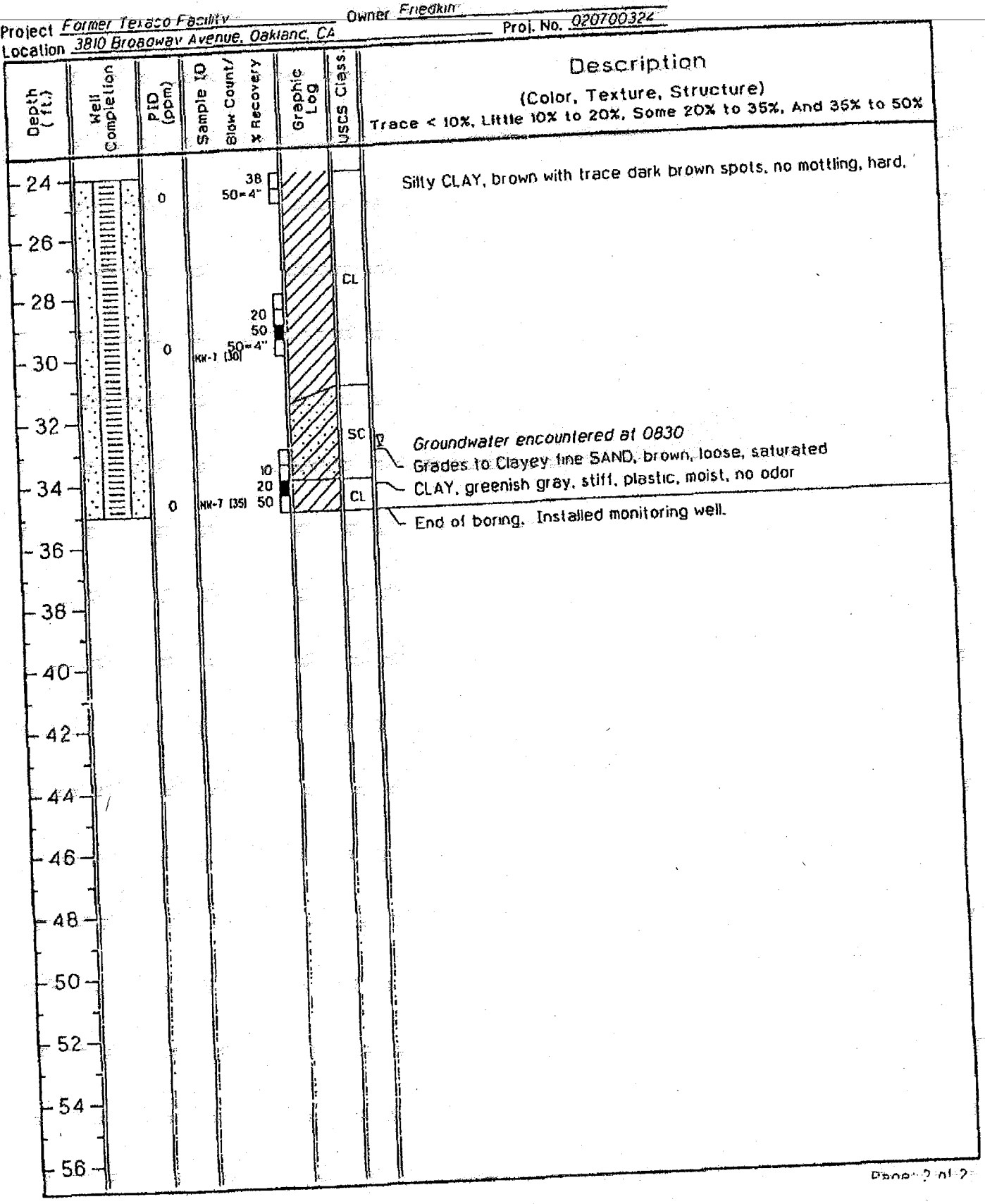
FLUOR DANIEL GTI

Drilling Log

Monitoring Well MW-7

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324



Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-8

Project Former Texaco Facility Owner Freakin
Location 3910 Broadway Avenue, Oakland CA Proj. No. 096700324
Surface Elev. ____ Total Hole Depth 35 ft Diameter 8.5 in
Top of Casing ____ Water Level Initial 33 ft Static ____
Screen: Dia 2 in Length 25 ft Type/Size 0.020 in
Casing: Dia 2 in Length 10 ft Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Wester Method Hollow Stem Auger
Driller Chris Miner Log By Bob Fehr Date 09/23/96 Permit # X9600747
Checked By Ed Simonis License No. RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0					(Asph)		Concrete
2							
4		729		13 28 30			Silty CLAY, brown with trace dark brown spots, stiff, plastic, damp, moderate odor
6							
8				8 20 28			Grades with greenish gray mottling, strong hydrocarbon odor
10		698					
12						CL	
14		341		14 24 34			
16							
18				13 24 35			Grades to less silt, greenish gray with olive green mottling, plastic, stiff, moist, no hydrocarbon odor
20		161					
22							
24				17 30			CLAY, brown, hard, plastic, no odor

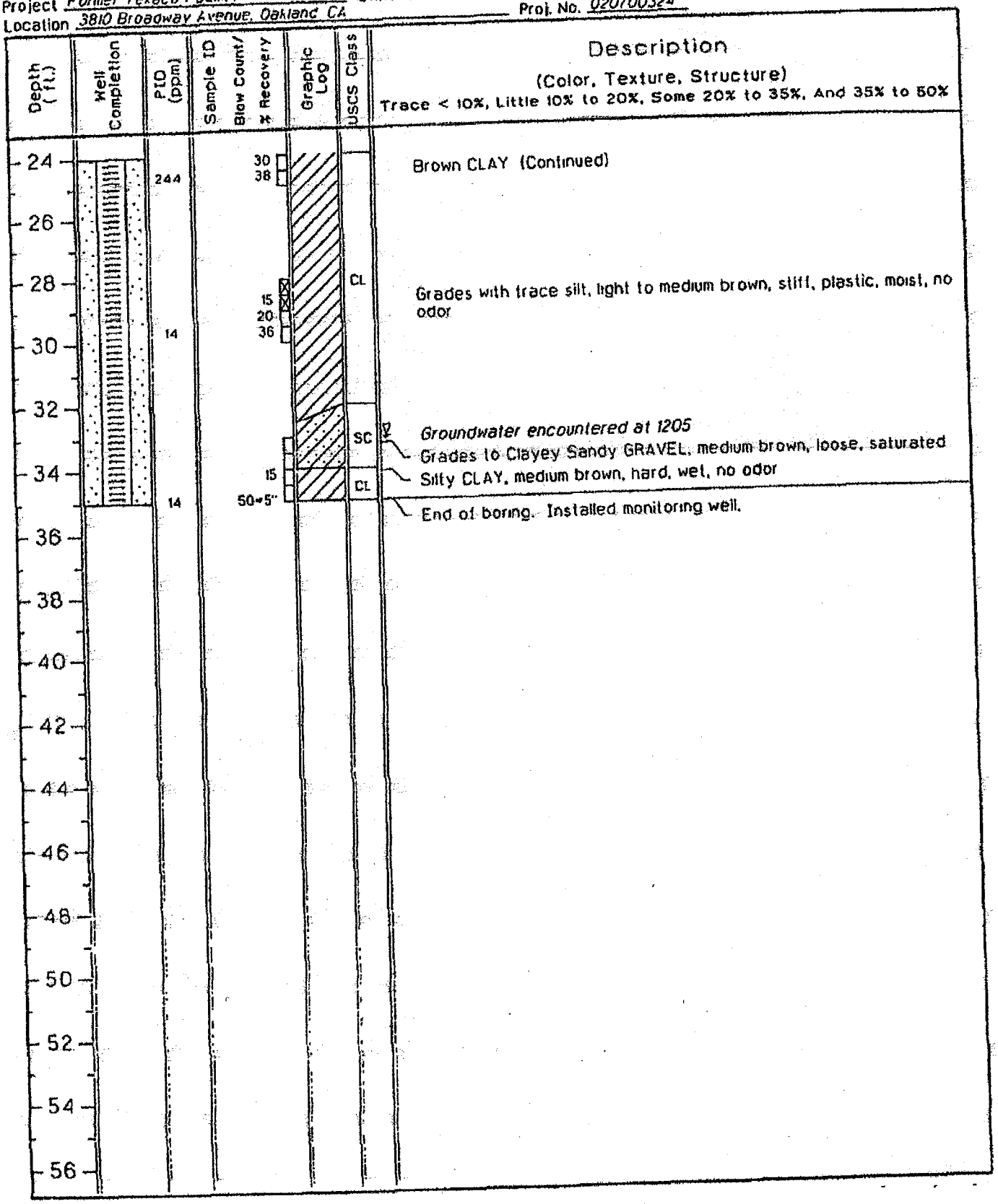
FLUOR DANIEL GTI

Drilling Log

Monitoring Well MW-8

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324



Drilling Log

Monitoring Well MW-9

FLUOR DANIEL GTI

Project Former Texaco Facility Owner Exxon
Location 3910 Broadway Avenue, Oakland, CA Proj. No. 020700324
Surface Elev. ____ Total Hole Depth 35 ft Diameter 8.5 in
Top of Casing ____ Water Level Initial 33 ft Static ____
Screen: Dia 2 in. Length 25 ft Type/Size 0.020 in
Casing: Dia 2 in Length 10 ft Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Wester Method Hollow Stem Auger
Driller Mike Noble Log By Bob Fehr Date 09/19/96 Permit # X9600747
Checked By Ed Simonis License No. RG #4422

See Site Map For Boring Location

COMMENTS.

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Conc	Concrete
2							
4		23	MW-9 (5)	12 16 25			Silty CLAY, brown with greenish gray mottling, stiff, plastic, damp, no odor
6							
8				18 33			
10		2	MW-9 (10)	40			Grades to Sandy CLAY, light to medium brown with greenish mottling, hard, damp, no odor
12						CL	
14		0	MW-9 (15)	23			Grades to Silty CLAY, brown with very dark brown and light greenish gray mottling, stiff, plastic, damp, no odor
16							
18							Grades to light brown with very light gray mottling, medium stiff, moist
20		0	MW-9 (20)	50/6"			
22							Silty CLAY, brown with no mottling, hard, moist, plastic, no odor
24							

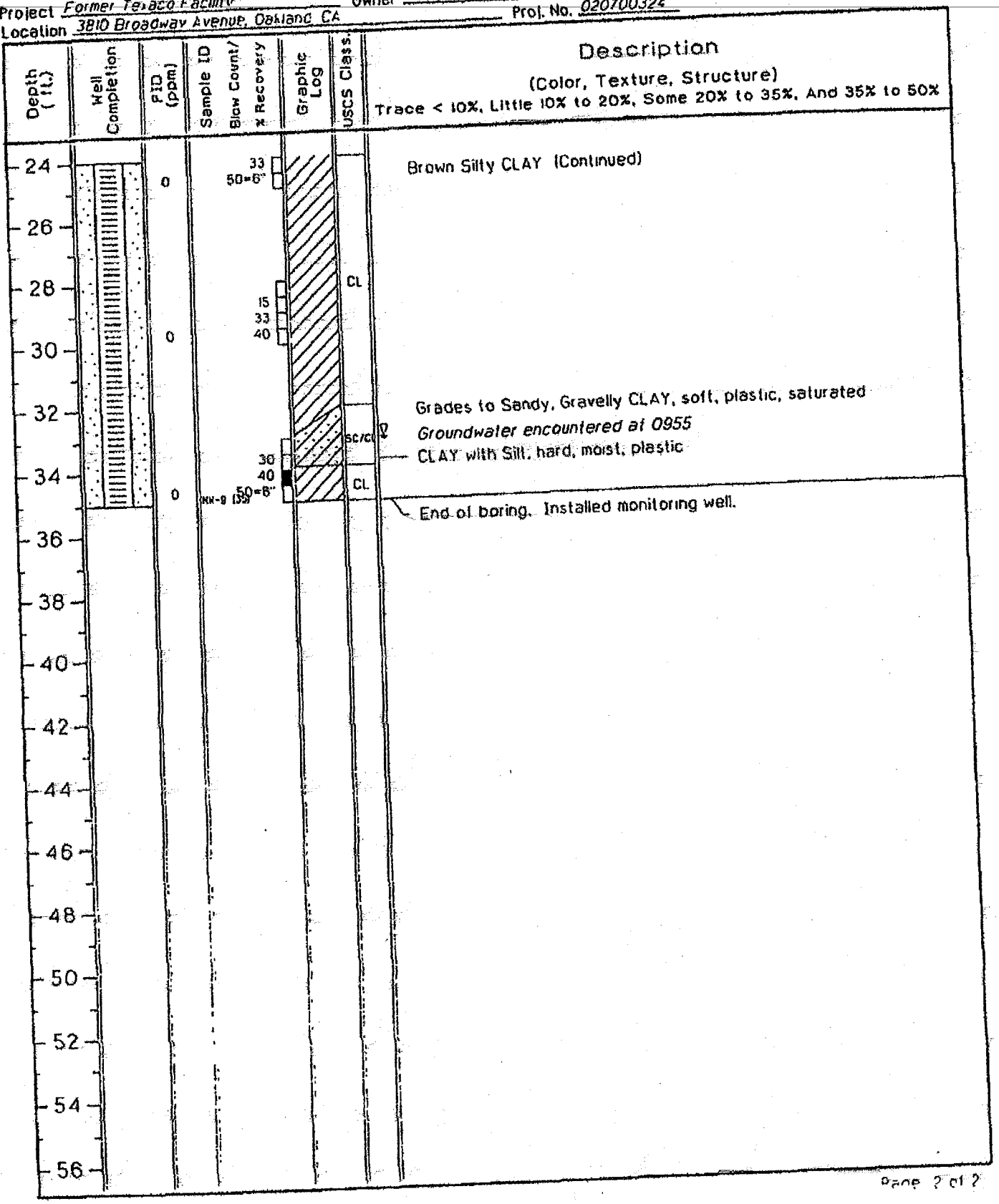
FLUOR DANIEL GTI

Drilling Log

Monitoring Well MW-9

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324



Drilling Log

Monitoring Well MW-10

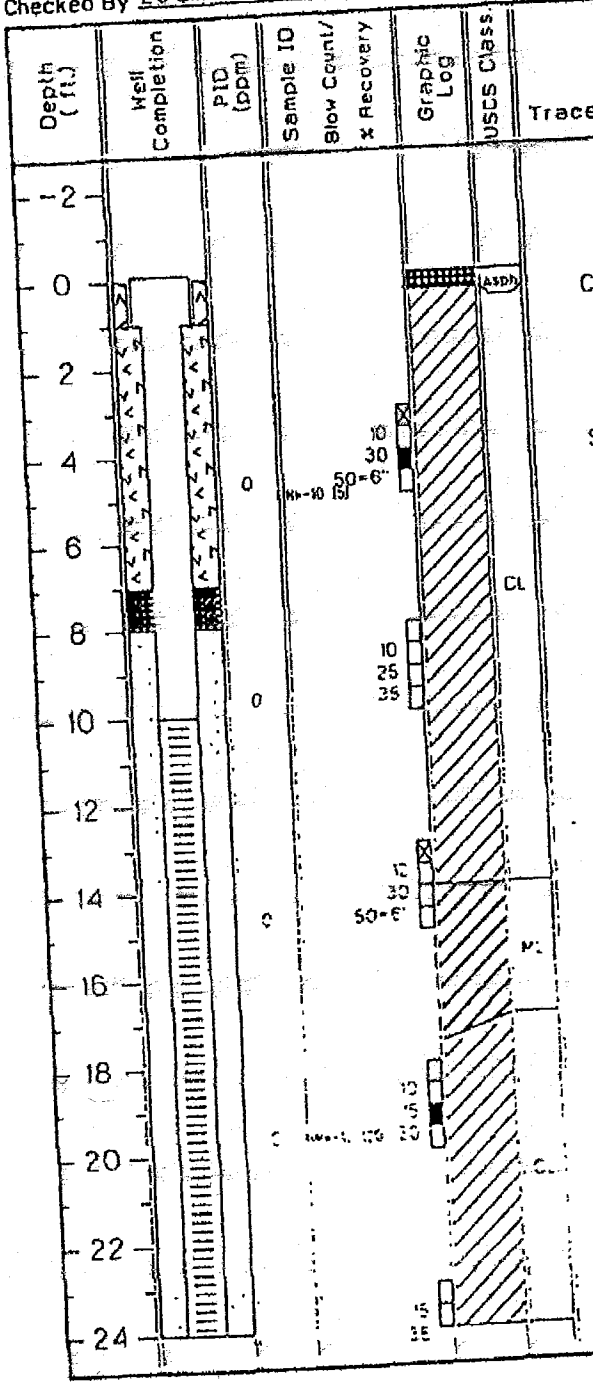
FLUOR DANIEL GTI

Project Former Texaco Facility Owner Fuegin
Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324
Surface Elev. ____ Total Hole Depth 25 ft Diameter 8.5 in
Top of Casing ____ Water Level Initial 28 ft Static ____
Screen: Dia 2 in Length 25 ft Type/Size 0.020 in.
Casing: Dia 2 in Length 10 ft Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Wester Method Hollow Stem Auger
Driller Mike Noble Log By Bob Fehr Date 09/19/96 Permit # X9600747
Checked By Ed Simonis License No. RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal



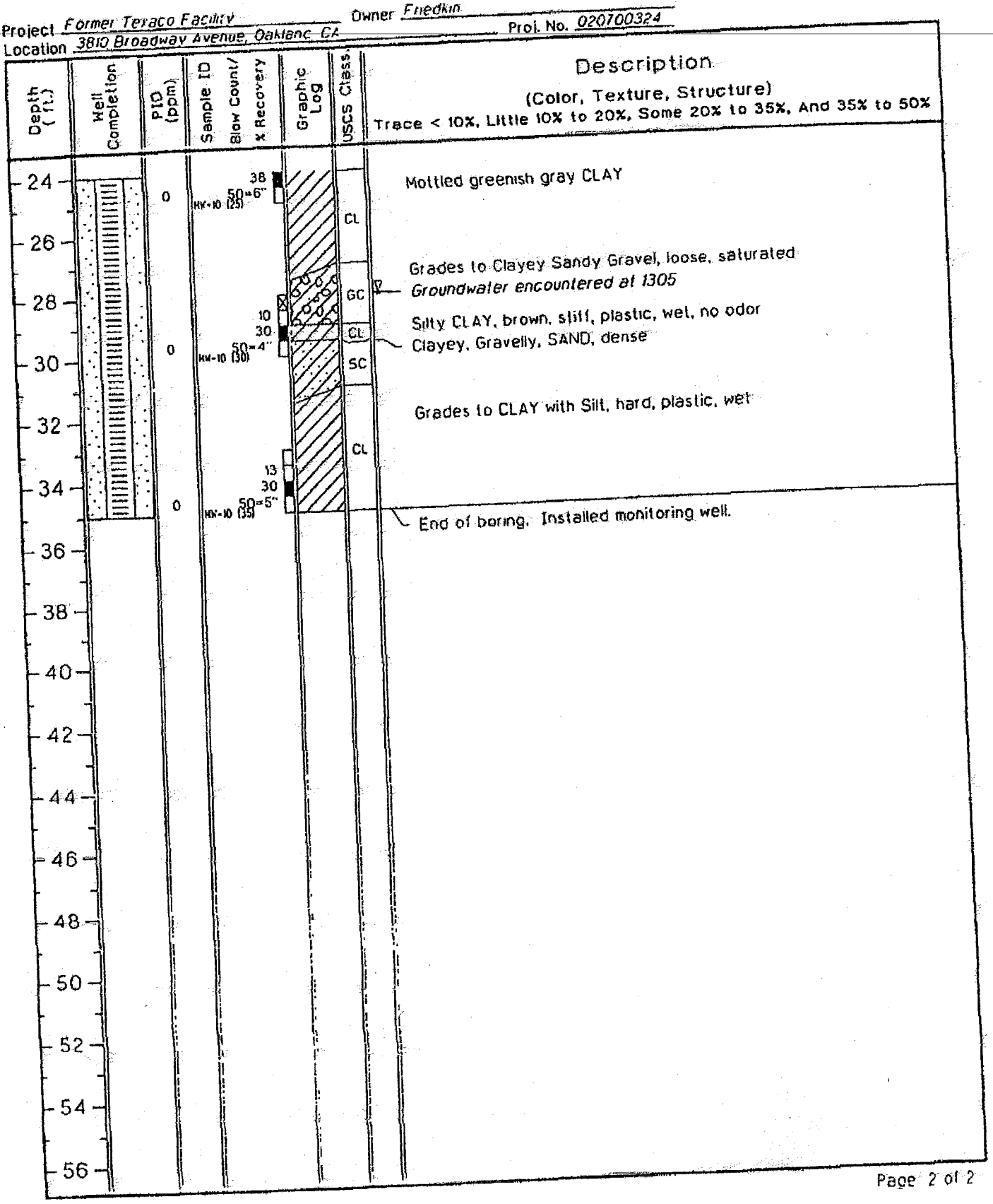
FLUOR DANIEL GTI

Drilling Log

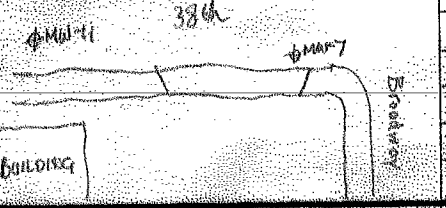
Monitoring Well MW-10

Project *Former Texaco Facility* Owner *Friedkin*

Location *3810 Broadway Avenue, Oakland CA* Proj. No. *020700324*



WELL/BORING LOCATION MAP



Boring/Well Log

TOXICHEM Management Systems, Inc.

WELL/BORING MW-11
PAGE 1 of 2
LOGGED BY: KC

LOCATION: 3810 BROADWAY
CITY/STATE: OAKLAND, CA
DRILLED BY: GREGG DRILLING
DRILLING METHOD/DIA: HSA / 8"
SAMPLING METHOD: SPLIT SPOON

CLIENT/PROJECT: EQ02IA
DATE DRILLED: 8-4-00
NORTHING:
EASTING:
TOTAL DEPTH: 40'

CONSTRUCTION: SEAL | CASING | SEAL

Grout Type/Qty: Basalite Type II
Grout Interval: 0-12
Seal Type/Qty: Bentonite
Seal Interval: 12-13
Total Well Depth: 40'
Casing Diameter: 2"
Casing Type: Sched 40 PVC
Screen Interval: 15-40

MOISTURE CONTENT	PID (ppm)	DENSITY BLOWS/6"	DEPTH (FEET)	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	SOIL GRAPHIC	SOIL TYPE	DESCRIPTION
			1						Asphalt BASEROCK: Gravel and sand
Dp			2					CL	Sandy clay: orange-brown, 40-50% clay, 10-15% silt, 35-40% fine sand, soft to firm, low plasticity, no product odor
			3					SP	Sand: orange-brown, 10-15% clay, 10-15% silt, 70-80% fine sand, loose, no product odor
Dp			4						
		12	5						
		16	6						@6': as above, <5% clay, 5-10% silt, 90-95% fine sand, loose, no product odor
Dp	0	17	7						
			8						
		8	9						@9': as above, no product odor
		12							
Dp	0	18	10						
			11						
			12						
			13					CL	Silty clay: brown with trace black nodules and some gray mottling, 60-70% clay, 20-25% silt, 5-10% fine sand, firm, low to med plasticity, no product odor
		10	14						
Dp Mst	0	14 16	15						
			16						
			17						
			18					ML	Clayey silt: light brown, 35-40% clay, 40-45% silt, 15-20% v fine sand, soft, low plasticity, no product odor
		14	19						
Dp Mst	0	15 19	20						
			21						
			22						

Bentonite
Grout
Grout
0.020" Slot
2/12 Sand
2/12 Sand

Ullmann 408 983 0482 H
650 591-7617 W

WELL/BORING LOCATION MAP

Boring/Well Log

TOXICHEM Management Systems, Inc.

WELL/BORING: MW-11
PAGE: 2 of 2
LOGGED BY: NC

LOCATION: 3810 Broadway
CLIENT/PROJECT: EQ021A
CITY/STATE:
DATE DRILLED: 8-4-00
DRILLED BY:
NORTHING:
DRILLING METHOD/DIA.:
EASTING:
SAMPLING METHOD:
TOTAL DEPTH:

CONSTRUCTION							SAMPLE					
SEAL	CASING	SEAL	MOISTURE CONTENT	PID (ppm)	DENSITY BLOWS/6"	DEPTH (FEET)	INTERVAL	RECOVERY	RETAINED	SOIL GRAPHIC	SOIL TYPE	DESCRIPTION

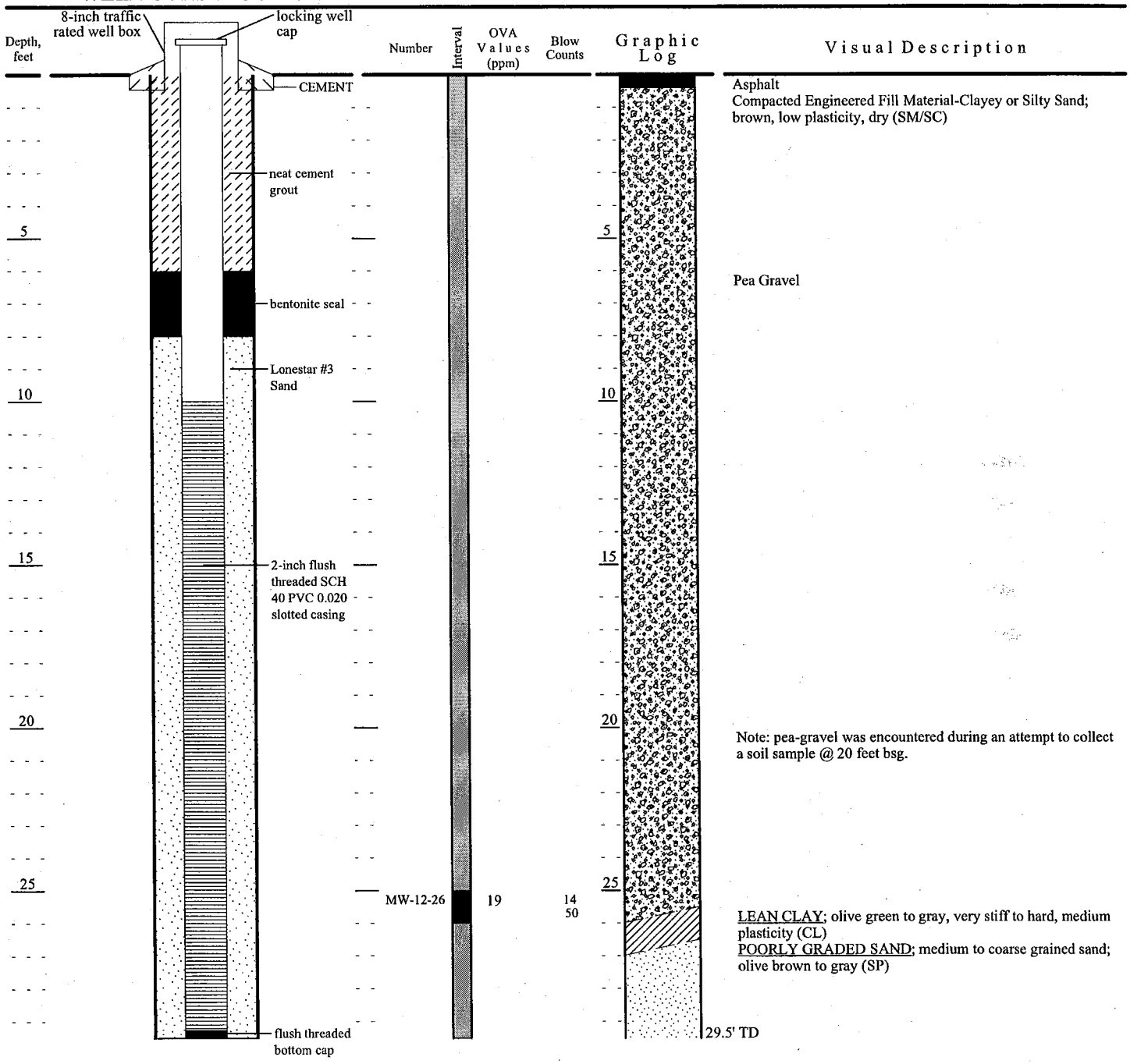
Grout Type/Qty:
Grout Interval:
Seal Type/Qty:
Seal Interval:
Total Well Depth:
Casing Diameter:
Casing Type:
Screen Interval:

DEPTH (FEET)	SOIL TYPE	DESCRIPTION
23	SM	Silty sand: grayish brown with rust colored mottling, 10-15% clay, 30-35% silt, 50-60% v fine to fine sand, soft, loose, no product odor
24		
25		
26		
27	CL	Silty clay: brown with rust colored and gray mottling and trace black nodules, 70-80% clay, 10-15% silt, 5-10% fine sand, very stiff, no product odor
28		
29		
30		
31		
32		
33		@ 34': as above, increased sand, decreased clay content, no product odor
34		
35		
36		
37		
38	SP	Sand: brown, <5% clay 10-15% silt, 85-90% fine sand, loose, no product odor not enough recovery for sample
39		
40		
19		
20		
21		
22		

Construction: 2/12 Sand; 0.020" Slot; 2/12 Sand

DEPTH (FEET)	MOISTURE CONTENT	PID (ppm)	DENSITY BLOWS/6"
24			12 15
25	Mst	0	17
28	@ 12½		
29			20 22
30	Mst	0	30
34			22 20
35	▽ @ 10½ Wet	0	20
39	Wet	0	35 50/5"

Delta Environmental Consultants, Inc.	Street Address: 3810 Broadway	Project ID: Former Texaco #211283	
	City & State: Oakland, California	Surface Elev.	Well / Boring ID: MW-12
	Delta Project #: D211-283	Casing Elev.	Total Depth: 29.5'



Dates and Times	Logger: Will Slowik	Sampling Method & Diameter: 2-Inch Split Spoon	Permitting Agency: Alameda County Public Works Agency
Start: 5/30/02 1430	Drilling Company & Driller: Cascade Drilling, Inc., Jaydean	Bore Hole Diameter: 8-inches	Permit #: W02-0510
Total Depth: 5/30/02 1600	Drillers C-57#: 717510	Diameter, Type & Slot Size of Casing: 2-inch SCH 40 PVC/0.020 slot	
Completion or backfill: 5/30/02 1730	Drilling Equipment and method: LAR HSA, Hollow Stem Auger		Page 1 of 1

WELL 211-283.GPJ 8/14/02

Date Start/Finish: 6/25/12 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand auger **Sampling Method:** Hand auger/Slide hammer **Rig Type:** NA	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 10.5' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID: SV-1** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0						NA		Asphalt and gravel sub-base.	Steel flushmount cover
					2.0		SM		Silty fine to coarse SAND, poorly sorted, moist, loose, dark yellowish brown (10YR 4/6).	Steel flushmount monument Concrete pad
					2.9		SP		Very fine to fine SAND, well sorted, moist, loose, yellowish brown (10YR 5/6).	Hydrated bentonite slurry 0.25-in diameter Teflon tubing
					2.2					
					2.6					Dry bentonite granules
					2.1					
5	-5	HA	NA	NA					Trace medium pebbles at 5 ft bgs, subangular, low sphericity. Soil sample SV-1-S-5 collected from 5.0-5.5 ft bgs at 1635 for geotechnical analysis.	0.375-in diameter vapor probe screen (4.75-5.25' bgs)
					1.5		SW		Fine to medium SAND, some coarse Sand through medium Pebbles, poorly sorted, moist, very loose, dark yellowish brown (10YR 3/6).	#2 Silica sand pack
					1.8		SP		Very fine to fine SAND, trace subrounded medium Pebbles, well sorted, moist, loose, yellowish brown (10YR 5/6).	Hydrated bentonite slurry 0.25-in diameter Teflon tubing
					1.0					
					2.5					Dry bentonite granules
					1.7		SW		Fine SAND with some Silt, trace subangular pebbles (small to very large), poorly sorted, moist, loose, greenish gray (GLEY1 5/1 5GY). Soil sample SV-1-S-10 collected from 10.0-10.5 ft bgs at 1715 for geotechnical analysis.	#2 Silica sand pack
10	-10								End of boring at 10.5 ft bgs.	0.375-in diameter vapor probe screen (9.75-10.25' bgs)
15	-15									

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Remarks: bgs = below ground surface
HA = Hand auger
NA = Not applicable/available
Samples collected with a manual slide hammer core sampler and stainless steel sleeves and capped with Teflon squares and plastic caps.
Vapor probe lines capped with new 2-way valves and marked with strips of electrical tape (1 for 5' deep SV-1S, 2 for 10' deep SV-1D).

Date Start/Finish: 6/25/12
Drilling Company: Cascade Drilling, L.P.
Driller's Name: Mauricio Alba
Drilling Method: Hand auger
Sampling Method: Hand auger/Slide hammer
Rig Type: NA

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 10.5' bgs
Surface Elevation: NA

Descriptions By: Tim Bellis

Well/Boring ID: **SV-2**

Client: Chevron EMC

Location: 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0						NA		Asphalt and gravel sub-base.	Steel flushmount cover
					1.8		GM		Fine SAND and GRAVEL (small to medium angular Pebbles), some Silt, poorly sorted, moist, loose, brown (10YR 4/3).	Steel flushmount monument Concrete pad
					2.8		ML		SILT with some Clay, medium plasticity, moist, soft, olive yellow (2.5Y 6/6). Some very fine Sand from 2.0 - 5.0 ft bgs.	Hydrated bentonite slurry 0.25-in diameter Teflon tubing
					2.1					
					1.5					Dry bentonite granules
					1.8				Soil sample SV-2-S-5 collected from 5.0-5.5 ft bgs at 1030 for geotechnical analysis.	
5	-5	HA	NA	NA		X			CLAY with some very fine Sand, medium plasticity, moist, very stiff, yellowish brown (10YR 5/6).	0.375-in diameter vapor probe screen (4.75-5.25' bgs) #2 Silica sand pack
					3.3		CL			Hydrated bentonite slurry 0.25-in diameter Teflon tubing
					3.2					
					1.4					
					2.1		SW		Fine to medium SAND, some Silt, trace subrounded Granules to medium Pebbles, poorly sorted, moist, loose, yellowish brown (10YR 5/8).	Dry bentonite granules
					2.1		SP		Fine SAND with some Silt, well sorted, moist, medium dense, yellowish brown (10YR 5/4).	#2 Silica sand pack
10	-10					X			Fine SAND, trace Silt, trace subrounded small pebbles, well sorted, moist, very loose, yellowish brown (10YR 5/8). Soil sample SV-2-S-10 collected from 10.0-10.5 ft bgs at 1100 for geotechnical analysis. End of boring at 10.5 ft bgs.	0.375-in diameter vapor probe screen (9.75-10.25' bgs)
15	-15									

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Remarks: bgs = below ground surface
HA = Hand auger
NA = Not applicable/available
Samples collected with a manual slide hammer core sampler and stainless steel sleeves and capped with Teflon squares and plastic caps.
Vapor probe lines capped with new 2-way valves and marked with strips of electrical tape (1 for the 5' deep probe, 2 for the 10' deep probe).

Date Start/Finish: 6/26/12 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand auger **Sampling Method:** Hand auger/Slide hammer **Rig Type:** NA	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 10.5' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **SV-3** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0				1.7		NA		Asphalt and gravel sub-base.	Steel flushmount cover
							SC		Clayey fine SAND, some Gravel (Granules to medium Pebbles, subangular), poorly sorted, moist, loose, strong brown (7.5YR 4/6).	Steel flushmount monument Concrete pad
					1.8		CL		Sandy CLAY with little Silt, medium plasticity, moist, medium stiff, brownish yellow (10YR 6/6).	Hydrated bentonite slurry
					1.8		CL		Grading from Sandy CLAY with little Silt, medium plasticity, moist, medium stiff, brownish yellow (10YR 6/6) to fine SAND with little Clay, well sorted, moist, loose, brownish yellow (10YR 6/6).	0.25-in diameter Teflon tubing
					1.9		SP			Dry bentonite granules
5	-5	HA	NA	NA	1.8				Fine SAND with little Clay, well sorted, moist, loose, brownish yellow (10YR 6/6). Soil sample SV-3-S-5 collected from 5.0-5.5 ft bgs at 0935 for geotechnical analysis.	0.375-in diameter vapor probe screen (4.75-5.25' bgs)
					4.5					#2 Silica sand pack
					3.8		SP		Grading to coarse SAND with some Silt, well sorted, moist, medium dense, yellowish brown (10YR 5/4).	Hydrated bentonite slurry
					4.1					0.25-in diameter Teflon tubing
					4.8				Coarse SAND with trace Clay, well sorted, moist, loose, dark yellowish brown (10YR 4/6).	Dry bentonite granules
					3.5		CL		Silty CLAY with trace fine to medium Sand, medium plasticity, moist, stiff, yellowish brown (10YR 5/4). Soil sample SV-3-S-10 collected from 10.0-10.5 ft bgs at 1015 for geotechnical analysis.	#2 Silica sand pack
10	-10								End of boring at 10.5 ft bgs.	0.375-in diameter vapor probe screen (9.75-10.25' bgs)
15	-15									

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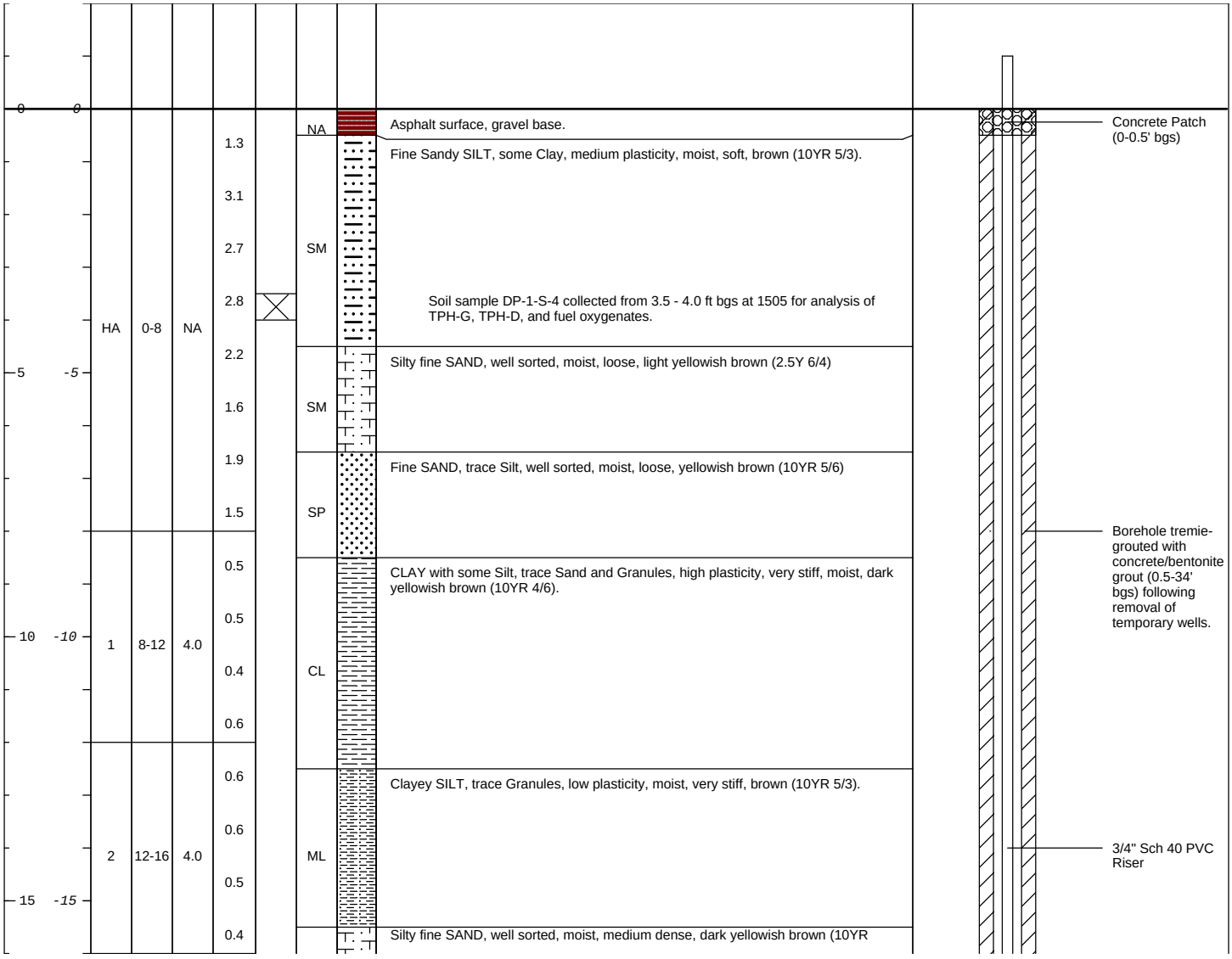
Remarks: bgs = below ground surface
HA = Hand auger
NA = Not applicable/available
Samples collected with a manual slide hammer core sampler and stainless steel sleeves and capped with Teflon squares and plastic caps.
Vapor probe lines capped with new 2-way valves and marked with strips of electrical tape (1 for 5' deep SV-3S, 2 for 10' deep SV-3D).

Date Start/Finish: 6/29/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 34' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-1** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA



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Remarks: bgs = below ground surface
HA = Hand Auger
NA = Not applicable/available
Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 6/29/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 34' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-1** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
					0.4		SM		4/4). Silty fine SAND, well sorted, moist, medium dense, dark yellowish brown (10YR 4/4) (continued).	
					0.4		ML		Clayey SILT, low plasticity, moist, medium stiff, brown (10YR 5/3), trace black mottling,	Borehole tremie-grouted with concrete/bentonite grout (0.5-34' bgs) following removal of temporary wells.
		3	16-20	4.0	0.5					
					0.4					
20	-20				0.4	X			Soil sample DP-1-S-21 collected from 20.5 - 21.0 ft bgs at 1515 for analysis of TPH-G, TPH-D, and fuel oxygenates. Wet at 21.5 ft bgs.	
		4	20-24	4.0	0.3					
					0.3					
					0.4		SM		Silty fine SAND, well sorted, wet, dense, light olive brown (2.5Y 5/6).	Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (21-26' bgs)
					0.4		ML		Clayey SILT, low plasticity, very soft, wet, brown (10YR 5/3).	
25	-25	5	24-26	2.0	0.8		SW		Medium to coarse SAND with little Granules, poorly sorted, wet, yellowish brown (10YR 5/6). Stained greenish grey (GLEY1 5/1 5G) from 25.8 to 27.0 ft bgs.	
		6	26-28	2.0	0.3					3/4" Sch 40 PVC Riser
					0.4		CL		Silty CLAY, medium plasticity, stiff, wet, olive (5Y 5/3).	
					0.4					
		7	28-30	2.0	0.5					
30	-30				0.5					
		8	30-32	2.0	0.4					Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (29-34' bgs)
					0.5		SM		Silty fine SAND, well sorted, wet, loose, pale olive (5Y 6/4).	
		9	32-34	2.0	0.5					

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Remarks: bgs = below ground surface
HA = Hand Auger
NA = Not applicable/available
Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 6/27/2012, 6/29/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 34' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID: DP-2** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0				NA				Asphalt surface, gravel base.	Concrete Patch (0-0.5' bgs)
					NA				Fine Sandy SILT, some Clay, medium plasticity, moist, soft, brown (10YR 5/3).	
					NA					
					NA					
		HA	0-9	NA	NA		NA		Silty fine SAND, well sorted, moist, loose, light yellowish brown (2.5Y 6/4)	
5	-5				NA					
					NA				Fine SAND, trace Silt, well sorted, moist, loose, yellowish brown (10YR 5/6)	
					NA					
					NA				CLAY with some Silt, trace Sand and Granules, high plasticity, very stiff, moist, dark yellowish brown (10YR 4/6).	Borehole tremie-grouted with concrete/bentonite grout (0.5-34' bgs) following removal of temporary wells.
					0.2		GM			
10	-10	1	9-12	3.0	491	X			Soil sample DP-2-S-10.5 collected from 10.0 - 10.5 ft bgs at 1145 for analysis of TPH-G, TPH-D, and fuel oxygenates.	
					6.1					
					1.5		ML		Clayey SILT, trace Granules, low plasticity, moist, very stiff, brown (10YR 5/3).	3/4" Sch 40 PVC Riser
		2	12-16	4.0	2.2					
					1.3					
15	-15				2.3				Silty fine SAND, well sorted, moist, medium dense, dark yellowish brown (10YR	

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Remarks: bgs = below ground surface
HA = Hand Auger
NA = Not applicable/available
Temporary well screens were set inside the rods and then exposed by retracting outer rods. No shallow well screen interval was set due to barely moist clayey soils from 10.5 - 31.5 ft bgs.

Date Start/Finish: 6/27/2012, 6/29/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 34' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-2** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
					3.6				4/4). Silty fine SAND, well sorted, moist, medium dense, dark yellowish brown (10YR 4/4) (continued).	
		3	16-20	4.0	1.8				Clayey SILT, low plasticity, moist, medium stiff, brown (10YR 5/3), trace black mottling,	Borehole tremie-grouted with concrete/bentonite grout (0.5-34' bgs) following removal of temporary wells.
					0.9		ML			
20	-20				1.0					
		4	20-23	3.0	0.3					
					0.4					
					0.4				Silty fine SAND, well sorted, wet, dense, light olive brown (2.5Y 5/6).	
		5	23-26	3.0	0.5					
					0.4		CH		Clayey SILT, low plasticity, very soft, wet, brown (10YR 5/3).	
25	-25				0.4				Medium to coarse SAND with little Granules, poorly sorted, wet, yellowish brown (10YR 5/6).	
		6	26-28	2.0	0.3					
					0.3				Silty CLAY, medium plasticity, stiff, wet, olive (5Y 5/3).	3/4" Sch 40 PVC Riser
		7	28-30	2.0	0.3		CL			
					0.3					
30	-30				0.3				Soil sample DP-2-S-31 collected from 30.5 - 31.0 ft bgs at 1205 for analysis of TPH-G, TPH-D, and fuel oxygenates.	
		8	30-32	2.0	0.3					Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (29-34' bgs)
					1.7		SM		Silty fine SAND, well sorted, wet, loose, pale olive (5Y 6/4).	
		9	32-34	2.0	0.3		SW		End of boring at 34.0 ft bgs.	

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NA = Not applicable/available
Temporary well screens were set inside the rods and then exposed by retracting outer rods. No shallow well screen interval was set due to barely moist clayey soils from 10.5 - 31.5 ft bgs.

Date Start/Finish: 6/28/2012 - 6/29/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 30' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID: DP-3** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0						NA		Asphalt surface, gravel base.	Concrete Patch (0-0.5' bgs)
					3.0		SM		Silty fine SAND with little Gravel (Granule to small Pebble, subangular), poorly sorted, moist, loose, yellowish brown (10YR 5/4).	
					3.2		SP		Fine SAND with little Silt, well sorted, moist, loose, yellowish brown (10YR 5/6).	
		HA	0-8	NA	3.7					
					4.0					
5	-5				3.5					
					4.5					
					3.9					
					2.4		SW		Medium SAND, little coarse Sand and Granules, poorly sorted, moist, loose, yellowish brown (10YR 5/6).	Borehole tremie-grouted with concrete/bentonite grout (0.5-30' bgs) following removal of temporary wells.
					0.3				Silty fine to medium SAND with some Granules and small Pebbles, trace Clay, poorly sorted, moist, loose, yellowish brown (10YR 5/6).	
10	-10	1	8-12	4.0	0.4				Stained greenish gray (GLEY1 5/1 10Y), trace large Pebbles from 9.5 - 11.0 ft bgs.	3/4" Sch 40 PVC Riser
					25.0					
					3.6		ML		SILT with little Clay, low plasticity, moist, stiff, yellowish brown (10YR 5/4) with some greenish gray staining (GLEY2 5/1 5BG).	
					12.2					
					21.2				Completely greenish gray (GLEY1 5/1 5GY) from 12.8 - 14.5 ft bgs.	
		2	12-16	4.0	130					
15	-15						SW		Fine to medium SAND, trace Silt, trace Granules and small Pebbles, poorly sorted, moist, loose, dark greenish gray (GLEY1 4/1 10Y), odor.	
					1338				Soil sample DP-3-S-15.5 collected from 15.0 - 16.0 ft bgs at 0920 for analysis of TPH-G, TPH-D, and fuel oxygenates.	
							ML			

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Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 6/28/2012 - 6/29/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 30' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-3** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
					721		ML		SILT with little Clay, low plasticity, moist, medium stiff, olive gray (5Y 4/2).	
					70.2					
		3	16-20	4.0					Silty CLAY, medium plasticity, moist, medium stiff, olive gray (5Y 4/2).	3/4" Sch 40 PVC Riser
					50.5		CL			
					13.1					
20	-20									
					1.8				CLAY with little Silt, medium plasticity, very stiff, moist, brown (7.5YR 4/4).	
					2.8					
		4	20-24	4.0						Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (20-25' bgs)
					2.2					
					7.2					Borehole tremie-grouted with concrete/bentonite grout (0.5-30' bgs) following removal of temporary wells.
		5	24-25	1.0	1.2		CL		Olive grey (5Y 4/2) from 24.0 - 25.0 ft bgs.	
25	-25									
					0.6					
		6	25-28	3.0	0.7					Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (25-30' bgs)
					0.8					
						X			Soil sample DP-3-S-28 collected from 28.0 - 28.5 ft bgs at 0950 for analysis of TPH-G, TPH-D, and fuel oxygenates.	
					1.1		SP		Fine SAND with trace Silt, trace Granules, well sorted, wet, loose, strong brown (7.5YR 5/6).	
		7	28-30	2.0	0.6		SW		Medium SAND with some coarse Sand and Granules, littel small to medium Pebbles, poorly sorted, wet, loose, strong brown (7.5YR 5/6).	
30	-30								End of boring at 30.0 ft bgs.	

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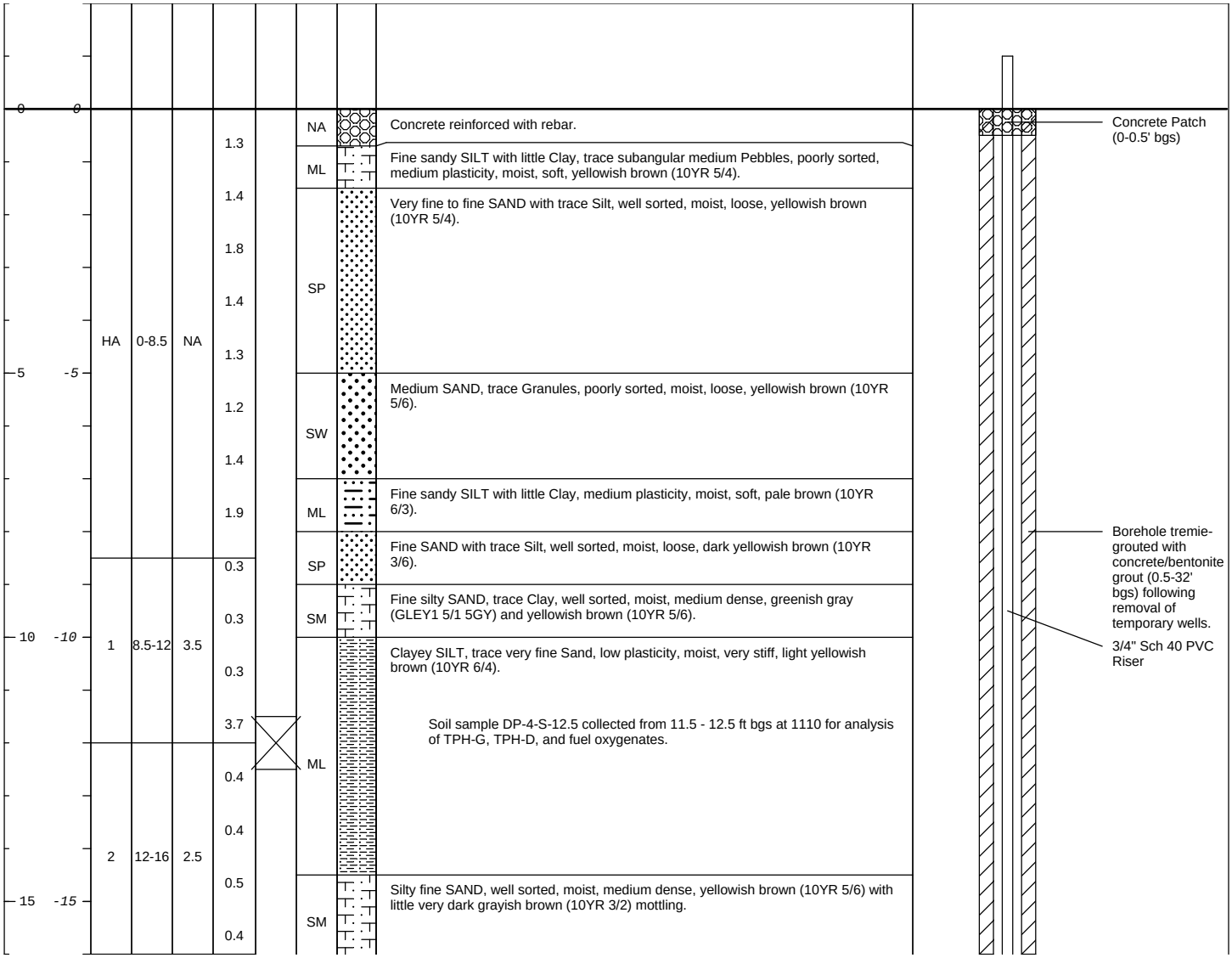
Date Start/Finish: 6/28/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 32' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-4** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA



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HA = Hand Auger
NA = Not applicable/available
Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 6/28/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 32' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-4** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
					0.5				Silty fine SAND, well sorted, moist, medium dense, yellowish brown (10YR 5/6) with little very dark grayish brown (10YR 3/2) mottling (continued).	
		3	16-20	2.5	0.8		SM		Soil sample DP-4-S-19 collected from 18.0 - 19.0 ft bgs at 1120 for analysis of TPH-G, TPH-D, and fuel oxygenates.	3/4" Sch 40 PVC Riser
					4.4		SW		Fine SAND and GRAVEL (small to large Pebble, subrounded to subangular), some Silt, poorly sorted, moist, loose, yellowish brown (10YR 5/6), odor.	
					0.7				SILT, little very fine Sand, trace Clay, nonplastic, moist, medium stiff, dark greenish gray (GLEY1 4/1 5GY).	
20	-20				0.8		ML			
		4	20-24	4.0	13.1					Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (20-25' bgs)
					18.3				Silty CLAY, low plasticity, moist, stiff, dark grey (10YR 4/1).	
					11.4					Borehole tremie-grouted with concrete/bentonite grout (0.5-32' bgs) following removal of temporary wells.
		5	24-25	1.0	0.5					
25	-25	6	25-26	1.0	0.5		CL			
					0.5					3/4" Sch 40 PVC Riser
		7	26-28	2.0	0.4					
					0.5				Clayey SILT, medium plasticity, wet, soft, brown (10YR 5/3).	
		8	28-30	2.0	0.4		ML			
30	-30				0.4					Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (28-32' bgs)
		9	30-32	1.5	0.5		SM		Fine SAND with little Silt, well sorted, wet, loose, brown (10YR 4/3). End of boring at 32.0 ft bgs.	

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Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 7/2/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 35' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-5** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0						NA		Asphalt and gravel sub-base.	Concrete Patch (0-0.5' bgs)
					0.2		GM		Silty SAND and GRAVEL (Granule to medium Pebble, subangular to subrounded), poorly sorted, moist, medium dense, strong brown (7.5YR 4/6) (FILL).	
					0.0					
					0.0		SM		Silty fine SAND, little Clay, well sorted, moist, loose, light olive brown (2.5Y 5/4).	
		HA	0-8	NA	7.9				Slight odor and staining from 4.0 - 5.0 ft bgs.	
					13.6					
5	-5				523				Significant odor and uniform 5Y 5/3 from 5.0 - 5.5 ft bgs.	
					1096		ML		Fine sandy SILT, low plasticity, moist, stiff, significant odor, little apparent staining, brown (7.5YR 4/4).	
									Soil sample DP-5-S-7 collected from 6.5 - 7.5 ft bgs at 0940 for analysis of TPH-G, TPH-D, and fuel oxygenates.	Borehole tremie-grouted with concrete/bentonite grout (0.5-35' bgs) following removal of temporary wells.
					391					
					12.4		CL		Silty CLAY, medium plasticity, moist, very stiff, brown (10YR 4/3).	
					4.0				Some medium to coarse Sand and Granules from 9.5 - 10.0 ft bgs.	
10	-10	1	8-12	4.0					Trace Sand and Granules from 10.0 - 10.5 ft bgs.	3/4" Sch 40 PVC Riser
					0.7		CH		CLAY, little Silt, high plasticity, moist, very stiff, brown (10YR 4/3).	
					0.8					
					2.1		ML		SILT with little fine Sand, nonplastic, slightly moist, very stiff, greenish gray (GLEY1 6/1 10Y).	
		2	12-16	4.0	11.0					
					9.0					
15	-15				10.0		SP		Fine SAND, trace small angular Pebbles, well sorted, slightly moist, medium dense,	

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Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 7/2/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 35' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-5** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
					136				olive gray (5Y 5/2), some odor.	
					1108				SILT with some Clay, low plasticity, moist, stiff, olive gray (5Y 5/2), some odor.	
		3	16-20	4.0			ML		Soil sample DP-5-S-18 collected from 17.0 - 18.0 ft bgs at 1120 for analysis of TPH-G, TPH-D, and fuel oxygenates.	3/4" Sch 40 PVC Riser
					265					
					28.3					
20	-20									
					70.8		SM		Silty fine SAND, well sorted, wet, loose, olive gray (5Y 5/2).	
									Gradually grading to:	
					4.3				Clayey SILT, low plasticity, moist, medium stiff, yellowish brown (10YR 5/4).	
		4	20-24	4.0			ML			Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (20-24' bgs)
					2.7					
									CLAY with some Silt, medium plasticity, moist, very stiff, brown (10YR 4/3).	
					1.5					
					0.6					
25	-25	5	24-26	2.0						Borehole tremie-grouted with concrete/bentonite grout (0.5-35' bgs) following removal of temporary wells.
					0.4					
					0.5					
		6	26-28	2.0			CL			3/4" Sch 40 PVC Riser
					0.4					
					0.4					
		7	28-30	2.0						
					0.3					
30	-30									
					0.4				Silty CLAY, low plasticity, moist, medium stiff, olive (5Y 5/3).	
		8	30-32	2.0						
					0.5					
					1.0				Fine to medium SAND, trace Silt, wet, well sorted, loose, olive (5Y 5/3) grading to dark brown (10YR 3/3).	
		9	32-34	2.0			SP			Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (31-35' bgs)
					1.5					

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Date Start/Finish: 7/2/2012 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 35' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-5** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
35	35	NA	34-35	0.0	NA		NA		No recovery. End of boring at 35.0 ft bgs.	

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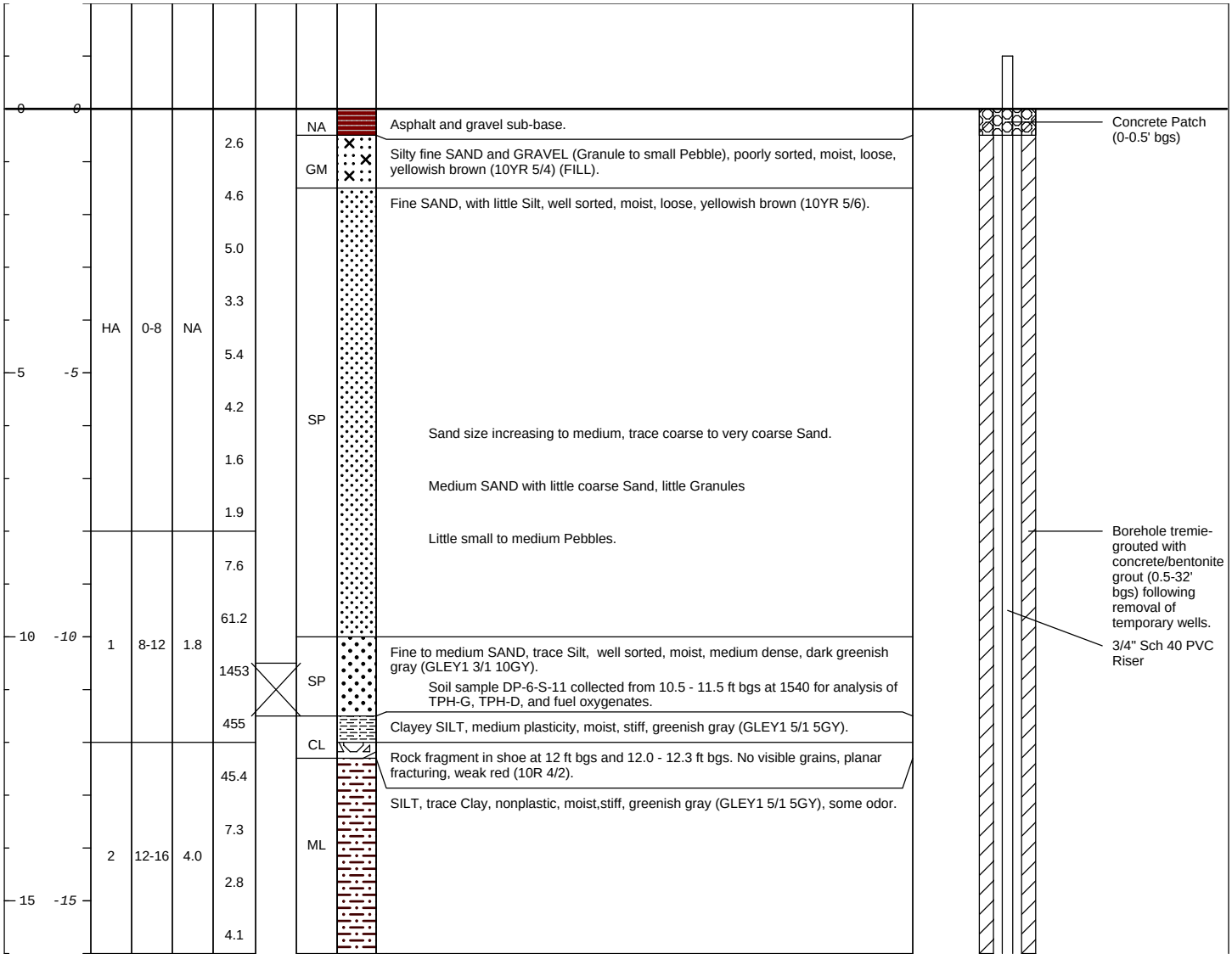
HA = Hand Auger
NA = Not applicable/available
Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 6/28/12 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 32' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-6** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA



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Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

Date Start/Finish: 6/28/12 **Drilling Company:** Cascade Drilling, L.P. **Driller's Name:** Mauricio Alba **Drilling Method:** Hand-Auger/Direct Push **Sampling Method:** Hand Auger/4' Acetate Liner **Rig Type:** Truck-Mounted Geoprobe 6600 Rig	**Northing:** NA **Easting:** NA **Casing Elevation:** NA **Borehole Depth:** 32' bgs **Surface Elevation:** NA **Descriptions By:** Tim Bellis	**Well/Boring ID:** **DP-6** **Client:** Chevron EMC **Location:** 3810 Broadway, Oakland, CA

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
					369		SP		Fine to medium SAND, trace Silt, well sorted, moist, loose, dark grayish brown (2.5Y 4/2), strong odor.	
									SILT, little Clay, nonplastic, moist, medium stiff, olive gray (5Y 4/2), some odor.	
					1493				Soil sample DP-6-S-17 collected from 17.0 - 17.5 ft bgs at 1645 for analysis of TPH-G, TPH-D, and fuel oxygenates.	
		3	16-20	4.0						3/4" Sch 40 PVC Riser
					198					
					425		ML			
20	-20									
					21.2				Wet at 21 ft bgs.	
					40.2					
		4	20-24	4.0						Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (20-25' bgs)
					13.1					
					9.3		SM		Silty fine SAND with little small to medium Pebbles (subangular), poorly sorted, wet, loose, olive gray (5Y 5/2), some odor.	
		5	24-25	1.0	3.0		CL		Silty CLAY, medium plasticity, moist, very stiff, grayish brown (10YR 5/2).	Borehole tremie-grouted with concrete/bentonite grout (0.5-32' bgs) following removal of temporary wells.
25	-25									
					6.0					
		6	25-28	3.0	1.7					3/4" Sch 40 PVC Riser
					1.8					
					0.6					
		7	28-30	2.0			ML		Fine sandy SILT, nonplastic, wet, soft, brown (10YR 5/3).	
					0.6					
30	-30									
					0.4					
		8	30-32	2.0			SM		Silty very fine SAND, well sorted, wet, loose, brown (10YR 5/3).	Pre-packed 3/4" Sch 40 PVC 0.010" Slot Screen (28-32' bgs)
					0.5		ML		Fine sandy SILT, nonplastic, wet, soft, brown (10YR 5/3). End of boring at 32.0 ft bgs.	

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Temporary well screens were set inside the rods and then exposed by retracting outer rods. After sampling of the shallow well screen interval, boring was advanced to the next water bearing zone.

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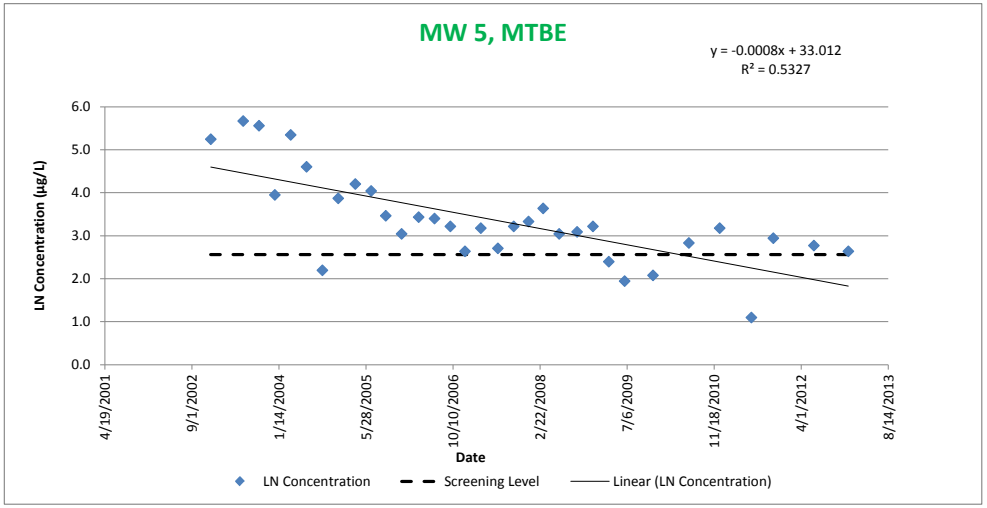
Appendix B

Summary of Linear Regression Analysis

Sample Information
Sample Location **MW 5B**
Constituent MTBE

Data		
Sample Date	Concentration	LN Concentration
	(ug/L)	
12/19/2002	190	5.25
6/23/2003	290	5.67
9/22/2003	260	5.56
12/22/2003	52	3.95
3/22/2004	210	5.35
6/21/2004	100	4.61
9/20/2004	9	2.20
12/20/2004	48	3.87
3/28/2005	67	4.20
6/27/2005	57	4.04
9/19/2005	32	3.47
12/19/2005	21	3.04
3/27/2006	31	3.43
6/26/2006	30	3.40
9/25/2006	25	3.22
12/18/2006	14	2.64
3/19/2007	24	3.18
6/25/2007	15	2.71
9/24/2007	25	3.22
12/18/2007	28	3.33
3/11/2008	38	3.64
6/11/2008	21	3.04
9/22/2008	22	3.09
12/22/2008	25	3.22
3/23/2009	11	2.40
6/22/2009	7	1.95
12/2/2009	8	2.08
6/26/2010	17	2.83
12/20/2010	24	3.18
6/20/2011	3	1.10
10/24/2011	19	2.94
6/13/2012	16	2.77
12/28/2012	14	2.64



Notes:

Data quality	
Total # of data points used in regression	33
# of nondetects	0
% of data as detects	100

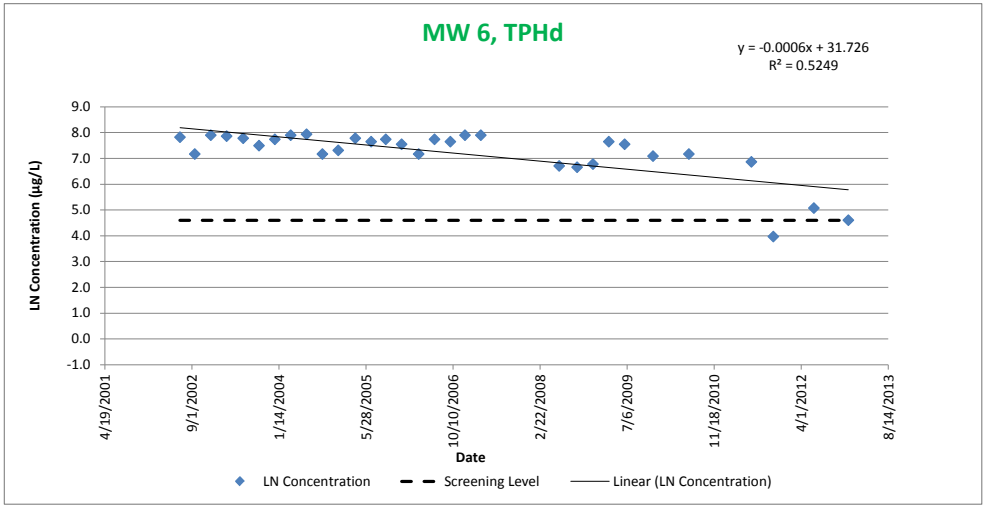
Results		
Coefficient of Determination (R^2) =	0.5327	
p-Value =	1.44E-06	
Attenuation Rate in Groundwater (K) =	0.0008	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0006	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	9.17E+02	days

Date Screening Level Reached	
Screening Level	13
LN Screening Level	2.6
Intercept	33.012
Slope	-0.0008
Date to Screening Level	5/3/2010

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
MTBE = Methyl tertiary butyl ether

Sample Information
Sample Location **MW 6**
Constituent TPHd

Data		
Sample Date	Concentration	LN Concentration
	(ug/L)	
6/25/2002	2,500	7.82
9/18/2002	1,300	7.17
12/19/2002	2,700	7.90
3/20/2003	2,600	7.86
6/23/2003	2,400	7.78
9/22/2003	1,800	7.50
12/22/2003	2,300	7.74
3/22/2004	2,700	7.90
6/21/2004	2,800	7.94
9/20/2004	1,300	7.17
12/20/2004	1,500	7.31
3/28/2005	2,400	7.78
6/27/2005	2100	7.65
9/19/2005	2300	7.74
12/19/2005	1900	7.55
3/27/2006	1300	7.17
6/26/2006	2300	7.74
9/25/2006	2100	7.65
12/18/2006	2700	7.90
3/19/2007	2700	7.90
6/11/2008	820	6.71
9/22/2008	780	6.66
12/22/2008	880	6.78
3/23/2009	2100	7.65
6/22/2009	1900	7.55
12/2/2009	1200	7.09
6/26/2010	1300	7.17
6/20/2011	960	6.87
10/24/2011	53	3.97
6/13/2012	160	5.08
12/28/2012	100	4.61



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	31
# of nondetects	1
% of data as detects	97

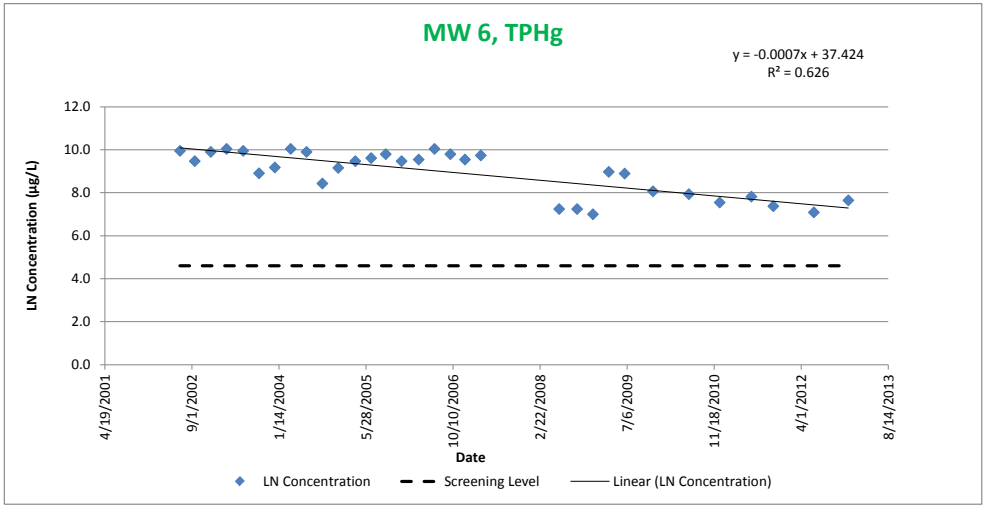
Results		
Coefficient of Determination (R^2) =	0.5249	
p-Value =	4.05E-06	
Attenuation Rate in Groundwater (K) =	0.0006	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0005	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	1.10E+03	days

Date Screening Level Reached	
Screening Level	100
LN Screening Level	4.6
Intercept	31.726
Slope	-0.0006
Date to Screening Level	2/13/2018

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
TPHd = Total petroleum hydrocarbons as diesel

Sample Information
Sample Location **MW 6**
Constituent TPHg

Data		
Sample Date	Concentration (ug/L)	LN Concentration
6/25/2002	21000	9.95
9/18/2002	13000	9.47
12/19/2002	20000	9.90
3/20/2003	23000	10.04
6/23/2003	21000	9.95
9/22/2003	7400	8.91
12/22/2003	9700	9.18
3/22/2004	23000	10.04
6/21/2004	20000	9.90
9/20/2004	4600	8.43
12/20/2004	9500	9.16
3/28/2005	13000	9.47
6/27/2005	15000	9.62
9/19/2005	18000	9.80
12/19/2005	13000	9.47
3/27/2006	14000	9.55
6/26/2006	23000	10.04
9/25/2006	18000	9.80
12/18/2006	14000	9.55
3/19/2007	17000	9.74
6/11/2008	1400	7.24
9/22/2008	1400	7.24
12/22/2008	1100	7.00
3/23/2009	7900	8.97
6/22/2009	7300	8.90
12/2/2009	3200	8.07
6/26/2010	2800	7.94
12/20/2010	1900	7.55
6/20/2011	2500	7.82
10/24/2011	1600	7.38
6/13/2012	1200	7.09
12/28/2012	2100	7.65



Notes:

Data quality	
Total # of data points used in regression	32
# of nondetects	0
% of data as detects	100

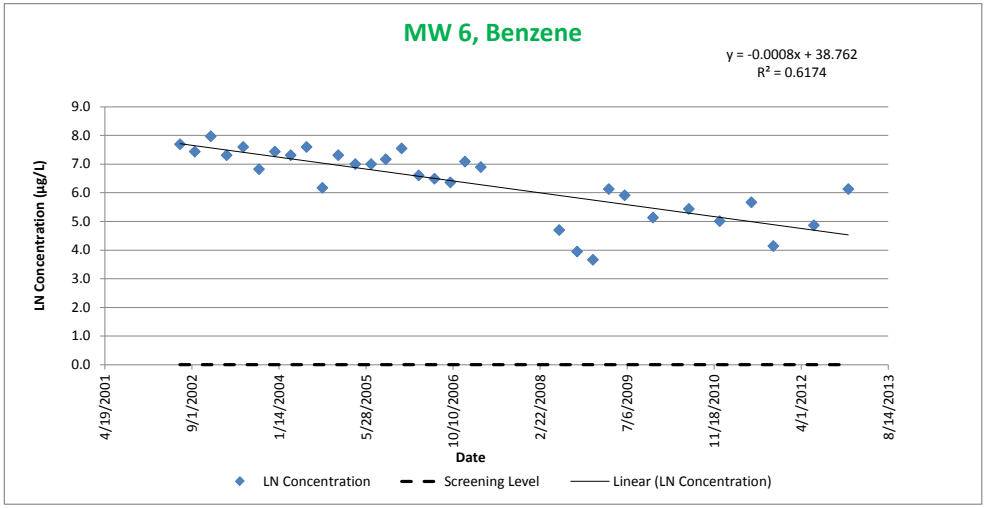
Results		
Coefficient of Determination (R^2) =	0.6260	
p-Value =	7.02E-08	
Attenuation Rate in Groundwater (K) =	0.0007	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0006	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	9.49E+02	days

Date Screening Level Reached	
Screening Level	100
LN Screening Level	4.6
Intercept	37.424
Slope	-0.0007
Date to Screening Level	1/15/2023

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
TPHg = Total petroleum hydrocarbons as gasoline

Sample Information
Sample Location **MW 6**
Constituent Benzene

Data		
Sample Date	Concentration (ug/L)	LN Concentration
6/25/2002	2200	7.70
9/18/2002	1700	7.44
12/19/2002	2900	7.97
3/20/2003	1500	7.31
6/23/2003	2000	7.60
9/22/2003	920	6.82
12/22/2003	1700	7.44
3/22/2004	1500	7.31
6/21/2004	2000	7.60
9/20/2004	480	6.17
12/20/2004	1500	7.31
3/28/2005	1100	7.00
6/27/2005	1100	7.00
9/19/2005	1300	7.17
12/19/2005	1900	7.55
3/27/2006	740	6.61
6/26/2006	660	6.49
9/25/2006	580	6.36
12/18/2006	1200	7.09
3/19/2007	990	6.90
6/11/2008	110	4.70
9/22/2008	52	3.95
12/22/2008	39	3.66
3/23/2009	460	6.13
6/22/2009	370	5.91
12/2/2009	170	5.14
6/26/2010	230	5.44
12/20/2010	150	5.01
6/20/2011	290	5.67
10/24/2011	63	4.14
6/13/2012	130	4.87
12/28/2012	460	6.13



Notes:

Data quality	
Total # of data points used in regression	32
# of nondetects	0
% of data as detects	100

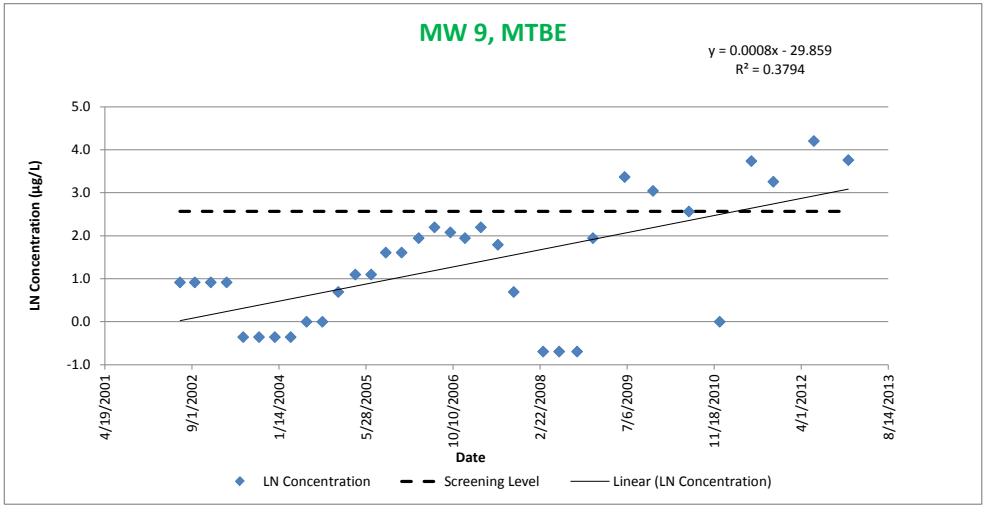
Results		
Coefficient of Determination (R^2) =	0.6174	
p-Value =	9.93E-08	
Attenuation Rate in Groundwater (K) =	0.0008	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0007	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	8.35E+02	days

Date Screening Level Reached	
Screening Level	1
LN Screening Level	0.0
Intercept	38.762
Slope	-0.0008
Date to Screening Level	12/8/2027

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location **MW 9**
Constituent MTBE

Data		
Sample Date	Concentration (ug/L)	LN Concentration
6/25/2002	2.5	0.92
9/18/2002	2.5	0.92
12/19/2002	2.5	0.92
3/20/2003	2.5	0.92
6/23/2003	0.7	-0.36
9/22/2003	0.7	-0.36
12/22/2003	0.7	-0.36
3/22/2004	0.7	-0.36
6/21/2004	1.0	0.00
9/20/2004	1.0	0.00
12/20/2004	2.0	0.69
3/28/2005	3.0	1.10
6/27/2005	3.0	1.10
9/19/2005	5.0	1.61
12/19/2005	5.0	1.61
3/27/2006	7.0	1.95
6/26/2006	9.0	2.20
9/25/2006	8.0	2.08
12/18/2006	7.0	1.95
3/19/2007	9.0	2.20
6/25/2007	6.0	1.79
9/24/2007	2.0	0.69
3/11/2008	0.5	-0.69
6/11/2008	0.5	-0.69
9/22/2008	0.5	-0.69
12/22/2008	7.0	1.95
6/22/2009	29	3.37
12/2/2009	21	3.04
6/26/2010	13	2.56
12/20/2010	1.0	0.00
6/20/2011	42	3.74
10/24/2011	26	3.26
6/13/2012	67	4.20
12/28/2012	43	3.76



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	34
# of nondetects	7
% of data as detects	79

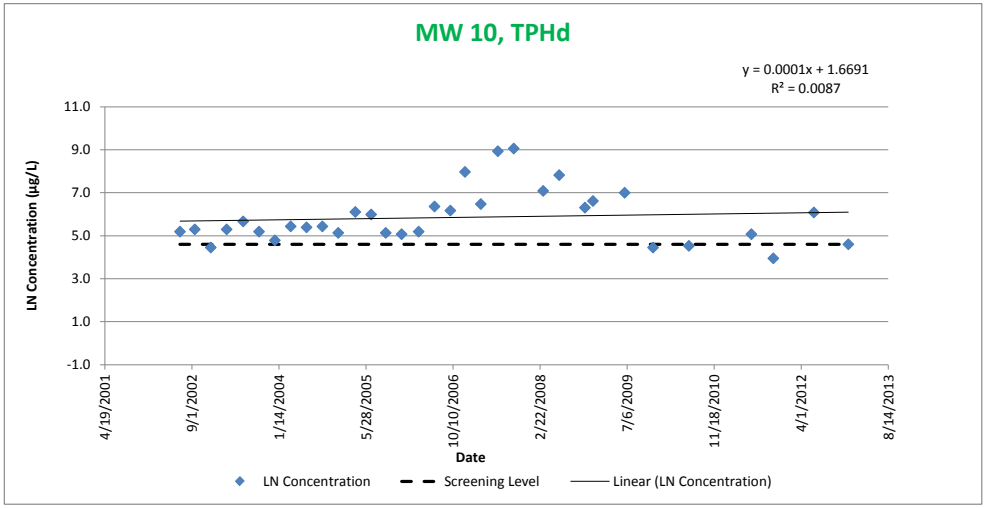
Results		
Coefficient of Determination (R^2) =	0.3794	
p-Value =	1.05E-04	
Attenuation Rate in Groundwater (K) =	-0.0008	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0010	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	13
LN Screening Level	2.6
Intercept	-29.859
Slope	0.0008
Date to Screening Level	NA

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
MTBE = Methyl tertiary butyl ether

Sample Information
Sample Location **MW 10**
Constituent TPHd

Data		
Sample Date	Concentration (ug/L)	LN Concentration
6/25/2002	180	5.19
9/18/2002	200	5.30
12/19/2002	86	4.45
3/20/2003	200	5.30
6/23/2003	290	5.67
9/22/2003	180	5.19
12/22/2003	120	4.79
3/22/2004	230	5.44
6/21/2004	220	5.39
9/20/2004	230	5.44
12/20/2004	170	5.14
3/28/2005	450	6.11
6/27/2005	400	5.99
9/19/2005	170	5.14
12/19/2005	160	5.08
3/27/2006	180	5.19
6/26/2006	580	6.36
9/25/2006	480	6.17
12/18/2006	2900	7.97
3/19/2007	650	6.48
6/25/2007	7600	8.94
9/24/2007	8600	9.06
3/11/2008	1200	7.09
6/11/2008	2500	7.82
11/6/2008	550	6.31
12/22/2008	750	6.62
6/22/2009	1100	7.00
12/2/2009	86	4.45
6/26/2010	93	4.53
6/20/2011	160	5.08
10/24/2011	52	3.95
6/13/2012	440	6.09
12/28/2012	100	4.61



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	33
# of nondetects	1
% of data as detects	97

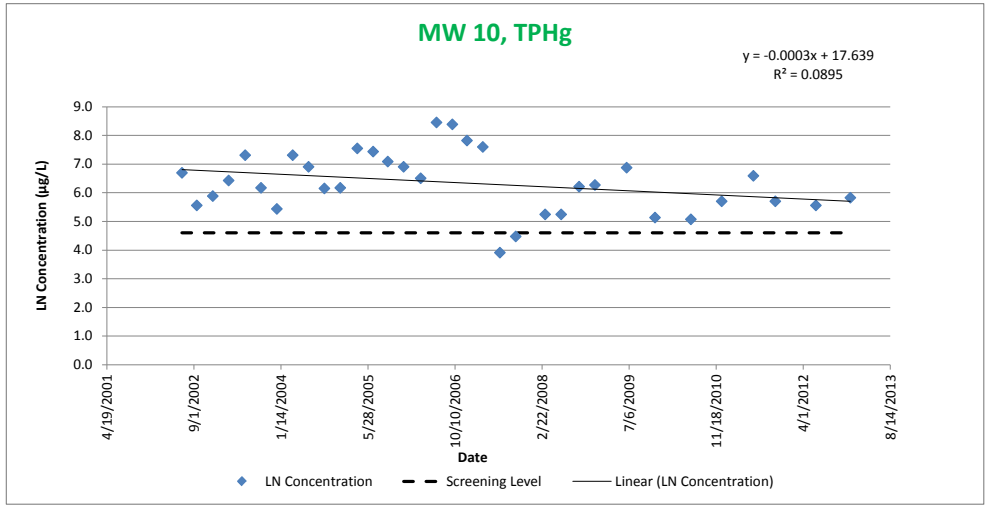
Results		
Coefficient of Determination (R^2) =	0.0087	
p-Value =	6.05E-01	
Attenuation Rate in Groundwater (K) =	-0.0001	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0004	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	100
LN Screening Level	4.6
Intercept	1.669
Slope	0.0001
Date to Screening Level	NA

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
TPHd = Total petroleum hydrocarbons as diesel

Sample Information
Sample Location **MW 10**
Constituent TPHg

Data		
Sample Date	Concentration	LN Concentration
	(ug/L)	
6/25/2002	810	6.70
9/18/2002	260	5.56
12/19/2002	360	5.89
3/20/2003	620	6.43
6/23/2003	1500	7.31
9/22/2003	480	6.17
12/22/2003	230	5.44
3/22/2004	1500	7.31
6/21/2004	1000	6.91
9/20/2004	470	6.15
12/20/2004	480	6.17
3/28/2005	1900	7.55
6/27/2005	1700	7.44
9/19/2005	1200	7.09
12/19/2005	1000	6.91
3/27/2006	670	6.51
6/26/2006	4700	8.46
9/25/2006	4400	8.39
12/18/2006	2500	7.82
3/19/2007	2000	7.60
6/25/2007	50	3.91
9/24/2007	88	4.48
3/11/2008	190	5.25
6/11/2008	190	5.25
9/22/2008	500	6.21
12/22/2008	530	6.27
6/22/2009	970	6.88
12/2/2009	170	5.14
6/26/2010	160	5.08
12/20/2010	300	5.70
6/20/2011	730	6.59
10/24/2011	300	5.70
6/13/2012	260	5.56
12/28/2012	340	5.83



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	34
# of nondetects	1
% of data as detects	97

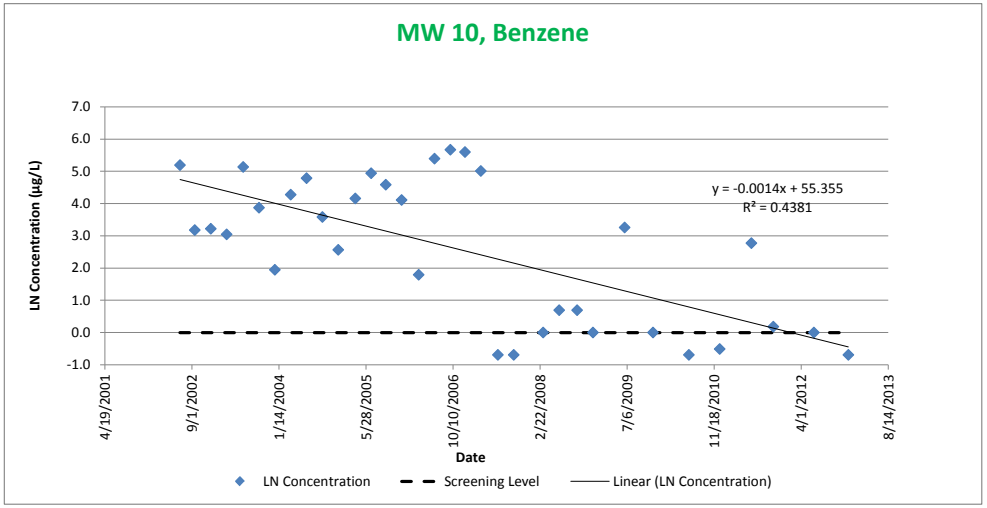
Results		
Coefficient of Determination (R^2) =	0.0895	
p-Value =	8.57E-02	
Attenuation Rate in Groundwater (K) =	0.0003	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0001	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	2.40E+03	days

Date Screening Level Reached	
Screening Level	100
LN Screening Level	4.6
Intercept	17.639
Slope	-0.0003
Date to Screening Level	NA

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
TPHg = Total petroleum hydrocarbons as gasoline

Sample Information
Sample Location **MW 10**
Constituent Benzene

Data		
Sample Date	Concentration	LN Concentration
	(ug/L)	
6/25/2002	180	5.19
9/18/2002	24	3.18
12/19/2002	25	3.22
3/20/2003	21	3.04
6/23/2003	170	5.14
9/22/2003	48	3.87
12/22/2003	7	1.95
3/22/2004	72	4.28
6/21/2004	120	4.79
9/20/2004	36.0	3.58
12/20/2004	13	2.56
3/28/2005	64	4.16
6/27/2005	140.0	4.94
9/19/2005	98.0	4.58
12/19/2005	61	4.11
3/27/2006	6	1.79
6/26/2006	220.0	5.39
9/25/2006	290.0	5.67
12/18/2006	270	5.60
3/19/2007	150	5.01
6/25/2007	0.5	-0.69
9/24/2007	0.5	-0.69
3/11/2008	1	0.00
6/11/2008	2	0.69
9/22/2008	2	0.69
12/22/2008	1	0.00
6/22/2009	26	3.26
12/2/2009	1	0.00
6/26/2010	0.5	-0.69
12/20/2010	0.6	-0.51
6/20/2011	16	2.77
10/24/2011	1.2	0.18
6/13/2012	1.0	0.00
12/28/2012	0.5	-0.69



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	34
# of nondetects	3
% of data as detects	91

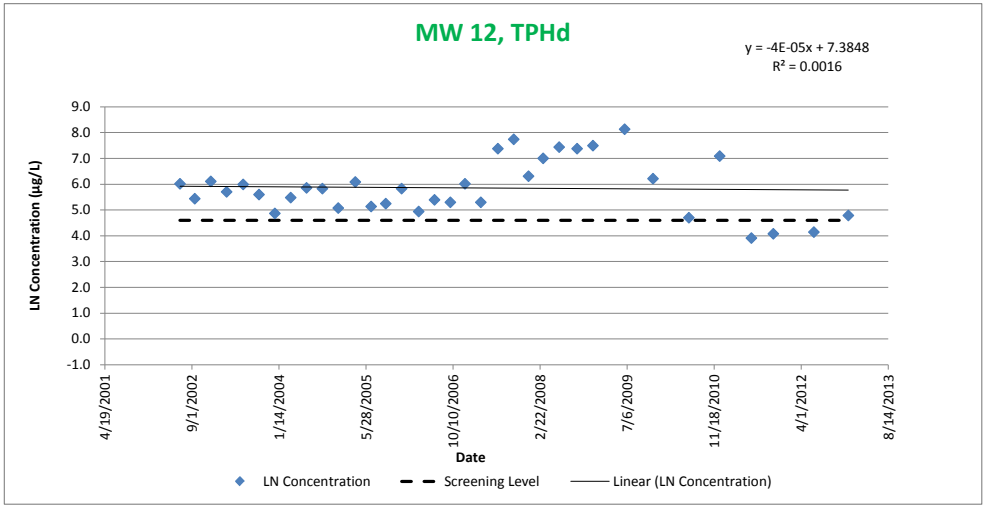
Results		
Coefficient of Determination (R^2) =	0.4381	
p-Value =	2.02E-05	
Attenuation Rate in Groundwater (K) =	0.0014	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	0.0010	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	5.13E+02	days

Date Screening Level Reached	
Screening Level	1
LN Screening Level	0.0
Intercept	55.355
Slope	-0.0014
Date to Screening Level	2/1/2012

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm

Sample Information
Sample Location **MW 12**
Constituent TPHd

Data		
Sample Date	Concentration (ug/L)	LN Concentration
6/25/2002	410	6.02
9/18/2002	230	5.44
12/19/2002	450	6.11
3/20/2003	300	5.70
6/23/2003	400	5.99
9/22/2003	270	5.60
12/22/2003	130	4.87
3/22/2004	240	5.48
6/21/2004	350	5.86
9/20/2004	340	5.83
12/20/2004	160	5.08
3/28/2005	440	6.09
6/27/2005	170	5.14
9/19/2005	190	5.25
12/19/2005	340	5.83
3/27/2006	140	4.94
6/26/2006	220	5.39
9/25/2006	200	5.30
12/18/2006	410	6.02
3/19/2007	200	5.30
6/25/2007	1600	7.38
9/24/2007	2300	7.74
12/18/2007	550	6.31
3/11/2008	1100	7.00
6/11/2008	1700	7.44
9/22/2008	1600	7.38
12/22/2008	1800	7.50
6/22/2009	3400	8.13
12/2/2009	500	6.21
6/26/2010	110	4.70
12/20/2010	1200	7.09
6/20/2011	50	3.91
10/24/2011	59	4.08
6/13/2012	63	4.14
12/28/2012	120	4.79



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	35
# of nondetects	1
% of data as detects	97

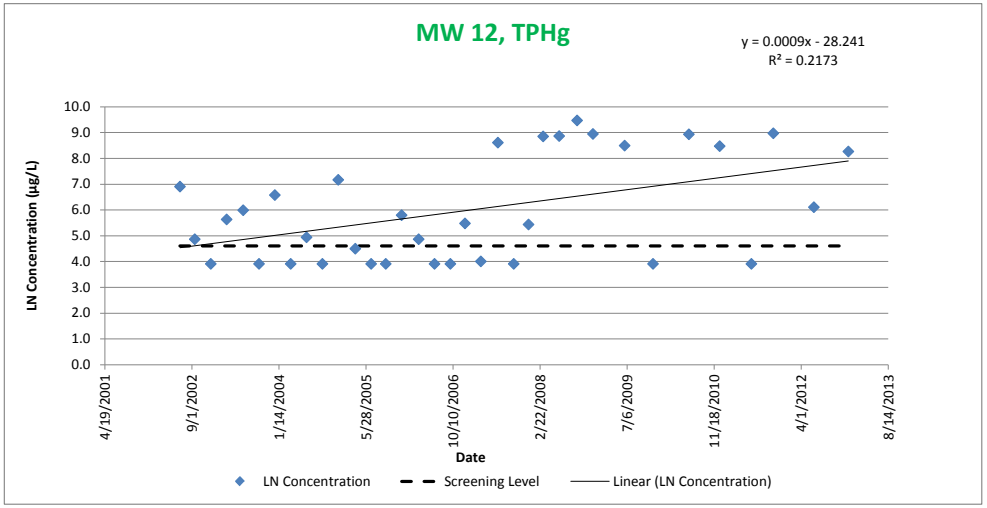
Results		
Coefficient of Determination (R^2) =	0.0016	
p-Value =	8.22E-01	
Attenuation Rate in Groundwater (K) =	0.0000	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0002	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	1.77E+04	days

Date Screening Level Reached	
Screening Level	100
LN Screening Level	4.6
Intercept	7.385
Slope	0.0000
Date to Screening Level	NA

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
TPHd = Total petroleum hydrocarbons as diesel

Sample Information
Sample Location **MW 12**
Constituent TPHg

Data		
Sample Date	Concentration	LN Concentration
	(ug/L)	
6/25/2002	1,000	6.91
9/18/2002	130	4.87
12/19/2002	50	3.91
3/20/2003	280	5.63
6/23/2003	400	5.99
9/22/2003	50	3.91
12/22/2003	720	6.58
3/22/2004	50	3.91
6/21/2004	140	4.94
9/20/2004	50	3.91
12/20/2004	1,300	7.17
3/28/2005	90	4.50
6/27/2005	50	3.91
9/19/2005	50	3.91
12/19/2005	330	5.80
3/27/2006	130	4.87
6/26/2006	50	3.91
9/25/2006	50	3.91
12/18/2006	240	5.48
3/19/2007	55	4.01
6/25/2007	5500	8.61
9/24/2007	50	3.91
12/18/2007	230	5.44
3/11/2008	7000	8.85
6/11/2008	7100	8.87
9/22/2008	13000	9.47
12/22/2008	7700	8.95
6/22/2009	4900	8.50
12/2/2009	50	3.91
6/26/2010	7600	8.94
12/20/2010	4800	8.48
6/20/2011	50	3.91
10/24/2011	7900	8.97
6/13/2012	450	6.11
12/28/2012	3900	8.27



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	35
# of nondetects	11
% of data as detects	69

Less than 75% data above reporting limits.

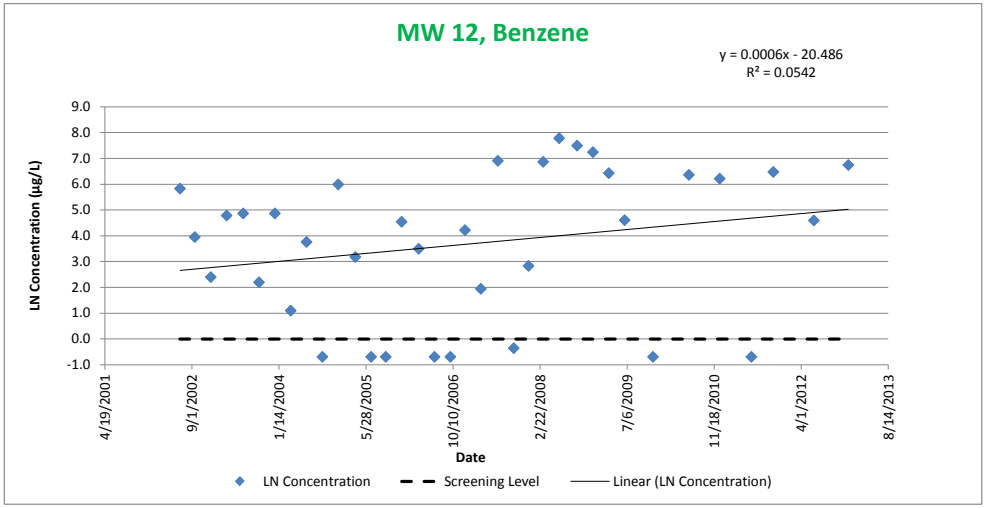
Results		
Coefficient of Determination (R^2) =	0.2173	
p-Value =	4.76E-03	
Attenuation Rate in Groundwater (K) =	-0.0009	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0013	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	100
LN Screening Level	4.6
Intercept	-28.241
Slope	0.0009
Date to Screening Level	NA

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm
TPHg = Total petroleum hydrocarbons as gasoline

Sample Information
Sample Location **MW 12**
Constituent Benzene

Data		
Sample Date	Concentration	LN Concentration
	(ug/L)	
6/25/2002	340	5.83
9/18/2002	52	3.95
12/19/2002	11	2.40
3/20/2003	120	4.79
6/23/2003	130	4.87
9/22/2003	9	2.20
12/22/2003	130	4.87
3/22/2004	3	1.10
6/21/2004	43	3.76
9/20/2004	0.5	-0.69
12/20/2004	400	5.99
3/28/2005	24	3.18
6/27/2005	0.5	-0.69
9/19/2005	0.5	-0.69
12/19/2005	94	4.54
3/27/2006	33	3.50
6/26/2006	0.5	-0.69
9/25/2006	0.5	-0.69
12/18/2006	68	4.22
3/19/2007	7	1.95
6/25/2007	1000	6.91
9/24/2007	0.7	-0.36
12/18/2007	17	2.83
3/11/2008	960	6.87
6/11/2008	2400	7.78
9/22/2008	1800	7.50
12/22/2008	1400	7.24
3/23/2009	620	6.43
6/22/2009	100	4.61
12/2/2009	0.5	-0.69
6/26/2010	580	6.36
12/20/2010	500	6.21
6/20/2011	0.5	-0.69
10/24/2011	650	6.48
6/13/2012	99	4.60
12/28/2012	850	6.75



Notes:
ND taken at reporting limit/reported value

Data quality	
Total # of data points used in regression	36
# of nondetects	7
% of data as detects	81

Results		
Coefficient of Determination (R^2) =	0.0542	
p-Value =	1.72E-01	
Attenuation Rate in Groundwater (K) =	-0.0006	$days^{-1}$
Attenuation Rate in Groundwater at 90% confidence (K) =	-0.0012	$days^{-1}$
Chemical Half Life in Groundwater ($t_{1/2}$) =	NA	days

Date Screening Level Reached	
Screening Level	1
LN Screening Level	0.0
Intercept	-20.486
Slope	0.0006
Date to Screening Level	NA

Abbreviations and Notes
ug/l = micrograms per liter
LN = Natural Logarithm

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

Submittal Type:	GEO_REPORT
Report Title:	CSM & CLOSURE REQUEST REPORT
Report Type:	Request for Closure
Report Date:	3/29/2013
Facility Global ID:	T0600101108
Facility Name:	CHEVRON #21-1283 / EXPRESS AUTO CLINIC
File Name:	21-1283 CSM and Closure Report_FIN 03292013.pdf
Organization Name:	ARCADIS US
Username:	RKANDRESEN
IP Address:	216.207.98.101
Submittal Date/Time:	3/29/2013 12:22:16 PM
Confirmation Number:	3000991761