Chevron

Dave Patten
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6111 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 543-1740
Fax (925) 543-2324
drpatten@chevron.com

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Service Station No. 9-1153
3135 Gibbons Drive (3126 Fernside Blvd)
Alameda, CA

I have reviewed the attached report dated December 21, 2010

The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

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

Sincerely,

Dave Patten
Project Manager

Attachment: Report

CONESTOGA-ROVERS & ASSOCIATES

5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700 Fax: (510) 420-9170
www.CRAworld.com

TRANSMITTAL

DATE: December 21, 2010

REFERENCE NO.: 311617

PROJECT NAME: Former Chevron 9-1153

ACEHS File No. RO 341

TO: Mr. Mark Detterman
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

Sent via:
- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
- ☒ Other FTP/GeoTracker upload

QUANTITY	DESCRIPTION
1	Feasibility Study and Corrective Action Plan

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
Please call Nathan Lee at (510) 420-3333 if you have any questions or concerns.
Thank you.

Copy to: Mr. Dave Patten, , Chevron

Copy to: Mr. Mark Hom, Property Owner

Completed by: Nathan Lee [Please Print]

Signed: Nathan Lee

Filing: **Correspondence File**

FEASIBILITY STUDY AND CORRECTIVE ACTION PLAN

FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD)
ALAMEDA, CALIFORNIA
Fuel Leak Case RO0000341

Prepared For:

Mr. Mark Detterman
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

DECEMBER 30, 2010
REF. NO. 311642 (12)
This report is printed on recycled paper.

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

Office: (510) 420-0700
Fax: (510) 420-9170

web: http:\\www.CRAworld.com

FEASIBILITY STUDY AND CORRECTIVE ACTION PLAN

FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD)
ALAMEDA, CALIFORNIA
Fuel Leak Case RO0000341

Kiersten Hoey

Nathan Lee, PG #8486

DECEMBER 30, 2010
REF. NO. 311642 (12)
This report is printed on recycled paper.

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

Office: (510) 420-0700
Fax: (510) 420-9170

web: http:\\www.CRAworld.com

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES
(Following Text)

LIST OF APPENDICES

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA), on behalf of Chevron Environmental Management Company (Chevron), has prepared this *Feasibility Study and Corrective Action Plan* (FS/CAP) for the former Chevron station located at what was previously 3126 Fernside Boulevard in Alameda, California. The address of the property was subsequently changed to 3135 Gibbons Drive. This FS/CAP was requested by Alameda County Environmental Health (ACEH) in a letter to Chevron dated June 24, 2010 (Appendix A).

This document complies with California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Storage Tank Regulations. A site background, previous site investigations groundwater monitoring activities, hydrocarbon distribution, remediation goals, evaluation of remedial alternatives, and final remediation recommendations are presented below.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION

The site is located on a triangular-shaped lot at the intersections of Gibbons Drive, Fernside Boulevard, and High Street in Alameda, California (Figure 1). The former service station operated until June 1986. A residence was built on the property in 1989 (Figure 2). Surrounding area use is residential and commercial.

2.2 PREVIOUS WORK

Environmental investigations began in 1986 with the UST removal. Since 1986, a total of 12 confirmation samples, 26 soil borings, 10 groundwater monitoring wells (well C-2 has been destroyed), 1 extraction well, 1 temporary well, and 51 temporary soil vapor probes have been installed. Groundwater has been monitored since 1986. Remediation conducted has included an excavation during UST removal and during the foundation construction for the house, a groundwater pump and treat system, oxygen releasing compound (ORC) and hydrogen peroxide injections, groundwater extraction events, and since 21995 weekly to quarterly light non-aqueous phase liquid (LNAPL) removal by bailing. Two well surveys and preferential pathway analyses have also been conducted. A summary of previous environmental investigation and remediation is included in Appendix B.

2.3 PRODUCT RELEASES AND SOURCE AREA

Based on soil and groundwater data, the release source appears to be the USTs and product lines that were removed in 1986. The product volume released is unknown. Cumulative historical soil data is located on Table 1.

2.4 SITE GEOLOGY

Soil beneath the site consists primarily sand with some silt and clay to the total depth explored of approximately 23 feet below grade (fbg). Boring logs are included in Appendix C and geologic cross-sections are shown on Figures 3 and 4.

2.5 SITE HYDROGEOLOGY

The site is approximately 8 feet above mean sea level. Depth to water in wells ranges from approximately 0 to 6.5 fbg. Cumulative historical groundwater data is located on Table 2. Groundwater beneath the site is designated as an existing or potential drinking water resource.[1] Groundwater flow direction is typically east-southeast toward the Oakland Alameda Estuary. The estuary is the closest surface water and is approximately 550 feet downgradient. LNAPL is currently present in well C-1, ranging in thickness during 2010 from 0.04 to 0.25 foot.

2.6 SENSITIVE RECEPTOR SURVEY

In August 1987, Pacific Environmental Group, Inc. conducted a well survey and additional information is available in the August 12, 1987 *Well Survey Report*. In 1996, Fluor Daniel GTI compiled utility location and depth information, and additional information is available in the May 15, 1996 *Evaluation for Potential Migration Pathway via Buried Utility Pipelines.* In 2010, CRA performed a second water supply well survey and preferential pathway analysis. A summary of the results of the survey are presented below. Additional details can be found in CRA's September 30, 2010 *Preferential Pathway Study and Well Survey Report*.

[1] East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, California; California Regional Water Quality Control Board – San Francisco Bay Region Groundwater Committee; June 1999.

2.6.1 SURFACE WATER SURVEY

The nearest surface water features to the site are the Oakland Alameda Estuary located approximately 550 feet northeast (downgradient), the San Leandro Bay located approximately 3,000 feet south (crossgradient), and a number of unnamed water bodies located over one mile west (upgradient) of the site. Dissolved hydrocarbon concentrations have historically been below detection limits in downgradient wells C-8, C-9, and C-10. This indicates the dissolved hydrocarbon plume is stable and defined and these surface water bodies are not considered at risk from hydrocarbons originating from the site.

2.6.2 AREA WELL SURVEY

In 2010, CRA reviewed DWR well completion reports to identify wells within one half-mile of the site and used aerial photography to measure approximate distances from the site to each well. No municipal drinking water supply wells were identified. Local water utilities rely on imported water to meet the region's water needs.[1] Nine extraction wells were identified within the survey area and are included because the current use of these wells is unknown. The closest irrigation and domestic wells are greater than 1,000 feet from the site. Several additional wells, such as test wells and a well with an unknown use were also identified. The well survey results, including a table and area map, are included as Appendix D. The closest wells of concern are grater than 1,000 feet from the site and these wells are either upgradient or located in Oakland across the Oakland Alameda Estuary. The wells identified in the survey are not considered at risk from hydrocarbons originating from the site.

2.6.3 PREFERENTIAL PATHWAY STUDY

In 2010, CRA evaluated potential preferential pathways for hydrocarbon migration from the site. Major utilities near the site include electric, natural gas, water, communication, storm drain, and sanitary sewer lines that range in depth from 1 to 8 fbg. Depth to groundwater onsite has ranged from approximately 0 to 6.5 fbg since monitoring began in 1986. Average depth to groundwater is approximately 3.5 fbg and flows primarily to the east-southeast.

It does not appear that the utilities are acting as preferential pathways based on hydrocarbon distribution observed in monitoring wells. Because native soil is sandy, there is unlikely a significant hydraulic conductivity difference between the backfill and

native soil that would create a preferential pathway for hydrocarbon migration. This includes the storm and sanitary sewers in High Street based on historical hydrocarbon concentrations in well MW-10. Underground utilities are illustrated on Figures 2, 3, and 4.

2.6.4 POTENTIAL VAPOR RECEPTORS

The primary potential receptor from hydrocarbon vapors is the onsite residence. Figure 2 shows the location of the existing residence overlaying the location of the former service station. In 1989, the majority of soil beneath the house footprint was excavated prior to construction. The house was constructed with a ventilated crawl space, which makes the vapor intrusion pathway incomplete. The properties immediately adjacent to the site are also residential; however, there is no evidence of hydrocarbons underlying any of the other residences.

3.0 REMEDIAL ACTIONS

In 1986, all USTs, associated piping, and all above ground structures were removed during service station demolition. An unspecified volume of soil was excavated from the UST vicinity, stockpiled and aerated onsite,; then used as backfill for the excavations. In addition, some soil from beneath the current residence was removed during foundation construction.

In 1991, groundwater extraction well RW-1 was installed in the site's eastern portion and an extraction/recovery trench was connected to well RW-1 to enhance groundwater extraction (GWE). Groundwater was extracted using an electric pump, treated with aqueous-phase granular-activated carbon, then discharged to the sanitary sewer. As of May 31, 1994, approximately 99,850 gallons of groundwater had been removed at a pumping rate of approximately 0.08 gallon per minute (gpm). A performance summary of the GWE system is included as Appendix E.

In 1997, ORC socks were placed in wells MW-6 and MW-7 in June 1998 and removed in the fist quarter of 1999. A 10 percent hydrogen peroxide solution was placed in well C-1 to treat LNAPL in July 1998. In July 1999, 3 gallons of 3 percent hydrogen peroxide solution and 2 gallons of 10 percent hydrogen peroxide solution were injected in well C-1 to oxidize residual hydrocarbons.

Between 2001 and 2002 five groundwater batch extraction events were completed in well C-1 and removed approximately 2,350 gallons of groundwater. Weekly to quarter LNAPL bailing has occurred in well C-1 since 1995 has removed approximately 72 gallons of LNAPL mixed with groundwater.

4.0 HYDROCARBON DISTRIBUTION

The primary constituents of concern (COCs) are total petroleum hydrocarbons as gasoline (TPHg) and benzene. Other COCs are toluene, ethylbenzene, and xylenes. Methyl tertiary butyl ether (MTBE) is not a COC.

4.1 SOIL

The highest hydrocarbon concentrations of 5,500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons (TPH) was detected in boring SB1 at 4.5 fbg. The highest TPH quantified as gasoline was 63 mg/kg at 5 fbg in MW-7. The highest benzene concentration detected was 45 mg/kg benzene in boring SB2 at 4 fbg. As shown on Figures 5 and 6, the horizontal extent of hydrocarbons in soil is defined in all directions and residual hydrocarbons are located east-southeast of the former fueling facilities. Concentrations that exceed applicable environmental screening levels (ESLs)[2] are primarily detected between 3.5 and 6 fbg and are vertically delineated in several soil borings and confirmation samples (Figures 3 and 4). Cumulative soil analytical data is summarized in Table 1.

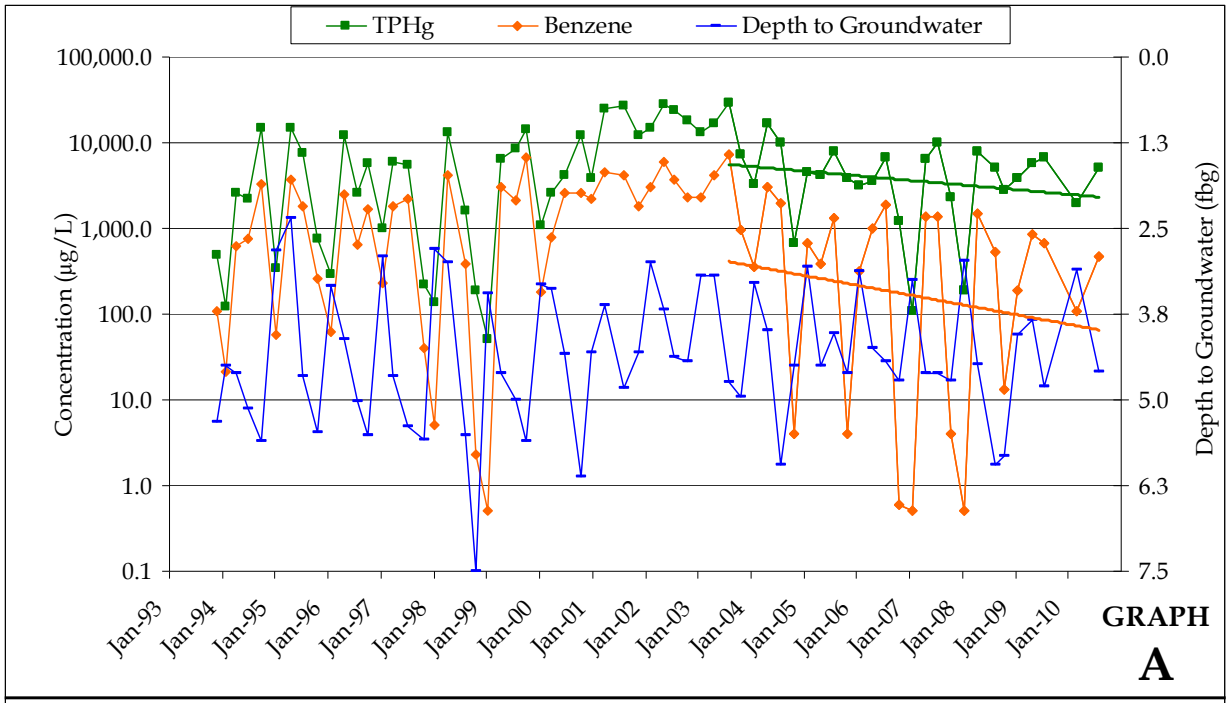
4.2 GROUNDWATER

Groundwater has been monitored for over 24 years. The most recent data for each well are summarized in Table A below. Hydrocarbons in groundwater are centered near well C-1, where LNAPL has consistently been observed. The extent of hydrocarbons in groundwater is limited and defined horizontally in all directions (Figure 7). Well construction details are summarized in Table 3.

[2] Environmental Screening Level (ESL) from the San Francisco Regional Water Quality Control Board's (RWQCB's) *Screening for Environmental Concerns at Sites withy Contaminated Soil and Groundwater,* Interim Final November 2007, Revised May 2008

TABLE A: CURRENT HYDROCARBON CONCENTRATIONS IN GROUNDWATER							
Well	***Most Recent Sample Date***	***TPHg***	***Benzene***	***Toluene***	***Ethyl-benzene***	***Xylenes***	***MTBE***
		Concentrations in µg/L					
ESL Table F-1a – Potential Drinking Water		***100***	***1***	***40***	***30***	***20***	***5***
ESL Table E-1 – Potential Vapor Intrusion Concerns (Residential)		***NE***	***540***	***380,000***	***170,000***	***160,000***	***24,000***
C-1	8/26/2010	LNAPL present					
C-3	3/31/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	3/31/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	8/26/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	8/26/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-7	8/26/2010	5,100	470	3	150	9	<0.5
MW-8	3/31/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	3/31/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	8/26/2010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
Notes: NE = Not established							

The dissolved hydrocarbon plume is shrinking as indicated by the declining dissolved concentration trends observed in samples collected from well MW-7 (Graph A below), and the fact that dissolved hydrocarbons historically detected in crossgradient wells MW-5 and MW-6 have decreased to below laboratory detection limits. This indicates that source mass flux to groundwater is decreasing as the hydrocarbon source mass is depleting. Historical and current groundwater data is presented in Table 2. Grab-groundwater samples are summarized in Table 4.



FORMER CHEVRON STATION #9-1153
3135 GIBBONS BOULEVARD
ALAMEDA, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-7: TPHg AND BENZENE CONCENTRATIONS AND DEPTH TO GROUNDWATER

4.3 LIGHT NONAQEOUS PHASE LIQUIDS

LNAPL has historically been detected in well C-1 at a maximum thickness of 2.20 feet in 1995. LNAPL thickness has decreased over time, with a current measured thickness of 0.04 foot (August 2010).

4.4 SOIL VAPOR

Soil vapor samples were collected in 1987, 1989, and 2002. Cumulative soil vapor data are summarized in Table 5 and the soil vapor sampling locations are included in Appendix F. The *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor, May 2003* report dated May, 27 2005 assessed the risks to the residence from potential inhalation of vapors within indoor air that could potentially be caused by chemicals of potential concern (COPCs) identified within soil gas. The report concluded that based on predicted indoor air concentrations, estimated risks for both onsite adult and child residents were below the United States Environmental Protection Agency (USEPA's) established acceptable target risk levels.

On August 17, 2010, CRA met with the property owners and determined that the house was constructed with a ventilated crawl space. Therefore, the vapor intrusion pathway is incomplete and no additional soil vapor assessment is warranted.

5.0 FEASIBILITY STUDY/CORRECTIVE ACTION PLAN

5.1 REMEDIAL ACTION OBJECTIVES

Groundwater and soil cleanup goals will be established based on the following:

- Background concentrations of individual COCs
- Applicable water quality objectives and environmental screening levels based on human health and environmental risk
- Technologic and economic feasibility

5.2 GROUNDWATER CLEANUP GOALS

The RWQCB's Water Quality Control Plan (Basin Plan) for the San Francisco Bay Region states that existing and potential beneficial uses applicable to groundwater in the region include municipal water supply. The primary COCs are TPHg and benzene. Table B presents the COCs, ESLs to protect designated beneficial uses, highest historical concentrations, and current maximum concentrations (using August 26, 2010 monitoring data) for this site.

TABLE B
ESLs AND CONCENTRATIONS IN GROUNDWATER

Constituent of Concern (COC)	*Environmental Screening Level (µg/L)*	*Historical Maximum Detected Concentration (µg/L)*	*Current Maximum Concentration (µg/L)*
C-1			
TPHg	100	2.22 feet LNAPL	0.04 foot LNAPL
Benzene	1	2.22 feet LNAPL	0.04 foot LNAPL
MW-7			
TPHg	100	29,000	5,100
Benzene	1	7,300	470

The current maximum TPHg and benzene concentrations exceed ESLs. However, degradation calculations predict dissolved TPHg concentrations in well MW-7 will reach

ESLs within 26 years and benzene will reach ESLs within 16 years. Therefore, the groundwater cleanup goal is LNAPL removal from well C-1 so that subsequent dissolved COC concentrations will be enhanced by natural biodegradation, so declining trends can predict when ESL objectives can be achievement within a reasonable timeframe.

5.3 SOIL CLEANUP GOALS

Maximum historical soil concentrations at the site were compared to RWQCB ESLs for TPHg and benzene. The results are presented in the Table C.

TABLE C
ESLs AND CONCENTRATIONS IN SOIL

COC	*Concentrations (a) (mg/kg)*	*Residential ESLs (b) (mg/kg)*
TPHg	5,500	83
Benzene	45	0.044

Notes:
(a) Soil concentrations based on highest historical detection beneath the site.
(b) Applicable ESLs are Table G Soil Leaching (groundwater is a current or potential source of drinking water) from the May 2008 SF-RWQCB ESLs document.

The proposed soil cleanup goals are the San Francisco Bay RWQCB ESLs for soil leaching screening levels where groundwater is a current or potential source of drinking water. However, attainment of the approved cleanup levels may not be technically or economically feasible, due mainly to the existing residential home. Reduction of COC concentrations in soil is a remediation objective; however, achievement of cleanup goals may not be attainable or measurable. Therefore, CRA recommends that LNAPL removal and dissolved COC concentration reduction be used as the measures to define success of any remedial activities and that collection of post-remediation soil samples not be required to confirm successful soil cleanup.

5.4 REMEDIAL ALTERNATIVES DISCUSSION AND APPROACH

The proposed remediation objectives are based on implementing the most cost-effective remedial approach that will protect human health and groundwater quality. Given site conditions and the cleanup goals, the remediation objective is to remove and prevent the

recurrence of LNAPL at well C-1. The remediation alternatives reviewed in this FS/CAP have been evaluated based on their potential to meet this objective.

5.5 REMEDIAL ALTERNATIVES

The remedial technologies selected for evaluation include monitored natural attenuation (MNA), in-situ chemical oxidation (ISCO), excavation, dual-phase extraction (DPE), and surfactant-enhanced recovery (SER). These five alternatives have been evaluated below on the basis of technical feasibility and cost effectiveness.

5.5.1 MONITORED NATURAL ATTENUATION (MNA)

Biodegradation, adsorption, chemical reactions, and volatilization can all naturally degrade hydrocarbons. MNA is the process of monitoring hydrocarbon concentrations in groundwater to confirm that the concentrations are decreasing and will reach ESLs in a reasonable timeframe. Dissolved concentration reduction is the primary indicator of natural attenuation. Secondary indicators such as dissolved oxygen (DO) concentrations; oxidation-reduction potential (ORP); alkalinity; nitrate, sulfate, and ferrous iron concentrations; and ^{13}C isotopes can also be used to confirm natural attenuation and understand the specific attenuation mechanisms.

Feasibility and Cost Effectiveness:

Dissolved TPHg and benzene concentrations have already decreased one order of magnitude, indicating hydrocarbons are naturally attenuating. CRA calculated dissolved-phase TPHg and benzene concentration trends in downgradient well MW-7 (Appendix G). Trends were generated using the historical peak concentrations, which occurred in 2003. To estimate the time to meet RWQCB drinking water ESLs, CRA used the following first order exponential decay rate calculation:[3]

$$y = be^{(ax)};$$

Where "a" is the decay rate constant, "b" is a concentration at time (x), y is the target concentration (e.g. ESL), and "x" is time. Projections to meet the drinking water ESLs for MW-7 are summarized in Table D below.

[3] EPA-Groundwater Issue; *Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*; Charles J. Newell, et al., 2003.

TABLE D SUMMARY OF DEGRADATION RATE CALCULATIONS						
Well	*Analyte*	*Maximum Concentration (µg/L)*	*Current Concentration (µg/L)*	*ESL (µg/L)*	*Date to Reach ESLs*	*Years to Reach ESL*
MW-7	TPHg	29,000	5,100	100	2036	26
	Benzene	7,300	470	1	2026	16

Both TPHg and benzene will reach their respective ESLs within 26 years, which is considered a reasonable timeframe. Based on this evaluation, MNA is feasible to cleanup dissolved hydrocarbons beneath the site. However, MNA is not a feasible method to remove LNAPL that has persisted in well C-1. While natural attenuation processes will eventually mitigate LNAPL, it will likely not be within a reasonable timeframe. Historical groundwater analytical data used for predictions are presented Table 2. Degradation calculations are presented in Appendix G.

The cost of MNA and continued semi-annual sampling of the current nine wells is estimated to be approximately $8,000 per year. Although dissolved hydrocarbon concentrations are defined and are decreasing in well C-7, LNAPL remains in well C-1. CRA can not predict a timeframe for which MNA would be required for LNAPL to attenuate in C-1; therefore a cost for this alternative has not been estimated. However, after LNAPL is mitigated in C-1, MNA can be used to monitor post-remediation effectiveness for any of the other potential remedial alternatives, since it is infeasible for dissolved concentrations to be reduced directly to ESLs by any of the remedial alternatives. Therefore, costs for a period of MNA have not been included in the overall estimate for each of the other alternatives discussed below.

Recommendations

MNA is not recommended because it alone is not a feasible method for removing LNAPL. However, MNA has been retained as an element of each of the technically feasible remedies evaluated below.

5.5.2 IN-SITU CHEMICAL OXIDATION (ISCO)

ISCO involves the use of a strong oxidizing agent to promote a chemical reaction with the COCs. During the reaction, the oxidizing agent breaks the carbon bonds and converts the COCs into carbon dioxide (CO_2) and water (H_2O). Another benefit of ISCO includes an increase in dissolved oxygen, which in turn accelerates naturally-occurring biodegradation.

Common oxidizing agents include permanganate (MnO_4^-), Fenton's reagent (hydrogen peroxide [H_2O_2] mixed with ferrous iron [Fe^{+2}]), ozone (O_3), and persulfate ($S_2O_8^{2-}$). Persulfate, the strongest oxidizer from the referenced list, is commonly applied as sodium persulfate to effectively buffer the pH.[4] Because persulfate is also more persistent than H_2O_2 or ozone, the radius of the chemical reaction will be greater. While Fenton's reagent is the most commonly used oxidizer for treating hydrocarbons, its reaction with the hydrocarbons can be extremely exothermic.

ISCO is not typically used to mitigate hydrocarbon LNAPL because the oxidizing reaction can potentially be violent.

Feasibility and Cost Effectiveness

The effectiveness of ISCO is limited by the ability of the oxidant to spread outward from the point of injection and contact residual hydrocarbons. At this site, the sandy soils are conducive to ISCO. However, ISCO is not considered appropriate for treating LNAPL due to the potentially violent exothermic nature of the oxidation reaction and due to the residence proximity.

We estimated costs for ISCO presuming it were implemented if LNAPL were not present. Bench-scale feasibility testing to determine the proper type and volume of oxidizing agent is estimated at $15,000. Samples for the bench-scale testing would be collected during the drilling to install two additional ISCO injection wells at a cost of approximately $30,000. Additional equipment will cost approximately $20,000. The average application cost for ISCO is estimated to be approximately $75,000 per event, with four events predicted. The total cost, including 4 years groundwater monitoring (one during and three post-remediation) and closure request and destruction of wells would cost approximately $447,000. These costs are summarized in Table E shown below in Section 5.6.

Recommendation

ISCO is not recommended for the removal of LNAPL in such close proximity to the residence. Finally, the relatively high cost of ISCO makes it economically infeasible given the lack of actual exposure risk at this site.

[4] Guidance Documents prepared by the Interstate Technology and Regulatory Council, 2005.

5.5.3 EXCAVATION

Excavation is often the quickest method to remediate hydrocarbons in soil and can be used to remove saturated sediments containing petroleum hydrocarbons. Impacted soil is excavated, then typically hauled offsite for treatment and/or disposal, and replaced with clean backfill material. In some cases, excavated soil can be treated onsite to regulatory requirements and then replaced in the excavation.

Standard earth-moving equipment (backhoes, bobcats, loaders, etc.) is typically utilized for excavation. Depending on available space, this range of equipment can safely excavate to a depth of approximately 25 fbg. Deep excavations may require shoring to prevent collapse of the sidewalls and to prevent damage or undermining of adjacent structures, utilities, sidewalks, etc. Additionally, dewatering of the excavated area may be required depending on the groundwater depth and recharge rates. The extent of excavation is typically determined in advance using soil boring data. Soil samples are collected for chemical analysis to confirm that the excavation limits are sufficient to meet soil cleanup levels.

Feasibility and Cost Effectiveness:
Based on historical soil analytical data, CRA has estimated a 90-foot by 30-foot area impacted to a depth of 6 fbg that would require excavation. However, this area of impact lies at least partially beneath the residence, which makes excavation technically infeasible.

Recommendation:
Excavation is technically infeasible due to the residence located partially over the source area. Therefore, CRA does not recommend excavation.

5.5.4 DUAL-PHASE EXTRACTION (DPE)

DPE uses submersible pumps to extract groundwater, while a blower or vacuum pump is used to apply a vacuum to well casings to simultaneously extract soil vapor from the saturated zone and the smear zone exposed by the groundwater dewatering. Extended dewatering of the saturated zone combined with vapor extraction can effectively remediate residual gasoline hydrocarbons in the source area. A soil vapor treatment device (oxidizer, carbon adsorption, or internal combustion engine) is used to abate volatile organic compounds in extracted vapor. Extracted groundwater is treated and discharged to the local sanitary sewer or storm drain with the appropriate authorization, or off-hauled to a disposal facility.

Feasibility and Cost Effectiveness:
Although DPE would likely be effective in removing hydrocarbons from soil and groundwater, the site is currently an inhabited residence and there is not enough available space to feasibly place a DPE system. The system would also create a noise nuisance for nearby residents even with noise abatement equipment, making DPE technically infeasible. Therefore, CRA has not estimated a cost to execute soil excavation.

Recommendation
DPE is not technically feasible because of the presence of the existing residence. Therefore, CRA does not recommend DPE.

5.5.5 SURFACTANT-ENHANCED RECOVERY (SER)

To remove residual LNAPL, CRA previously proposed SER. The objective of SER is to remove residual LNAPL from the subsurface and prevent LNAPL recurrence. SER consists of applying a low concentration, food grade, biodegradable solution of a surfactant and water and recovering the resulting mixture of groundwater, surfactant, and emulsified LNAPL using groundwater extraction. Surfactants are wetting agents with the ability to lower the interfacial surface tension between two liquids (such as oil and water). Surfactants can effectively emulsify and release LNAPL from pore spaces, thereby allowing subsequent removal by fluid extraction. Additional details can be found in CRA's January 14, 2010 *Work Plan for Remediation and Vapor Survey.*

Feasibility and Cost Effectiveness
SER is a feasible method for the mitigation of LNAPL in well C-1. It would have a low impact on the residents. It would likely be successful in removing LNAPL based on lithology, and there are several monitoring wells surrounding well C-1, including multiple downgradient wells, to monitor for the presence of and to capture a surfactant and LNAPL mixture should it migrate downgradient. CRA would install additional observation wells as requested by ACEH.

Additional observation and injection wells will cost approximately $30,000. A slug test using potable water to evaluate the extent to which the formation will accept surfactant, as well as to ensure sufficient extraction of liquids is expected to cost approximately $15,000. Conducting up to two SER events is expected to cost a total of approximately $40,000. The total cost, including 4 years groundwater monitoring (one during and three post-remediation) and closure request and destruction of wells would cost

approximately $167,000. These costs are summarized in Table E shown below in Section 5.6.

Recommendation

CRA recommends SER based on its technical and economic feasibility and its likely effectiveness to remove LNAPL observed in well C-1.

5.6 SUMMARY OF REMEDIAL ALTERNATIVES

The predicted effectiveness and estimated costs for each of remediation alternatives discussed above are shown in Table E.

TABLE E
SUMMARY OF REMEDIAL ALTERNATIVES

Alternative	*MNA*	*ISCO*	*Excavation*	*DPE*	*SER*
Effectiveness	Poor for LNAPL	Hazard for LNAPL	Good	Moderate to Good	Good
Feasibility	Good	Poor	None	None	Good
Pilot Testing	NA	$15,000	NA	NA	$15,000
Design and Permitting	NA	NA	NA	NA	NA
Equipment and Installation	NA	$50,000	NA	NA	$30,000
Operational Duration	NA	4 events (1 year)	NA	NA	2 events (1 year)
Average Annual Operational Cost	NA	$75,000 (per event)	NA	NA	$20,000 (per event)
Total Operational Cost	NA	$300,000	NA	NA	$40,000
Annual Groundwater Monitoring Cost	NA	$8,000	NA	NA	$8,000
Total Groundwater Monitoring Duration	NA	4 years	NA	NA	4 years
Total Groundwater Monitoring Cost	NA	$32,000	NA	NA	$32,000
System Demo	NA	NA	NA	NA	NA
Closure Request/Well Destructions	NA	$50,000	NA	NA	$50,000
Total Cost	**NA**	**$447,000**	**NA**	**NA**	**$167,000**

Of the five remedial alternatives evaluated, SER is the most cost-effective and feasible given limitations posed by the existing onsite residence. Therefore, we recommend implementing SER as the preferred remedial strategy to remove LNAPL from beneath the site.

6.0 CONCLUSIONS

Based on the historical data, CRA makes the following conclusions:

- No surface water bodies or identified wells are considered at risk from hydrocarbons originating from the site
- The utilities on and in the vicinity of the site are not acting as significant pathways for hydrocarbon migration
- The horizontal and vertical extent of hydrocarbons in soil is fully delineated
- The extent of hydrocarbons in groundwater is fully delineated
- There is no risk from vapor intrusion pathway due to the ventilated crawl space and additional soil vapor assessment is not warranted

7.0 RECOMMENDATIONS

Due to the presence of LNAPL CRA evaluated five remedial options and selected SER to remove LNAPL and extract hydrocarbon mass from the source area. Upon approval of this FS/CAP CRA will submit a Pilot Test Work Plan that will propose observation wells and details pertaining to the surfactant injection and extraction. As an interim remedial measure CRA will install a hydrocarbon adsorbent sock in monitoring well C-1. The adsorbent sock will be changed out quarterly during monitoring and sampling events.

FIGURES

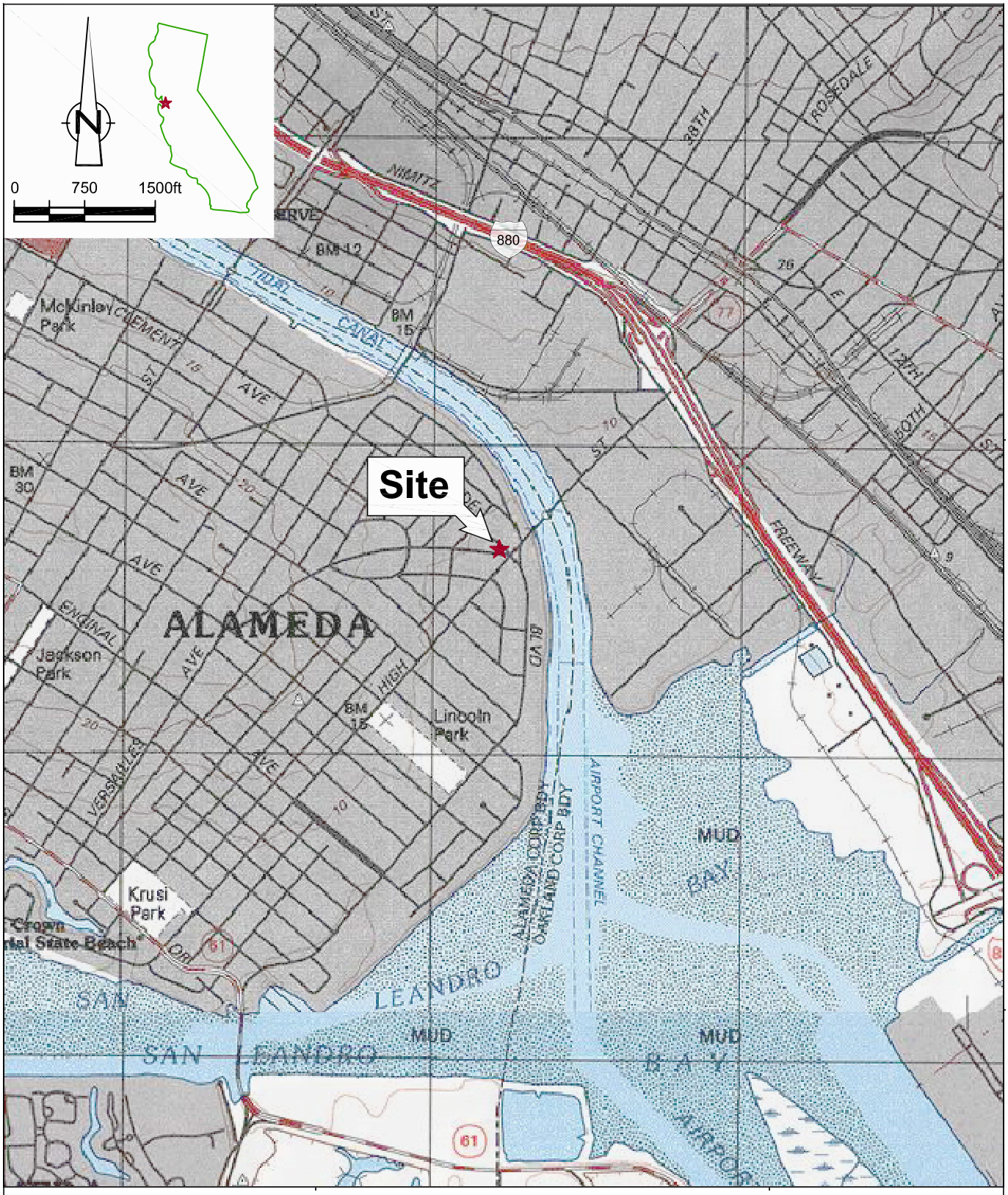
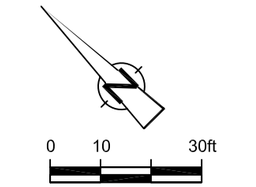
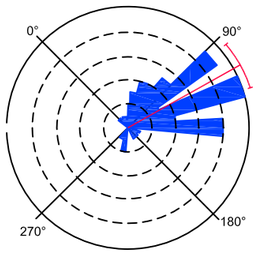


Figure 1

VICINITY MAP
FORMER CHEVRON STTION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

I:\Chevron\3116--\311642 9-1153 Alameda\311642-FIGURES\311642-2010 GN-EM001.DWG





GROUNDWATER FLOW DIRECTION
1986 - 2Q2010

LEGEND

- MW-1 ● MONITORING WELL LOCATION
- TMW-1 ⊕ TEMPORARY MONITORING WELL LOCATION
- RW-1 ⊕ EXTRACTION WELL LOCATION
- C-2 ✱ DESTROYED WELL LOCATION
- SB1 ■ SOIL BORING LOCATION
- SV-1 ▲ SOIL VAPOR SAMPLE LOCATION (G-R, 2002)
- S1 ⊠ SOIL SAMPLE LOCATION
- E — ELECTRICAL LINE
- G — GAS LINE
- W — WATER LINE
- T — COMMUNICATIONS LINE
- STM — STORM DRAIN LINE
- SAN — SANITARY SEWER LINE

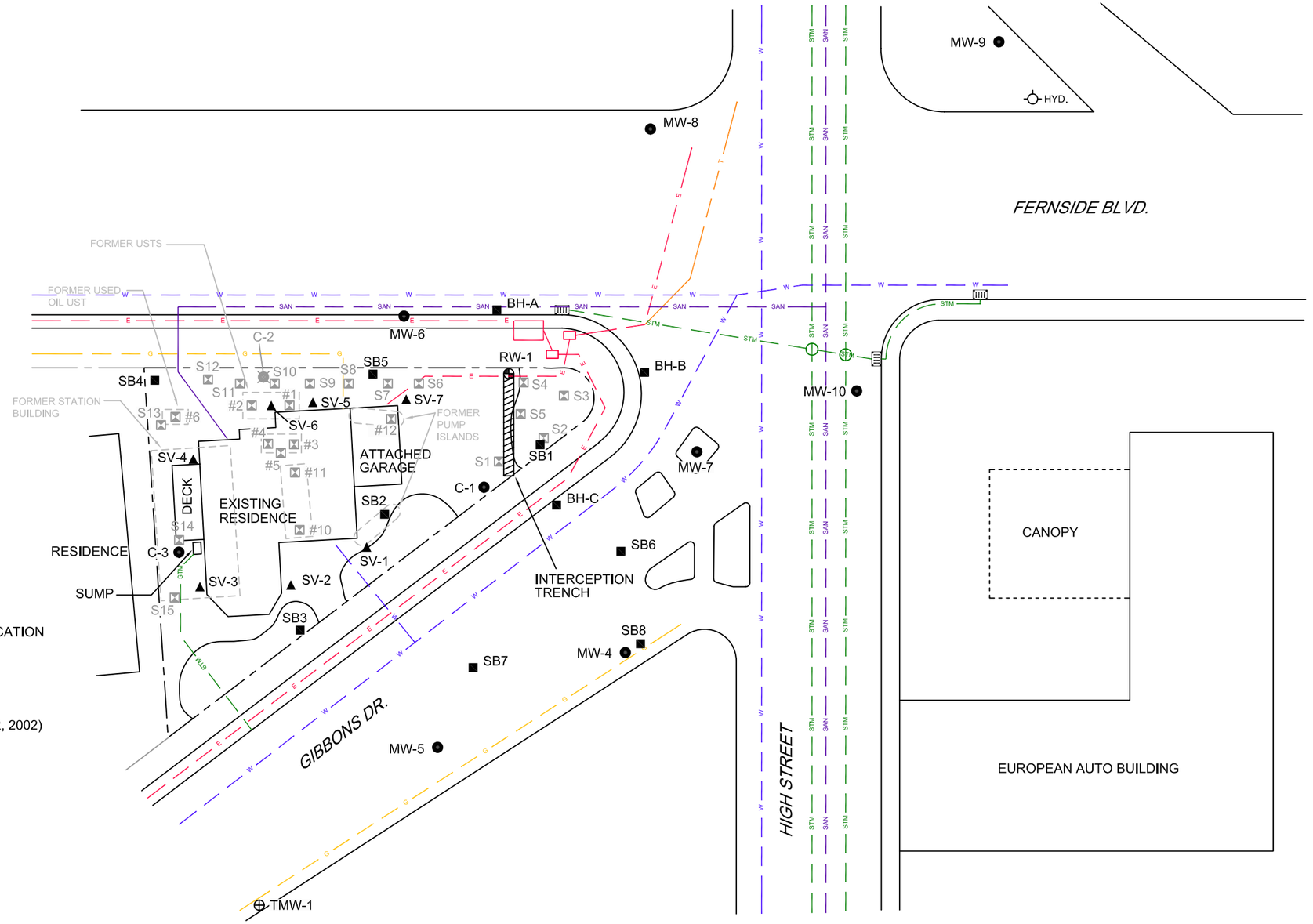
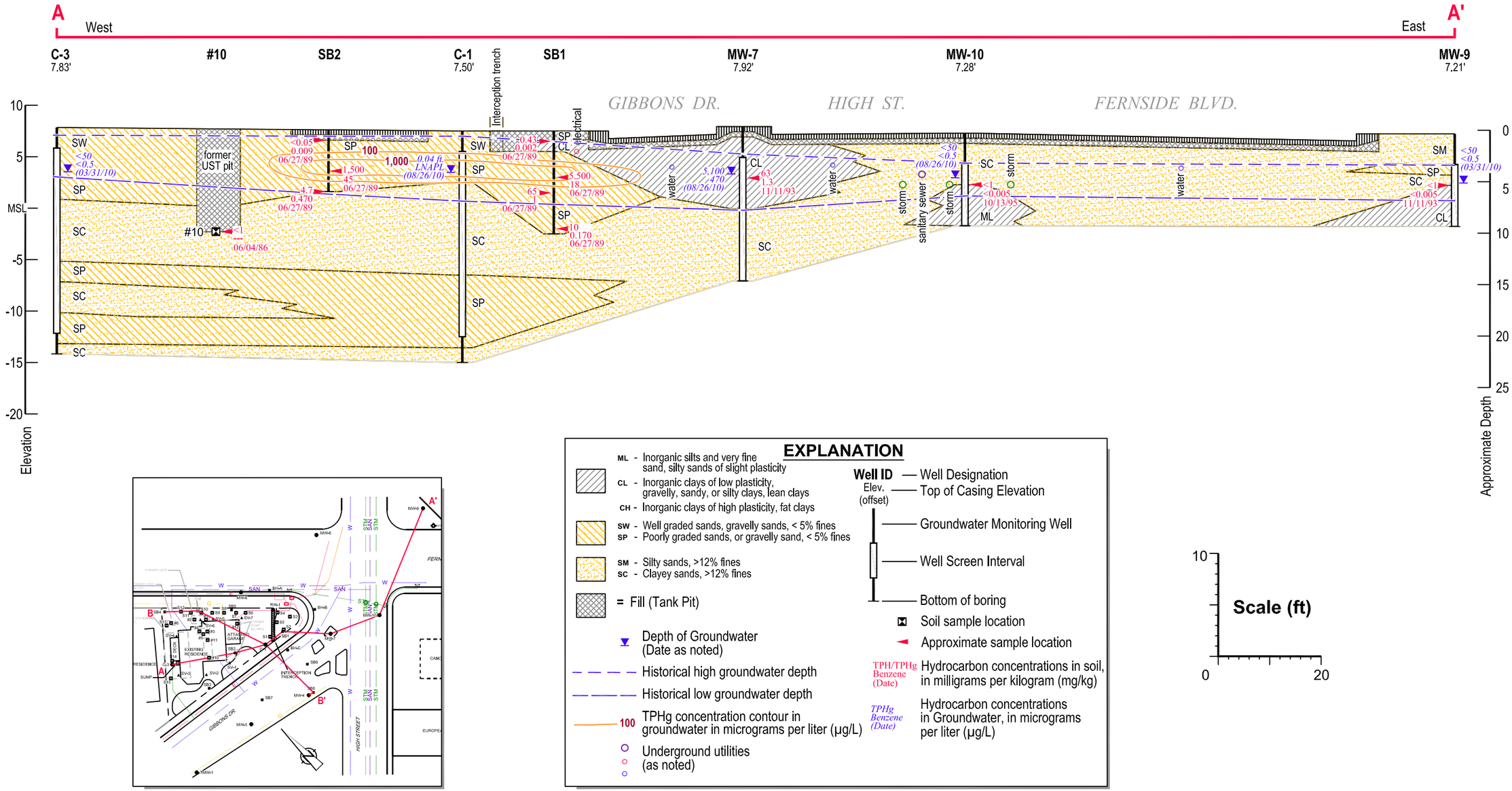


Figure 2

SITE PLAN with UTILITIES
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California



EXPLANATION

- ML - Inorganic silts and very fine sand, silty sands of slight plasticity
- CL - Inorganic clays of low plasticity, gravelly, sandy, or silty clays, lean clays
- CH - Inorganic clays of high plasticity, fat clays
- SW - Well graded sands, gravelly sands, < 5% fines
- SP - Poorly graded sands, or gravelly sand, < 5% fines
- SM - Silty sands, >12% fines
- SC - Clayey sands, >12% fines
- = Fill (Tank Pit)
- Depth of Groundwater (Date as noted)
- Historical high groundwater depth
- Historical low groundwater depth
- 100 — TPHg concentration contour in groundwater in micrograms per liter (µg/L)
- Underground utilities (as noted)

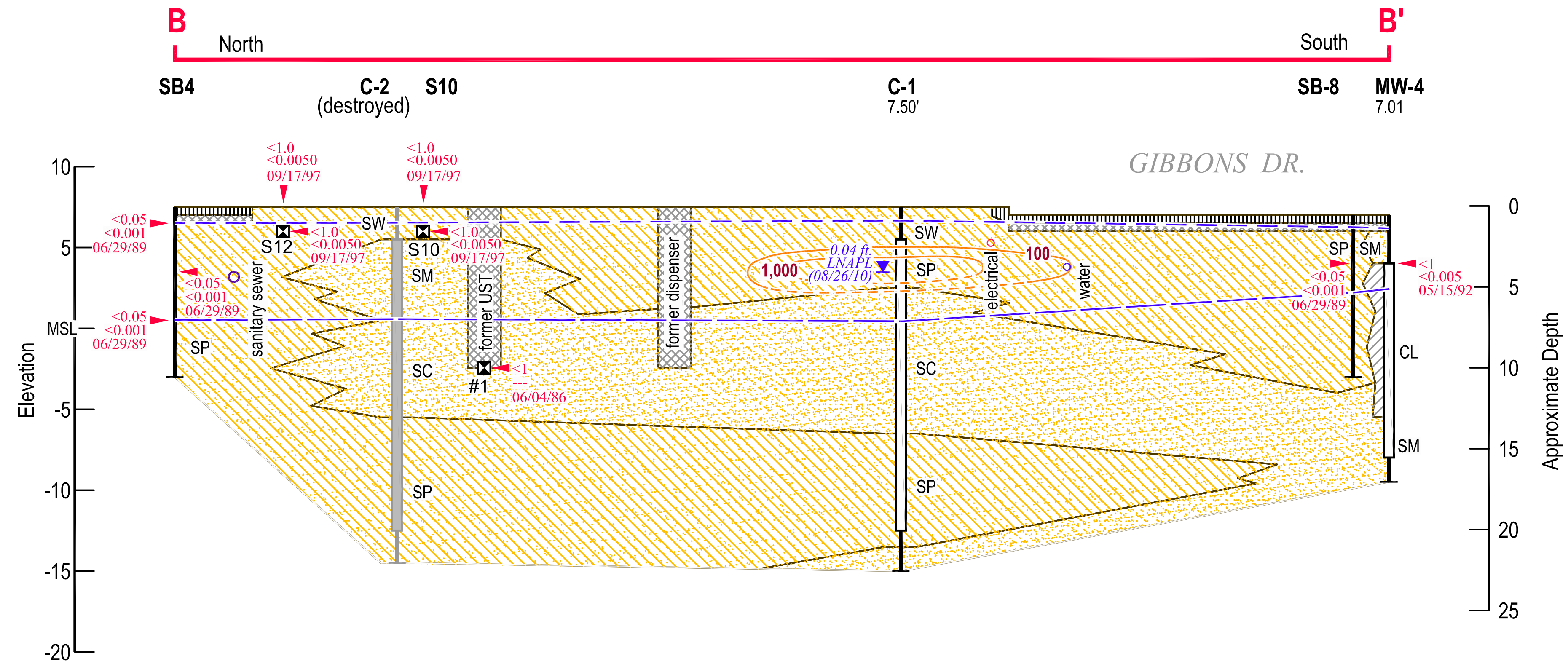
Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
- Groundwater Monitoring Well
- Well Screen Interval
- Bottom of boring
- Soil sample location
- Approximate sample location

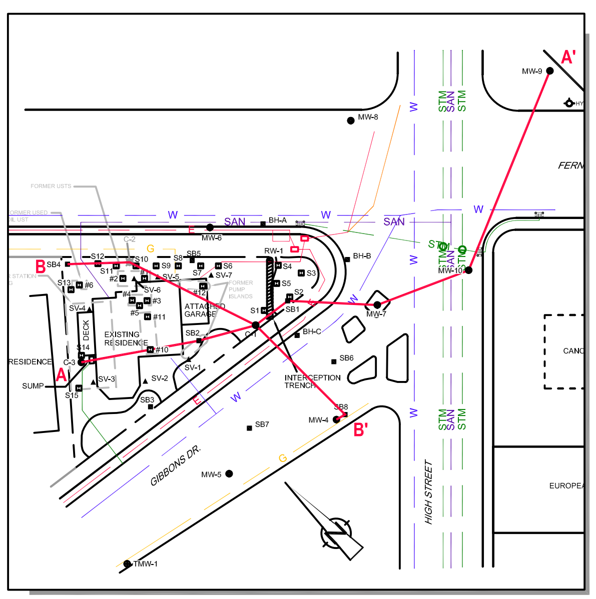
TPH/TPHg Benzene (Date) — Hydrocarbon concentrations in soil, in milligrams per kilogram (mg/kg)

TPHg Benzene (Date) — Hydrocarbon concentrations in Groundwater, in micrograms per liter (µg/L)

Figure 3

GEOLOGIC-CROSS SECTION A-A'
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California





EXPLANATION

ML - Inorganic silts and very fine sand, silty sands of slight plasticity
CL - Inorganic clays of low plasticity, gravelly, sandy, or silty clays, lean clays
CH - Inorganic clays of high plasticity, fat clays
SW - Well graded sands, gravelly sands, < 5% fines
SP - Poorly graded sands, or gravelly sand, < 5% fines
SM - Silty sands, >12% fines
SC - Clayey sands, >12% fines
= Fill (Tank Pit)
Depth of Groundwater (Date as noted)
Historical high groundwater depth
Historical low groundwater depth
100 TPHg concentration contour in groundwater in micrograms per liter (µg/L)
Underground utilities (as noted)

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring
Soil sample location
Approximate sample location
TPH/TPHg Benzene (Date) Hydrocarbon concentrations in soil, in milligrams per kilogram (mg/kg)
TPHg Benzene (Date) Hydrocarbon concentrations in Groundwater, in micrograms per liter (µg/L)

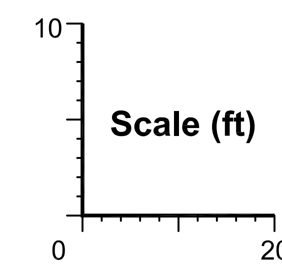


Figure 4

GEOLOGIC CROSS SECTION B-B'
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

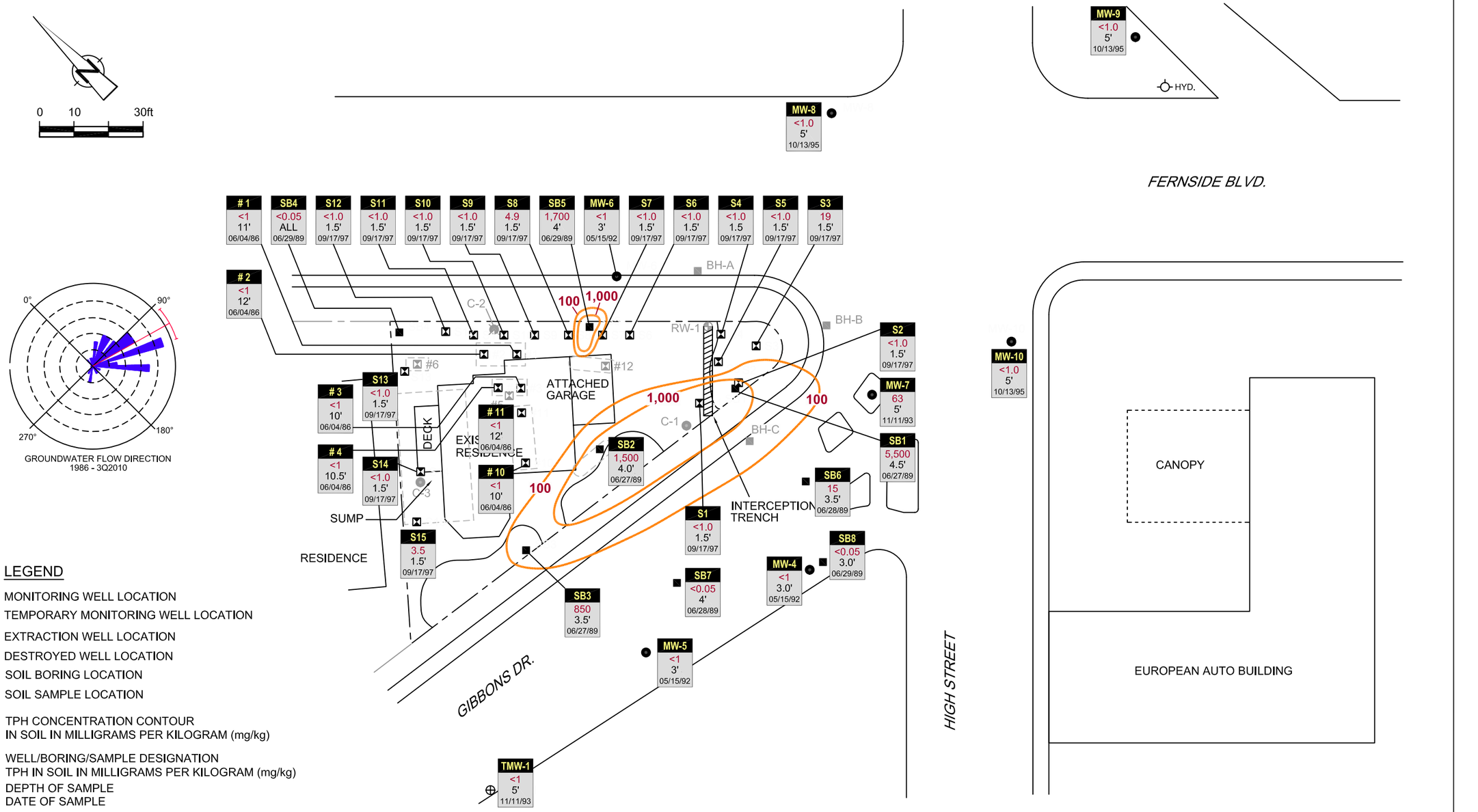


Figure 5

MAXIMUM CONCENTRATION TPH & TPHG IN SOIL FOR 0 - 11 fbg
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

311642-2010(012)GN-EM005 DEC 16/2010

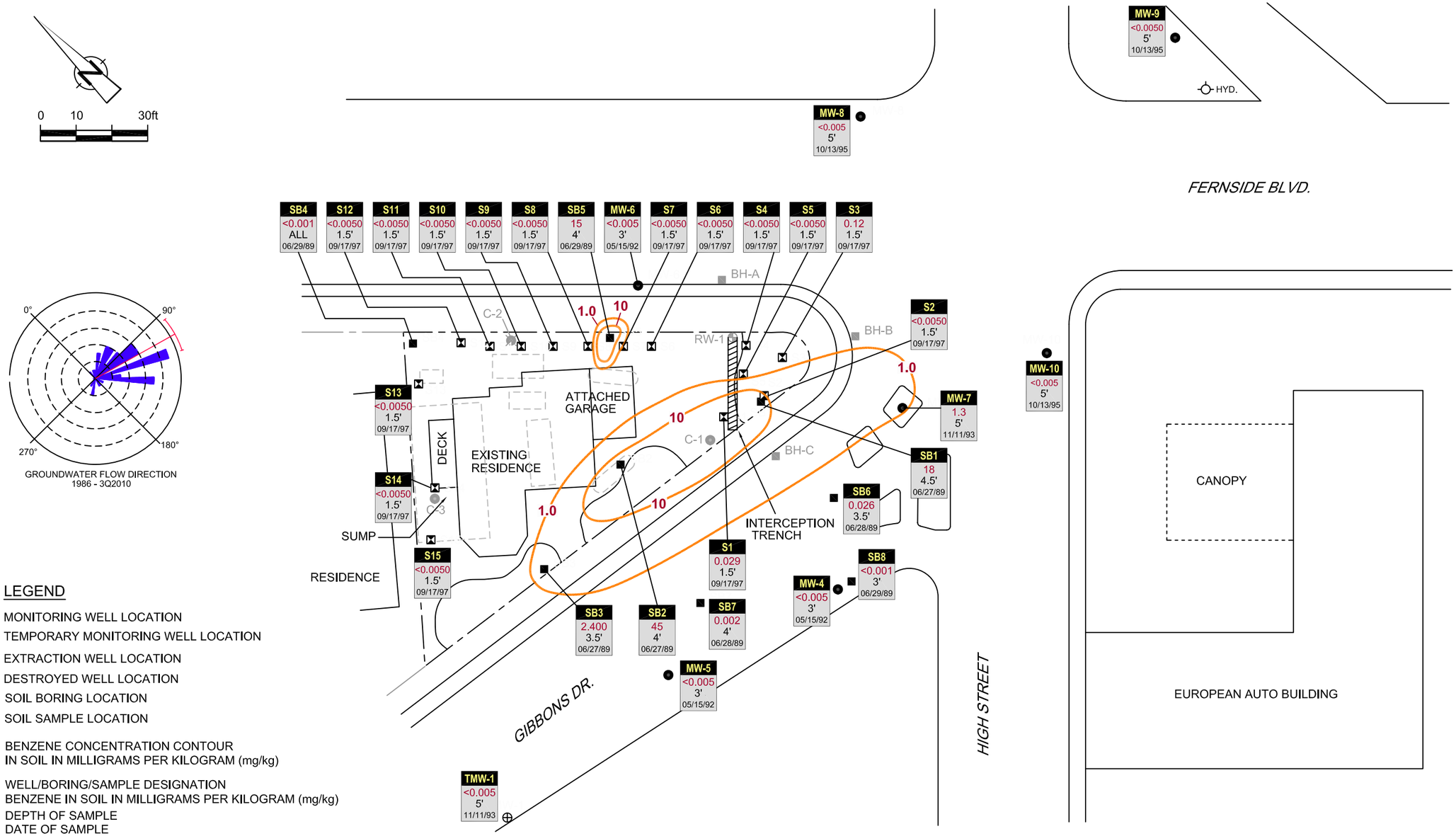
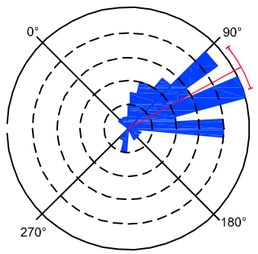


Figure 6

MAXIMUM BENZENE CONCENTRATIONS IN SOIL FOR 0 - 11 fbg
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

311642-2010(012)GN-EM006.DWG DEC 16/2010

0 10 30ft



GROUNDWATER FLOW DIRECTION
1986 - 3Q2010

MW-8
(2.69)
(SA)

MW-9
(2.44)
(SA)
2.50
2.50
HYD.

FERNSIDE BLVD.

FORMER USTS
FORMER USED OIL UST
FORMER STATION BUILDING
FORMER PUMP ISLANDS
ATTACHED GARAGE
EXISTING RESIDENCE
RESIDENCE
DECK
C-2
C-3
(3.54)
(SA)
MW-6
(3.12)
(<50)
(<0.5)
(<0.5)
RW-1
C-1
(3.50)
(LNAPL)
MW-7
(3.32)
(5,100)
(470)
(<0.5)
MW-10
(2.95)
(<50)
(<0.5)
(<0.5)
MW-4
(3.31)
(SA)
MW-5
(3.79)
(<50)
(<0.5)
(<0.5)
3.00
3.00
3.50
3.50
GIBBONS DR.
HIGH STREET
CANOPY
EUROPEAN AUTO BUILDING

LEGEND

MW-1 ●	MONITORING WELL LOCATION
RW-1 ⊕	EXTRACTION WELL LOCATION
C-2 ✕	DESTROYED WELL LOCATION
(3.79)	GROUNDWATER ELEVATION (ft-amsl)
(<50)	TPHg CONCENTRATION (ug/L)
(<0.5)	BENZENE CONCENTRATION (ug/L)
(<0.5)	MTBE CONCENTRATION (ug/L)
(SA)	SAMPLED ANNUALLY
(LNAPL)	LIGHT NON-AQUEOUS PHASE LIQUIDS - NOT SAMPLED
—3.50—	GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED

GROUNDWATER FLOW
DIRECTION AT A GRADIENT OF 0.006

Figure 7

GROUNDWATER ELEVATION AND HYDROCARBON CONCENTRATION MAP - AUGUST 26, 2010
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

311642-2010(012)GN-WA002 NOV 11/2010

TABLES

TABLE 1
CUMULATIVE SOIL ANALYTICAL DATA
FORMER CHEVRON STATION #9-1153
3126 FERNSIDE DRIVE, ALAMEDA, CALIFORNIA

Sample ID	Date	Depth (fbg)	Used-Oil	TPH	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Lead
			milligrams per kilogram (mg/kg)								
ESL (Table G), Soil Leaching to Drinking Water Resource			*NA*	*83*	*83*	*0.044*	*2.9*	*3.3*	*2.3*	*0.023*	NA
ESL (Table K-3), Construction/Trench Worker Exporsure			*12,000*	*4,200*	*4,200*	*12*	*650*	*210*	*420*	*2800*	750
Monitoring Wells											
MW-4	5/15/1992	3	--	--	<1	<0.005	<0.005	<0.005	<0.005	--	--
MW-5	5/15/1992	3	--	--	<1	<0.005	<0.005	<0.005	<0.005	--	--
MW-6	5/15/1992	3	--	--	<1	<0.005	<0.005	<0.005	<0.005	--	--
MW-7	11/11/1993	5	--	--	63	1.3	0.67	1.6	4.6	--	--
TMW-1	11/11/1993	5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.017	--	--
MW-8	10/13/1995	5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	--	--
MW-9	10/13/1995	5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	--	--
MW-10	10/13/1995	5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	--	--
Soil Borings											
SB1	6/27/1989	1	--	0.43	--	0.002	<0.001	0.001	0.008	--	--
SB1 (Duplicate)	6/27/1989	1	--	--	--	0.001	<0.001	<0.001	0.008	--	--
SB1	6/27/1989	4.5	--	5,500	--	18	111	37	149	--	--
SB1	6/27/1989	6	--	65	--	1	2.200	0.540	1.930	--	--
SB1	6/27/1989	9.5	--	10	--	0.170	0.460	0.140	0.530	--	--
SB2	6/27/1989	1	--	<0.05	--	0.009	0.024	0.010	0.026	--	--
SB2 (Duplicate)	6/27/1989	1	--	<0.05	--	--	--	--	--	--	--
SB2	6/27/1989	4	--	1,500	--	45	230	78	283	--	--
SB2	6/27/1989	6	--	4.7	--	0.470	1.300	0.310	1.120	--	--
SB3	6/27/1989	0.5	--	0.07	--	<0.001	<0.001	<0.001	<0.001	--	--
SB3	6/27/1989	3.5	--	850	--	2.400	3.200	5.300	17.8	--	--
SB4	6/29/1989	1	--	<0.05	--	<0.001	<0.001	<0.001	<0.001	--	--
SB4 (Duplicate)	6/29/1989	1	--	<0.05	--	--	--	--	--	--	--
SB4	6/29/1989	4	--	<0.05	--	<0.001	<0.001	<0.001	<0.001	--	--
SB4	6/29/1989	7	--	<0.05	--	<0.001	<0.001	<0.001	<0.001	--	--
SB5	6/29/1989	0.5	--	0.25	--	0.019	0.017	0.019	0.153	--	--
SB5 (Duplicate)	6/29/1989	0.5	--	--	--	0.020	0.021	0.023	0.178	--	--
SB5	6/29/1989	4	--	1,700	--	15	81	30	108	--	--
SB5 (Duplicate)	6/29/1989	4	--	1,600	--	--	--	--	--	--	--
SB5	6/29/1989	6	--	470	--	0.260	1.900	1.400	5.200	--	--
SB6	6/28/1989	3.5	--	15	--	0.026	0.100	0.160	0.370	--	--
SB7	6/28/1989	4	--	<0.05	--	0.002	<0.001	<0.001	<0.001	--	--
SB7 (Duplicate)	6/28/1989	4	--	--	--	0.002	<0.001	<0.001	<0.001	--	--
SB8	6/29/1989	3	--	<0.05	--	<0.001	<0.001	<0.001	<0.001	--	--

TABLE 1
CUMULATIVE SOIL ANALYTICAL DATA
FORMER CHEVRON STATION #9-1153
3126 FERNSIDE DRIVE, ALAMEDA, CALIFORNIA

Sample ID	Date	Depth (fbg)	Used-Oil	TPH	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Lead
			milligrams per kilogram (mg/kg)								
ESL (Table G), Soil Leaching to Drinking Water Resource			***NA***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	NA
ESL (Table K-3), Construction/Trench Worker Exporsure			***12,000***	***4,200***	***4,200***	***12***	***650***	***210***	***420***	***2800***	750
Soil Samples											
S1	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	85
	9/17/1997	1.5	--	--	<1.0	0.029	<0.0050	<0.0050	<0.0050	<0.025	13
S2	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	160
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	6.7
S3	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	140
	9/17/1997	1.5	--	--	19	0.12	0.28	0.3	1.4	0.11	12
S4	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	200
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	16
S5	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	0.0078	<0.025	110
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	15
S6	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	38
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	15
S7	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	35
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
S8	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	4.9	<0.0050	<0.0050	0.011	0.048	<0.025	a
S9	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
S10	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
S11	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
S12	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
S13	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
S14	9/17/1997	Surface	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	a
	9/17/1997	1.5	--	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	20
S15	9/17/1997	Surface	--	--	1.6	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	40
	9/17/1997	1.5	--	--	3.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	12

TABLE 1
CUMULATIVE SOIL ANALYTICAL DATA
FORMER CHEVRON STATION #9-1153
3126 FERNSIDE DRIVE, ALAMEDA, CALIFORNIA

Sample ID	Date	Depth (fbg)	Used-Oil	TPH	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Lead
			milligrams per kilogram (mg/kg)								
ESL (Table G), Soil Leaching to Drinking Water Resource			*NA*	*83*	*83*	*0.044*	*2.9*	*3.3*	*2.3*	*0.023*	NA
ESL (Table K-3), Construction/Trench Worker Exporsure			*12,000*	*4,200*	*4,200*	*12*	*650*	*210*	*420*	*2800*	750
UST/Excavation Samples											
1	6/4/1986	11	--	--	<1	--	--	--	--	--	--
2	6/4/1986	12	--	--	<1	--	--	--	--	--	--
3	6/4/1986	10	--	--	<1	--	--	--	--	--	--
4	6/4/1986	10.5	--	--	<1	--	--	--	--	--	--
6	6/4/1986	8	<11	--	--	--	--	--	--	--	--
10	6/4/1986	10	--	--	<1	--	--	--	--	--	--
11	6/4/1986	12	--	--	<1	--	--	--	--	--	--
12	6/4/1986	10	<11	--	--	--	--	--	--	--	--

Explanation:
fbg = feet below grade
TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015
TPH used-oil by EPA Method 3510
BTEX = Benzene, toluene, ethylbenzene, xylene by EPA Method 8020
MTBE = methyl tertiary butyl ether
<x.xx = Not present above laboratory detection limit

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
C-1	08/18/1986	-	4.10	-	-	-	-	-	-	-	-	-
C-1	09/04/1986	-	-	-	-	-	15,000	760	820	1,500	-	-
C-1	07/22/1987	-	-	-	-	-	1,100	250	7.0	40	-	-
C-1	05/03/1989	-	4.46	-	-	-	6,900	3,800	190	229	-	-
C-1	12/04/1989	-	4.16	-	-	-	17,000	8,000	490	470	-	-
C-1	02/14/1990	-	3.64	-	-	-	19,000	12,000	990	1,050	-	-
C-1	03/07/1990	-	3.36	-	-	-	-	4,260	261	430	-	-
C-1	09/06/1991	-	4.43	-	-	-	21,000	10,000	100	240	560	-
C-1	12/15/1991	-	4.78	-	-	-	20,000	4,900	43	110	330	-
C-1	03/03/1992	-	2.39	-	-	-	13,000	5,800	730	340	1,200	-
C-1	06/04/1992	4.08	4.08	0.00	-	-	34,000	9,400	350	290	1,200	-
C-1	10/13/1992	4.08	4.75	-0.67	-	-	24,000	11,000	98	280	530	-
C-1	01/11/1993	4.08	2.26	1.82	Sheen	-	7,100	1,500	130	150	700	-
C-1	04/14/1993	4.08	2.90	1.18	Sheen	-	29,000	7,300	4,000	640	2,300	-
C-1	07/13/1993	4.08	3.97	0.11	Sheen	-	650,000	27,000	18,000	6,300	29,000	-
C-1	10/19/1993	4.08	4.50	-0.42	-	-	40,000	12,000	730	1,100	3,600	-
C-1	11/30/1993	7.50	4.27	3.23	-	-	-	-	-	-	-	-
C-1	01/27/1994	7.50	3.35	4.15	-	-	36,000	8,600	220	670	1,900	-
C-1	04/07/1994	7.50	3.42	4.08	-	-	53,000	12,000	3,500	480	3,300	-
C-1	07/01/1994	7.50	3.96	3.54	-	-	65,000	19,000	5,900	1,000	9,000	-
C-1	10/05/1994	7.50	4.39	3.11	-	-	160,000	23,000	12,000	2,200	11,000	-
C-1	01/12/1995	7.50	1.52	6.38	0.50	-	-	-	-	-	-	-
C-1	04/26/1995	7.50	4.40	4.86	2.20	-	-	-	-	-	-	-
C-1	07/12/1995	7.50	4.85	4.10	1.81	-	-	-	-	-	-	-
C-1	10/30/1995	7.50	5.67	3.13	1.63	-	-	-	-	-	-	-
C-1	01/04/1996	7.50	3.92	3.68	0.12	-	-	-	-	-	-	-
C-1	01/10/1996	7.50	3.48	4.12	0.13	-	-	-	-	-	-	-
C-1	01/17/1996	7.50	3.40	4.12	0.02	-	-	-	-	-	-	-
C-1	01/22/1996	7.50	2.90	4.60	0.00	-	82,000	18,000	4,400	1,400	5,200	<1,000
C-1	02/23/1996	7.50	4.10	4.89	1.86	-	-	-	-	-	-	-
C-1	02/28/1996	7.50	-	-	0.83 >	-	-	-	-	-	-	-
C-1	03/08/1996	7.50	2.86	6.10	1.83	-	-	-	-	-	-	-
C-1	03/26/1996	7.50	3.96	4.56	1.28	-	-	-	-	-	-	-
C-1	04/11/1996	7.50	5.61	3.29	1.75	-	-	-	-	-	-	-
C-1	04/19/1996	7.50	3.09	4.44	0.04	-	-	-	-	-	-	-
C-1	04/24/1996	7.50	3.04	4.48	0.03	-	-	-	-	-	-	-
C-1	05/03/1996	7.50	4.02	3.85	0.46	-	-	-	-	-	-	-
C-1	05/08/1996	7.50	4.25	3.53	0.35	-	-	-	-	-	-	-
C-1	05/17/1996	7.50	3.24	4.29	0.04	-	-	-	-	-	-	-
C-1	05/22/1996	7.50	3.10	4.46	0.07	-	-	-	-	-	-	-
C-1	06/18/1996	7.50	4.68	3.20	0.48	-	-	-	-	-	-	-
C-1	07/03/1996	7.50	5.03	2.57	0.13	-	-	-	-	-	-	-
C-1	07/09/1996	7.50	4.63	3.05	0.23	-	-	-	-	-	-	-
C-1	07/17/1996	7.50	4.73	2.89	0.15	-	-	-	-	-	-	-
C-1	07/29/1996	7.50	5.10	2.47	0.09	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
C-1	08/02/1996	7.50	5.68	1.84	0.03	-	-	-	-	-	-	-
C-1	08/07/1996	7.50	5.16	2.35	0.01	-	-	-	-	-	-	-
C-1	08/23/1996	7.50	5.75	1.77	0.03	-	-	-	-	-	-	-
C-1	08/28/1996	7.50	5.53	1.99	0.03	-	-	-	-	-	-	-
C-1	09/06/1996	7.50	5.38	2.12	-	-	-	-	-	-	-	-
C-1	09/12/1996	7.50	5.48	2.04	0.03	-	-	-	-	-	-	-
C-1	09/19/1996	7.50	6.32	1.20	0.03	-	-	-	-	-	-	-
C-1	10/10/1996	7.50	4.58	3.00	0.10	-	-	-	-	-	-	-
C-1	10/17/1996	7.50	5.61	1.90	0.01	-	-	-	-	-	-	-
C-1	10/29/1996	7.50	6.01	1.49	-	-	-	-	-	-	-	-
C-1	11/07/1996	7.50	5.56	1.94	0.04	-	-	-	-	-	-	-
C-1	11/11/1996	7.50	5.32	2.18	0.04	-	-	-	-	-	-	-
C-1	12/17/1996	7.50	3.73	3.77	0.01	-	-	-	-	-	-	-
C-1	12/20/1996	7.50	3.33	4.17	0.03	-	-	-	-	-	-	-
C-1	01/15/1997	7.50	2.74	4.76	-	-	47,000	16,000	2,800	1,300	4,900	<1,000
C-1	01/22/1997	7.50	1.37	6.13	0.19	-	-	-	-	-	-	-
C-1	02/04/1997	7.50	2.98	4.52	0.51	-	-	-	-	-	-	-
C-1	02/20/1997	7.50	4.09	3.41	0.13	-	-	-	-	-	-	-
C-1	03/06/1997	7.50	3.75	3.75	0.56	-	-	-	-	-	-	-
C-1	03/14/1997	7.50	3.82	3.68	0.03	-	-	-	-	-	-	-
C-1	03/20/1997	7.50	3.73	3.77	0.03	-	-	-	-	-	-	-
C-1	03/25/1997	7.50	4.32	3.18	0.01	-	-	-	-	-	-	-
C-1	03/31/1997	7.50	3.71	3.79	0.03	-	-	-	-	-	-	-
C-1	04/03/1997	7.50	4.60	2.92	0.03	-	-	-	-	-	-	-
C-1	04/09/1997	7.50	4.25	3.27	0.02	-	-	-	-	-	-	-
C-1	04/24/1997	7.50	4.65	2.87	0.02	-	-	-	-	-	-	-
C-1	04/30/1997	7.50	3.50	4.02	0.02	-	-	-	-	-	-	-
C-1	05/22/1997	7.50	4.97	2.53	-	-	-	-	-	-	-	-
C-1	06/03/1997	7.50	3.62	3.93	0.06	-	-	-	-	-	-	-
C-1	07/09/1997	7.50	4.30	3.25	0.06	-	-	-	-	-	-	-
C-1	08/12/1997	7.50	5.18	2.32	0.00	-	-	-	-	-	-	-
C-1	09/30/1997	7.50	5.25	2.65	0.50	-	-	-	-	-	-	-
C-1	10/29/1997	7.50	5.33	2.19	0.03	-	-	-	-	-	-	-
C-1	11/13/1997	7.50	4.86	2.66	0.02	-	-	-	-	-	-	-
C-1	12/18/1997	7.50	2.34	5.16	-	-	-	-	-	-	-	-
C-1	01/14/1998	7.50	0.25	7.27	0.02	-	-	-	-	-	-	-
C-1	02/02/1998	7.50	2.35	5.19	0.05	-	-	-	-	-	-	-
C-1	03/16/1998	7.50	2.50	5.40	0.50	-	-	-	-	-	-	-
C-1	04/17/1998	7.50	2.65	5.17	0.40	-	-	-	-	-	-	-
C-1	05/01/1998	7.50	2.39	5.14	0.04	-	-	-	-	-	-	-
C-1	06/17/1998	7.50	3.26	4.30	0.08	-	-	-	-	-	-	-
C-1	07/15/1998	7.50	3.55	3.95	-	-	110,000	22,000	22,000	1,000	10,000	<250
C-1	09/01/1998	7.50	4.00	3.50	-	-	-	-	-	-	-	-
C-1	10/27/1998	7.50	4.48	3.02	-	-	45,000	12,000	5,400	590	4,300	<500
C-1	11/19/1998	7.50	3.89	3.61	-	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
C-1	12/19/1998	7.50	2.13	5.39	0.02	-	-	-	-	-	-	-
C-1	01/20/1999	7.50	3.98	3.52	-	-	50,300	7,050	5,030	244	6,090	<40
C-1	02/24/1999	7.50	2.55	4.95	-	-	-	-	-	-	-	-
C-1	03/26/1999	7.50	2.14	5.97	0.76	-	-	-	-	-	-	-
C-1	04/19/1999	7.50	1.04	6.46	-	-	150,000	21,000	20,000	3,000	18,000	<2.5/49[2]
C-1	07/29/1999	7.50	3.76	3.76	0.02	-	-	-	-	-	-	-
C-1	08/30/1999	7.50	4.30	3.20	-	-	-	-	-	-	-	-
C-1	09/23/1999	7.50	3.84	3.68	0.02	-	-	-	-	-	-	-
C-1	10/13/1999	7.50	1.27	6.23	-	-	136,000	23,900	30,000	2,390	17,300	<500
C-1	11/17/1999	7.50	3.59	3.91	-	-	-	-	-	-	-	-
C-1	12/08/1999	7.50	3.79	3.71	-	-	-	-	-	-	-	-
C-1	01/25/2000	7.50	1.99	5.54	0.04	-	-	-	-	-	-	-
C-1	04/03/2000	7.50	2.20	5.38	0.10	-	-	-	-	-	-	-
C-1	05/26/2000	7.50	2.52	5.16	0.23	-	-	-	-	-	-	-
C-1	06/19/2000	7.50	2.89	4.76	0.19	-	-	-	-	-	-	-
C-1	07/03/2000	7.50	3.45	4.25	0.25	-	-	-	-	-	-	-
C-1	08/01/2000	7.50	3.78	3.85	0.16	-	-	-	-	-	-	-
C-1	09/30/2000	7.50	4.03	3.50	0.04	-	-	-	-	-	-	-
C-1	10/23/2000	7.50	4.15	3.37	0.03	-	-	-	-	-	-	-
C-1	11/21/2000	7.50	3.42	4.08	0.00	-	-	-	-	-	-	-
C-1	12/22/2000	7.50	2.96	4.54	0.00	-	-	-	-	-	-	-
C-1	01/08/2001	7.50	2.94	4.56	0.00	-	-	-	-	-	-	-
C-1	02/17/2001	7.50	2.09	5.88	0.59	-	-	-	-	-	-	-
C-1	03/13/2001	7.50	2.20	5.91	0.76	-	-	-	-	-	-	-
C-1	04/09/2001	7.50	2.45	5.26	0.26	-	-	-	-	-	-	-
C-1	05/18/2001	7.50	2.70	5.27	0.59	-	-	-	-	-	-	-
C-1	06/12/2001	7.50	3.50	4.78	0.97	-	-	-	-	-	-	-
C-1	07/19/2001	7.50	4.25	4.01	0.95	-	-	-	-	-	-	-
C-1	08/23/2001	7.50	4.34	3.22	0.07	-	-	-	-	-	-	-
C-1	09/17/2001	7.50	4.39	3.17	0.08	-	-	-	-	-	-	-
C-1	10/08/2001	7.50	4.45	3.08	0.04	-	-	-	-	-	-	-
C-1	11/27/2001	7.50	3.89	3.61	0.00	-	330,000	9,800	5,300	3,800	22,000	<50
C-1	12/17/2001	7.50	1.81	5.69	0.00	-	-	-	-	-	-	-
C-1	01/07/2002	7.50	2.27	5.64	0.51	-	-	-	-	-	-	-
C-1	02/26/2002	7.50	2.70	5.22	0.52	-	-	-	-	-	-	-
C-1	03/27/2002	7.50	2.87	5.47	1.05	-	-	-	-	-	-	-
C-1	04/08/2002	7.50	2.45	6.03	1.23	-	-	-	-	-	-	-
C-1	05/23/2002	7.50	3.57	4.35	0.52	-	-	-	-	-	-	-
C-1	06/17/2002	7.50	3.90	3.88	0.35	-	-	-	-	-	-	-
C-1	07/31/2002	7.50	4.12	3.54	0.20	-	-	-	-	-	-	-
C-1	08/09/2002	7.50	4.15	3.48	0.16	-	-	-	-	-	-	-
C-1	09/17/2002	7.50	4.33	3.27	0.12	-	-	-	-	-	-	-
C-1	10/15/2002	7.50	4.51	3.11	0.15	-	-	-	-	-	-	-
C-1	11/08/2002	7.50	4.11	3.39	0.00	-	51,000	7,000	510	820	5,800	<3.0
C-1	12/19/2002	7.50	1.14	6.36	0.00	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
C-1	01/14/2003	7.50	1.80	5.70	0.00	-	-	-	-	-	-	-
C-1	02/07/2003	7.50	2.95	4.79	0.30	-	-	-	-	-	-	-
C-1	03/20/2003	7.50	2.86	4.97	0.41	-	-	-	-	-	-	-
C-1	04/15/2003	7.50	2.12	5.46	0.10	-	-	-	-	-	-	-
C-1	05/09/2003	7.50	2.95	5.11	0.70	-	-	-	-	-	-	-
C-1	06/27/2003	7.50	3.97	3.93	0.50	-	-	-	-	-	-	-
C-1	07/16/2003	7.50	3.68	4.04	0.28	-	-	-	-	-	-	-
C-1	08/15/2003	7.50	4.29	3.39	0.22	-	-	-	-	-	-	-
C-1	09/26/2003	7.50	4.60	3.05	0.19	-	-	-	-	-	-	-
C-1	10/18/2003	7.50	4.72	2.90	0.15	-	-	-	-	-	-	-
C-1	11/14/2003	7.50	4.31	3.35	0.20	-	-	-	-	-	-	-
C-1	12/23/2003	7.50	1.81	5.69	0.00	-	-	-	-	-	-	-
C-1	01/22/2004	7.50	4.19	3.32	0.01	-	-	-	-	-	-	-
C-1	02/13/2004	7.50	3.04	4.49	0.04	-	-	-	-	-	-	-
C-1	03/11/2004	7.50	1.85	5.97	0.40	-	-	-	-	-	-	-
C-1	04/22/2004	7.50	3.08	4.60	0.22	-	-	-	-	-	-	-
C-1	05/14/2004	7.50	3.49	4.03	0.03	-	-	-	-	-	-	-
C-1	06/18/2004	7.50	3.41	4.19	0.13	-	-	-	-	-	-	-
C-1	07/23/2004	7.50	3.28	4.31	0.11	-	-	-	-	-	-	-
C-1	08/13/2004	7.50	3.14	4.40	0.05	-	-	-	-	-	-	-
C-1	09/13/2004	7.50	4.53	3.04	0.09	-	-	-	-	-	-	-
C-1	10/22/2004	7.50	3.19	4.33	0.03	-	-	-	-	-	-	-
C-1	11/12/2004	7.50	3.22	4.30	0.03	-	-	-	-	-	-	-
C-1	12/02/2004	7.50	3.28	4.24	0.02	-	-	-	-	-	-	-
C-1	01/28/2005	7.50	3.19	4.32	0.01	-	-	-	-	-	-	-
C-1	02/11/2005	7.50	2.75	4.78	0.04	-	-	-	-	-	-	-
C-1	03/11/2005	7.50	2.94	4.58	0.03	-	-	-	-	-	-	-
C-1	04/26/2005	7.50	3.03	4.49	0.02	-	-	-	-	-	-	-
C-1	05/13/2005	7.50	3.18	4.34	0.02	-	-	-	-	-	-	-
C-1	06/01/2005	7.50	3.22	4.30	0.02	-	-	-	-	-	-	-
C-1	07/15/2005	7.50	3.09	4.43	0.02	-	-	-	-	-	-	-
C-1	08/19/2005	7.50	2.88	4.64	0.03	-	-	-	-	-	-	-
C-1	09/23/2005	7.50	2.95	4.57	0.02	-	-	-	-	-	-	-
C-1	10/14/2005	7.50	3.01	4.50	0.01	-	-	-	-	-	-	-
C-1	11/18/2005	7.50	3.21	4.31	0.02	-	-	-	-	-	-	-
C-1	12/09/2005	7.50	3.61	3.90	0.01	-	-	-	-	-	-	-
C-1	01/12/2006	7.50	2.98	4.53	0.01	-	-	-	-	-	-	-
C-1	02/10/2006[15]	7.50	2.69	4.82	0.01	-	100,000	11,000	2,500	2,900	15,000	<10
C-1	03/13/2006	7.50	2.81	4.70	0.01	-	-	-	-	-	-	-
C-1	04/13/2006	7.50	2.75	4.76	0.01	-	-	-	-	-	-	-
C-1	05/12/2006	7.50	3.02	4.49	0.01	-	-	-	-	-	-	-
C-1	06/12/2006	7.50	3.10	4.41	0.01	-	-	-	-	-	-	-
C-1	07/13/2006	7.50	3.14	4.38	0.02	-	-	-	-	-	-	-
C-1	08/11/2006[15]	7.50	3.70	3.81	0.01	-	200,000	8,600	470	1,700	8,800	<10
C-1	09/11/2006	7.50	3.75	3.77	0.02	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
C-1	10/17/2006	7.50	3.82	3.69	0.01	-	-	-	-	-	-	-
C-1	11/17/2006	7.50	3.11	4.41	0.03	-	-	-	-	-	-	-
C-1	12/15/2006	7.50	2.95	4.57	0.02	-	-	-	-	-	-	-
C-1	01/16/2007	7.50	2.98	4.54	0.02	-	-	-	-	-	-	-
C-1	02/16/2007[15]	7.50	2.77	4.73	0.00	-	25,000	4,300	260	310	3,300	<5
C-1	03/16/2007	7.50	3.07	4.44	0.01	-	-	-	-	-	-	-
C-1	04/17/2007	7.50	2.98	4.53	0.01	-	-	-	-	-	-	-
C-1	05/17/2007[15]	7.50	3.05	4.46	0.01	-	110,000[16]	12,000[16]	1,000[16]	2,000[16]	15,000[16]	<5
C-1	06/15/2007	7.50	3.08	4.43	0.01	-	-	-	-	-	-	-
C-1	07/17/2007	7.50	3.13	4.38	0.01	-	-	-	-	-	-	-
C-1	08/09/2007	7.50	3.24	4.28	0.02	-	-	-	-	-	-	-
C-1	09/14/2007	7.50	3.16	4.35	0.01	-	-	-	-	-	-	-
C-1	10/16/2007	7.50	3.04	4.47	0.01	-	-	-	-	-	-	-
C-1	11/08/2007[15]	7.50	3.11	4.40	0.01	-	150,000	13,000	570	1,800	10,000	<13
C-1	12/07/2007	7.50	2.98	4.54	0.03	-	-	-	-	-	-	-
C-1	01/16/2008	7.50	2.95	4.57	0.02	-	-	-	-	-	-	-
C-1	02/06/2008[15]	7.50	2.61	4.90	0.01	-	110,000	13,000	500	5,300	21,000	<10
C-1	03/07/2008	7.50	2.87	4.65	0.02	-	-	-	-	-	-	-
C-1	04/16/2008	7.50	3.06	4.46	0.02	-	-	-	-	-	-	-
C-1	05/07/2008	7.50	2.98	4.54	0.03	-	-	-	-	-	-	-
C-1	06/06/2008	7.50	3.02	4.50	0.02	-	-	-	-	-	-	-
C-1	07/16/2008	7.50	3.12	4.40	0.02	-	-	-	-	-	-	-
C-1	09/05/2008	7.50	3.97	3.75	0.28	-	-	-	-	-	-	-
C-1	09/11/2008	7.50	4.22	3.61	0.41	-	-	-	-	-	-	-
C-1	10/17/2008	7.50	4.16	3.60	0.33	-	-	-	-	-	-	-
C-1	11/10/2008	7.50	4.05	3.54	0.11	-	-	-	-	-	-	-
C-1	12/15/2008	7.50	3.85	3.69	0.05	-	-	-	-	-	-	-
C-1	01/21/2009	7.50	3.91	3.62	0.04	-	-	-	-	-	-	-
C-1	02/09/2009[15]	7.50	3.72	3.79	0.01	-	53,000	3,100	66	660	3,700	<1
C-1	03/16/2009	7.52	3.81	3.71	0.03	-	-	-	-	-	-	-
C-1	05/28/2009	7.50	3.48	4.02	0.02	-	-	-	-	-	-	-
C-1	08/18/2009	7.50	4.40	3.10	0.02	-	-	-	-	-	-	-
C-1	11/17/2009	7.50	4.21	3.29	0.03	-	-	-	-	-	-	-
C-1	03/31/2010	7.50	2.07	5.46	0.04	-	-	-	-	-	-	-
C-1	05/17/2010	7.50	2.87	4.83	0.25	-	-	-	-	-	-	-
C-1	**08/26/2010[15]**	**7.50**	**4.03**	**3.50**	**0.04**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
C-3	08/18/1986	-	4.00	-	-	-	-	-	-	-	-	-
C-3	09/04/1986	-	-	-	-	-	50	3.2	5.4	5.8	-	-
C-3	07/22/1987	-	-	-	-	-	<50	<0.5	<1.0	<4.0	-	-
C-3	05/03/1989	-	4.15	-	-	-	<50	<0.5	<1.0	<2.0	-	-
C-3	12/04/1989	-	4.24	-	-	-	<250	<0.5	<0.5	<0.5	-	-
C-3	02/14/1990	-	3.57	-	-	-	<50	<0.5	<0.5	<0.5	-	-
C-3	03/07/1990	-	3.31	-	-	-	-	<5.0	<5.0	<5.0	-	-
C-3	09/06/1991	-	4.59	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
C-3	12/15/1991	-	4.84	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	03/03/1992	-	2.17	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	06/04/1992	4.41	4.01	0.40	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	10/13/1992	4.41	4.79	-0.38	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	01/11/1993	4.41	2.01	2.40	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	04/14/1993	4.41	2.76	1.65	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	07/13/1993	4.41	3.96	0.45	-	-	<50	<0.5	<0.5	<0.5	<1.5	-
C-3	10/19/1993	4.41	4.53	-0.12	-	-	66	12	1.4	1.0	8.4	-
C-3	11/30/1993	7.83	4.04	3.79	-	-	-	-	-	-	-	-
C-3	01/27/1994	7.83	3.17	4.66	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	04/07/1994	7.83	3.20	4.63	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	07/01/1994	7.83	3.99	3.84	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	10/05/1994	7.83	4.54	3.29	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	01/12/1995	7.83	0.80	7.03	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	05/02/1995	7.83	2.15	5.68	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	07/12/1995	7.83	3.42	4.41	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
C-3	10/30/1995	7.83	4.46	3.37	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	01/22/1996	7.83	1.73	6.10	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	04/24/1996	7.83	2.62	5.21	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	07/29/1996	7.83	3.94	3.89	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	10/10/1996	7.83	4.06	3.77	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	01/15/1997	7.83	1.54	6.29	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	04/03/1997	7.83	3.23	4.60	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	07/09/1997	7.83	4.36	3.47	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	10/29/1997	7.83	4.65	3.18	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	01/14/1998	7.83	0.77	7.06	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	07/15/1998	7.83	3.72	4.11	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-3	01/20/1999	7.83	2.65	5.18	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
C-3	04/19/1999	7.83	1.78	6.05	-	-	-	-	-	-	-	-
C-3	04/03/2000	7.83	-	-	-	-	-	-	-	-	-	-
C-3	07/03/2000	7.83	-	-	-	-	-	-	-	-	-	-
C-3	10/23/2000	7.83	-	-	-	-	-	-	-	-	-	-
C-3	01/08/2001[11]	7.83	3.71	4.12	0.00	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
C-3	04/09/2001	7.83	-	-	-	-	-	-	-	-	-	-
C-3	08/23/2001	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/27/2001	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/26/2002	7.83	2.38	5.45	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
C-3	05/23/2002	7.83	-	-	-	-	-	-	-	-	-	-
C-3	08/09/2002	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/08/2002	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/07/2003	7.83	2.73	5.10	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
C-3	05/09/2003	7.83	-	-	-	-	-	-	-	-	-	-
C-3	08/15/2003	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/14/2003	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/13/2004[15]	7.83	2.81	5.02	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
C-3	05/14/2004	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/12/2004	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/11/2005[15]	7.83	2.58	5.25	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
C-3	05/13/2005	7.83	-	-	-	-	-	-	-	-	-	-
C-3	08/19/2005	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/18/2005	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/10/2006[15]	7.83	2.52	5.31	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
C-3	05/12/2006	7.83	-	-	-	-	-	-	-	-	-	-
C-3	08/11/2006	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/17/2006	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/16/2007[15]	7.83	2.63	5.20	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
C-3	05/17/2007	7.83	-	-	-	-	-	-	-	-	-	-
C-3	08/09/2007	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/08/2007	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/06/2008[15]	7.83	2.91	4.92	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
C-3	05/07/2008	7.83	-	-	-	-	-	-	-	-	-	-
C-3	09/11/2008	7.83	-	-	-	-	-	-	-	-	-	-
C-3	11/10/2008	7.83	-	-	-	-	-	-	-	-	-	-
C-3	02/09/2009[15]	7.83	2.95	4.88	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
C-3	03/31/2010	7.83	2.22	5.61	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
C-3	05/17/2010	7.83	3.07	4.76	-	-	-	-	-	-	-	-
C-3	**08/26/2010[19]**	**7.83**	**4.29**	**3.54**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-4	06/04/1992	3.58	3.63	-0.05	-	-	<50	0.8	<0.5	<0.5	<0.5	-
MW-4	10/13/1992	3.58	-	-	-	-	-	-	-	-	-	-
MW-4	01/11/1993	3.58	1.89	1.69	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	04/14/1993	3.58	2.20	1.38	-	-	<50	<0.5	<0.5	<0.5	<1.5	-
MW-4	07/13/1993	3.58	3.51	0.07	-	-	54	2.6	1.6	<0.5	<1.5	-
MW-4	10/19/1993	3.58	4.22	-0.64	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	11/30/1993	7.01	4.01	3.00	-	-	-	-	-	-	-	-
MW-4	01/27/1994	7.01	2.89	4.12	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	04/07/1994	7.01	3.06	3.95	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	07/01/1994	7.01	3.59	3.42	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	10/05/1994	7.01	4.33	2.68	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	01/12/1995	7.01	1.20	5.81	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	04/26/1995	7.01	1.15	5.86	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-4	07/12/1995	7.01	2.72	4.29	-	-	<50	6.4	<0.5	0.63	0.72	-
MW-4	10/30/1995	7.01	4.08	2.93	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	01/22/1996	7.01	1.76	5.25	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	04/24/1996	7.01	1.95	5.06	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	07/29/1996	7.01	3.37	3.64	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	10/10/1996	7.01	3.96	3.05	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	01/15/1997	7.01	1.27	5.74	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	04/03/1997	7.01	2.11	4.90	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	07/09/1997	7.01	4.04	2.97	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-4	10/29/1997	7.01	4.56	2.45	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	01/14/1998	7.01	0.39	6.62	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	01/20/1999	7.01	2.83	4.18	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
MW-4	04/19/1999	7.01	2.91	4.10	-	-	-	-	-	-	-	-
MW-4	01/25/2000	7.01	1.92	5.09	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-4	04/03/2000	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	07/03/2000	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	10/23/2000	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	01/08/2001[11]	7.01	3.02	3.99	0.00	-	87[12]	<0.50	<0.50	0.55	2.9	<2.5
MW-4	04/09/2001	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	08/23/2001	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/27/2001	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/26/2002	7.01	1.37	5.64	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-4	05/23/2002	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	08/09/2002	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/08/2002	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/07/2003	7.01	1.72	5.29	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-4	05/09/2003	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	08/15/2003	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/14/2003	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/13/2004[15]	7.01	1.82	5.19	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	05/14/2004	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/12/2004	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/11/2005[15]	7.01	1.46	5.55	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	05/13/2005	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	08/19/2005	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/18/2005	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/10/2006[15]	7.01	1.35	5.66	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	05/12/2006	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	08/11/2006	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/17/2006	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/16/2007[15]	7.01	1.48	5.53	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	05/17/2007	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	08/09/2007	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/08/2007	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/06/2008[15]	7.01	1.27	5.74	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	05/07/2008	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	09/11/2008	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	11/10/2008	7.01	-	-	-	-	-	-	-	-	-	-
MW-4	02/09/2009[15]	7.01	2.33	4.68	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	03/31/2010	7.01	2.13	4.88	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	05/17/2010	7.01	2.05	4.96	-	-	-	-	-	-	-	-
MW-4	08/26/2010[17]	**7.01**	**3.70**	**3.31**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-5	06/04/1992	3.61	3.25	0.36	-	-	560	110	0.5	37	2.2	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	10/13/1992	3.61	4.20	-0.59	-	-	1,200	150	<2.5	84	8.6	-
MW-5	01/11/1993	3.61	1.30	2.31	-	-	1,300	48	1.0	83	33	-
MW-5	04/14/1993	3.61	1.20	2.41	-	-	2,600	240	6.1	250	170	-
MW-5	07/13/1993	3.61	3.15	0.46	-	-	1,700	260	7.8	160	100	-
MW-5	10/19/1993	3.61	3.82	-0.21	-	-	1,900	190	3.3	200	93	-
MW-5	11/30/1993	7.04	3.56	3.48	-	-	-	-	-	-	-	-
MW-5	01/27/1994	7.04	2.42	4.62	-	-	4,000	100	12	210	110	-
MW-5	04/07/1994	7.04	2.33	4.71	-	-	2,600	170	10	150	88	-
MW-5	07/01/1994	7.04	3.18	3.86	-	-	2,300	350	9.1	110	76	-
MW-5	10/05/1994	7.04	3.98	3.06	-	-	11,000	840	150	130	340	-
MW-5	01/12/1995	7.04	0.40	6.64	-	-	2,300	82	<2.5	54	20	-
MW-5	04/26/1995	7.04	0.50	6.54	-	-	1,600	52	<5.0	36	61	-
MW-5	07/12/1995	7.04	2.41	4.63	-	-	2,800	150	<5.0	34	38	-
MW-5	10/30/1995	7.04	3.78	3.26	-	-	1,100	81	<5.0	<5.0	<5.0	35
MW-5	01/22/1996	7.04	0.78	6.26	-	-	880	7.3	<2.0	15	4.8	<10
MW-5	04/24/1996	7.04	1.65	5.39	-	-	1,600	51	3.8	14	5.6	56
MW-5	07/29/1996	7.04	-	-	-	-	-	-	-	-	-	-
MW-5	10/10/1996	7.04	3.60	3.44	-	-	1,000	18	<1.2	1.5	<1.2	<6.2
MW-5	01/15/1997	7.04	0.45	6.59	-	-	520	0.84	<0.5	3.1	1.2	8.4
MW-5	04/03/1997	7.04	2.11	4.93	-	-	1,400	13	<2.0	4.3	8.4	32
MW-5	07/09/1997	7.04	3.71	3.33	-	-	810	3.6	0.97	<0.5	<0.5	9.7
MW-5	10/29/1997	7.04	4.20	2.84	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-5	01/14/1998	7.04	0.00	7.04	-	-	430	5.8	2.4	<0.5	1.6	17
MW-5	04/17/1998	7.04	0.71	6.33	-	-	-	-	-	-	-	-
MW-5	07/15/1998	7.04	0.00	7.04	-	-	990	11	3.9	0.56	2.2	61
MW-5	10/27/1998	7.04	4.23	2.81	-	-	-	-	-	-	-	-
MW-5	01/20/1999	7.04	2.58	4.46	-	-	168	<0.5	<0.5	<0.5	0.692	<2.0
MW-5	04/19/1999	7.04	2.07	4.97	-	-	-	-	-	-	-	-
MW-5	07/29/1999	7.04	3.43	3.61	-	-	246	1.54	<0.5	<0.5	<0.5	<5.0/<2.0[2]
MW-5	10/13/1999	7.04	-	-	-	-	-	-	-	-	-	-
MW-5	01/25/2000	7.04	1.51	5.53	-	-	169	1.94	<0.5	<0.5	<0.5	201
MW-5	04/03/2000	7.04	1.20	5.84	0.00	-	-	-	-	-	-	-
MW-5	07/03/2000	7.04	2.98	4.06	0.00	-	320[6,10]	5.3	1.1	<0.50	<0.50	5.0
MW-5	10/23/2000	7.04	4.18	2.86	0.00	-	-	-	-	-	-	-
MW-5	01/08/2001[11]	7.04	2.92	4.12	0.00	-	220[6]	3.9	<0.50	<0.50	<0.50	7.7
MW-5	04/09/2001	7.04	1.01	6.03	0.00	-	-	-	-	-	-	-
MW-5	08/23/2001	7.04	3.48	3.56	0.00	-	630	40	3.5	<2.5	<2.5	43
MW-5	11/27/2001	7.04	3.05	3.99	0.00	-	-	-	-	-	-	-
MW-5	02/26/2002	7.04	1.00	6.04	0.00	-	410	4.3	<0.50	<0.50	<1.5	<2.5
MW-5	05/23/2002	7.04	2.21	4.83	0.00	-	-	-	-	-	-	-
MW-5	08/09/2002	7.04	3.38	3.66	0.00	-	240	1.3	<0.50	<0.50	<1.5	<2.5
MW-5	11/08/2002	7.04	4.56	2.48	0.00	-	-	-	-	-	-	-
MW-5	02/07/2003	7.04	1.42	5.62	0.00	-	380	3.2	<0.50	0.64	<1.5	<2.5
MW-5	05/09/2003	7.04	1.25	5.79	0.00	-	-	-	-	-	-	-
MW-5	08/15/2003[15]	7.04	3.61	3.43	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	11/14/2003	7.04	3.57	3.47	0.00	-	-	-	-	-	-	-
MW-5	02/13/2004[15]	7.04	1.50	5.54	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	05/14/2004	7.04	2.47	4.57	0.00	-	-	-	-	-	-	-
MW-5	08/13/2004[15]	7.04	5.46	1.58	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	11/12/2004	7.04	4.65	2.39	0.00	-	-	-	-	-	-	-
MW-5	02/11/2005[15]	7.04	1.20	5.84	0.00	-	130	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	05/13/2005	7.04	4.36	2.68	0.00	-	-	-	-	-	-	-
MW-5	08/19/2005[15]	7.04	2.78	4.26	0.00	-	96	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	11/18/2005	7.04	4.51	2.53	0.00	-	-	-	-	-	-	-
MW-5	02/10/2006[15]	7.04	1.12	5.92	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	05/12/2006	7.04	2.23	4.81	0.00	-	-	-	-	-	-	-
MW-5	08/11/2006[15]	7.04	3.40	3.64	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	11/17/2006	7.04	4.16	2.88	0.00	-	-	-	-	-	-	-
MW-5	02/16/2007[15]	7.04	1.22	5.82	0.00	-	<50	<0.5	<0.7	<0.8	<0.8	<0.5
MW-5	05/17/2007	7.04	4.06	2.98	0.00	-	-	-	-	-	-	-
MW-5	08/09/2007[15]	7.04	3.61	3.43	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	11/08/2007	7.04	3.70	3.34	0.00	-	-	-	-	-	-	-
MW-5	02/06/2008[15]	7.04	1.06	5.98	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	05/07/2008	7.04	3.57	3.47	0.00	-	-	-	-	-	-	-
MW-5	09/11/2008[15]	7.04	4.58	2.46	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	11/10/2008	7.04	4.26	2.78	0.00	-	-	-	-	-	-	-
MW-5	02/09/2009[15]	7.04	2.15	4.89	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	05/28/2009	7.04	2.76	4.28	-	-	-	-	-	-	-	-
MW-5	08/18/2009[15]	7.04	3.81	3.23	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	11/17/2009	7.04	4.02	3.02	-	-	-	-	-	-	-	-
MW-5	03/31/2010	7.04	1.86	5.18	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5	05/17/2010	7.04	1.57	5.47	-	-	-	-	-	-	-	-
MW-5	**08/26/2010**	**7.04**	**3.25**	**3.79**	**-**	**-**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-6	06/04/1992	3.85	3.89	-0.04	-	-	210	54	<0.5	1.9	2.4	-
MW-6	10/13/1992	3.85	4.56	-0.71	-	-	10,000	5,300	<10	70	<10	-
MW-6	01/11/1993	3.85	2.36	1.49	-	-	100	50	<0.5	<0.5	<0.5	-
MW-6	04/14/1993	3.85	3.15	0.70	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-6	07/13/1993	3.85	3.94	-0.09	-	-	<50	1.8	<0.5	<0.5	<1.5	-
MW-6	10/19/1993	3.85	4.40	-0.55	-	-	320	150	<0.5	0.8	<0.5	-
MW-6	11/30/1993	7.27	4.16	3.11	-	-	-	-	-	-	-	-
MW-6	01/27/1994	7.27	3.33	3.94	-	-	120	45	<0.5	<0.5	<0.5	-
MW-6	04/07/1994	7.27	3.43	3.84	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-6	07/01/1994	7.27	3.94	3.33	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
MW-6	10/05/1994	7.27	4.38	2.89	-	-	8,300	2,400	160	42	190	-
MW-6	01/12/1995[1]	7.27	2.43	4.84	-	-	<50	12	<0.5	<0.5	<0.5	-
MW-6	04/26/1995	7.27	2.06	5.21	-	-	<50	5.5	0.67	<0.5	1.3	-
MW-6	07/12/1995	7.27	3.53	3.74	-	-	65	27	<0.5	<0.5	<0.5	-
MW-6	10/30/1995	7.27	4.34	2.93	-	-	<50	3.9	<0.5	<0.5	<0.5	<2.5
MW-6	01/22/1996	7.27	2.61	4.66	-	-	<50	0.93	<0.5	<0.5	<0.5	<2.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-6	04/24/1996	7.27	2.50	4.77	-	-	260	110	<1.2	<1.2	<1.2	<6.2
MW-6	07/29/1996	7.27	3.85	3.42	-	-	<50	23	<0.5	<0.5	<0.5	<2.5
MW-6	10/10/1996	7.27	4.37	2.90	-	-	79	31	<0.5	<0.5	<0.5	<2.5
MW-6	01/15/1997	7.27	2.63	4.64	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-6	04/03/1997	7.27	3.42	3.85	-	-	670	360	<5.0	<5.0	<5.0	<25
MW-6	07/09/1997	7.27	4.29	2.98	-	-	330	140	<2.0	<2.0	<2.0	<10
MW-6	10/29/1997	7.27	4.56	2.71	-	-	400	260	<2.0	<2.0	<2.0	5.8
MW-6	01/14/1998	7.27	1.01	6.26	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-6	04/17/1998	7.27	2.94	4.33	-	-	<50	1.7	<0.5	<0.5	<0.5	<2.5
MW-6	07/15/1998	7.27	4.72	2.55	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-6	10/27/1998	7.27	-	-	-	-	-	-	-	-	-	-
MW-6	11/25/1998	7.27	4.16	3.11	-	-	110[3]	54	<0.5	<0.5	<0.5	<2.5
MW-6	01/20/1999	7.27	3.45	3.82	-	-	<50	10	<0.5	<0.5	<0.5	<2.0
MW-6	04/19/1999	7.27	3.39	3.88	-	-	<50	2.6	<0.5	<0.5	<0.5	<2.5/<2.0[2]
MW-6	07/29/1999[4]	7.27	4.34	2.93	-	-	<5,000	2,590	<50	<50	<50	<500
MW-6	10/13/1999	7.27	5.89	1.38	-	-	9,270	4,610	44.2	<25	<25	<125
MW-6	01/25/2000	7.27	4.11	3.16	-	-	529	289	<0.5	<0.5	<0.5	738
MW-6	04/03/2000[7,8]	7.27	2.84	4.43	0.00	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MW-6	07/03/2000[7]	7.27	3.77	3.50	0.00	-	91[6]	89	0.77	<0.50	<0.50	<2.5
MW-6	10/12/2000	7.27	6.32	0.95	0.00	-	<50	8.0	<0.50	<0.50	<0.50	<2.5
MW-6	01/08/2001[7,11]	7.27	3.74	3.53	0.00	-	400[6]	640	8.2	8.0	5.0	10
MW-6	04/09/2001[7]	7.27	3.03	4.24	0.00	-	91.3	22.0	3.36	0.751	2.14	<0.500
MW-6	08/23/2001[7]	7.27	4.70	2.57	0.00	-	53[13]	23	0.50	<0.50	1.1	<2.5
MW-6	11/27/2001[14]	7.27	4.43	2.84	0.00	-	<50	4.1	<0.50	<0.50	<1.5	<2.5
MW-6	02/26/2002[14]	7.27	2.50	4.77	0.00	-	100	53	<0.50	<0.50	<1.5	<2.5
MW-6	05/23/2002	7.27	3.27	4.00	0.00	-	610	260	4.2	1.7	2.1	<2.5
MW-6	08/09/2002	7.27	4.11	3.16	0.00	-	<50	1.1	<0.50	<0.50	<1.5	<2.5
MW-6	11/08/2002	7.27	4.12	3.15	0.00	2.10	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-6	02/07/2003	7.27	2.60	4.67	0.00	2.60	<50	0.65	<0.50	<0.50	<1.5	<2.5
MW-6	05/09/2003	7.27	2.57	4.70	0.00	3.10	<50	1.9	<0.5	<0.5	<1.5	<2.5
MW-6	08/15/2003[15]	7.27	4.15	3.12	0.00	2.90	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/14/2003[15]	7.27	4.10	3.17	0.00	3.41	<50	<0.5	0.6	<0.5	<0.5	1
MW-6	02/13/2004[15]	7.27	2.66	4.61	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	05/14/2004[15]	7.27	3.55	3.72	0.00	-	<50	3	<0.5	<0.5	<0.5	<0.5
MW-6	08/13/2004[15]	7.27	4.32	2.95	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/12/2004[15]	7.27	4.20	3.07	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	02/11/2005[15]	7.27	2.18	5.09	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	05/13/2005[15]	7.27	4.11	3.16	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	08/19/2005[15]	7.27	3.70	3.57	0.00	1.90	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/18/2005[15]	7.27	3.98	3.29	0.00	1.70	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	02/10/2006[15]	7.27	2.11	5.16	0.00	2.20	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	05/12/2006[15]	7.27	3.18	4.09	0.00	2.80	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	08/11/2006[15]	7.27	3.80	3.47	0.00	2.50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/17/2006[15]	7.27	3.78	3.49	0.00	2.20	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	02/16/2007[15]	7.27	2.08	5.19	0.00	1.80	<50	1	<0.5	<0.5	<0.5	<0.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
MW-6	05/17/2007[15]	7.27	3.61	3.66	0.00	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	08/09/2007[15]	7.27	4.05	3.22	0.00	2.6	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/08/2007[15]	7.27	4.12	3.15	0.00	2.2	<50	5	<0.5	<0.5	<0.5	<0.5
MW-6	02/06/2008[15]	7.27	1.85	5.42	0.00	2.4	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	05/07/2008[15]	7.27	3.91	3.36	0.00	2.3	63	18	<0.5	<0.5	<0.5	<0.5
MW-6	09/11/2008[15]	7.27	4.93	2.34	0.00	1.9	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/10/2008[15]	7.27	4.30	2.97	0.00	2.2	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	02/09/2009[15]	7.27	2.97	4.30	0.00	2.0	<50	2	<0.5	<0.5	<0.5	<0.5
MW-6	05/28/2009[15]	7.27	3.53	3.74	-	1.77	<50	4	<0.5	<0.5	<0.5	<0.5
MW-6	08/18/2009[15]	7.27	3.38	3.89	-	1.81	560	130	3	<0.5	0.7 J	<0.5
MW-6	11/17/2009	7.27	4.00	3.27	-	-	-	-	-	-	-	-
MW-6	03/31/2010	7.27	2.44	4.83	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	05/17/2010	7.27	3.30	3.97	-	-	-	-	-	-	-	-
MW-6	**08/26/2010**	**7.27**	**4.15**	**3.12**	**-**	**-**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-7	11/30/1993	8.22	5.33	2.89	-	-	480	110	41	4.4	38	-
MW-7	01/27/1994	8.22	4.50	3.72	-	-	120	21	1.1	2.2	4.8	-
MW-7	04/07/1994	8.22	4.62	3.60	-	-	2,600	630	39	56	94	-
MW-7	07/01/1994	8.22	5.13	3.09	-	-	2,200	770	42	<10	92	-
MW-7	10/05/1994	8.22	5.61	2.61	-	-	15,000	3,300	90	130	320	-
MW-7	01/12/1995	8.22	2.83	5.39	-	-	340	57	<1.3	18	6.4	-
MW-7	04/26/1995	8.22	2.35	5.87	-	-	15,000	3,700	210	520	800	-
MW-7	07/12/1995	8.22	4.66	3.56	-	-	7,700	1,800	59	130	370	-
MW-7	10/30/1995	8.22	5.48	2.74	-	-	770	260	<5.0	33	48	25
MW-7	01/22/1996	8.22	3.34	4.88	-	-	290	63	<1.0	6.4	5.7	<5.0
MW-7	04/24/1996	8.22	4.12	4.10	-	-	12,000	2,500	510	380	810	<125
MW-7	07/29/1996	8.22	5.03	3.19	-	-	2,600	650	<25	61	150	<125
MW-7	10/10/1996	8.22	5.52	2.70	-	-	5,800	1,700	28	170	210	<62
MW-7	01/15/1997	8.22	2.92	5.30	-	-	1,000	230	<2.5	28	11	63
MW-7	04/03/1997	8.22	4.65	3.57	-	-	6,000	1,800	100	140	170	<100
MW-7	07/09/1997	8.22	5.39	2.83	-	-	5,500	2,200	<20	41	30	<100
MW-7	10/29/1997	8.22	5.58	2.64	-	-	220	40	0.61	3.0	2.4	7.6
MW-7	01/14/1998	8.22	2.80	5.42	-	-	140	5.1	<0.5	<0.5	1.4	<2.5
MW-7	04/17/1998	8.22	3.00	5.22	-	-	13,000	4,200	98	250	240	250
MW-7	07/15/1998	8.22	-	-	-	-	-	-	-	-	-	-
MW-7	08/17/1998[5]	7.92	5.52	2.40	-	-	1,600	380	51	68	280	22
MW-7	10/27/1998	7.92	7.51	0.41	-	-	190	2.3	0.53	<0.5	<0.5	33
MW-7	01/20/1999	7.92	3.45	4.47	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
MW-7	04/19/1999	7.92	4.61	3.31	-	-	6,500	3,000	<0.5	110	210	310/150[2]
MW-7	07/29/1999[4]	7.92	5.00	2.92	-	-	8,390	2,100	129	222	729	248
MW-7	10/13/1999	7.92	5.61	2.31	-	-	14,300	6,600	58.8	117	190	<125
MW-7	01/25/2000	7.92	3.32	4.60	-	-	1,100	184	<5.0	13.5	33.7	151
MW-7	04/03/2000[7,9]	7.92	3.38	4.54	0.00	-	2,600[6]	780	12	<5.0	61	95
MW-7	07/03/2000[7]	7.92	4.34	3.58	0.00	-	4,100[6]	2,600	72	240	690	<50
MW-7	10/23/2000	7.92	6.11	1.81	0.00	-	12,000[6]	2,600	<50	150	290	<250

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-7	01/08/2001[7,11]	7.92	4.32	3.60	0.00	-	3,900[6]	2,200	61	140	350	<25
MW-7	04/09/2001[7]	7.92	3.63	4.29	0.00	-	25,100	4,590	1,200	843	1,920	48.1
MW-7	08/23/2001[7]	7.92	4.83	3.09	0.00	-	27,000	4,100	970	1,100	3,500	<500
MW-7	11/27/2001	7.92	4.30	3.62	0.00	-	12,000	1,800	50	450	830	91
MW-7	02/26/2002	7.92	3.00	4.92	0.00	-	15,000	3,100	260	380	860	<10
MW-7	05/23/2002	7.92	3.69	4.23	0.00	-	28,000	6,000	120	820	1,900	42
MW-7	08/09/2002	7.92	4.38	3.54	0.00	-	24,000	3,700	81	710	1,300	56
MW-7	11/08/2002	7.92	4.43	3.49	0.00	-98.00	18,000	2,300	150	660	1,400	<100
MW-7	02/07/2003	7.92	3.20	4.72	0.00	2.90	13,000	2,300	200	310	620	<25
MW-7	05/09/2003	7.92	3.18	4.74	0.00	2.60	17,000	4,200	36	350	360	<50
MW-7	08/15/2003[15]	7.92	4.75	3.17	0.00	2.30	29,000	7,300	140	780	1,900	<5
MW-7	11/14/2003[15]	7.92	4.95	2.97	0.00	1.87	7,200	950	3	45	20	7
MW-7	02/13/2004[15]	7.92	3.29	4.63	0.00	-	3,300	360	4	82	130	3
MW-7	05/14/2004[15]	7.92	3.98	3.94	0.00	-	17,000	3,100	480	510	1,300	3
MW-7	08/13/2004[15]	7.92	5.94	1.98	0.00	-	10,000	2,000	4	130	150	4
MW-7	11/12/2004[15]	7.92	4.50	3.42	0.00	-	680	4	<0.5	1	0.7	0.8
MW-7	02/11/2005[15]	7.92	3.07	4.85	0.00	-	4,600	680	6	80	44	4
MW-7	05/13/2005[15]	7.92	4.51	3.41	0.00	-	4,200	380	3	38	13	2
MW-7	08/19/2005[15]	7.92	4.03	3.89	0.00	0.80	7,900	1,300	3	190	310	<1
MW-7	11/18/2005[15]	7.92	4.62	3.30	0.00	0.90	3,900	4	1	16	8	2
MW-7	02/10/2006[15]	7.92	3.12	4.80	0.00	1.30	3,200	320	2	14	8	2
MW-7	05/12/2006[15]	7.92	4.25	3.67	0.00	1.40	3,600	1,000	2	65	27	<1
MW-7	08/11/2006[15]	7.92	4.45	3.47	0.00	1.10	6,700	1,900	6	280	300	<1
MW-7	11/17/2006[15]	7.92	4.71	3.21	0.00	0.70	1,200	0.6	<0.5	1	0.8	<0.5
MW-7	02/16/2007[15]	7.92	3.26	4.66	0.00	1.10	110	<0.5	<0.5	<0.5	<0.5	<0.5
MW-7	05/17/2007[15]	7.92	4.62	3.30	0.00	1.7	6,400	1,400	4	130	26	<1
MW-7	08/09/2007[15]	7.92	4.61	3.31	0.00	1.2	10,000	1,400	4	230	12	<3
MW-7	11/08/2007[15]	7.92	4.72	3.20	0.00	0.9	2,300	4	1	3	7	0.9
MW-7	02/06/2008[15]	7.92	2.98	4.94	0.00	0.5	190	<0.5	<0.5	<0.5	<0.5	<0.5
MW-7	05/07/2008[15]	7.92	4.48	3.44	0.00	1.2	8,000	1,500	15	380	260	<1
MW-7	09/11/2008[15]	7.92	5.95	1.97	0.00	1.0	5,100	530	4	47	12	0.7
MW-7	11/10/2008[15]	7.92	5.81	2.11	0.00	0.6	2,800	13	1	1	7	<0.5
MW-7	02/09/2009[15]	7.92	4.06	3.86	0.00	0.8	3,900	190	2	51	11	0.5
MW-7	05/28/2009[15,17]	7.92	3.84	4.08	-	0.45	5,800	870	8	220	27	<0.5
MW-7	08/18/2009[15]	7.92	4.80	3.12	-	0.57	6,700	660	4	110	13	0.7 J
MW-7	11/17/2009	7.92	4.52	3.40	-	-	-	-	-	-	-	-
MW-7	03/31/2010	7.92	3.11	4.81	-	-	2,000	110	1	2	3	0.7 J
MW-7	05/17/2010	7.92	3.41	4.51	-	-	-	-	-	-	-	-
MW-7	**08/26/2010**	**7.92**	**4.60**	**3.32**	**-**	**-**	**5,100**	**470**	**3**	**150**	**9**	**<0.5**
MW-8	10/17/1995	6.96	4.40	2.56	-	-	-	-	-	-	-	-
MW-8	10/30/1995	6.96	4.44	2.52	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	01/22/1996	6.96	2.24	4.72	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	04/24/1996	6.96	2.97	3.99	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	07/29/1996	6.96	3.37	3.59	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	10/10/1996	6.96	4.12	2.84	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	01/15/1997	6.96	0.94	6.02	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	04/03/1997	6.96	2.20	4.76	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	07/09/1997	6.96	4.30	2.66	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	10/29/1997	6.96	4.57	2.39	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	01/14/1998	6.96	0.83	6.13	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	01/20/1999	6.96	2.69	4.27	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
MW-8	04/19/1999	6.96	3.76	3.20	-	-	-	-	-	-	-	-
MW-8	01/25/2000	6.96	1.41	5.55	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-8	04/03/2000	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	07/03/2000	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	10/23/2000	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	01/08/2001[11]	6.96	3.58	3.38	0.00	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MW-8	04/09/2001	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	08/23/2001	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/27/2001	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/26/2002	6.96	2.91	4.05	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-8	05/23/2002	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	08/09/2002	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/08/2002	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/07/2003	6.96	3.13	3.83	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-8	05/09/2003	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	08/15/2003	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/14/2003	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/13/2004[15]	6.96	3.20	3.76	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	05/14/2004	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/12/2004	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/11/2005[15]	6.96	2.85	4.11	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	05/13/2005	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	08/19/2005	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/18/2005	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/10/2006[15]	6.96	2.74	4.22	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	05/12/2006	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	08/11/2006	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/17/2006	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/16/2007[15]	6.96	2.69	4.27	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	05/17/2007	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	08/09/2007	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/08/2007	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/06/2008[15]	6.96	2.57	4.39	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	05/07/2008	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	09/11/2008	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	11/10/2008	6.96	-	-	-	-	-	-	-	-	-	-
MW-8	02/09/2009[15]	6.96	3.28	3.68	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	03/31/2010	6.96	2.85	4.11	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	05/17/2010	6.96	3.33	3.63	-	-	-	-	-	-	-	-
MW-8	**08/26/2010[17]**	**6.96**	**4.27**	**2.69**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-9	10/17/1995	7.21	4.80	2.41	-	-	-	-	-	-	-	-
MW-9	10/30/1995	7.21	4.97	2.24	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	01/22/1996	7.21	3.40	3.81	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	04/24/1996	7.21	4.18	3.03	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	07/29/1996	7.21	4.69	2.52	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	10/10/1996	7.21	5.20	2.01	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	01/15/1997	7.21	3.31	3.90	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	04/03/1997	7.21	4.57	2.64	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	07/09/1997	7.21	5.04	2.17	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	10/29/1997	7.21	4.96	2.25	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	01/14/1998	7.21	2.40	4.81	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	01/20/1999	7.21	4.31	2.90	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
MW-9	04/19/1999	7.21	3.92	3.29	-	-	-	-	-	-	-	-
MW-9	01/25/2000	7.21	2.95	4.26	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-9	04/03/2000	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	07/03/2000	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	10/23/2000	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	01/08/2001[11]	7.21	4.59	2.62	0.00	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MW-9	04/09/2001	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	08/23/2001	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/27/2001	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/26/2002	7.21	3.75	3.46	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-9	05/23/2002	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	08/09/2002	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/08/2002	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/07/2003	7.21	3.97	3.24	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-9	05/09/2003	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	08/15/2003	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/14/2003	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/13/2004[15]	7.21	3.94	3.27	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	05/14/2004	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/12/2004	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/11/2005[15]	7.21	3.66	3.55	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	05/13/2005	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	08/19/2005	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/18/2005	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/10/2006[15]	7.21	3.53	3.68	0.00	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	05/12/2006	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	08/11/2006	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/17/2006	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/16/2007[15]	7.21	3.50	3.71	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	05/17/2007	7.21	-	-	-	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-9	08/09/2007	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/08/2007	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/06/2008[15]	7.21	3.14	4.07	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	05/07/2008	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	09/11/2008	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	11/10/2008	7.21	-	-	-	-	-	-	-	-	-	-
MW-9	02/09/2009[15]	7.21	3.91	3.30	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	03/31/2010	7.21	3.16	4.05	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	05/17/2010	7.21	3.44	3.77	-	-	-	-	-	-	-	-
MW-9	**08/26/2010[17]**	**7.21**	**4.77**	**2.44**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-10	10/17/1995	7.28	5.05	2.23	-	-	-	-	-	-	-	-
MW-10	10/30/1995	7.28	5.11	2.17	-	-	<50	<0.5	<0.5	<0.5	<0.5	5.1
MW-10	01/22/1996	7.28	4.03	3.25	-	-	<50	<0.5	<0.5	<0.5	0.70	17
MW-10	04/24/1996	7.28	4.30	2.98	-	-	<50	<0.5	<0.5	<0.5	<0.5	12
MW-10	07/29/1996	7.28	4.70	2.58	-	-	<50	<0.5	<0.5	<0.5	<0.5	14
MW-10	10/10/1996	7.28	5.24	2.04	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-10	01/15/1997	7.28	3.35	3.93	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-10	04/03/1997	7.28	4.64	2.64	-	-	<50	<0.5	<0.5	<0.5	<0.5	8.2
MW-10	07/09/1997	7.28	5.12	2.16	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-10	10/29/1997	7.28	5.10	2.18	-	-	<50	<0.5	<0.5	<0.5	<0.5	5.3
MW-10	01/14/1998	7.28	3.08	4.20	-	-	<50	<0.5	<0.5	<0.5	<0.5	8.6
MW-10	04/17/1998	7.28	3.79	3.49	-	-	-	-	-	-	-	-
MW-10	07/15/1998	7.28	4.55	2.73	-	-	<50	<0.5	<0.5	<0.5	<0.5	7.5
MW-10	10/27/1998	7.28	5.32	1.96	-	-	-	-	-	-	-	-
MW-10	01/20/1999	7.28	4.24	3.04	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
MW-10	04/19/1999	7.28	4.07	3.21	-	-	-	-	-	-	-	-
MW-10	07/29/1999	7.28	4.82	2.46	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0/2.4[2]
MW-10	10/13/1999	7.28	4.86	2.42	-	-	-	-	-	-	-	-
MW-10	01/25/2000	7.28	3.00	4.28	-	-	<50	<0.5	<0.5	<0.5	<0.5	4.33
MW-10	04/03/2000	7.28	3.04	4.24	0.00	-	-	-	-	-	-	-
MW-10	07/03/2000	7.28	4.00	3.28	0.00	-	<50	<0.50	<0.50	<0.50	<0.50	4.7
MW-10	10/23/2000	7.28	5.86	1.42	0.00	-	-	-	-	-	-	-
MW-10	01/08/2001[11]	7.28	3.98	3.30	0.00	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MW-10	04/09/2001	7.28	3.74	3.54	0.00	-	-	-	-	-	-	-
MW-10	08/23/2001	7.28	-	-	-	-	-	-	-	-	-	-
MW-10	11/27/2001	7.28	4.13	3.15	0.00	-	-	-	-	-	-	-
MW-10	02/26/2002	7.28	3.54	3.74	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-10	05/23/2002	7.28	3.82	3.46	0.00	-	-	-	-	-	-	-
MW-10	08/09/2002	7.28	4.18	3.10	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-10	11/08/2002	7.28	3.91	3.37	0.00	-	-	-	-	-	-	-
MW-10	02/07/2003	7.28	3.61	3.67	0.00	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
MW-10	05/09/2003	7.28	3.25	4.03	0.00	-	-	-	-	-	-	-
MW-10	08/15/2003[15]	7.28	4.35	2.93	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	11/14/2003	7.28	4.30	2.98	0.00	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
MW-10	02/13/2004[15]	7.28	4.27	3.01	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	05/14/2004	7.28	4.08	3.20	0.00	-	-	-	-	-	-	-
MW-10	08/13/2004[15]	7.28	3.92	3.36	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	11/12/2004	7.28	3.98	3.30	0.00	-	-	-	-	-	-	-
MW-10	02/11/2005[15]	7.28	4.07	3.21	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	05/13/2005	7.28	4.01	3.27	0.00	-	-	-	-	-	-	-
MW-10	08/19/2005[15]	7.28	3.69	3.59	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	11/18/2005	7.28	3.86	3.42	0.00	-	-	-	-	-	-	-
MW-10	02/10/2006[15]	7.28	3.94	3.34	0.00	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	05/12/2006	7.28	4.07	3.21	0.00	-	-	-	-	-	-	-
MW-10	08/11/2006[15]	7.28	4.21	3.07	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	11/17/2006	7.28	3.83	3.45	0.00	-	-	-	-	-	-	-
MW-10	02/16/2007[15]	7.28	3.87	3.41	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	05/17/2007	7.28	3.71	3.57	0.00	-	-	-	-	-	-	-
MW-10	08/09/2007	7.28	-	-	-	-	-	-	-	-	-	-
MW-10	11/08/2007	7.28	-	-	-	-	-	-	-	-	-	-
MW-10	02/06/2008	7.28	-	-	-	-	-	-	-	-	-	-
MW-10	05/07/2008	7.28	-	-	-	-	-	-	-	-	-	-
MW-10	09/11/2008[15]	7.28	4.63	2.65	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	11/10/2008	7.28	4.28	3.00	0.00	-	-	-	-	-	-	-
MW-10	02/09/2009[15]	7.28	2.17	5.11	0.00	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	05/28/2009	7.28	3.69	3.59	-	-	-	-	-	-	-	-
MW-10	08/18/2009[15]	7.28	4.07	3.21	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	11/17/2009	7.28	4.12	3.16	-	-	-	-	-	-	-	-
MW-10	03/31/2010	7.28	3.43	3.85	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	05/17/2010	7.28	3.53	3.75	-	-	-	-	-	-	-	-
MW-10	**08/26/2010**	**7.28**	**4.33**	**2.95**	**-**	**-**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
TRIP BLANK	02/14/1990	-	-	-	-	-	<50	<0.5	1.1	<0.5	<0.5	-
TRIP BLANK	09/06/1991	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	12/15/1991	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	03/03/1992	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	06/04/1992	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	10/13/1992	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	01/11/1993	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	04/14/1993	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	07/13/1993	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	10/19/1993	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<1.5	-
TRIP BLANK	01/27/1994	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	04/07/1994	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	07/01/1994	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	10/05/1994	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	01/12/1995	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	04/26/1995	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	07/12/1995	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	PRIMARY VOCS				
Location	Date	TOC	DTW	GWE	SPHT	DO (Pre-Purged)	TPH-GRO	B	T	E	X	MTBE by SW8260
	Units	ft	ft	ft-amsl	ft	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
TRIP BLANK	10/30/1995	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-
TRIP BLANK	01/22/1996	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	04/24/1996	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	07/29/1996	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	01/15/1997	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	04/03/1997	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	07/09/1997	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	10/29/1997	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	01/14/1998	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	04/17/1998	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	07/15/1998	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	10/27/1998	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	01/20/1999	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.0
TRIP BLANK	04/19/1999	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	07/29/1999	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
TRIP BLANK	10/13/1999	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	01/25/2000	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
TRIP BLANK	04/03/2000	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
TRIP BLANK	07/03/2000	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
TRIP BLANK	10/23/2000	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
TRIP BLANK	01/08/2001[11]	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
TRIP BLANK	04/09/2001	-	-	-	-	-	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
TRIP BLANK	08/23/2001	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5
TRIP BLANK	11/27/2001	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
TRIP BLANK	02/26/2002	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
TRIP BLANK	05/23/2002	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
TRIP BLANK	08/09/2002	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
TRIP BLANK	11/08/2002	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
TRIP BLANK	02/07/2003	-	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5
TRIP BLANK	05/09/2003	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<1.5	<2.5
TRIP BLANK	08/15/2003[15]	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	11/14/2003	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	02/13/2004[15]	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	05/14/2004[15]	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	08/13/2004	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	11/12/2004	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	02/11/2005	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	05/13/2005	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	08/19/2005	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	11/18/2005	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	02/10/2006	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	05/12/2006	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	08/11/2006	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	11/17/2006	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	02/16/2007	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
TRIP BLANK	05/17/2007	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	08/09/2007	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	11/08/2007	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	02/06/2008	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	05/07/2008	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	09/11/2008	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	11/10/2008	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	02/09/2009	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
QA	05/28/2009[15]	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
QA	08/18/2009[15]	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
QA	03/31/2010	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5
QA	**08/26/2010**	**-**	**-**	**-**	**-**	**-**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
TMW-1	11/11/1993	-	-	-	-	-	<1.0	<0.5	<0.5	<0.5	<0.5	-
3115A GIBBONS DR.	01/14/1998	-	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5
C-2	09/04/1986	-	-	-	-	-	1,100	49	18	84	-	-
C-2	07/22/1987	-	-	-	-	-	<50	1.8	<1.0	<4.0	-	-

Abbreviations and Notes:

TOC = Top of Casing
DTW = Depth to Product
GWE = Groundwater elevation
(ft-amsl) = Feet Above Mean sea level
ft = Feet
µg/L = Micrograms per Liter
TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics
TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
MTBE = Methyl tert butyl ether
-- = Not available / not applicable
<x = Not detected above laboratory method detection limit

1 Laboratory report indicates EPA 8010 were not detected (ND)
2 MTBE confirmed
3 Chromatogram report indicates an unidentified hydrocarbon
4 ORC installed
5 TOC elevation altered due to well head maintenance
6 Laboratory report indicates gasoline C6-C12
7 ORC in well
8 Laboratory report indicates Dissolved Oxygen was 1.50 parts per million (ppm) by EPA Method 360.1

TABLE 2
GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 9-1153
3126 FERNSIDE BLVD, ALAMEDA, CALIFORNIA

							HYDROCARBONS	*PRIMARY VOCS*				
Location	*Date*	*TOC*	*DTW*	*GWE*	*SPHT*	*DO (Pre-Purged)*	*TPH-GRO*	*B*	*T*	*E*	*X*	*MTBE by SW8260*
	Units	*ft*	*ft*	*ft-amsl*	*ft*	*mg/L*	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

9 Laboratory report indicates Dissolved Oxygen was 0.300 ppm by EPA Method 360.1

10 Laboratory report indicates sample originally shot in hold time at a raise D.L. re-analyzed and reported past hold time

11 Laboratory report indicates this sample was analyzed outside of the EPA recommended holding time

12 Laboratory report indicates unidentified hydrocarbons C6-C12

13 Laboratory report indicates hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel

14 Laboratory confirmed analytical result

15 BTEX and MTBE by EPA Method 8260

16 Laboratory confirmed analytical result

17 The vial submitted did not have pH<2. The pH of this sample used for the undiluted analysis was pH = 3

18 Not sampled due to the presence of LNAPL in the well.

19 Sampled annually.

TABLE 3
WELL CONSTRUCTION DETAILS
FORMER CHEVRON STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD, ALAMEDA, CALIFORNIA

Well ID	*Date Installed*	*TOC*	*Total Depth (fbg)*	*Borehole Diameter (inches)*	*Casing Diameter* (inches)*	*Slot Size (inches)*	*Screen Interval (fbg)*	*Filter Pack (fbg)*	*Status*
C-1	8/18/1986	7.50	22.5	8	3	0.020	2-22	1.5-22	Active
C-3	8/18/1986	7.83	22	8	3	0.020	2-22	1.5-22	Active
MW-4	5/15/1992	7.01	16.5	8	2	0.020	2.5-15	3-16.5	Active
MW-5	5/15/1992	7.04	16.5	8	2	0.020	3-15	2.5-16.5	Active
MW-6	5/15/1992	7.27	16.5	8	2	0.020	3-15	2.5-16.5	Active
MW-7	11/11/1993	7.92	15	8	2	0.020	3-15	2.5-15	Active
MW-8	10/13/1995	6.96	9	6.25	2	0.020	3-9	2-9	Active
MW-9	10/13/1995	7.21	9	6.25	2	0.020	3-9	2-9	Active
MW-10	10/13/1995	7.28	9	6	2	0.020	3-9	2-9	Active

Abbreviations & Notes
TOC = Top of casing elevation (feet above mean sea level)
fbg = Feet below grade
* = Casing material: Schedule 40 PVC
NA = Not available

TABLE 4
CUMULATIVE GRAB-GROUNDWATER ANALYTICAL DATA
CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD), ALAMEDA, CALIFORNIA

Sample ID	*Date*	*TPH*	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*MTBE*
		micrograms per liter (µg/L)					
ESL Table E-1: Potential Vapor Instrusion Concerns (Residential)		***Use Soil Gas***	***540***	***380,000***	***170,000***	***160,000***	***24,000***
ESL Table E-1: Potential Vapor Instrusion Concerns		***Use Soil Gas***	***1,800***	***530,000***	***170,000***	***160,000***	***80,000***
ESL Table F-1a: Groundwater is a potential drinking water resource		***100***	***1***	***40***	***30***	***20***	***5***
#5 (UST pit sample)	6/4/1996	*130,000*	--	--	--	--	--
SB1	06/27/89	110,000	52,000	64,000	6,700	23,700	--
SB2	06/28/89	160,000	30,000	59,000	6,600	26,200	--
SB4	06/29/89	<50	<1	<1	<1	<1	--
SB5	06/29/89	110,000	27000	22,000	4,600	13,400	--
SB6	06/27/89	74,000	12,000	7,400	2,500	7,100	--
SB7	06/28/89	50,000	14,000	6,800	3,300	8,200	--
SB8	06/29/89	<50	<1	<1	<1	<1	--
BH-A	03/09/93	160	6.4	1.6	1.0	3.2	--
BH-B	03/09/93	<50	2.1	<0.5	<0.5	<0.5	--
BH-C	03/09/93	190,000	3,200	830	6,000	1,500	--
TMW-1	11/11/93	<1	<0.5	<0.5	<0.5	<0.5	--

Explanation:

TPH = Total Petroleum Hydrocarbons by EPA Method 8015

Benzene, Toluene, Ethylbenzene, Xylenes by EPA Method 8015

MTBE = methyl tertiary butyl ether

-- = Not analyzed

<n = Not present above laboratory detection limit

TABLE 5
CUMULATIVE SOIL VAPOR ANALYTICAL DATA
FORMER CHEVRON STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD), ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes* [1]	*MTBE*
			Reported in µg/L [3]					
ESL Table E-4 - Residential Shallow Soil Gas Screening Levels			***5,100***	***42***	***31,000***	***490***	***10,000***	***4,700***
SV-1	10/15/02	--	--	**1,700**	8,500	**2,300**	**12,800**	--
SV-2	10/15/02	--	--	**1,700**	5,200	**3,000**	**10,800**	--
SV-3	10/15/02	--	--	<2.2	<2.7	<3.1	4.7	--
SV-4	10/15/02	--	--	3.2	7.1	<3.2	12.6	--
SV-5	10/15/02	--	--	**3,600**	260	**2,000**	860	--
SV-6	10/15/02	--	--	3.1	4.6	5.5	8.7	--
SV-7	10/15/02	--	--	<9.7	<11	<13	<13	--
					Reported in ppm			
V1	05/04/89	2.5	--	25	<1	<1	23	--
		4.5	--	<1	16	<1	1	--
V2	05/04/89	2.5	--	80	69	<1	17	--
		4.5	--	<1	<1	<1	<1	--
V3	05/04/89	2.5	--	<1	70	<1	1	--
		4.5	--	<1	<1	<1	<1	--
V4	05/04/89	2.5	--	<1	<1	<1	<1	--
		4.5	--	<1	<1	<1	<1	--
V5	05/04/89	2.5	--	250	2,400	450	2,400	--
		2.5	--	8	83	<1	51	--
V6	05/04/89	2	--	<1	<1	3	<1	--
		3	--	34	39	10	12	--
V7	05/04/89	2.5	--	2,200	2,700	43	200	--
V8	05/04/89	2.5	--	1	<1	<1	<1	--
		4.5	--	1	<1	--	--	--
V9	05/04/89	3	--	<1	<1	<1	<1	--
V10	05/04/89	2.5	--	1	1	<1	<1	--
		4.5	--	1	1	<1	<1	--
V11	05/04/89	3	--	0.5	1	<1	<1	--
		4.5	--	2	5	<1	2	--
V12	05/04/89	2.5	--	<1	<1	<1	<1	--
		4.5	--	<1	<1	<1	<1	--
V13	05/04/89	3	--	<1	<1	<1	<1	--
		4.5	--	<1	1	<1	<1	--
V14	05/04/89	2.5	--	360	310	69	340	--
V15	05/04/89	2.5	--	8	7	<1	<1	--
V16	05/10/89	2.25	--	<1	<1	<1	<1	--
V17	05/10/89	2.5	--	2,300	2,500	150	670	--

TABLE 5
CUMULATIVE SOIL VAPOR ANALYTICAL DATA
FORMER CHEVRON STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD), ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes* [1]	*MTBE*
			Reported in µg/L [3]					
ESL Table E-4 - Residential Shallow Soil Gas Screening Levels			***5,100***	***42***	***31,000***	***490***	***10,000***	***4,700***
V18	05/10/89	2.5	--	490	220	10	32	--
V19	05/10/89	25	--	<1	<1	<1	<1	--
		4.5	--	<1	<1	<1	<1	--
V20	05/10/89	2.5	--	<1	<1	<1	<1	--
		4	--	<1	<1	<1	<1	--
V21	05/10/89	2.5	--	<1	<1	<1	<1	--
		4	--	<1	<1	<1	<1	--
V22	05/10/89	2.5	--	7	3	<1	<1	--
V23	05/10/89	2	--	<1	1	<1	<1	--
V24	05/10/89	2.5	--	<1	<1	<1	<1	--
		4	--	<1	<1	<1	<1	--
		4	--	140	500	48	340	--
		3.5	--	<1	<1	<1	<1	--
V25	05/10/89	2.5	--	<1	<1	<1	<1	--
V26	05/10/89	2	--	1	<1	<1	<1	--
V27	05/10/89	0	--	<1	<1	<1	<1	--
		2	--	<1	<1	<1	<1	--
		4	--	<1	15	<1	<1	--
V28	05/10/89	2	--	10	25	<1	42	--
		2.5	--	<1	1	<1	6	--
V29	05/10/89	2.5	--	5	49	<1	<1	--
V30	05/10/89	2	--	<1	<1	<1	<1	--
V31	05/10/89	2.5	--	<1	<1	<1	<1	--
V32	05/10/89	2.5	--	<1	<1	<1	<1	--
V1	07/21/87	3	--	110	30	--	--	--
V2	07/21/87	3	--	1,900	500	--	--	--
V3	07/21/87	3	--	120	50	--	--	--
V4	07/21/87	3	--	70	180	--	--	--
V5	07/21/87	3	--	<1	<1	--	--	--
V6	07/21/87	3	--	10	10	--	--	--
V7	07/21/87	3	--	<1	<1	--	--	--
V8	07/21/87	3	--	5	5	--	--	--
V9	07/21/87	3	--	<1	<1	--	--	--
V10	07/21/87	3	--	<1	<1	--	--	--
V11	07/21/87	3	--	<1	<1	--	--	--
V12	07/21/87	3	--	<1	<1	--	--	--

TABLE 5
CUMULATIVE SOIL VAPOR ANALYTICAL DATA
FORMER CHEVRON STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD), ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes* [1]	*MTBE*
			Reported in µg/L [3]					
ESL Table E-4 - Residential Shallow Soil Gas Screening Levels			***5,100***	***42***	***31,000***	***490***	***10,000***	***4,700***

Explanation:

fbg = feet below grade
TPHg = Total Petroleum Hydrocarbons as Gasoline
MTBE = Methyl tertiary Butyl Ether
1989 samples analyzed by method 24
-- = Not analyzed
<n = Not present above laboratory detection limit
µg/L[3] = micrograms per cubic liter
ppm = parts per million

APPENDIX A

REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

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

June 24, 2010

Mr. Aaron Costa
Chevron Corporation
6111 Bollinger Canyon Road, Rm 3660
San Ramon, CA
(sent via electronic mail to acosta@chevron.com)

Mr. Mark Hom and Anna Cheng
3135 Gibbons Drive
Alameda, CA, 94501-1749

JL and Jane Bolton
3135 Gibbons Drive
Alameda, CA 94501-1749

Subject: Approval of Vapor Survey With Modifications and Request for Feasibility Study; Fuel Leak Case No. RO0000341; (Global ID # T0600100330); Chevron #9-1153, (3126 Fernside Blvd), 3135 Gibbons Drive, Alameda, CA 94501

Ladies and Gentlemen:

Alameda County Environmental Health Department (ACEH) staff has reviewed the case file, and the most recently submitted reports prepared by Conestoga-Rovers & Associates (CRA) for this site, *Work Plan for Remediation and Vapor Survey*, dated January 14, 2010; *Fourth Quarter 2009 Groundwater Monitoring Report,* dated April 30, 2010; and *First Quarter 2010 Groundwater Monitoring Report,* dated May 5, 2010. Thank you for submitting the reports, and thank you for forwarding extraction trench construction design documents in the work plan. As you are aware, this is a residential property. During the October 2008 sampling event approximately 0.4 feet of free phase (FP) petroleum hydrocarbon was detected in onsite monitoring well C-1. Between September 2008 and December 2008 free-phase was again present in this well at increased thicknesses in comparison to previous monthly measurements. The recently submitted reports document a reduction in FP thickness in well C-1 since approximately February 2009.

Based on Alameda County Environmental Health (ACEH) staff review of the work plan we request additional information prior to initiation of the proposed scope of work for the surfactant pilot test; however, are in general agreement with the sub-slab soil vapor scope of work. We request that you address the following technical comments regarding the proposed surfactant work, perform the proposed soil vapor work, and send us the technical reports requested below. Please provide 72-hour advance written notification to this office (e-mail preferred to: mark.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Surfactant Injection and Extraction**. The work plan proposes to conduct a pilot test in well C-1 using the surfactant Gold Crew Release© in an effort to decrease the surface tension between the FP and water, allowing desorption of residual FP from saturated soil. The surfactant is also reported to be biodegradable and of food-grade quality. Due to the shallow depth of groundwater, the work is planned to occur near the end of the dry season during the annual low groundwater level, (i.e. early fall). The approach is intriguing; however, ACEH has a number of concerns that require a better understanding prior to initiation of the pilot test. Please address the following comments and submit the requested items:

a. **Preferential Pathway Evaluation -** ACEH is concerned that the flow of groundwater (and potentially injected fluids), may not be adequately understood in the vicinity of the site. This can be more critical at the site due to downgradient close proximity of the Oakland – Alameda Estuary; a straight-line distance of under approximately 400 feet by utility conduits. Underground utilities downgradient and in the site vicinity appear to range between approximately 1.5 to 3.6 feet below grade surface, and depths to groundwater have been generally within that range. In conjunction with these observations are notes contained on old bore logs (e.g. C-1 and B-1) that appear to indicate significant hydrocarbon impacts in these depth ranges. Should the injection of surfactant successfully liberate adsorbed free-phase, unintended flow along preferential pathways may occur. As a consequence, please conduct a preferential pathway survey including a conduit and well survey. Utility laterals emanating from vicinity parcels, onsite utility corridors, storm drop inlets, and buried PG&E lines are to be included. Please evaluate the potential for fluid flow along all potential conduits; please note several gradient maps suggest flow towards to a drop box on the far side of High Street from the site. Available sources of information include the May 15, 1996 *Evaluation of Potential Migration Pathway via Buried Utilities* which did not evaluate laterals, onsite corridors, or PG&E lines at the site and vicinity and the June 26, 1996 *Geophysical Investigation for Buried Underground Storage Tanks*; copies can be found on the ACEH website.

   As a part of the preferential pathway study please include the results of a well survey. A *Well Completion Report Release Agreement* form was submitted to, and approved by, ACEH in January 2009, but results have not been forwarded.

b. **Justification of Pilot Test Appropriateness -** Please also note that ACEH is not convinced that the proposed interim remediation pilot test could not be described as a spot treatment of one or more wells, and not of the site, due to the depth of impacted soil as described in older bore logs including those noted above, and previously observed flow patterns at the site. Considering the site is close to the estuary and is a residential property the use of surfactant appears to be inappropriate remedial technology, and that other options would be more appropriate; in particular when coupled with wells currently spaced a minimum of 50 feet apart and intervening underground utility lines. Significant unintended flow of liberated product can occur prior to recognition or could be missed completely with the existing well network. As a consequence, a denser monitoring well network would be required.

   Please evaluate interim use of skimmers or socks in well C-1 as temporary measures to increase the capture of free product at the site between site visits; they do not appear to be utilized currently.

   Please justify the evaluation of this potential interim remedial alternative in lieu of other options such as the pilot testing of vapor extraction, dual-phase extraction, or other potentially appropriate remedial options as a part of a Feasibility Study (FS). The FS, prepared in accordance with Title 23, California Code of Regulations, Section 2725, must include a concise background of soil and groundwater investigations performed in connection with this case and an assessment of the residual impacts of the chemicals of concern (COCs) for the site and the surrounding area where the unauthorized release has migrated or may migrate. The FS should also include, but not limited to, a detailed description of site lithology, including soil permeability, and most importantly, contamination cleanup levels and cleanup goals, in accordance with the San Francisco Regional Water Quality Control Board (SFRWQCB) Basin Plan and appropriate environmental screening levels (ESL) guidance for all COCs and for the appropriate groundwater designation. Please note

that soil cleanup levels should ultimately (within a reasonable timeframe) achieve water quality control objectives (cleanup goals) for groundwater in accordance with the SFRWQCB Basin Plan. Please propose appropriate cleanup levels and cleanup goals and the timeframe to reach these levels and goals in accordance with 23 CCF Section 2725, 2726, and 2727 in the FS/CAP for active remediation and final cleanup goals. These can be applicable and justified ESLs or calculated site-specific risk-based cleanup goals and water quality objectives.

The FS/CAP must evaluate at least three viable alternatives for remedying or mitigating the actual or potential adverse affects of the unauthorized release(s) besides the 'no action' and 'monitored natural attenuation' remedial alternatives. Each alternative shall be evaluated for cost-effectiveness and the Responsible Party must propose the most cost-effective corrective action and shortest timeframe to reach water quality objectives (cleanup goals).

2. **Installation of Vapor Points.** Due to the shallowness of groundwater at the site the installation of "permanent" single depth sub-slab vapor probes, at both indoor and outdoor locations, was proposed in the work plan. Indoor and outdoor background air sampling is also proposed after completion of a Building Survey Form to help identify sources of contaminants derived from consumer products. The number of probes, probe locations, and location of ambient indoor and outdoor air sampling were proposed to be identified after incorporation of utility corridors, the residential site plan, and other site features, and then submitted for ACEH concurrence prior to work initiation. The approach described in the work plan generally appears reasonable. Please incorporate sub-slab sampling protocols contained in Appendix G of the DTSC *Interim Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor* Air, dated December 15, 2004, revised February 7, 2005. For all consumer products identified during the building survey please include a list of active or known inactive ingredients in the resulting report.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Mr. Mark Detterman), according to the following schedule:

- **July 30, 2010** - Preferential Pathway Survey and proposed vapor points
- **August 20, 2010** – Feasibility Study
- **September 20, 2010** – Vapor Survey Report
- **30 days after approval of Feasibility Study** – Pilot Test Work Plan
- **60 days after approval of Pilot Test Work Plan** – Interim Corrective Action Plan

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

Should you have any questions, do not hesitate to call me at (510) 567-6876.

Sincerely,

Mark E. Detterman, PG, CEG
Hazardous Materials Specialist

cc: Nathan Lee, Conestoga-Rovers & Assoc., 5900 Hollis Street, Suite A, Emeryville, CA 94608
(sent via electronic mail to NLee@craworld.com)

Donna Drogos (sent via electronic mail to donna.drogos@acgov.org),
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org),
File

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

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

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

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

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

REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:
  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

Submission Instructions

1) Obtain User Name and Password:
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
         Or
      ii) Send a fax on company letterhead to (510) 337-9335, to the attention of My Le Huynh.
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape and Firefox browsers will not open the FTP site.
   b) Click on File, then on Login As.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

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

APPENDIX B

SUMMARY OF ENVIRONMENTAL INVESTIGATIONS

PREVIOUS ENVIRONMENTAL INVESTIGATION AND REMEDIATION

1986 UST Removal and Excavation

The underground storage tanks (USTs) were removed and an unreported volume of soil was excavated from the former UST pit and product line trenches. Excavated soil was aerated onsite and used as backfill. Additional information is available in Blaine Tech Services, Inc.'s June 19, 1986 *Field Sampling* report and Weiss Associates' (Weiss) December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1986 Well Installation

Wells C-1 through C-3 were installed onsite. Additional information is available in Emcon Associates' September 18, 1986 *Well Installation Memorandum*.

1987 Area Well Survey

In August 1987, Pacific Environmental Group, Inc. (PEG) conducted a well survey and indentified wells within approximately 0.5 mile of the site. The majority of these wells were used for groundwater monitoring or cathodic protection and some were used for irrigation. None of the wells were listed as municipal drinking water supply wells. Additional information is available in PEG's August 12, 1987 *Well Survey Report*.

1989 House Construction and Destruction of Monitoring Well C-2

According to Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*, a majority of the soil beneath the planned residence footprint was removed for construction in early 1989. Groundwater monitoring well C-2 was apparently destroyed during construction prior to May 1989. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1987 and 1989 Soil Vapor Survey

Soil vapor surveys were conducted to quantify vapor intrusion to indoor air risks for onsite residents. Based on vapor concentrations from samples collected from the southeastern portion of the site, a vapor barrier was recommended for any structures. Additional information is available in EA Engineering's August 19, 1987 *Risk Assessment* and June 9, 1989 *Soil vapor Contaminant Assessment Report of Investigation*.

1989 Subsurface Investigation

In July 1989, EA collected soil samples from between 0.5 and 9.5 feet below grade (fbg) in five shallow onsite borings and three shallow offsite borings (SB1 through SB8). The highest concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX) were found in the areas east of the UST complex and pump

islands. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1991 Groundwater Treatment

A groundwater pump and treat system was installed and operated by EA from 1991 to 1994. The system extracted groundwater from a recovery trench and extraction well RW-1. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1992 Well Installations

Offsite wells MW-4 through MW-6 were installed to further delineate the lateral extent of dissolved hydrocarbons. Additional information is available in Groundwater Technology Inc.'s (GTI) July 16, 1992 *Environmental Assessment Report*.

1993 Offsite Groundwater Sampling

Weiss collected groundwater samples from temporary offsite borings BH-A, BH-B, and BH-C, located crossgradient and downgradient of the groundwater extraction trench. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*..

1993 Monitoring Well Installation

On November 11, 1993 GTI installed groundwater monitoring well MW-7 and temporary monitoring well TMW-1 to further characterize the distribution of hydrocarbons in soil and groundwater upgradient and downgradient of the site. Additional information is available in GTI's January 31, 1994 *Additional Environmental Assessment Report*.

1994 Site Evaluation and Proposed Further Action

At Chevron's request, Weiss prepared a site evaluation to summarize all investigative and remedial actions performed to date and to outline a recommended future action plan. Additional information is available in WA's December 20, 1994 *Site Evaluation and Proposed Further Action Plan*.

1995 Well Installations

Wells MW-8 through MW-10 were installed to further delineate the downgradient extent of hydrocarbons in groundwater. Additional information is available in GTI's October 31, 1995 *Additional Site Assessment Report*.

1996 Evaluation for Potential Migration Pathway via Buried Utility Pipelines

Fluor Daniel GTI (FD-GTI) compiled utility location and depth information to analyze the potential for offsite migration of dissolved hydrocarbons in utility trenches. The report

concluded that several utilities penetrated groundwater, but that these utilities were not acting as preferential pathways. The report states that the buried utilities were installed in materials similar to native soil and were unlikely to result in preferential flow. In addition, monitoring well data near the utilities was not consistent with preferential flow. Additional information is available in FD-GTI's May 15, 1996 *Evaluation for Potential Migration Pathway via Buried Utility Pipelines*.

1996 Geophysical Investigation for Buried Underground Storage Tanks

FD-GTI performed a geophysical survey of approximately 70 feet of sidewalk along Gibbons Boulevard and near monitoring well C-1. Both ground penetrating radar and vertical magnetic gradiometer were used. No buried underground storage tanks were identified within the survey areas. Additional information is available in FD-GTI's July 8, 1996 *Geophysical Investigation for Buried Underground Storage Tanks*.

1997 Shallow Soil Investigation

Shallow soil samples S-1 through S-15 were collected along the north, west, and east property boundaries to assess lead concentrations in onsite soil. Additional information is available in Gettler-Ryan's (G-R) October 22, 1997 *Soil Sampling Report*.

1997 ORC and Peroxide Injection

Oxygen releasing compound (ORC) was placed in well MW-6 and MW-7 and hydrogen peroxide was injected in well MW-1 to remediate light non-aqueous phase liquids. Additional information is available in ChevronTexaco Energy Research and Technology Company's (Chevron ETC) May 2003 *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor*,

1998 Bio-Parameter Evaluation

Three samples collected during the third quarter 1998 groundwater monitoring event were analyzed for bio-parameter data to evaluate biodegradation processes. The report concluded that not enough parameters indicated biodegradation was occurring. However, the report states that the recently added ORC and hydrogen peroxide would potentially increase bioremediation. Additional information is available in Chevron's September 29, 1998 *Bio-Remediation Evaluation Letter*.

1999 Hydrogen Peroxide Injection

In July 1999, Cambria Environmental Technology, Inc. (Cambria) injected a hydrogen peroxide solution into well C-1 to oxidize residual hydrocarbons. Additional information is available in Cambria's July 12, 1999 *Hydrogen Peroxide Injection* report.

2001 to 2002 Groundwater Batch Extraction Events

Five groundwater batch extraction events were conducted. These events were discontinued because of inconvenience to the resident. Additional Information available in Chevron ETC's May 2003 *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor*.

2002-2003 Vapor Intrusion Study and Risk-Based Correction Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor

Borings SV-1 through SV-7 were hand-augered along the edges of the current building and soil-vapor samples were collected from temporary probes. These data were used to evaluate potential indoor air risks to onsite residents. Data was compared to the United States Environmental Protection Agency's established target risk levels for adults and children. The report concludes that vapor intrusion risks from soil vapor intrusion to indoor air were below the established guidelines. Additional information is available in Chevron ETC's May 2003 *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor*.

2010 Preferential Pathway and Well Survey

In 2010, Conestoga-Rovers & Associates (CRA) completed another preferential pathway analysis and well survey. CRA located electric, natural gas, water, communication, storm drain sewer, and sanitary sewer lines near the site. Although some of these utilities periodically intersect the groundwater table, hydrocarbon concentrations in monitoring wells indicate that utilities are not acting as significant pathways for hydrocarbon migration. This is consistent with previous assessments. The closest water supply wells are over 1,000 feet from the site. These wells are either upgradient or located in Oakland across the Oakland Alameda Estuary and off the island. The wells identified in the survey are not at risk from hydrocarbons originating from the site. Additional information is available in CRA's September 30, 2010 *Preferential Pathway Study and Well Survey Report*.

APPENDIX C

BORING LOGS

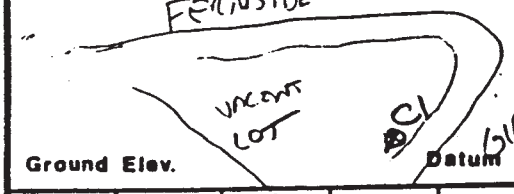
LOG OF EXPLORATORY BORING

EMCON ASSOCIATES

PROJECT No. 8001.5.01 DATE 8-18-86
CLIENT GR CHEVRON
LOCATION ALAMEDA
LOGGED BY EBL DRILLER BAYLAND

BORING No. G1
Sheet 1 of 1

Field location of boring: —3



Ground Elev. Datum

Drilling method H-S AUGER
Hole dia. 8"

Casing installation data 3" PVC SLOTTED CASING INSTALLED FROM 22 TO 2 FEET; SOLID TO SURFACE; SAND PACK TO 1½"; BENTONITE TO 1"; CONCRETE TO SURFACE.

Water level	4.5'	4.1'		
Time	13.05	16.06		
Date	8-18-86	8-18-86		

Pocket Torr vane TSF	Pocket Penetrometer TSF	Blows/ft. or Pressure PSI	Type of Sample	Sample Number	Depth	Sample	Soil Group Symbol (U.S.C.S.)	DESCRIPTION
					2		SW	SAND FILL; BROWN (10YR, 5/3); 10-20% FINES; 70-80% FINE SAND; 10-20% MED SAND TO FINE GRAVEL; LOOSE; DRY; NPO.
							SP	@ 1½ FEET; STRONG GAS ODOR.
		4/4/4	DR-L 100%	(1)	4			SAND; DARK GRAY (2.5Y, N4); 5-10% FINES; FINE SAND; LOOSE; WET; STRONG GAS ODOR.
	25				6		SC	
					8			CLAYEY SAND; DARK GRAY (2.5Y, N4); 30-40% FINES; FINE SAND; VERY STIFF; WET; STRONG GAS ODOR.
	3.0	4/8/16	DR-L 100%	(2)	10			@ 9-10½ FT; DARK GRAYISH BROWN (2.5Y, 4/2); FAINT GAS ODOR
					12			
					14		SP	SAND; OLIVE BROWN; (2.5Y, 4/4); 5-10% FINES; 80-90% FINE SAND; 5-10% MEDIUM SAND; MEDIUM DENSE; WET; NO GAS ODOR
		7/12/18	DR-L 100%	(3)	16			
					18			
		12/24/30	DR-L 100%	(4)	20			@ 19-20½ FEET; 5% COARSE SAND TO FINE GRAVEL; VERY DENSE; NPO.
		14/12/17	DR-L 100%	(5)	22		SC	CLAYEY SAND; GRAYISH BROWN (2.5Y, 5/2); 25-35% FINES TO 60-80% FINE SAND; VERY STIFF; WET; NPO.
	3.0							BOTTOM OF BORING AT 22½ FEET.

9-1153

PRELIMINARY

WELL DETAILS

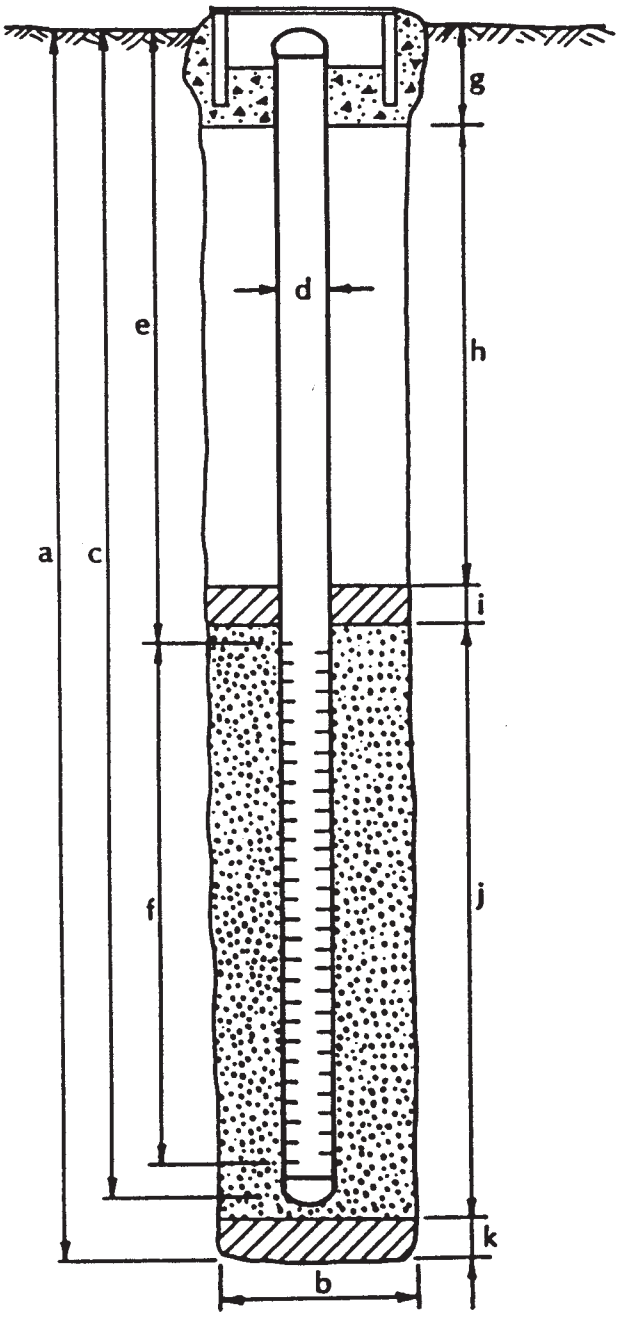
EMCON ASSOCIATES

PROJECT NUMBER 800-75.01
PROJECT NAME G-R (CHEVRON)
COUNTY ALAMEDA
WELL PERMIT NO.

BORING / WELL NO. C-1
TOP OF CASING ELEV.
GROUND SURFACE ELEV. 7'± MSL
DATUM USGS

DRAFT

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 22½ ft.
b. Diameter 8" in.
Drilling method HOLLOW-STEM AUGER

WELL CONSTRUCTION

c. Casing length 22 ft.
Material SCHEDULE 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 2 ft.
f. Perforated length 20 ft.
Perforated interval from 22 to 2 ft.
Perforation type MACHINED SLOT
Perforation size .020 INCH
g. Surface seal 1.2 ft.
Seal material CEMENT GROUT
h. Backfill 0 ft.
Backfill material
i. Seal 0.3 ft.
Seal material BENTONITE
j. Gravel pack (22 TO 1.5 FEET) 20.5 ft.
Pack material COARSE AGGREGATE SAND
k. Bottom seal 1.5 ft.
Seal material BENTONITE

PLATE

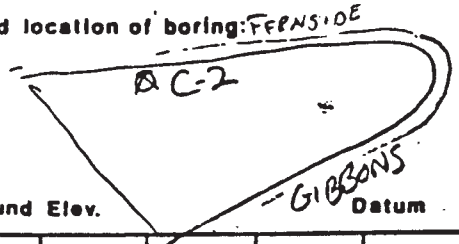
LOG OF EXPLORATORY BORING

EMCON ASSOCIATES

PROJECT No. 2001.04 DATE 8-16-88
CLIENT GR CHEVRON
LOCATION ALAMEDA
LOGGED BY EBL DRILLER BAYLAND

BORING NO. C-2
Sheet 1 of 1

Field location of boring: FERNSIDE



Ground Elev. Datum

Drilling method HS AUGER
Hole dia. 8"

Casing installation data 3" PVC SLOTTED CASING INSTALLED FROM 22 TO 2 FEET; SOLID CASING FROM 2 FEET TO SURFACE. SAND PACK TO 18"; BENTONITE TO 14"; CONCRETE TO SURFACE.

Water level	4.1'				
Time	16:04				
Date	8-18-88				

Pocket Torr vane TSF	Pocket Penetrometer TSF	Blows/ft. or Pressure PSI	Type of Sample	Sample Number	Depth	Sample	Soil Group Symbol (U.S.C.S.)	DESCRIPTION
					0		SW	SAND-FILL; OLIVE GRAY; (5Y, 4/2); 10-20% FINES; 55-65% FINE SAND; 10-20% MED TO COARSE SAND; 10-20% FINE TO COARSE GRAVEL; LOOSE; MOIST; NO PRODUCT ODOR.
					2			
					4		SM	
		1/1/1	DR-L 33%	(1)	6			SILTY SAND; VERY DARK GRAY (2.5Y, N2); 15-25% FINES; 70-80% FINE SAND; LOOSE; WET; STRONG GAS ODOR
					8		SC	
	1.0	3/6/5	DR-L 100%	(2)	10			CLAYEY SAND; OLIVE GRAY (5Y, 4/2); 30-40% FINES; FINE SAND; STIFF; WET; NO PRODUCT ODOR
					12			
		7/19/19	DR-L 100%	(3)	14		SP	SAND; OLIVE BROWN (2.5Y, 4/4); 5-10% FINES; 80-90% FINE SAND, 5-10% MEDIUM SAND; DENSE; WET; NO PRODUCT ODOR.
					16			
					18			
					20			@ 20½-22 FEET; 10-15% FINES; MEDIUM DENSE TO DENSE; NO PRODUCT ODOR.
		15/15/15	DR-L 100%	(4)	22			BOTTOM OF BORING AT 22 FEET
					24			
					26			
					28			
					30			

PRELIMINARY

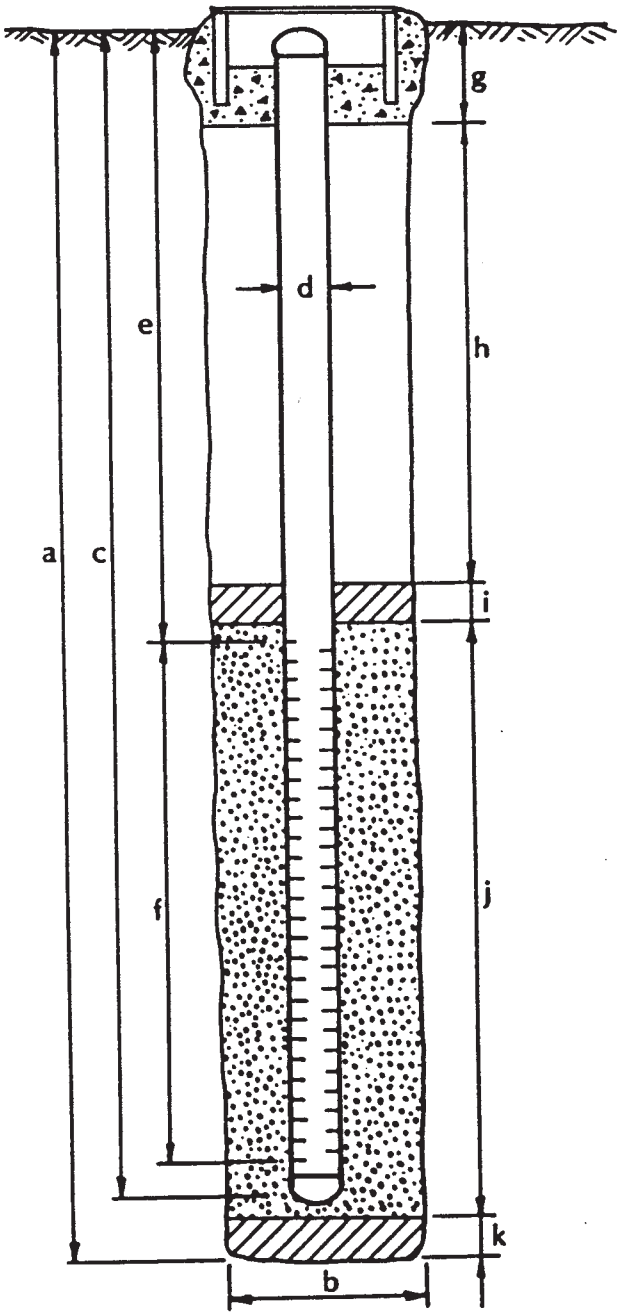
WELL DETAILS

PROJECT NUMBER 800-75.01
PROJECT NAME GR CHEVRON
COUNTY ALAMEDA
WELL PERMIT NO.

BORING / WELL NO. C-2
TOP OF CASING ELEV.
GROUND SURFACE ELEV. 7± MSL
DATUM USGS

G-5 vault box (Std.)

DRAFT



EXPLORATORY BORING

a. Total depth 22 ft.
b. Diameter 8 in.
Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Casing length 22 ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 2 ft.
f. Perforated length 20 ft.
Perforated interval from 22 to 2 ft.
Perforation type Machined Slot
Perforation size .020 inch
g. Surface seal 1.2 ft.
Seal material Cement Grout
h. Backfill -0- ft.
Backfill material
i. Seal 0.3 ft.
Seal material Bentonite
j. Gravel pack (22 + 0 1.5 Feet) 20.5 ft.
Pack material Coarse Monterey Sand
k. Bottom seal -0- ft.
Seal material

PLATE

LOG OF EXPLORATORY BORING

EMCON ASSOCIATES

PROJECT No. 880-15.01 DATE 8-18-86
CLIENT GR CHEVRON
LOCATION ALAMEDA
LOGGED BY EBL DRILLER BAYLAND

BORING No. C-3
Sheet 1 of 1

Field location of boring: SIDE PENCE C-3 GIBBONS

Ground Elev. Datum

Drilling method H-S AUGER
Hole dia. 8"

Casing installation data 3" PVC SLOTTED CASING INSTALLED FROM 22 TO 2 FEET; SOLID PVC FROM 2 FEET TO SURFACE; SAND PACK FROM 22' TO 18"; BENTONITE FROM 18" TO 14"; CONCRETE FROM 14" TO SURFACE.

Water level	4.0'			
Time	16:16			
Date	8-18-86			

Pocket Torvane TSF	Pocket Penetrometer TSF	Blows/ft. or Pressure PSI	Type of Sample	Sample Number	Depth	Sample	Soil Group Symbol (U.S.C.S.)	DESCRIPTION
					2		SM	SAND-FILL; OLIVE GRAY (5Y, 4/2); 10-20% FINES - 60-70% FINE SAND; 10-20% MEDIUM TO COARSE SAND; 10-20% FINE TO COARSE GRAVEL; CONCRETE FRAGMENTS; LOOSE; DRY TO MOIST; FAINT GAS ODOR.
		2/5/7	IR-L 20%	(1)	4		SP	SAND; VERY DARK GRAYISH BROWN (10YR, 3/2); 5-10% FINES; FINE SAND; 10-20% MEDIUM TO COARSE SAND; LOOSE; MOIST; NO PRODUCT ODOR
					6			
					8		SC	
	2.0	5/8/11	IR-L 100%	(2)	10			CLAYEY SAND; GRAYISH BROWN (10YR, 5/2); 40-50% FINES; FINE SAND; STIFF; WET; NO PRODUCT ODOR; ROOT FRAGMENTS AND HOLES.
					12			
		9/25/35	IR-L 100%	(3)	14		SP	SAND; BROWN (10YR, 4/3); 5-10% FINES; FINE SAND; 5-10% MEDIUM SAND; DENSE; WET; NO PRODUCT ODOR.
	3.0				16		SC	CLAYEY SAND; BROWN (10YR, 5/3); 25-35% FINES; FINE SAND; VERY STIFF; WET; NO PRODUCT ODOR.
					18		SP	
					20			
		12/14/12	DRL 1.0 FT.	(4)	22		SC	SAND; BROWN (10YR, 4/3); > 10% FINES; 80-90% FINE SAND; MEDIUM DENSE; WET; NPD
	1.5				24			CLAYEY SAND; DARK GRAY (2.5Y, N4); 35-45% FINES; FINE SAND; STIFF; WET; NPD
					26			
					28			BOTTOM OF BORING AT 22 FEET
					30			

PRELIMINARY

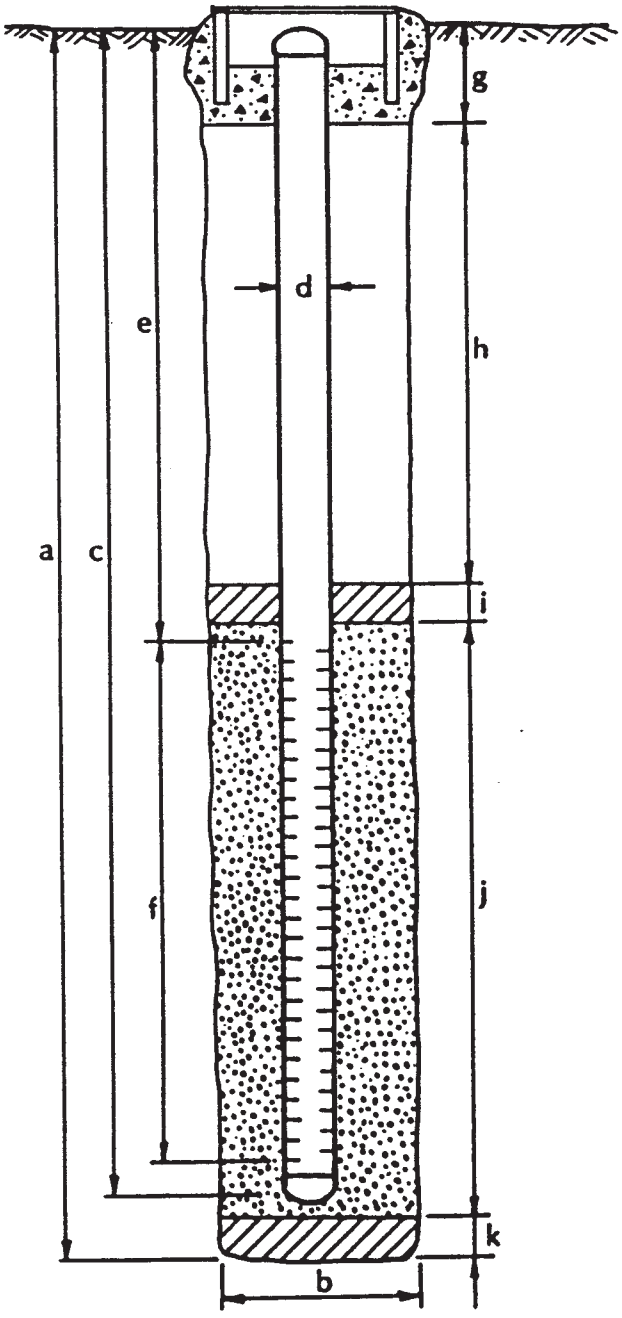
WELL DETAILS

PROJECT NUMBER 800-75.01
PROJECT NAME GR CHEVRON
COUNTY ALAMEDA
WELL PERMIT NO.

BORING / WELL NO. C-3
TOP OF CASING ELEV.
GROUND SURFACE ELEV. 7'± MSL
DATUM USGS

G-5 vault box (Std.)

DRAFT



EXPLORATORY BORING

a. Total depth 22 ft.
b. Diameter 8 in.
Drilling method HOLLOW-STEM AUGER

WELL CONSTRUCTION

c. Casing length 22 ft.
Material SCHEDULE 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 2 ft.
f. Perforated length 20 ft.
Perforated interval from 22 to 2 ft.
Perforation type MACHINED SLOT
Perforation size .020 INCH
g. Surface seal 1.2 ft.
Seal material CEMENT GROUT
h. Backfill ~~0~~ ft.
Backfill material
i. Seal 0.3 ft.
Seal material BENTONITE
j. Gravel pack (22+0 1.5 FEET) 20.5 ft.
Pack material COARSE MONTEREY SAND
k. Bottom seal 0 ft.
Seal material

PLATE

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring TMW-1

Project 3126 Fernside Blvd. Owner Chevron U.S.A., Inc.
Location Alameda, CA Proj. No. 020204604
Surface Elev. N/A ft. Total Hole Depth 15 ft. Diameter 8 in.
Top of Casing N/A ft. Water Level Initial 6.5 ft. Static N/A ft.
Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
Casing: Dia N/A in. Length N/A ft. Type N/A
Fill Material N/A Rig/Core Limited Access/Split Spoon
Drill Co. SES, Inc. Method Hollow Stem Auger
Driller D. Paxinos Log By S.C. Hurley Date 11/11/93 Permit # N/A
Checked By David Kleesattel License No. RG# 5136 David Kleesattel

See Site Map For Boring Location

COMMENTS:

The decon water and soil cuttings were stored 55-gallon drums and left on site until the contents could be analyzed for proper disposal. Depth to water was approximately 6.5 feet on 11-11-93.

Depth (ft.)	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						Asphalt
2						SAND, gray, about 100% fine sand, (about 50% quartz, about 50% mafic minerals).
4	5.6	5	6 9 10			Sandy CLAY, brown, about 80% clay, about 20% fine sand, (moist, no hydrocarbon odor).
6						(wet) ▽
8			8 11		CL	
10	5.6	10	12			(saturated)
12						
14		15	19 29 28			(No recovery. End of boring at 15 feet.)
16						
18						
20						
22						
24						

Drilling Log

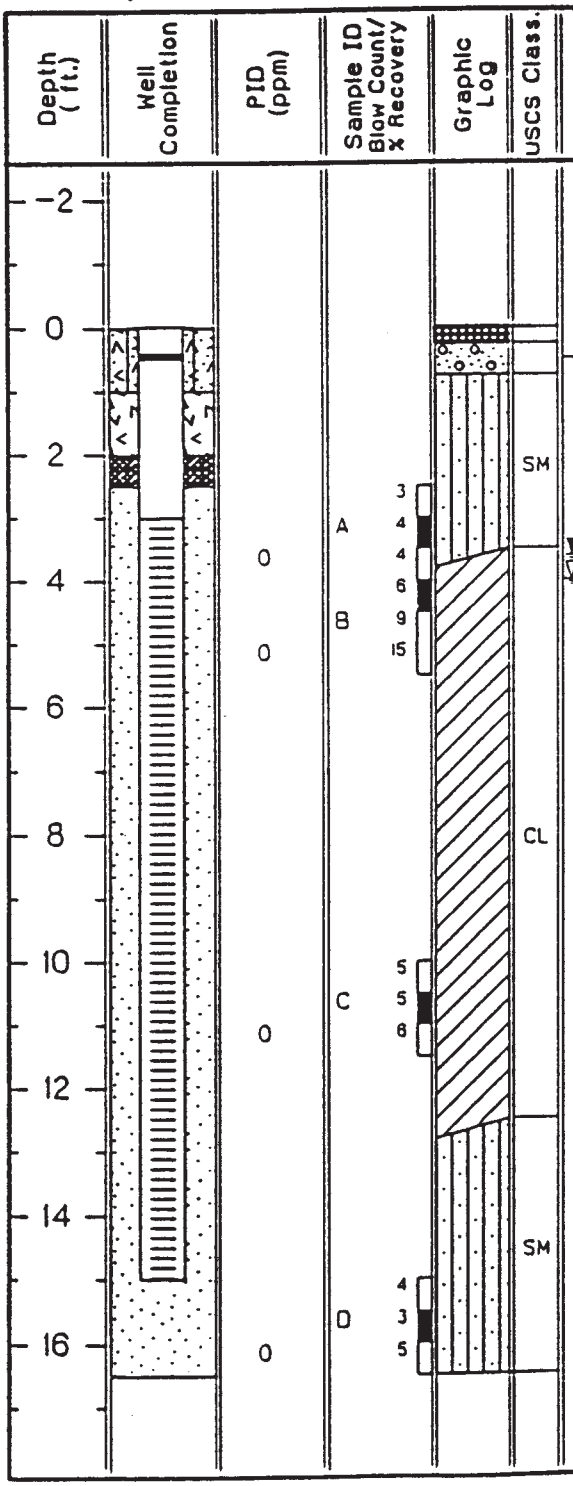
GROUNDWATER TECHNOLOGY

Monitoring Well MW-4

Project CHEVRON FERNSIDE — Owner CHEVRON U.S.A. INC.
Location 3125 Fernside Blvd. — Project No. 020202747 — Date drilled 05/15/92
Surface Elev. ____ — Total Hole Depth 16.5 ft. — Diameter 8 inches
Top of Casing 3.58 ft. — Water Level Initial 4.0 ft. — Static 3.63 ft.
Screen: Dia 2 in. — Length 12 ft. — Type/Size 0.020 in.
Casing: Dia 2 in. — Length 3.0 ft. — Type Sched. 40 PVC
Filter Pack Material Lapis Lustre No. 2/12 — Rig/Core Type Mobile B-53/split spoon
Drilling Company Kvilhaug Drilling — Method Hollow stem auger — Permit # ____
Driller Mike Crocker — Log By Steve Kranvak
Checked By David R. Kleesattel — License No. 5136 — David Kleesattel

See Site Map For Boring Location

COMMENTS:



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

6 inches asphalt
6 inches base coarse aggregate

Brown silty fine SAND (loose, moist, no hydrocarbon odor)

Water level on 06/04/92
Encountered water at 4.0 feet below grade on 05/15/92.

Brown silty CLAY with some fine sand (medium stiff, moist, no hydrocarbon odor)

(some fine gravels)

Brown silty fine SAND (loose, wet, no hydrocarbon odor)

End of boring at 16.5 below grade. Installed monitoring well.

07/14/1992 lithlog-mar92

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-5

Project CHEVRON FERNSIDE Owner CHEVRON U.S.A. INC.

Location 3126 Fernsice Blvd. Project No. 0202027.7 Date drilled 05/15/92

Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter 8 inches

Top of Casing 3.61 ft. Water Level Initial 4.0 ft. Static 3.25 ft.

Screen: Dia 2 in. Length 12 ft. Type/Size 0.020 in.

Casing: Dia 2 in. Length 3.0 ft. Type Sched. 40 PVC

Filter Pack Material Lapis Lustre No. 2/12 Rig/Core Type Mobile B-53/split spoon

Drilling Company Kvilhaug Drilling Method Hollow stem auger Permit # ____

Driller Mike Crocker Log By Steve Kranvak

Checked By David R. Kleesattel License No. 5136 David R. Kleesattel

See Site Map For Boring Location

COMMENTS:

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						6 inches asphalt
						6 inches of base coarse aggregate
2						Brown silty fine SAND (loose, wet, no hydrocarbon odor)
			A 3 4 5		SM	
4		0				Water elevation on 06/04/92
						Encountered water at 4.0 feet below grade on 05/15/92.
6						
8					CL	Brown and gray mottled silty CLAY with some fine sand (soft, wet, no hydrocarbon odor)
10			B 5 5 6			
		0				
12						
14					SM	Brown silty fine SAND (loose, wet, no hydrocarbon odor)
			C 3 5 7			
16		0				End of boring at 16.5 below grade. Installed monitoring well.

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-6

Project CHEVRON FERNSIDE — Owner CHEVRON U.S.A. INC.
Location 3125 Fernside Blvd. — Project No. 020202747 — Date drilled 05/15/92
Surface Elev. ____ — Total Hole Depth 16.5 ft. — Diameter 8 inches
Top of Casing 3.85 ft. — Water Level Initial 4.0 ft. — Static 3.89 ft.
Screen: Dia 2 in. — Length 12 ft. — Type/Size 0.020 in.
Casing: Dia 2 in. — Length 3.0 ft. — Type Sched. 40 PVC
Filter Pack Material Lapis Lustre No. 2/12 — Rig/Core Type Mobile B-53/split spoon
Drilling Company Kvilhaug Drilling — Method Hollow stem auger — Permit # ____
Driller Mike Crocker — Log By Steve Kranvak
Checked By David R. Kleesattel — License No. 5136 — David R. Kleesattel

See Site Map For Boring Location

COMMENTS:

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						
2			A 3 4 4		SM	Dark brown silty fine SAND (loose, moist, no hydrocarbon odor)
4		0				Water elevation on 06/04/92 *Encountered water at 4.0 feet below grade on 05/15/92.*
6						
8					CL	Brown and grey mottled silty CLAY with some fine sand (soft, wet, no hydrocarbon odor)
10			B 3 5 4			
12		0				
14					SM	Brown silty fine SAND (loose, wet, no hydrocarbon odor)
16			C 4 5 7			
		0				End of boring at 16.5 below grade. Installed monitoring well.

Drilling Log

GROUNDWATER TECHNOLOGY

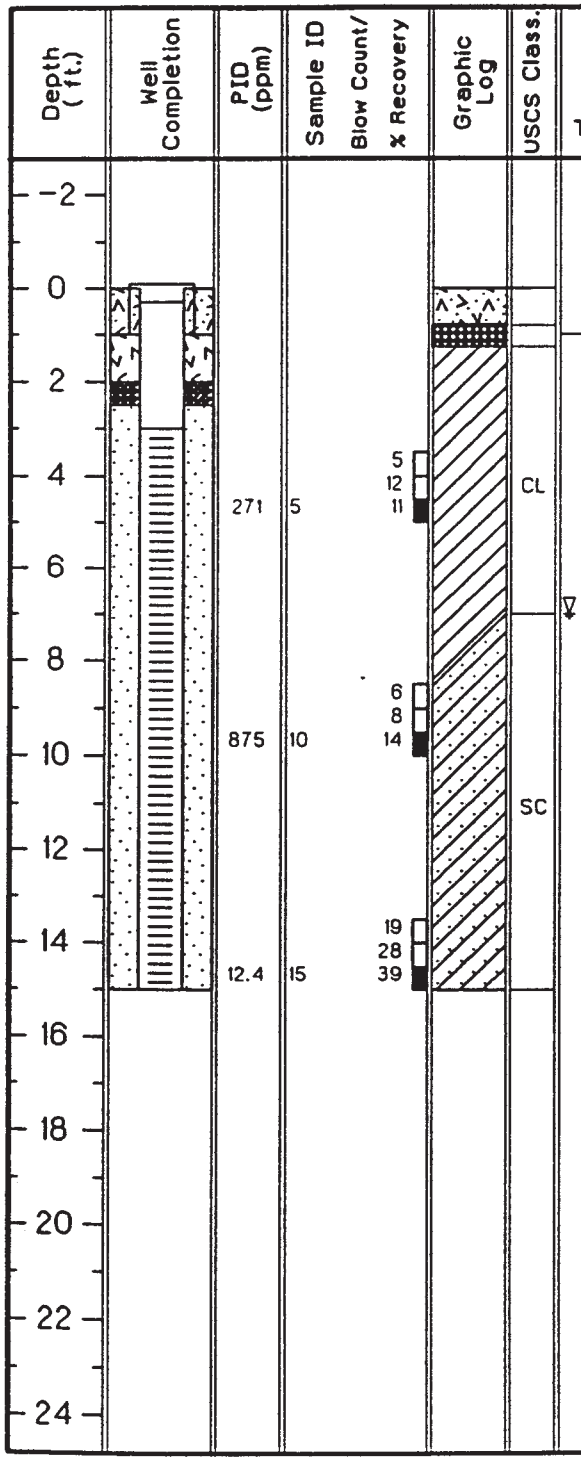
Monitoring Well MW-7

Project 3126 Fernside Blvd. Owner Chevron U.S.A., Inc.
Location Alameda, CA Proj. No. 020204604
Surface Elev. N/A ft. Total Hole Depth 15 ft. Diameter 8 in.
Top of Casing N/A ft. Water Level Initial 7 ft. Static N/A ft.
Screen: Dia 2 in. Length 12 ft. Type/Size 0.020 in.
Casing: Dia 2 in. Length 3 ft. Type PVC sch 40
Fill Material #3 sand Rig/Core Limited Access/Split Spoon
Drill Co. SES, Inc. Method Hollow Stem Auger
Driller D. Paxinos Log By S.C. Hurley Date 11/11/93 Permit # N/A
Checked By David Kleesattel License No. RG# 5136 Dan K Beaton

See Site Map For Boring Location

COMMENTS:

The screen was set at approximately l. feet below grade. The decon water a the soil cuttings were stored in 55-gal drums and left on site until the content could be analyzed for proper disposal. Depth to water was approximately 7.0 feet on 11-11-93.



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Concrete
Asphalt

CLAY, dark brown/olive, about 80% clay, about 20% silt, (very moist, strong hydrocarbon odor).

(wet)

Clayey SAND, gray, about 60% fine sand, about 30% clay, about 10% silt, (saturated, strong hydrocarbon odor).

(Grading to sand, tan, no hydrocarbon odor).

End of boring at 15 feet.

Drilling Log

GROUNDWATER TECHNOLOGY

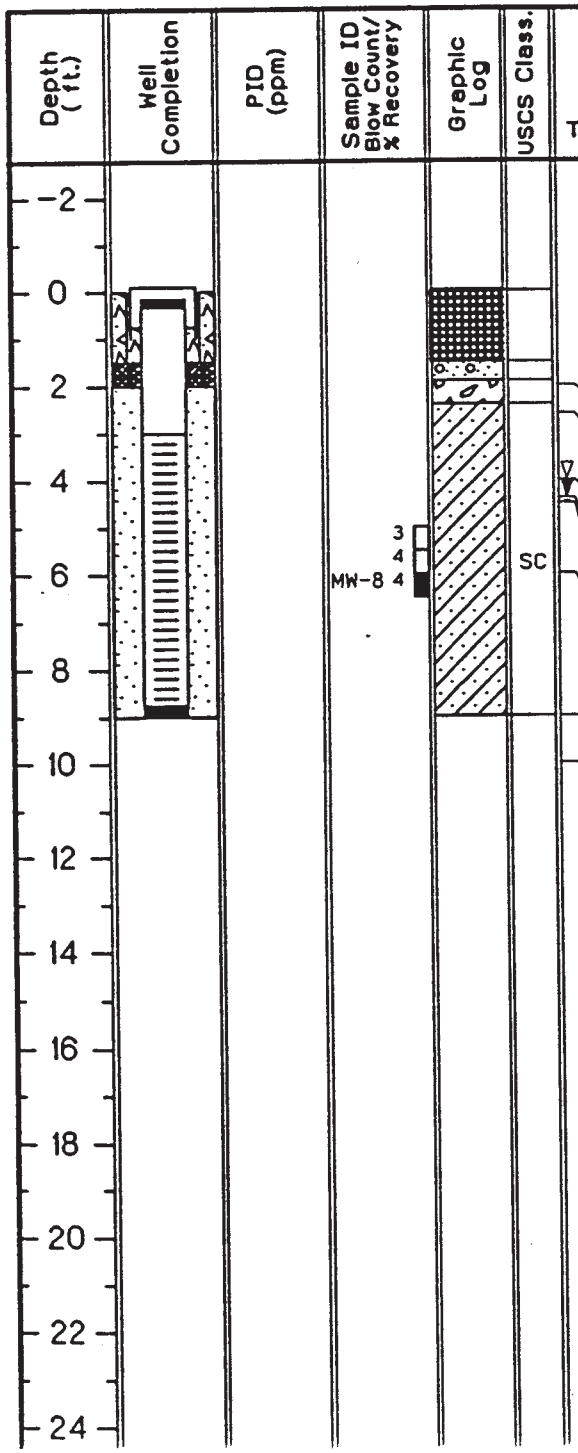
Monitoring Well MW-8

Project CHV/9-1153 Owner CHV/USA
Location 3126 Fernside Alameda Project No. 020200124 Date drilled 10/13/95
Surface Elev. 7.39 ft. Total Hole Depth 9 ft. Diameter 6.25 in.
Top of Casing 6.96 ft. Water Level Initial 4 ft. Static 4.40 ft.
Screen: Dia 2 in. Length 6 ft. Type/Size PVC/0.020 in.
Casing: Dia 2 in. Length 3 ft. Type PVC
Filter Pack Material #3 Monterey Sand Rig/Core Type Simco 2400 SK-1/Splitspoon
Drilling Company Geo-Environmental Method Hollow Stem Auger Permit # 95663
Driller Jim Condry Log By Terry James
Checked By Mike Blundell License No. R.G. 5146

See Site Map For Boring Location

COMMENTS:

Well is located on Fernside Blvd. in front of a driveway



Description

(Color, Texture, Structure)

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

Asphalt: very thick

Aggregate base

Cobbles: up to 10 in., former road surface.

Clayey SAND: fine sand, dark brown, slightly plastic, damp, no hydrocarbon odor

Groundwater encountered during drilling

Static water level prior to development, 10/17/95

Grades wet, slight light brown mottling

Clayey SAND (40,60): fine sand, light olive gray, medium stiff, slightly plastic, wet, no hydrocarbon odor

End of boring

(All percentages are approximate.)

Drilling Log

GROUNDWATER TECHNOLOGY

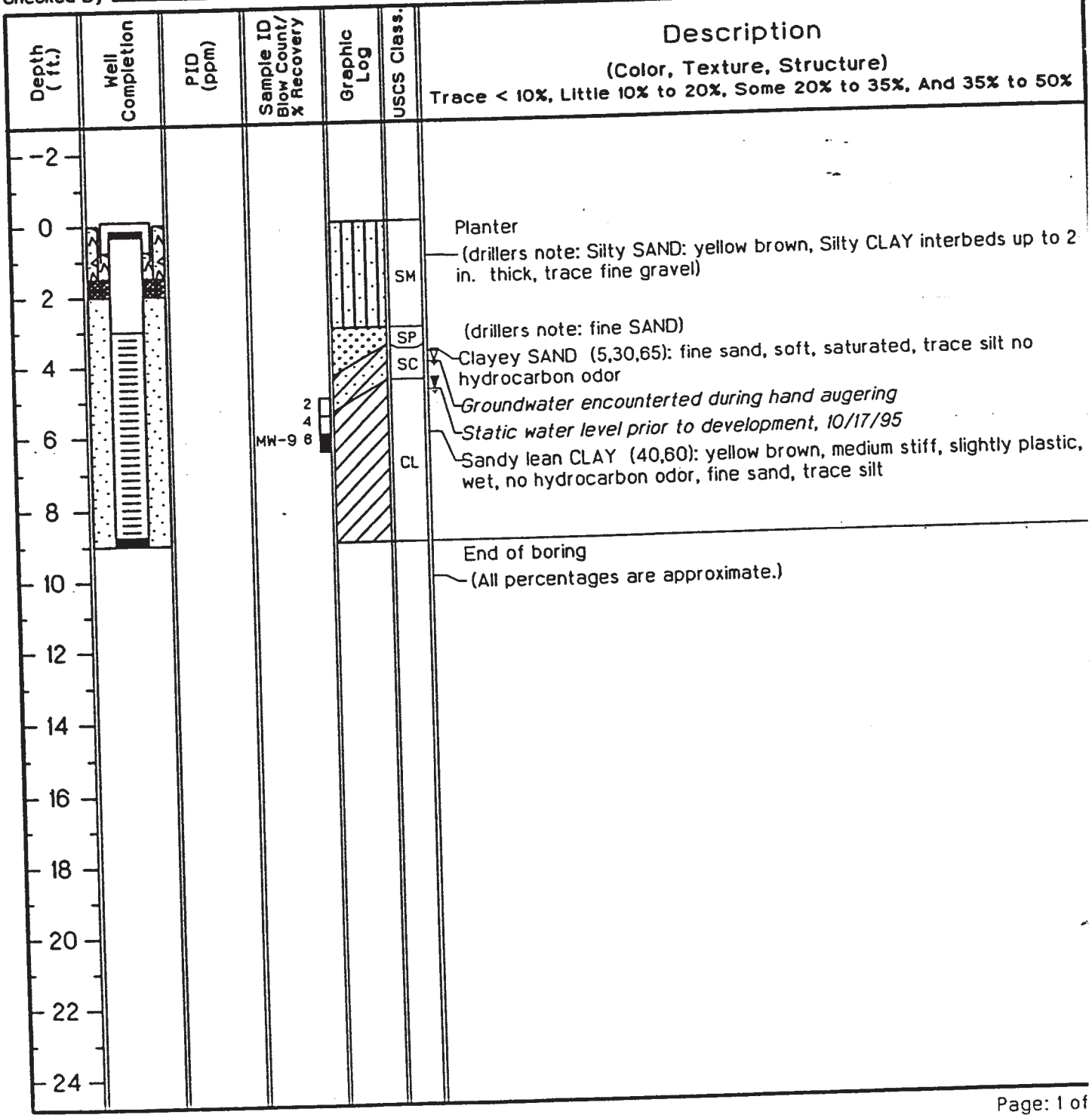
Monitoring Well MW-9

Project CHV/9-1153 Owner CHV/USA
Location 3126 Fernside Alameda Project No. 020200124 Date drilled 10/13/95
Surface Elev. 7.90 ft. Total Hole Depth 9 ft. Diameter 6.25 in.
Top of Casing 7.21 ft. Water Level Initial 4 ft. Static 4.80 ft.
Screen: Dia 2 in. Length 6 ft. Type/Size PVC/0.020 in.
Casing: Dia 2 in. Length 3 ft. Type PVC
Filter Pack Material #3 Monterey Sand Rig/Core Type Simco 2400 SK-1/Splitspoon
Drilling Company Geo-Environmental Method Hollow Stem Auger Permit # 95663
Driller Jim Condry Log By Terry James
Checked By Mike Blundell License No. R.G. 5146

See Site Map For Boring Location

COMMENTS:

Well is located in a landscaped median, at the intersection of Fernside Blvd. and High Street.



Drilling Log

GROUNDWATER TECHNOLOGY

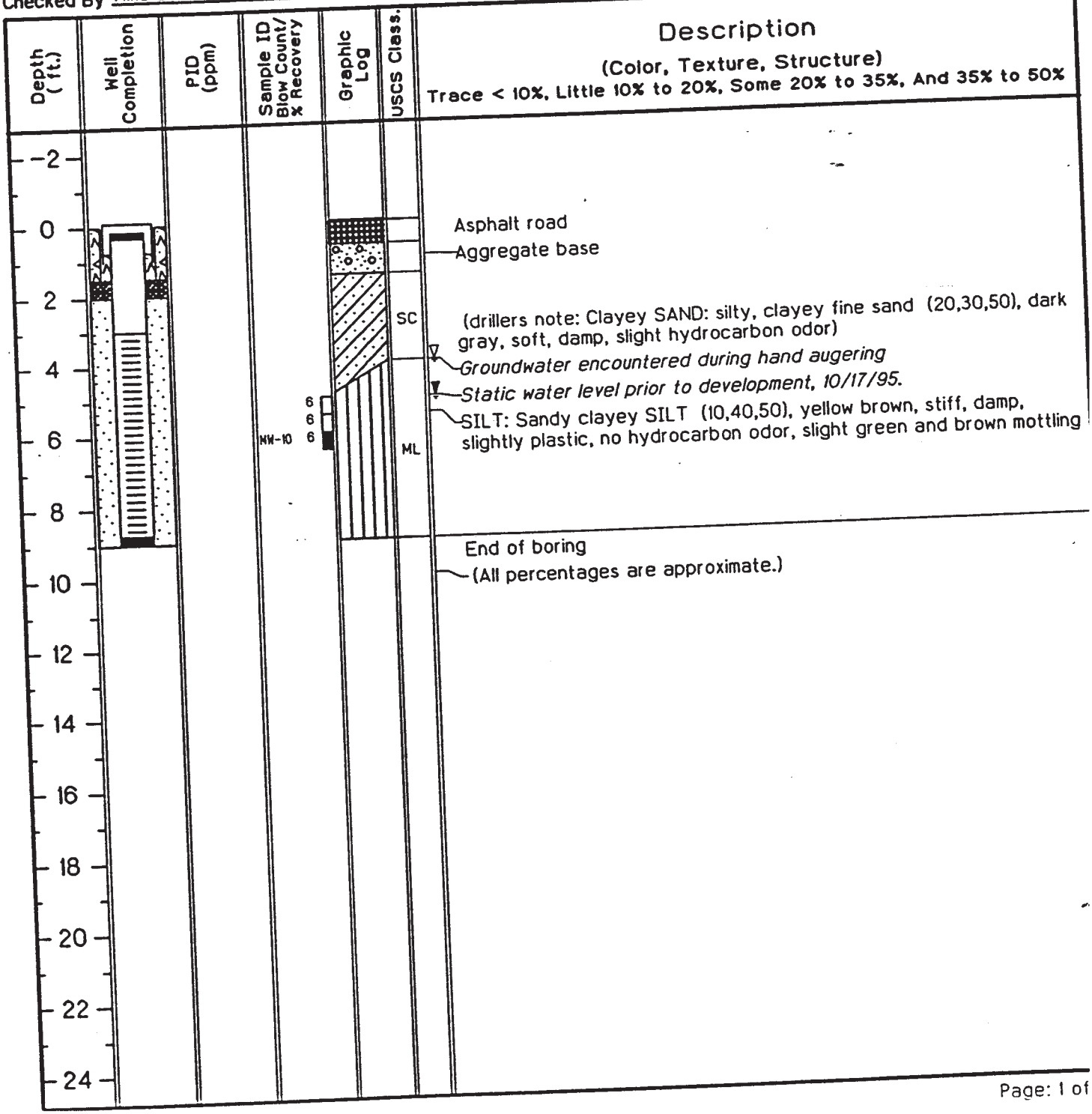
Monitoring Well **MW-10**

Project *CHV/9-1153* Owner *CHV/USA*
Location *3126 Fernside Alameda* Project No. *020200124* Date drilled *10/13/95*
Surface Elev. *7.66 ft.* Total Hole Depth *9 ft.* Diameter *6.25 in.*
Top of Casing *7.28 ft.* Water Level Initial *4 ft.* Static *5.05 ft.*
Screen: Dia *2 in.* Length *6 ft.* Type/Size *PVC/0.020 in.*
Casing: Dia *2 in.* Length *3 ft.* Type *PVC*
Filter Pack Material *#3 Monterey Sand* Rig/Core Type *Simco 2400 SK-1/Splitspoon*
Drilling Company *Geo-Environmental* Method *Hollow Stem Auger* Permit # *95663*
Driller *Jim Condry* Log By *Terry James*
Checked By *Mike Blundell* License No. *R.G. 5146*

See Site Map For Boring Location

COMMENTS:

Well is located in the center of the east bound lane, on High St.



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING **SB1**

Coordinates:

Elevation top of casing:
Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 10:30	TIME 12:00
DATE				DATE 06/27/89	DATE 06/27/89
REFERENCE					

SURFACE CONDITIONS: Flower bed at southeast corner of the site.

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
			1.5		0	SP	Gravelly Sand. Dark yellowish brown (10YR 4/2), moist, poorly graded, trace rootlets and organic material - bits of bark, etc., engineered fill, no odor.
			649				
			567		1	CL	Silty Clay. Olive gray (5YR 4/1), damp, parting perp. to ground surface, parting surfaces have dark iron staining, abundant rootlets, strong product odor.
			98		2	SP	
			449				
			519		3	CL	
			277		4	SP	Sand. Dusky brown (5YR 2/2), moist, very fine to medium grained, poorly graded, very strong product odor. Sand becomes dark yellowish brown by 2.5ft., strong product odor.
			461				
			534		5		
			470				Clay as above in top portion of sample.
					6		
			909		7	SP	Same sand as above.
					8		
					9		Sand as above, saturated.
			16		10	SP	
			39		11		
					12		GLOBULES OF PRODUCT ON WATER WHEN SAMPLED.
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB2

Coordinates:

Elevation top of casing:

Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL		2.8			
TIME		15:30		TIME 12:25	TIME 13:20
DATE		6/28/89		DATE 06/27/89	DATE 06/27/89
REFERENCE		Grnd.			

SURFACE CONDITIONS: Garden area west of the garage on south side of the house.

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
			0		0	SP	Gravel and Sand Fill.
			89		1		Sand. Dark yellowish brown (10YR 4/2), saturated, fine to medium grained, poorly sorted, possible product odor.
			25		2	SP	
			716		3	SP	Interbedded Sand and Clay. Sand is dusky brown (5YR 2/2), very fine to medium grained, saturated, area of dark yellowish brown sand that is well sorted. Clay is medium gray (N5), slight to moderate plasticity, very strong product odor, high OVM readings came from both sand and clay.
			624		4		
			517		5		Sand. Olive gray (5YR 3/2) to grayish black (N2), saturated, very fine grained to medium grained, as above, very strong product odor.
			618		6	SP	Same Sand as above.
			658		7		As above.
			457		8	SP	
					9	SP	Rock at 9.5 ft. prevented further boring.
			365		10		
			286		11		SHEEN ON WATER SAMPLED.
			392		12		
			347		13		
			356		14		
			441		15		
					16		
					17		
					18		
					19		
					20		

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB3

Coordinates:

Elevation top of casing:

Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 14:35	TIME 15:15
DATE				DATE 06/27/89	DATE 06/27/89
REFERENCE					

SURFACE CONDITIONS: Beside sidewalk and walkway to house entrance on south end of house.

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG
			0		0	SP
			9		1	
			10		2	SP
			931		3	
			856		4	SP
			790		5	
			968		6	
			888		7	
			506		8	
					9	
					10	
					11	
					12	
					13	
					14	
					15	
					16	
					17	
					18	
					19	
					20	

Sand. Dark to dusky yellowish brown (10YR 4/2 to 10YR 2/2), saturated, poorly sorted, very fine grained to medium grained, mild product odor.

Sand (as above) except olive gray (5YR 4/1).

As above.

AUGER REFUSAL

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB4

Coordinates:

Elevation top of casing:

Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 11:55	TIME 14:25
DATE				DATE 06/29/89	DATE 06/29/89
REFERENCE					

SURFACE CONDITIONS: Located at the northernmost corner of the site

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
			0		0	SP	Gravelly, Sandy Fill.
			0		1		Sand. Dark yellowish brown (10YR 4/2), damp, very fine grained to medium grained, no odor.
					2	SP	As above.
			0		3		
			0		4	SP	
					5		As above, but mottled dark yellowish brown (10YR 6/6) and light olive gray (5YR 5/2).
			0		6		
					7	SP	
			0		8		As above, but saturated.
			0		9	SP	As above.
			0		10		As above.
					11		
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB5

Coordinates:

Elevation top of casing:

Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 14:30	TIME 16:20
DATE					
REFERENCE				DATE 06/29/89	DATE 06/29/89

SURFACE CONDITIONS: Northeast of the house between the garage and the wall.

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
			0		0	SP	Sandy Fill.
			41				
			263		1	CL	Clay. Olive gray (5YR 3/2), damp, moderately plastic, strong organic (product?) odor.
			254				
					2	SP	Sand. Dusky yellowish brown (10YR 2/2), very fine grained to medium grained, poorly sorted, strong product odor.
			136				
			162		3		As above, except moist, very strong organic and product odor.
			669				
					4	SP	As above, except moist.
			730				
			697		5		Sand. Light olive gray, wet.
			438		6		As above, except mottled dark yellowish brown (10YR 6/6) and light olive gray (5YR 5/2), increase in silt/clay.
			486				
			523		7	SP	
			201		8		
			9		9	SP	As above.
			10				
					10		
					11		
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB6

Coordinates:

Elevation top of casing:

Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 10:30	TIME 13:15
DATE				DATE 06/08/89	DATE 06/08/89
REFERENCE					

SURFACE CONDITIONS: In asphalt at center line on Gibbons Drive, southeast of site.

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
			0		0		Asphalt.
			185		1	SC	Soil with wood.
			225				Sand. Dark yellowish brown (10YR 4/2), moist, very fine grained to medium grained, poorly sorted, wood fibers in upper sample of upper sample tube, very strong product odor.
			343		2	SP	
			150		3		As above, except color change to olive gray (5YR 4/1).
			125				
			585		4	SP	As above, except saturated. Sample had obvious product in it, sheen was apparent throughout, trace clay, strong product odor.
			614		5		
			90				As above except increase in clay. Mottled dark yellowish brown (10YR 6/6) and light olive gray (5YR 5/2).
			38		6		
			6		7	SP	As above except decrease in clay.
			5		8		
			10		9	SP	As above except decrease in clay.
			7		10		
					11		WATER SAMPLE WAS 'VISCOUS' AND TURBID- PROBABLY HAD PRODUCT IN IT. BAILER INTO TSP CLEANER CREATED SHEEN ON WATER.
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB7

Coordinates:

Elevation top of casing:
Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 13:55	TIME 16:00
DATE					
REFERENCE				DATE 06/28/89	DATE 06/28/89

SURFACE CONDITIONS: In asphalt on center line of Gibbons Drive, south of site.

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
					0		Asphalt.
			300		1	SP	
			310				Sand. Olive gray (5YR 3/2), moist, very fine grained to medium grained, poorly sorted, moderate product odor.
			111		2		
			110				Sand. As above except slightly lighter.
			60		3		
			59			SP	
			81		4		Sand. As above except saturated and strong product odor.
			76				
			243		5	SP	Sand. As above except mottled dark olive gray (10YR 6/6) and light olive gray (5YR 5/2), moderate to strong product odor.
			221				
			255		6		As above, possible product odor.
			123				
			89		7	SP	
			68				
			5.3		8		As above, possible product odor.
			8.8				
			4		9	SP	As above, possible product odor.
			3				
			3.7		10		As above.
			4				
					11		WATER SAMPLE WAS 'VISCOUS'.
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING SB8

Coordinates:

Elevation top of casing:

Casing below surface:

CLIENT	SITE NUMBER	LOCATION
Chevron	SS 9-1153	3126 Fernside Drive Alameda, CA.

DRILLING AND SAMPLING METHODS: Sampled using hand-driven modified California Split Spoon Sampler with 1.5" diam. brass liners. Starting at 5ft borehole was hand augered to 4" diam. and sampling was hand taken with 1.5" diam. brass liner from the soil cuttings.

WATER LEVEL		5.2	
TIME		10:55	
DATE		06/29/89	
REFERENCE			

DRILLING START	DRILLING FINISH
TIME 09:15	TIME 10:50
DATE 06/29/89	DATE 06/29/89

SURFACE CONDITIONS: In asphalt on far side of Gibbons Drive, south of the site

DESCRIPTION by: C.B. Reaber

Inches Driven	Inches Recovered	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
			0		0		Asphalt.
			0		1	SP	Sand. Dusky brown (5yr 2/2) to moderate brown (5YR 3/4), moist, very fine grained to medium grained, poorly sorted, trace rootlets, possible organic odor - no product odor.
			0		2		
					3		Color change to mottled light brown (5YR 5/6) and light olive gray (5YR 6/1), wet, abundant rootlets, no odor.
			0		4	SP	
			0		5		As above.
					6		
			0		7	SP	As above, except saturated, increase in silty clay with depth.
			0		8		As above.
					9	SP	As above.
					10		
					11		
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

APPENDIX D

WELL SURVEY TABLE AND MAP

TABLE 1

WELL SURVEY RESULTS
FORMER CHEVRON SERVICE STATION #9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD.), ALAMEDA, CALIFORNIA

Well ID	*Well Address*	*City*	*Well Use*	*Distance From Site* (ft)*	*Total Depth (fbg)*
1?	3001 Gibbons Dr	Alameda	?	850	49
1e	401 High St	Oakland	EXT	950	31
1e	401 High St	Oakland	EXT	950	31
1e	401 High St	Oakland	EXT	950	29
1e	401 High St	Oakland	EXT	950	31
1e	401 High St	Oakland	EXT	950	29
1e	401 High St	Oakland	EXT	950	29
1e	401 High St	Oakland	EXT	950	31
1e	401 High St	Oakland	EXT	950	30
1e	401 High St	Oakland	EXT	950	33
1o	301 - 411 High St	Oakland	OTH	970	32
1i	2978 Northwood Dr	Alameda	IRR	1,180	55
2i	2936 Gibbons Dr	Alameda	IRR	1,490	40
1d	500 High St	Oakland	DOM	2,000	127
3i	3801 E 8th St	Oakland	IRR	2,350	180
1t	3801 E 8th St	Oakland	TES	2,350	23
4i	1522 E Shore Dr	Alameda	IRR	2,420	17
2t	720 High St	Oakland	TES	2,700	17

Notes/Abbreviations:
Well survey radius is 2,500 feet from the site. Results tabulated from a survey of Department of Water Resources Well Completion Reports conducted on July 20, 2010.
Ft = Feet.
Fbg = Feet below grade.
Well use/desginations include: domestic (DOM), irrigation (IRR), test (TES), extraction/vapor (EXT), no information found or given (?), and other (OTH).
* = Distances from site are approximate and measured using aerial photography.
-- = Not available/not applicable.
Note: Only MUN, DOM, IRR, EXT, TES, ABN, OTH and ? Wells included. Other types are not sensitive receptors.

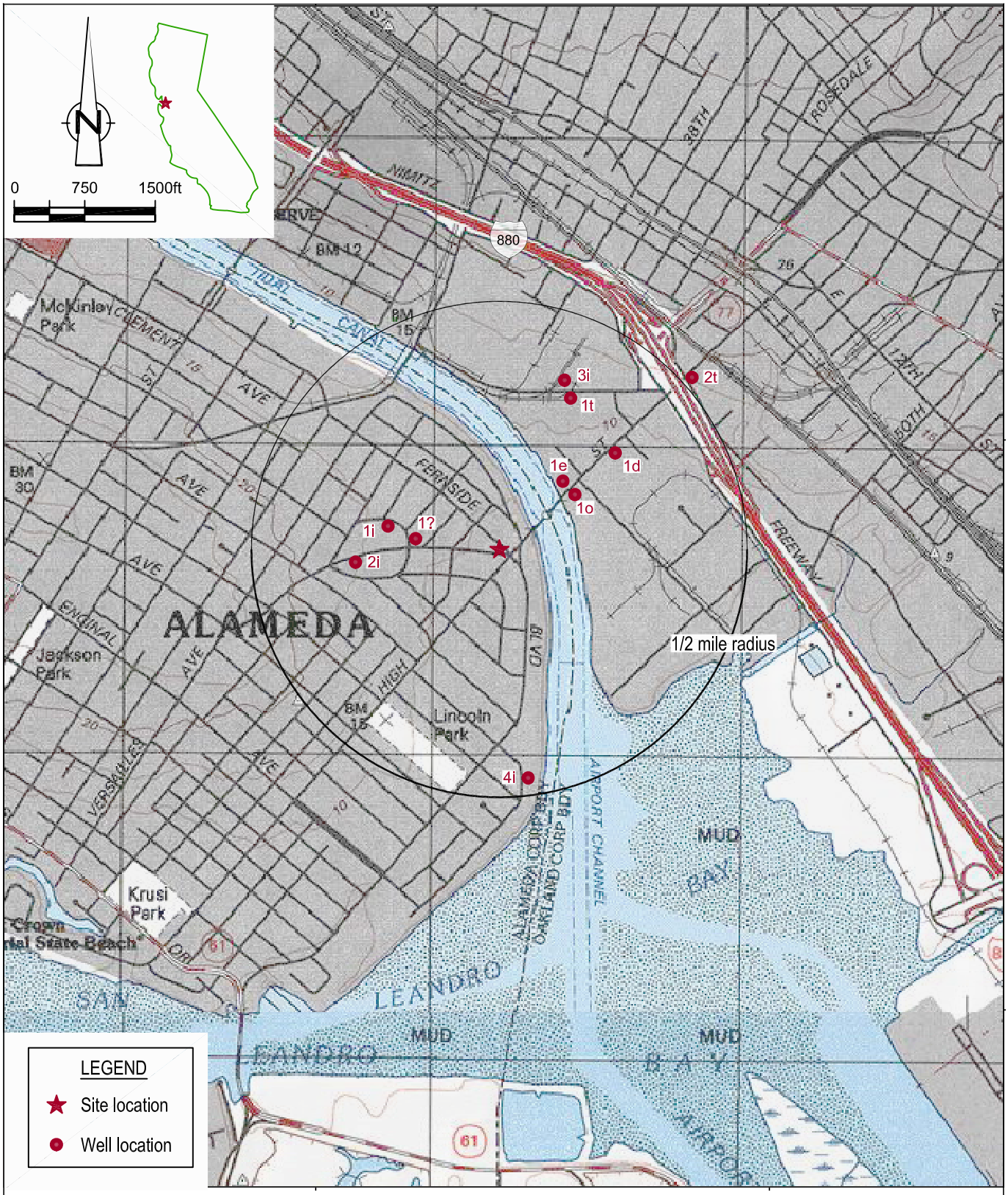


Figure 3

WELL SURVEY MAP
FORMER CHEVRON STTION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

I:\Chevron\3116--\311642 9-1153 Alameda\311642-FIGURES\311642-2010 GN-EM003.DWG

APPENDIX E

1994 GROUNDWATER EXTRACTION PERFORMANCE SUMMARY

Table 1. Performance Summary, Chevron Service Station #9-1153, 3126 Fernside Drive, Alameda, California

DATE SAMPLED	TOTAL FLOW (gallons)	FLOW BETWEEN READINGS	DAYS BETWEEN READINGS	AVERAGE FLOW (gpm)	NOTES
10/03/91 a	659	0	0	-	
10/07/91	821	162	4	0.03	
10/18/91	1,051	230	11	0.01	
10/28/91	2,017	966	10	0.07	
11/05/91	2,698	681	8	0.06	
11/15/91	3,546	848	10	0.06	
11/21/91	4,234	688	6	0.08	
12/05/91	5,130	896	14	0.04	
01/06/92	7,788	2,658	32	0.06	
01/28/92	8,961	1,173	22	0.04	
02/10/92	10,597	1,636	13	0.09	
02/18/92	15,181	4,584	8	0.40	
03/06/92	18,157	2,976	17	0.12	
03/13/92	18,991	834	7	0.08	
03/18/92	NM	NM	5	-	
03/24/92	21,042	2,051	6	0.24	
04/29/92	25,392	4,350	36	0.08	
05/12/92	29,862	4,470	13	0.24	
06/09/92	36,730	6,868	28	0.17	
07/14/92	39,950	3,220	35	0.06	
08/11/92	41,880	1,930	28	0.05	
09/09/92	44,043	2,163	29	0.05	
10/07/92	45,840	1,797	28	0.04	
11/10/92	48,742	2,902	34	0.06	
12/30/92	55,797	7,055	50	0.10	
01/12/93	59,091	3,294	13	0.18	
02/10/93	66,506	7,415	29	0.18	
03/09/93	70,412	3,906	27	0.10	
04/22/93	75,176	4,764	44	0.08	
05/10/93	76,443	1,267	18	0.05	
06/21/93	76,460	17	42	0.00	Discharge line found clogged. Cleaned and restarted
07/14/93	78,552	2,092	23	0.06	Pressure regulator repaired. System operational
08/19/93	79,848	1,296	36	0.03	
09/09/93	80,514	666	21	0.02	Carbon drum #1 changed out.
09/17/93	80,722	208	8	0.02	
10/15/93	81,160	438	28	0.01	
10/19/93	81,242	82	4	0.01	Autodialer installed.
10/28/93	82,019	777	9	0.06	Autodialer indicated system off on 11/29/93.
12/07/93	84,316	2,297	40	0.04	System operational when inspected.
03/22/94	94,022	9,706	105	0.06	
04/13/94	95,922	1,900	22	0.06	
04/26/94	97,331	1,409	13	0.08	
05/31/94	99,850	2,519	35	0.05	System shut off indefinitely.

Notes:
a = Values for 10/3/91 thru 2/18/92 based on data collected by EA Engineering, Science, and Technology, Lafayette, CA
gpm = gallons per minute

Table 2. Summary of Analytic Results, Chevron Service Station #9-1153, 3126 Fernside Drive, Alameda, California

DATE SAMPLED	LAB	SYSTEM INFLUENT TPH-G	B	E	T	X	SYSTEM MIDPOINT First Carbon Effluent TPH-G	B	E	T	X	SYSTEM EFFLUENT Second Carbon Effluent TPH-G	B	E	T	X
		parts per billion (ppb)														
10/03/91 a	SPA	47,000	7,100	1,300	4,100	4,900	<50	2.1	0.5	1.3	1.7	<50	<0.5	<0.5	<0.5	<0.5
10/07/91	SPA	29,000	57,000	1,000	4,100	4,800	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
10/18/91	SPA	40,000	4,600	660	2,300	2,700	<50	<1	<3	<3	<3	<50	<1	<3	<3	<3
10/28/91	SPA	9,500	900	190	790	1,000	<50	<0.5	<0.5	1.4	<0.5	<50	<0.5	<0.5	1.4	<0.5
11/05/91	SPA	14,000	2,700	330	1,600	1,500	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
11/15/91	SPA	12,000	3,700	300	1,700	1,300	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
11/21/91	SPA	15,000	4,000	360	2,600	1,800	NA	NA	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5
12/05/91	SPA	15,000	3,200	290	1,800	1,400	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
01/06/92	SPA	2,000	340	35	190	170	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
01/28/92	SPA	5,300	1,600	100	730	490	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
02/10/92	SPA	27,000	8,700	520	2,800	1,500	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
02/18/92	SPA	22,000	5,700	420	2,800	1,500	88	25	1.5	11	5.6	<50	<0.5	<0.5	<0.5	<0.5
03/06/92	SPA	16,000	2,700	150	940	640	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
03/13/92	SPA	33,000	9,200	520	4,300	2,600	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
03/18/92	SPA	42,000	17,000	720	5,200	2,700	<50	1.4	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
03/24/92	SPA	5,800	5,500	250	1,600	870	<50	1.0	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
04/29/92	SPA	24,000	3,400	260	1,300	1,100	<50	0.7	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
05/12/92	SPA	11,000	1,400	120	600	680	<50	1.2	0.6	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
06/09/92	SPA	48,000	8,600	820	4,500	3,700	<50	1.0	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
07/14/92	SPA	66,000	9,900	1,300	7,400	6,800	<50	0.9	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
08/11/92	SPA	85,000	11,000	1,600	7,500	7,400	<50	1.3	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
09/09/92	SPA	3,400	840	<5	34	220	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
10/07/92	SPA	52,000	9,100	1,100	4,800	5,000	51	2.1	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
11/07/92	SPA	60,000	13,000	920	5,000	4,500	59	3.9	<0.5	0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
12/30/92	SPA	17,000	1,600	150	800	1,200	78	14	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5

-- Table 2 continues on next page --

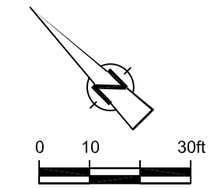
Table 2. Summary of Analytic Results, Chevron Service Station #9-1153, 3126 Fernside Drive, Alameda, California (continued)

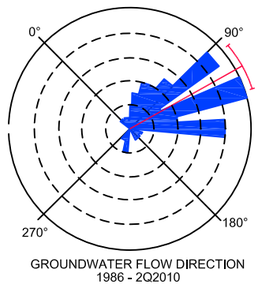
DATE SAMPLED	LAB	SYSTEM INFLUENT TPH-G	B	E	T	X	SYSTEM MIDPOINT First Carbon Effulent TPH-G	B	E	T	X	SYSTEM EFFLUENT Second Carbon Effluent TPH-G	B	E	T	X
		parts per billion (ppb)														
01/19/93	SPA	110,000	16,000	1,300	12,000	6,000	99	25	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
02/10/93	SPA	89,000	6,900	1,300	11,000	7,700	150	32	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
03/09/93	SPA	110,000	18,000	570	13,000	6,500	220	57	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5
04/22/93	SPA	190,000	17,000	2,700	20,000	14,000	910	180	18	22	4.9	<50	<0.5	<0.5	<0.5	<1.5
05/10/93	SPA	150,000	19,000	2,500	18,000	14,000	440	180	<0.5	0.9	<1.5	<50	<0.5	<0.5	<0.5	<1.5
06/21/93	SPA	58,000	7,500	1,800	15,000	11,000	510	160	<0.5	1.2	2.1	<50	<0.5	<0.5	<0.5	<1.5
07/14/93	SPA	67,000	6,600	1,700	7,800	14,000	400	250	<0.5	1.8	<1.5	<50	<0.5	<0.5	<0.5	<1.5
08/19/93	SPA	82,000	8,400	1,200	4,300	9,000	640	210	<0.5	1.2	<1.5	<50	<0.5	<0.5	<0.5	<1.5
09/17/93	SPA	53,000	6,700	940	3,000	6,200	<50	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<1.5
03/22/94	SPA	71,000	17,000	1,100	10,000	6,100	<50	1.6	<0.5	0.6	<0.5	<50	<0.5	<0.5	<0.5	<0.5

Abbreviations:
a = Values for 10/3/91 thru 2/18/92 based on data collected by EA Engineering, science, and Technology, Lafayette, CA
NA = Not Available
TPH-G = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
B = Benzene By EPA Method 8020
E = Ethlybenzene by EPA Method 8020
T = Tolueneby EPA Method 8020
X = Xylenes by EPA Method 8020
<n = Not detected at detection limit of n ppb
SPA = Superior Precision Analytical Lab, San Francisco, California

APPENDIX F

SOIL VAPOR SAMPLING LOCATIONS

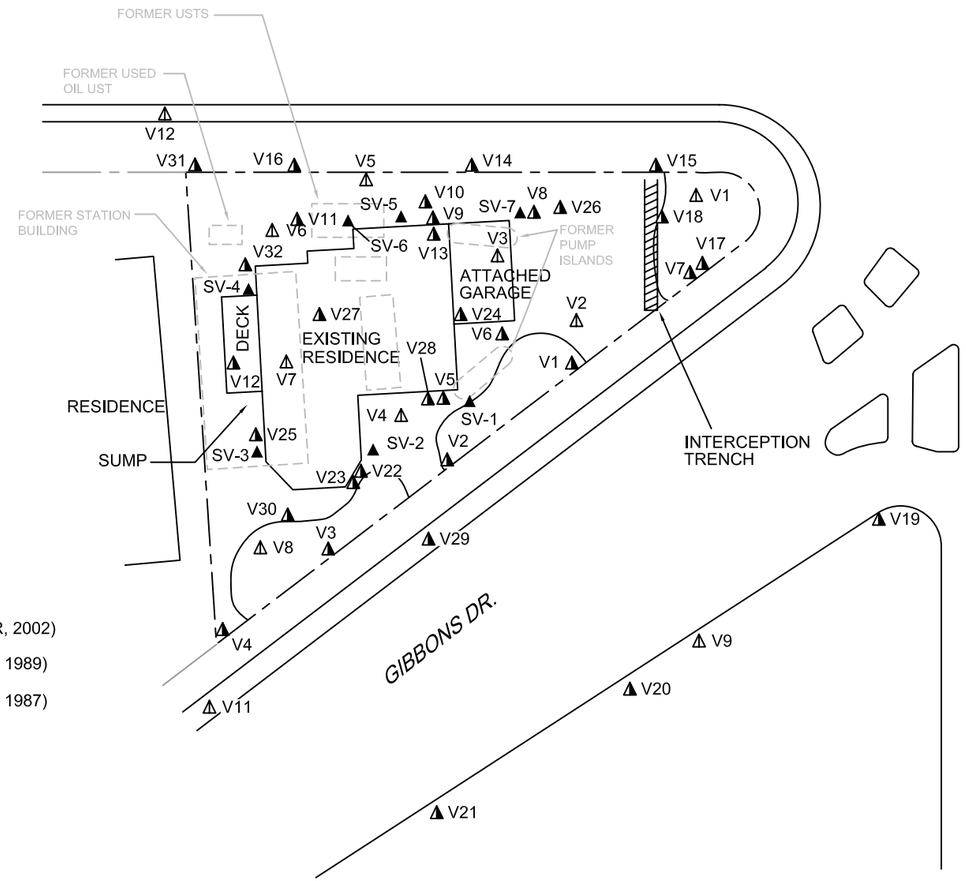




GROUNDWATER FLOW DIRECTION
1986 - 2Q2010

LEGEND

- ▲ SOIL VAPOR SAMPLE LOCATION (G-R, 2002)
- ◭ SOIL VAPOR SAMPLE LOCATION (EA, 1989)
- ◬ SOIL VAPOR SAMPLE LOCATION (EA, 1987)



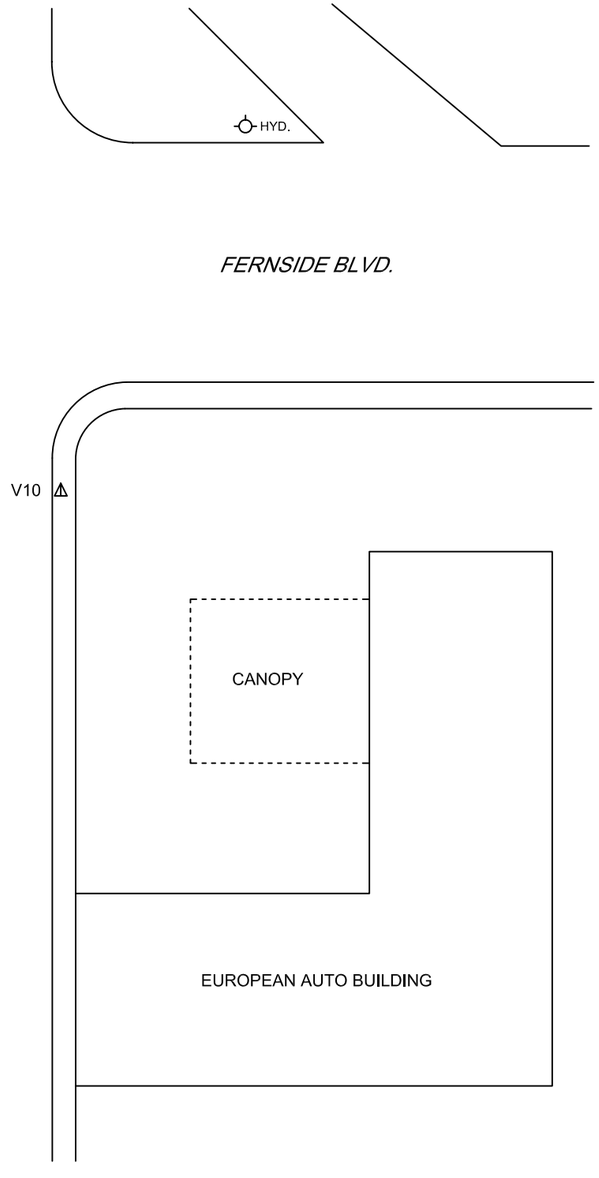


Figure 1

SITE PLAN with SOIL VAPOR SAMPLE LOCATIONS
FORMER CHEVRON SERVICE STATION 9-1153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

311642-2010 (012)GN-EM003 DEC 16/2010

APPENDIX G

DEGRADATION CALCULATIONS

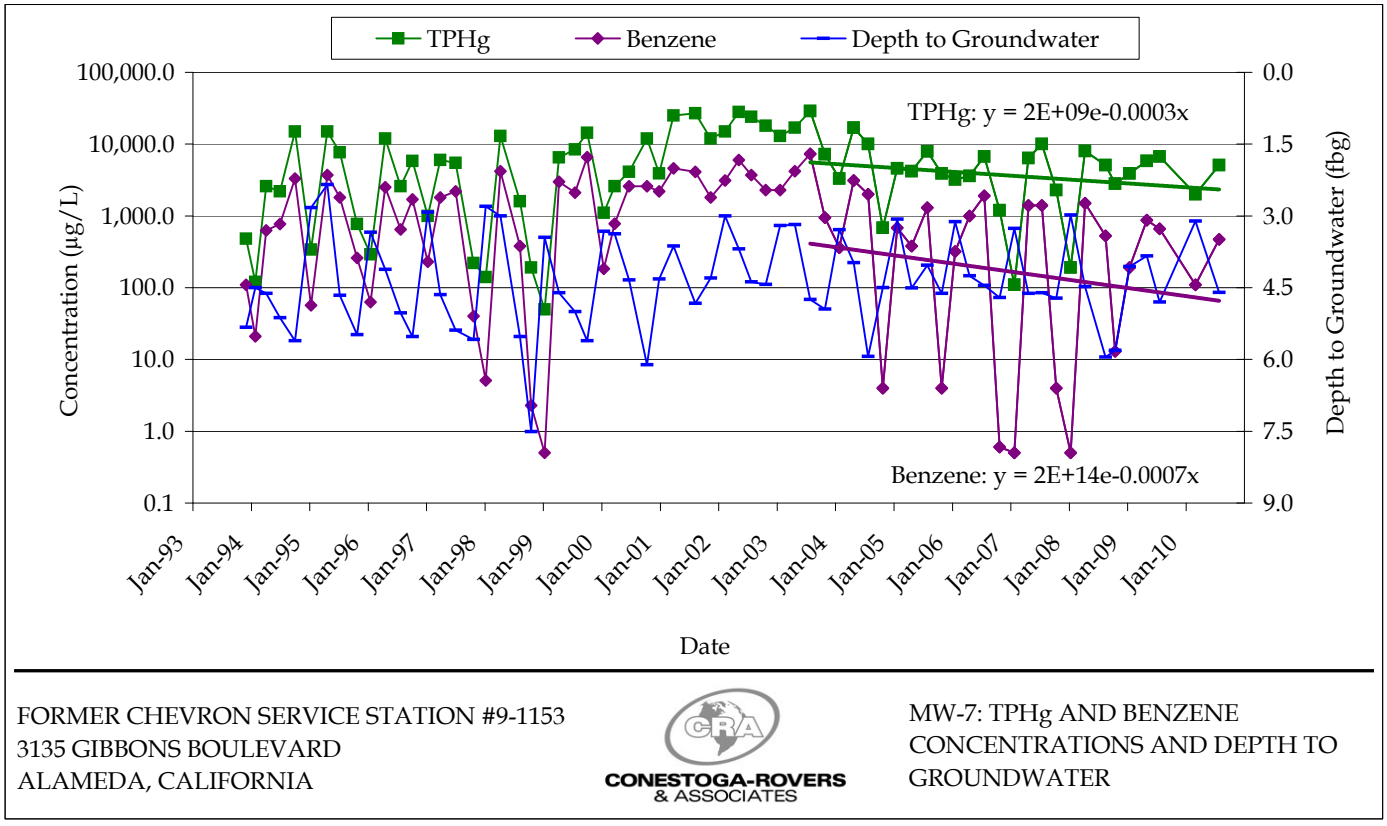
Predicted Time to Reach Environmental Screening Levels (ESL) in Well MW-7

Former Chevron Service Station #9-1153, 3135 Gibbons Boulevard, Alameda, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L; a = decay constant
b = concentration at time (x); x = time (x) in days

		Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)	Benzene
Given				
Environmental Screening Levels (ESL) :		y	100	1
Constant:		b	2.05E+09	2.18E+14
Constant:		a	-3.39E-04	-7.13E-04
Starting date for current trend:			8/15/2003	8/15/2003
Calculate				
Attenuation Half Life (years):	(-ln(2)/a)/365.25		5.60	2.66
Estimated Date to Reach ESL:	(x = ln(y/b) / a)		Feb 2036	Sep 2026



FORMER CHEVRON SERVICE STATION #9-1153
3135 GIBBONS BOULEVARD
ALAMEDA, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-7: TPHg AND BENZENE CONCENTRATIONS AND DEPTH TO GROUNDWATER