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January 13, 2012

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

RECEIVED

5:21 pm, Jan 17, 2012

Alameda County
Environmental Health

Re: Chevron Facility # 9-1583

Address: 5509 Martin Luther King Jr. Way, Oakland, California

I have reviewed the attached report titled Updated Site Conceptual Model and Case Closure Request and dated January 13, 2012.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by 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.

Sincerely,

Olivia Skance
Project Manager

Enclosure: Report



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TRANSMITTAL

DATE: January 13, 2012 **REFERENCE NO.:** 611960
PROJECT NAME: Former Chevron 9-1583 (RO2)
TO: Mr. Mark Detterman, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Please find enclosed: Draft Final
 Originals Other _____
 Prints

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 Overnight Courier Other Upload to ftp site

QUANTITY	DESCRIPTION
1	Updated Site Conceptual Model and Case Closure Request

As Requested For Review and Comment
 For Your Use Final reports _____

COMMENTS:

Copy to: Evelyn Schlichting Trust
c/o Mr. Ben Shimek
Petroleum Sales, Inc.

Completed by: James Kiernan
 [Please Print]

Signed: 

Filing: Correspondence File



UPDATED SITE CONCEPTUAL MODEL AND CASE CLOSURE REQUEST

**FORMER CHEVRON STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA
CASE NO. RO0000002**

Prepared For:

**Mr. Mark Detterman, P.G., C.E.G.
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577**

**JANUARY 13, 2012
REF. NO. 611960 (4)**

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**Prepared by:
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UPDATED SITE CONCEPTUAL MODEL AND CASE CLOSURE REQUEST

FORMER CHEVRON STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA
CASE NO. RO0000002

David W. Herzog, P.G

James P. Kiernan, P.E.



JANUARY 13, 2012
REF. NO. 611960 (4)

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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) has prepared this *Updated Site Conceptual Model and Case Closure Request* on behalf of Chevron Environmental Management Company (Chevron) for former Chevron service station 9-1583 located at 5509 Martin Luther King Jr. Way in Oakland, California. Based on our review of the site background and conditions, the site meets the San Francisco Bay Regional Water Quality Control Board (RWQCB) criteria for closure as a low-risk groundwater case as described in their January 5, 1996 memorandum entitled *Interim Guidance on Required Cleanup at Low-Risk Fuel Sites*. Presented below are the site description and background, site conditions and discussion of remaining impacts, an evaluation of potential risk, the rationale for closure based on the low-risk criteria, and our conclusions and recommendations.

2.0 SITE DESCRIPTION AND BACKGROUND

The site is located on the northwest corner of the intersection of Martin Luther King Jr. Way (formerly Grove Street) and 55th Street (Figure 1), and is currently occupied by a Super Stop gas station. Existing station facilities include three 10,000-gallon fuel underground storage tanks (USTs), four dispenser islands, and a station building. The site is bounded by Martin Luther King Jr. Way to the east, 55th Street to the south, a single-family residential property to the west, and single- and multi-family residential properties to the north.

The site was occupied by a Chevron service station from approximately 1968, when Chevron first leased the property, through 1998. In addition to the existing facilities, a 1,000-gallon used-oil UST, three hydraulic hoists, and an oil-water clarifier were also present at the site. The four USTs reportedly were installed in 1984; no information regarding previous USTs is known. Since that time, the product piping has been upgraded (1989), the used-oil UST removed (1995), the hydraulic hoists and clarifier removed (1998), and the dispensers upgraded (1998). Chevron sold the station facilities in November 1998. The site has been occupied by the Super Stop station since 2003. The USTs appear to have been reconfigured sometime after 2003, as three grades of gasoline and diesel are currently dispensed at the site. Current and former site features are shown on Figure 2.

Environmental work has been ongoing since 1983 and has included the installation of monitoring wells MW-1 through MW-8 and soil vapor wells VP-1 through VP-5, the drilling of borings B-1 through B-5, and confirmation sampling during UST and fueling system removal/upgrade work. Remedial activities have consisted of over-excavation

during product piping upgrade work and used-oil UST removal (approximately 105 cubic yards); and removal of a small volume of light non-aqueous phase liquid (LNAPL) from MW-3 via hand bailing in 1992. A summary of the environmental work is presented in Appendix A. The approximate well, boring, and soil sample locations, and the excavation extents, are shown on Figure 2. The historical soil, groundwater, and soil vapor analytical results are presented in Tables 1 through 3, respectively.

Land use in the vicinity of the site is mixed commercial and residential. A 76 service station is present to the south of the site across 55th Street. This facility was a fuel release case that was closed in 2010 (former BP #11127 at 5425 Martin Luther King Jr. Way; ACEH Case No. RO0000241).

3.0 SITE CHARACTERISTICS

3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located in the East Bay Plain groundwater sub-basin¹, approximately 1.5 miles east of San Francisco Bay, and 2 miles north of Lake Merritt. The basin is an elongated, northwest-trending, flat alluvial plain occupying approximately 115 square miles. The bottom of the basin is the contact between the consolidated and unconsolidated sediments, which can occur at maximum depths of 1,000 feet. The Oakland Sub-area consists of a series of alluvial fan deposits. There are no well-defined estuarine mud units that act as aquitards for groundwater migration². Designated beneficial uses for groundwater according to the basin plan include municipal, industrial, and agricultural uses.

The site elevation is approximately 85 feet above mean sea level and local topography slopes gently to the west-southwest toward San Francisco Bay. Soil in the site vicinity consists of Holocene-age, medium-grained alluvium consisting of unconsolidated, moderately sorted, fine sand, silt, and clayey silt with a few thin beds of coarse sand³. These materials are underlain by late Pleistocene-age alluvium consisting of weakly consolidated, slightly weathered, poorly sorted, interbedded clay, silt, sand, and gravel.

-
- ¹ RWQCB, 2007, San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), January 18.
 - ² Department of Water Resources Bulletin 118 (Basin Number 2-9.04).
 - ³ Helley E. J., et al., 1979, Flatland Deposits of the San Francisco Bay Region, California: U.S. Geological Survey Professional Paper 943.

3.2 SITE GEOLOGY AND HYDROGEOLOGY

Soil encountered beneath the site has predominantly been clay with some silt and trace sand to the maximum explored depth of 26.5 feet below grade (fbg). South of the site, soil has included minor discontinuous clayey to silty sand and sand bedding. Copies of the historical site boring logs are presented in Appendix B. Geologic cross-sections depicting the best available information on the shallow subsurface are presented on Figures 3 and 4.

Groundwater was encountered during drilling at depths ranging from approximately 10 to 18 fbg. Depth to groundwater in the site wells has ranged from approximately 6.5 to 16 feet below top of casing (TOC), but typically fluctuates between 8 and 13 feet below TOC. The historical range of groundwater elevations measured in the wells is shown on the cross-sections (Figures 3 and 4).

Prior to 1995, the calculated groundwater flow direction was consistently to the north-northwest toward San Francisco Bay. Following the installation of wells MW-7 and MW-8 in the northwest portion of the site, the flow direction appeared to shift approximately 180 degrees to the east-southeast. CRA reviewed historic monitoring data to evaluate why the flow direction appeared to shift away from the expected direction, and concluded that the apparent shift was due to differences in well elevation survey data. Wells MW-1 through MW-6 were surveyed in 1990 using the National Vertical Geodetic Datum (NVGD 1929) as the reference datum, while wells MW-7 and MW-8 were surveyed in 1994 using the North American Vertical Datum of 1988 (NAVD 88) as the reference datum. The measured groundwater elevations in MW-7 and MW-8 were consistently 1 to 2 feet higher than those in the remaining wells, resulting in the calculated flow direction being to the southeast. There reportedly is a difference between NVGD 1929 and NAVD 88 of approximately 0.835 meters (2.74 feet). CRA had all the site wells resurveyed in 2009 using the same reference datum, and corrected the previous groundwater elevations in MW-7 and MW-8 with the new data, resulting in a groundwater flow direction to the northwest (see rose diagram on Figure 2). The updated survey data along with the well construction details are presented in Table 4.

3.3 NEARBY WELLS AND SENSITIVE RECEPTORS

Nearby Wells

In 2002, Delta Environmental Consultants, Inc. (Delta) reviewed California Department of Water Resources (DWR) and Alameda County Public Works Agency (ACPWA) files

to identify any water-supply wells within 2,000 feet of the site. One well was identified within the search radius: an industrial well approximately 1,400 feet northwest (downgradient). Delta also identified a cathodic protection well as being within the radius; however, this well was mapped incorrectly and was not within 2,000 feet of the site. A copy of Delta's August 1, 2002 Sensitive Receptor Survey report is presented in Appendix C.

A well survey conducted in 2010 by ARCADIS for the former BP facility identified one irrigation and two industrial wells within ½-mile, along with numerous non-water supply wells. Details were not available, however, the irrigation well was located upgradient, and the wells located downgradient were approximately ½-mile from the facility and predominantly monitoring wells (Appendix C).

Sensitive Receptors

Also in 2010, ARCADIS performed an internet search to identify any sensitive receptors within 2,500 feet of the former BP facility. Three schools were identified; however, all were located at least 1,200 feet southwest (crossgradient).

As previously mentioned, residential properties are located to the north and west of the site (Figure 2). In 2011, CRA also performed an internet search to identify any potential sensitive receptors within ½-mile of the site and identified the following:

- VAT Daycare - 900 feet southwest
- Santa Fe Elementary School - 1,200 feet southwest
- Children's Hospital & Research Center - 1,400 feet south-southeast
- Oakland High School - 1,700 feet southwest
- Grace Children's Center - 2,400 feet southwest

As shown above, all the identified potential sensitive receptors are located up- or crossgradient of the site.

Local Water Supply

The local water supply is provided by East Bay Municipal Utility District (EBMUD); the source is the Mokelumne River Basin in the Sierra Nevada range. Shallow groundwater in the site area is not likely to be used as a drinking water source in the foreseeable future.

Nearest Surface Water Body

The nearest surface water body appears to be Temescal Creek approximately 1,400 feet south (up- to crossgradient). However, the creek in this area is shown as an underground culvert. A map showing the creek location is presented in Appendix C.

3.4 PREFERENTIAL PATHWAYS

Underground utilities identified within the streets to the east and south of the site included storm drain, sanitary sewer, electric, telephone, and water lines buried at depths of 4 to 22 fbg; however, these utilities are in the upgradient direction and thus not likely preferential pathways of concern.

4.0 CONSTITUENTS OF CONCERN

4.1 SOIL

Based on the historical data, the primary constituent of concern (COC) in remaining soil (i.e. not excavated) is total petroleum hydrocarbons as gasoline (TPHg). However, TPHg was only detected in one onsite soil sample (SS-1) (670 milligrams per kilogram [mg/kg]). As shown in Table 1, TPHg was also detected in two of the soil samples collected from the borings for wells MW-5 and MW-6; however, these wells are upgradient of the site and therefore the detections are likely attributable to the former BP facility. Benzene, toluene, ethylbenzene, and xylenes (BTEX) are less significant COCs in soil, as they were only detected at low concentrations in two samples (benzene only in one sample at 0.7 mg/kg).

Total recoverable petroleum hydrocarbons (TRPH) were detected in the four soil samples collected from the used-oil UST excavation. This excavation was subsequently deepened to below groundwater and thus no additional samples were collected. Regardless, heavier-end hydrocarbons such as TRPH exhibit characteristics of low mobility and low toxicity in the environment and would not be expected to significantly migrate vertically or horizontally away from the tank area. Therefore, TRPH does not appear to be a COC in soil.

TPH as diesel (TPHd), methyl tertiary butyl ether (MTBE) and other fuel oxygenates, volatile organic compounds (VOCs), and semi-VOCs generally were not detected in any of the soil samples analyzed with the exception of low TPHd and trace MTBE in one sample each (Table 1); therefore, none of these constituents appear to be COCs in soil.

4.2 GROUNDWATER

Based on the historical data, the primary COCs remaining in groundwater are TPHg and MTBE. However, TPHg only remains in well MW-8, and only at a low concentration (120 micrograms per liter [$\mu\text{g}/\text{L}$]). Only low concentrations of MTBE (up to 5 $\mu\text{g}/\text{L}$) remain in four of the wells. BTEX have not been detected since at least 2008 and ethanol was not detected in any of the wells. Other fuel oxygenates, 1,2-dichloroethane (1,2-DCA) and 1,2-dibromoethane (EDB) were not detected in groundwater samples collected in 2007 (Table 2). Only low concentrations of TPHd historically were detected. Therefore, these constituents are not COCs in groundwater.

TPH as motor oil (TPHmo) is present in wells MW-7 and MW-8. However, as mentioned above, heavier-end hydrocarbons are not a significant concern with regards to potential risk to human health or the environment. Therefore, TPHmo is not a primary COC in groundwater.

5.0 PETROLEUM HYDROCARBON SOURCES AND DISTRIBUTION

5.1 RELEASE SOURCE AND VOLUME

Based on previous investigations and UST/piping removal confirmation sampling, the primary source(s) of the released petroleum hydrocarbons appears to be the former USTs and dispensers. Although the volume of released hydrocarbons is unknown, approximately 100 cubic yards of impacted soil was excavated and removed. This remedial action has adequately mitigated the release as evidenced by decreasing hydrocarbon concentrations in groundwater and lack of dissolved-phase BTEX.

5.2 POTENTIAL OFFSITE SOURCES

The upgradient former BP facility may potentially be contributing to the impacts at the site. Wells MW-5 and MW-6 are located just downgradient of the former BP facility. While petroleum hydrocarbons generally have not been detected in MW-5, MW-6 historically contained MTBE. As low concentrations of MTBE are present beneath the subject site, the MTBE may, at least partially, have originated from this offsite facility.

5.3 PETROLEUM HYDROCARBONS IN SOIL

As described above, the COCs were only detected in two onsite soil samples. The trace concentration of toluene detected in the soil sample collected at 3 fbg from boring B-1 just downgradient of the fuel USTs is insignificant. Therefore, based on the analytical results, the COCs in soil primarily remain only in the area of the northeast dispenser (sample SS-1). The exact depth of this sample is unknown, but it reportedly was collected from the base of the excavation just above groundwater. As such, the COCs in soil are not expected to extend a significant depth below the water table; therefore, the vertical extent of hydrocarbons in soil in this area appears adequately defined. Based on the results of surrounding samples and borings, the lateral extent is limited and adequately defined. As this sample was collected in 1989, concentrations likely have decreased due to natural attenuation processes. Therefore, no further investigation is warranted.

5.4 PETROLEUM HYDROCARBONS IN GROUNDWATER

Groundwater has been monitored since 1990. Wells MW-7 and MW-8 are currently sampled semi-annually during the first and third quarters, and wells MW-1 through MW-6 are sampled annually during the first quarter. A copy of the most recent (second semi-annual 2011) groundwater monitoring report is presented in Appendix D.

As mentioned above, TPHg is only detected in MW-8; concentrations in this well have significantly decreased and only low concentrations remain. TPHg has not been detected in the remaining wells since at least 2007. Low concentrations (maximum of 5 µg/L) of MTBE remain in MW-1, MW-3, MW-7, and MW-8; the MTBE concentrations in these wells have also significantly decreased. MTBE is no longer detected in MW-6 and generally has not been detected in the remaining wells. A groundwater concentration map is presented on Figure 5.

A comparison of the historical maximum and most recent TPHg, benzene, and MTBE concentrations in the wells is presented in Table A below.

TABLE A COMPARISON OF MAXIMUM AND MOST RECENT CONCENTRATIONS IN GROUNDWATER (concentrations in µg/L)						
Well ID	TPHg		Benzene		MTBE ^a	
	Max Conc.	Most Recent Conc.	Max Conc.	Most Recent Conc.	Max Conc.	Most Recent Conc.
MW-1	14,000,000 (1-8-93)	<50 (1-25-11)	12,000 (1-8-93)	<0.5 (1-25-11)	61 (1-12-04)	5 (1-25-11)
MW-2	4,600 (2-8-91)	<50 (1-25-11)	1,200 (10-5-92)	<0.5 (1-25-11)	2 (7-22-08)	<0.5 (1-25-11)
MW-3	250,000 (1-8-93)	<50 (1-25-11)	5,000 (1-8-93)	<0.5 (1-25-11)	43 (7-14-03)	4 (1-25-11)
MW-4	65 (5-8-91)	<50 (1-25-11)	17 (2-8-91)	<0.5 (1-25-11)	<0.5 (all)	<0.5 (1-25-11)
MW-5	880 (7-17-92)	<50 (1-25-11)	2.6 (7-17-92)	<0.5 (1-25-11)	<0.5 (all)	<0.5 (1-25-11)
MW-6	56 (5-8-91)	<50 (1-25-11)	4 (1-5-94)	<0.5 (1-25-11)	25 (1-12-04)	<0.5 (1-25-11)
MW-7	1,200 (3-8-94)	<50 (7-12-11)	440 (3-8-94)	<0.5 (7-12-11)	44 (7-27-04)	2 (7-12-11)
MW-8	28,000 (3-8-94)	120 (7-12-11)	3,000 (8-4-94)	<0.5 (7-12-11)	110 (1-12-04)	3 (7-12-11)
a	Only results obtained using EPA Method 8260 reported					
<	Not detected at or above stated laboratory reporting limit					

In January 2007, grab-groundwater samples were collected from borings B-1 through B-4 advanced adjacent to the fuel USTs and dispensers. As shown in Table 2, up to 4,500 µg/L TPHg and 5 µg/L MTBE were detected in B-1 and B-2. These results are consistent with historical monitoring data from nearby wells MW-1 and MW-3. However, the detected concentrations likely were greater than actual conditions due to the presence of sediment in the grab samples.

With the exception of TPHmo in MW-7 and TPHg in MW-8, all other constituents in groundwater do not exceed the most conservative environmental screening levels (ESLs⁴) established by the RWQCB in May 2008. Degradation trend analysis estimates that TPHg in MW-8 will reach the ESL (100 µg/L) by November 2013 (Appendix E). Although not a significant concern, an estimate was also performed for TPHmo in MW-7, and indicated it would reach the ESL (also 100 µg/L) by February 2057; note that

4. San Francisco Bay Region RWQCB, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, interim final-November 2007 (revised May 2008); Table A: Shallow Soil (<3 m bgs) – Water is a current or potential source of drinking water.

the data indicates a change in groundwater conditions in 2007, thus, the data after 2006 was used to represent the current trend. Given the municipal water supply, the lack of nearby receptors, the limited extent of impact, and the location of the site in the City of Oakland, these timeframes are reasonable.

5.4.1 EXTENT OF DISSOLVED HYDROCARBONS

The extent of dissolved petroleum hydrocarbons in groundwater is adequately defined in all directions except downgradient (northwest). However, historical monitoring data indicate that hydrocarbon migration downgradient of the site is likely not significant and does not pose a significant threat to human health or the environment given the lack of nearby groundwater receptors, and no additional assessment is warranted, as further discussed below.

The Domenico multi-dimensional advection-dispersion model for contaminant transport⁵ was used to predict the extent of petroleum hydrocarbons in groundwater downgradient of the site. The Domenico model requires site-specific input for the groundwater seepage velocity and constituent degradation constant. For groundwater seepage velocity, a flow rate was calculated using the following equation⁶:

$$v_s = Ki/n_e$$

Where;

v_s = seepage velocity

K = hydraulic conductivity (0.0283 feet per day⁷ for clay with silt and sand)

i = gradient (0.01 - site specific)

n_e = average effective porosity (0.02³)

Given these values, the calculated groundwater seepage velocity is approximately 0.014 feet per day.

As petroleum hydrocarbons migrate in groundwater, concentrations decline through natural mechanical and biological processes. At this site, recent concentrations in groundwater downgradient would not be expected to exceed maximum concentrations

⁵ Domenico, P.A., 1987, An analytical model for multidimensional transport of a decaying contaminant species: *Journal of Hydrology*, 91; pp. 49-58.

⁶ Kuo, J., 1999, *Practical Design Calculations for Groundwater and Soil Remediation*: CRC Press LLC, Boca Raton FL.

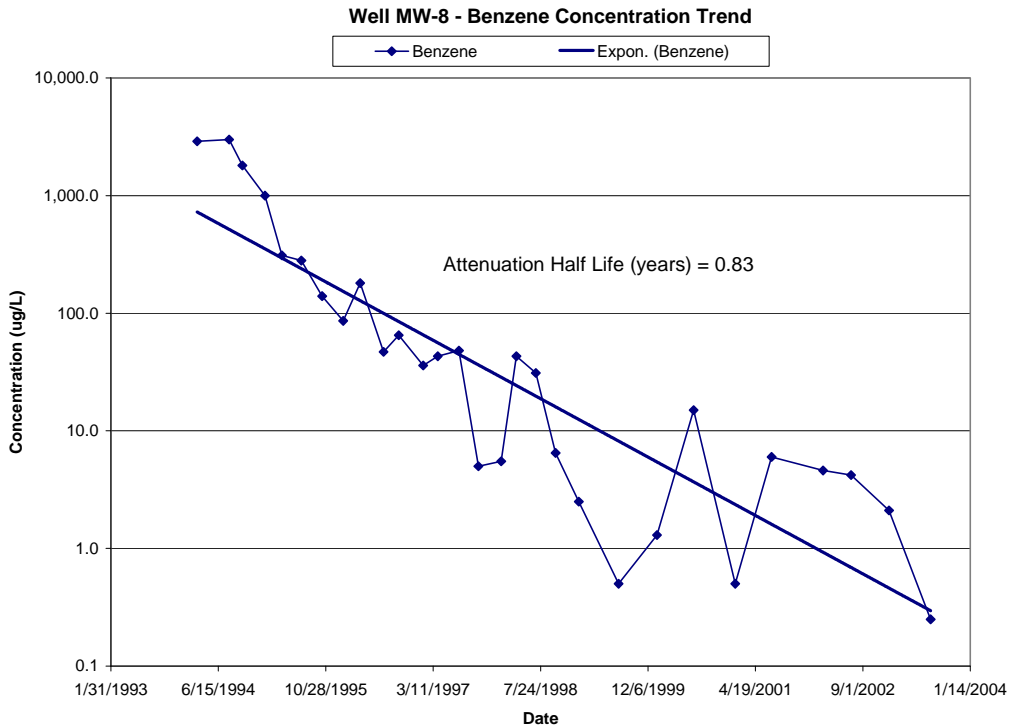
⁷ Fetter, C.W., 1994, *Applied Hydrogeology*: Macmillan College Publishing Company, Inc., New York.

observed in MW-8, located at the downgradient boundary of the site. Since shallow groundwater in the site area is not a potential source of drinking water, the only significant potential concern to downgradient receptors is inhalation risk via vapor intrusion. Table B below presents a comparison of the historical maximum concentrations detected in MW-8 with the respective groundwater ESLs associated with vapor intrusion concerns at residential sites.

TABLE B COMPARISON OF HISTORICAL MAXIMUM GROUNDWATER CONCENTRATIONS IN MW-8 TO ENVIRONMENTAL SCREENING LEVELS		
<i>Constituent of Concern</i>	<i>Historical Maximum Concentration (µg/L)</i>	<i>Residential Groundwater ESL for Potential Vapor Intrusion Concerns⁸ (µg/L)</i>
TPHg	28,000	(Use Soil Gas)
Benzene	3,000	540
Toluene	1,300	380,000
Ethylbenzene	1,200	170,000
Xylenes	6,800	160,000
MTBE	110	24,000

As shown above, the only constituent that historically exceeded the respective ESL is benzene; all other constituents were at least two orders of magnitude below the ESLs and thus appear to pose no significant inhalation risk to downgradient receptors. TPHg does not have a corresponding ESL and requires direct screening of soil gas. TPHg in soil vapor is discussed below in Section 5.5. Although benzene is no longer detected in MW-8, it was generally detected from the start of monitoring in 1994 through 2003. The attenuation rate of benzene in MW-8 (using the historical maximum of 3,000 µg/L from 1994) is shown below.

⁸. San Francisco Bay Region RWQCB, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, interim final-November 2007 (revised May 2008); Table E-1: Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns.



The calculated rate of benzene degradation in MW-8 gives a first-order attenuation half-life of 0.83 years (303 days). Constituent half-life in days is equivalent to the degradation constant times 0.6931, which results in a benzene degradation constant of 0.00229 per day. The Domenico calculation predicting the extent of benzene migration downgradient of MW-8 is presented in Appendix F. According to the model, the benzene concentration in groundwater 15 feet downgradient of MW-8 is 268 µg/L, which is below the ESL of 540 µg/L for potential vapor intrusion concerns. Based on this information and the building configuration and use on adjacent properties, there does not appear to be a significant vapor intrusion risk as no habitable structures are present within this distance downgradient of the site. The Domenico model also predicts that benzene in groundwater will attenuate within 55 feet of MW-8. Based on the modeling results, no further downgradient assessment is warranted.

5.5 PETROLEUM HYDROCARBONS IN SOIL VAPOR

In September 2008, soil vapor samples were collected from wells VP-1 through VP-5 to evaluate potential vapor intrusion concerns for site workers and offsite receptors. As seen in Table 3, TPHg was detected in all the wells at concentrations ranging from 550 to 330,000 micrograms per cubic meter (µg/m³). The highest concentration was detected in VP-2 located on the west side of the site. TPHd was detected in VP-2 (6,900 µg/m³) and VP-4 (920 µg/m³), but the concentrations did not exceed the

residential (most conservative) ESL of 10,000 µg/m³. Benzene, considered the primary risk driver for vapor intrusion as it is a known human carcinogen, was not detected in any of the wells.

The detected TPHg concentrations in VP-2 (330,000 µg/m³), VP-4 (38,000 µg/m³), and VP-5 (46,000 µg/m³) exceeded both the commercial/industrial (29,000 µg/m³) and residential (10,000 µg/m³) ESLs associated with vapor intrusion concerns. As stated by the RWQCB, the ESLs are considered to be conservative and are based on hydrocarbon composition typical of freshly dispensed fuel that has not been degraded and still has a significant aromatic (carcinogenic) component. The TPHg results reported by the laboratory incorporate many different compounds. Therefore, to further evaluate the components that comprise the detected TPHg in VP-2, VP-4, and VP-5, the laboratory reported the top 20 tentatively identified compounds (TICs) in each sample and also provided a breakdown of the percentage of aliphatic and aromatic compounds. A copy of the laboratory analytical report including the TIC results is presented in Appendix G. Based on the TIC results, the TPHg range compounds in soil vapor consisted of 92 to 100 percent aliphatic hydrocarbons, which are non-carcinogenic. The only identified aromatic compound (tris[trimethylsilyl]este-arsenous-acid [C₉H₂₇AsO₃Si₁₃]) was in the sample from VP-5 and is an herbicide compound, and thus not related to the case. None of the identified aliphatic compounds have associated ESLs. Based on this information, it does not appear that TPHg range petroleum hydrocarbons in soil vapor beneath and downgradient of the site pose a significant vapor intrusion risk.

6.0 LOW-RISK GROUNDWATER CRITERIA

The site appears to meet the RWQCB criteria for classification as a low-risk groundwater case. As described in the January 5, 1996 memorandum, a low-risk groundwater case has the following general characteristics:

- The leak has been stopped and ongoing sources, including LNAPL, have been removed or remediated.
- The site has been adequately characterized.
- The dissolved hydrocarbon plume is stable, decreasing, and not migrating.
- No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.
- The site presents no significant risk to human health or the environment.

Each low-risk groundwater case criteria, as it relates to the site, is discussed below.

6.1 THE LEAK HAS BEEN STOPPED AND ONGOING SOURCES, INCLUDING LNAPL, HAVE BEEN REMOVED OR REMEDIATED

All original potential sources of the petroleum hydrocarbon release(s) (former USTs, dispensers, and product piping) were removed. The site is currently an active station with three USTs. Remedial excavation was performed to remove hydrocarbon mass. Based on the decreasing concentrations in groundwater, any residual impacted soil is not acting as a continuing source of hydrocarbons to groundwater that would reverse these trends.

In October 1992, LNAPL (approximate thickness of 0.24 feet) was observed in MW-3. Weekly bailing was subsequently performed in November and December 1992 and approximately 270 milliliters of LNAPL were removed. The bailing was discontinued when only sheen was observed, and LNAPL has not been observed in MW-3 since third quarter 1993 (0.01 foot). Based on this information, the leak has been stopped and ongoing sources have been removed.

6.2 THE SITE HAS BEEN ADEQUATELY CHARACTERIZED

Soil sample analytical results indicate that residual impact is limited and the lateral and vertical extents have been adequately defined. Groundwater monitoring has been performed since 1990. Declining hydrocarbon concentration trends in groundwater indicate that the plume is shrinking, and based on degradation rates does not pose a threat to onsite or downgradient receptors and is adequately characterized. Concentrations are expected to continue to decrease over time due to natural attenuation. The soil vapor analytical results indicate that the constituents detected do not appear to pose a significant vapor intrusion risk. Based on this information, the extent of impact has been defined to the degree necessary to demonstrate that the site does not present a significant threat to human health or the environment.

6.3 THE DISSOLVED HYDROCARBON PLUME IS STABLE, DECREASING, AND NOT MIGRATING

Petroleum hydrocarbon concentrations in groundwater have been steadily decreasing since the start of monitoring, which is indicative of a shrinking plume. Although some migration of dissolved hydrocarbons likely occurred historically, gasoline plumes do not tend to detach and the documented declining trends indicate that the plume is shrinking. Natural attenuation is expected to continue to reduce the remaining

concentrations to background levels. The remaining TPHmo and TPHg concentrations in groundwater are estimated to reach the ESLs by 2085 and 2013, respectively.

**6.4 NO WATER WELLS, DEEPER DRINKING
WATER AQUIFERS, SURFACE WATER, OR OTHER
SENSITIVE RECEPTORS ARE LIKELY TO BE IMPACTED**

The recent well survey did not identify any water supply wells within 2,000 feet of the site in the downgradient direction. An industrial well was previously identified approximately 1,400 feet northwest of the site; if this well remains, based on this distance it is not likely to be impacted by dissolved hydrocarbons from the site. The nearest surface water body is located upgradient and is not at risk. With the exception of the downgradient residential properties, no sensitive receptors were identified within ½-mile downgradient. With regards to the residential properties, the water supply is municipal, and based on the modeling results the concentrations of fuel constituents downgradient will not exceed ESLs associated with potential vapor intrusion concerns. Therefore, there does not appear to be a significant risk to these receptors.

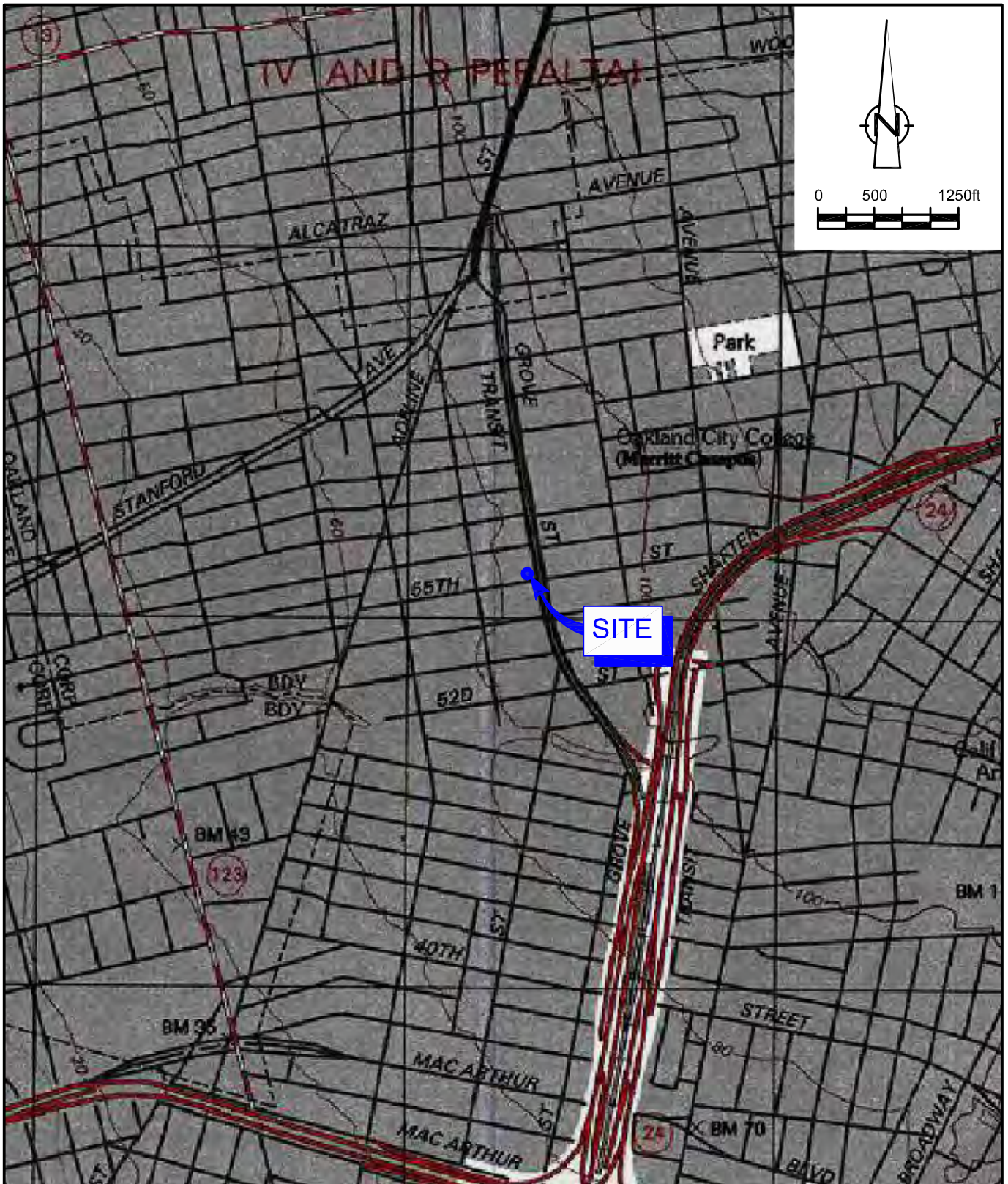
**6.5 THE SITE PRESENTS NO SIGNIFICANT RISK
TO HUMAN HEALTH OR THE ENVIRONMENT**

Little to no residual petroleum hydrocarbon impact was identified in remaining soil beneath the site. Additionally, as the site is generally capped with the existing development, potential exposure to any residual impacted soil by the general public is precluded. As the site is an active gas station, the remaining hydrocarbons in groundwater and soil vapor do not appear to pose a significant risk to site workers. The TIC analysis indicated no significant vapor intrusion risk. The modeling results indicate no significant risk to downgradient residential receptors. Based on this information, the site does not pose a significant risk to human health or the environment under the current and expected continued future land use scenario.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the site conditions and analytical data, the site satisfies the RWQCB criteria for classification as a low-risk groundwater case. No further assessment appears warranted. Remaining petroleum hydrocarbons in soil, groundwater, and soil vapor do not appear to pose a significant risk to human health or the environment under the current land use scenario. The site is expected to remain a gas station for the foreseeable future. Therefore, on behalf of Chevron, CRA respectfully requests the site be considered for low-risk case closure.

FIGURES

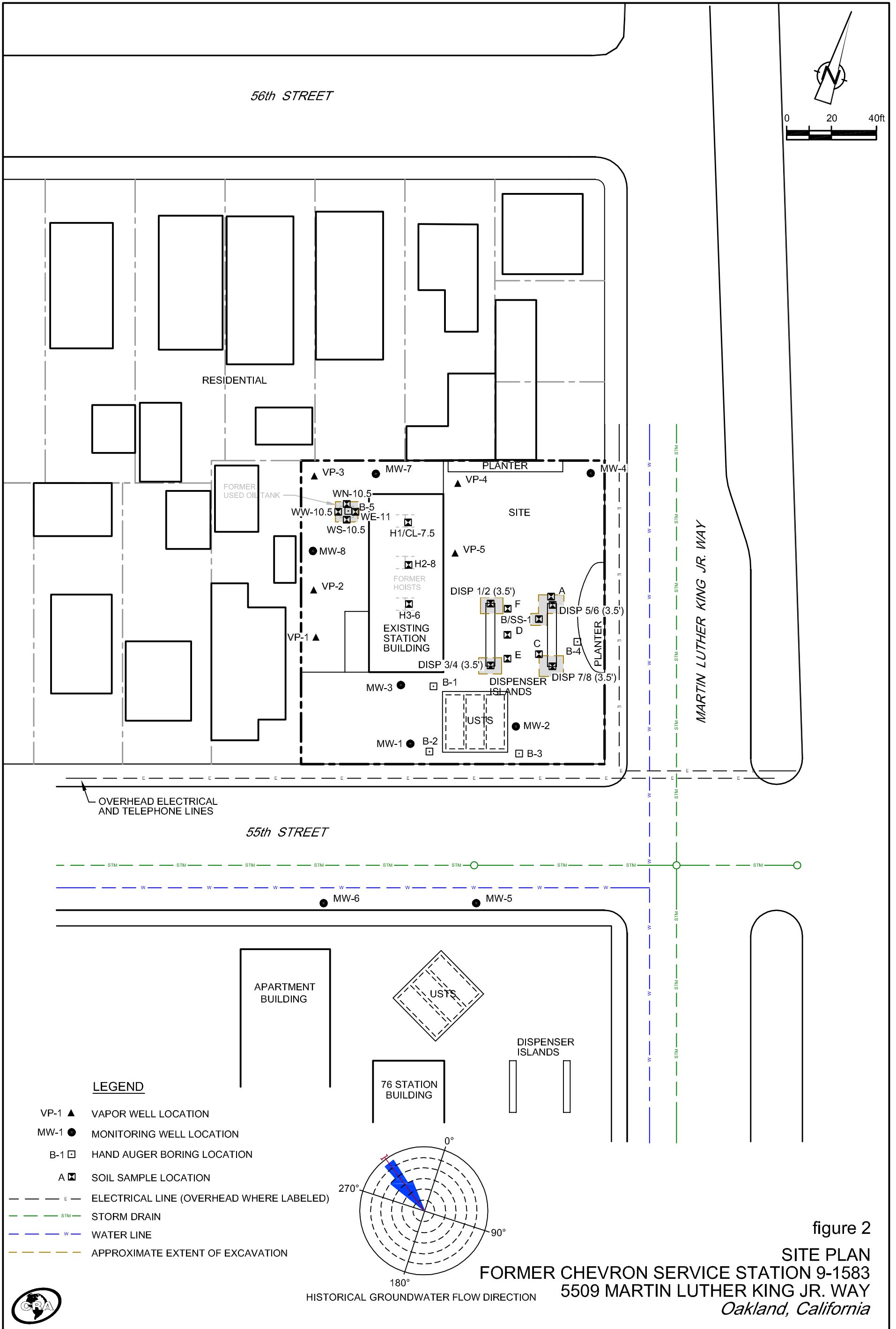


SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP
 FORMER CHEVRON SERVICE STATION 9-1583
 5509 MARTIN LUTHER KING JR. WAY
 Oakland, California





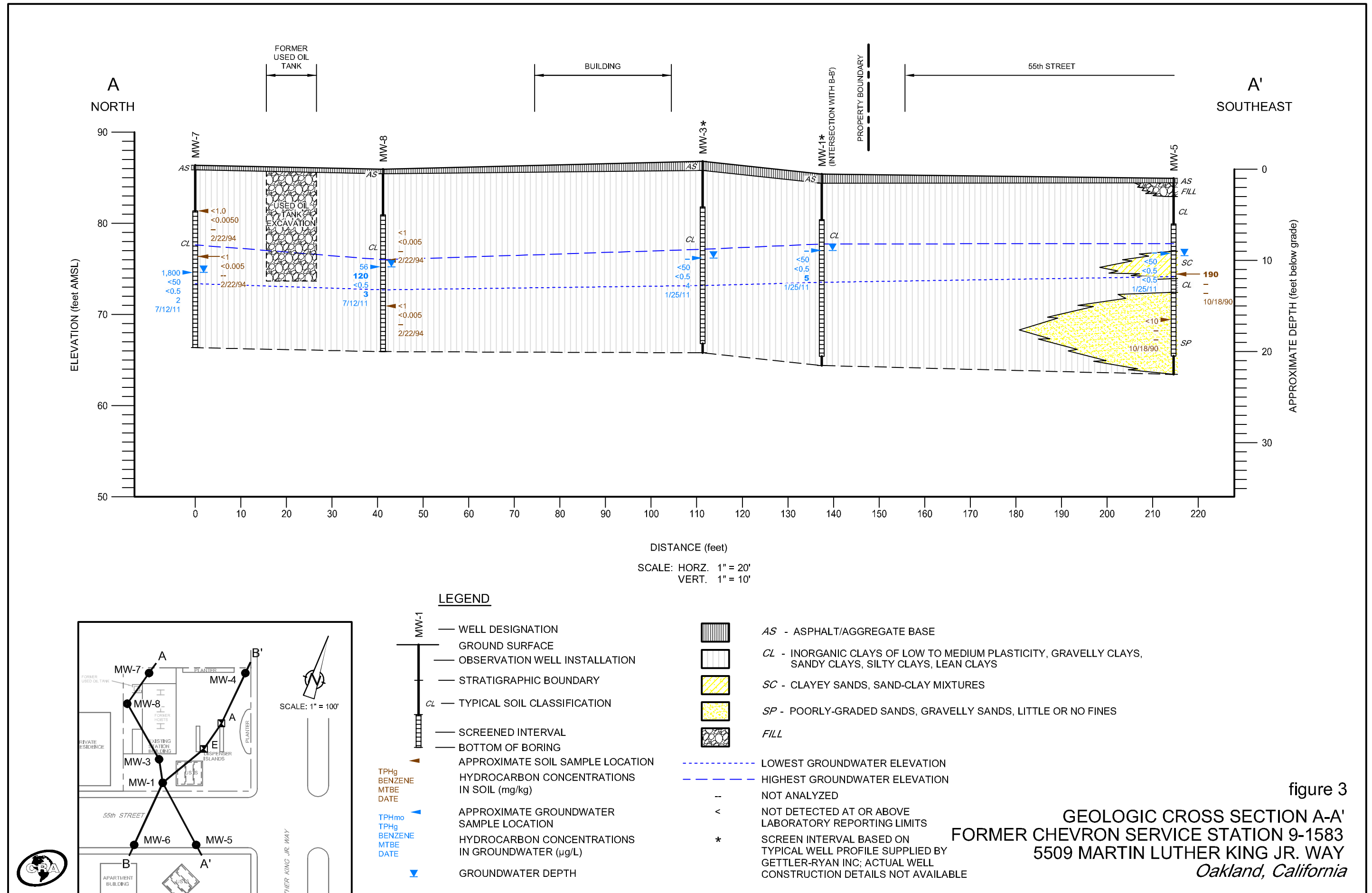


figure 3

GEOLOGIC CROSS SECTION A-A'
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
Oakland, California

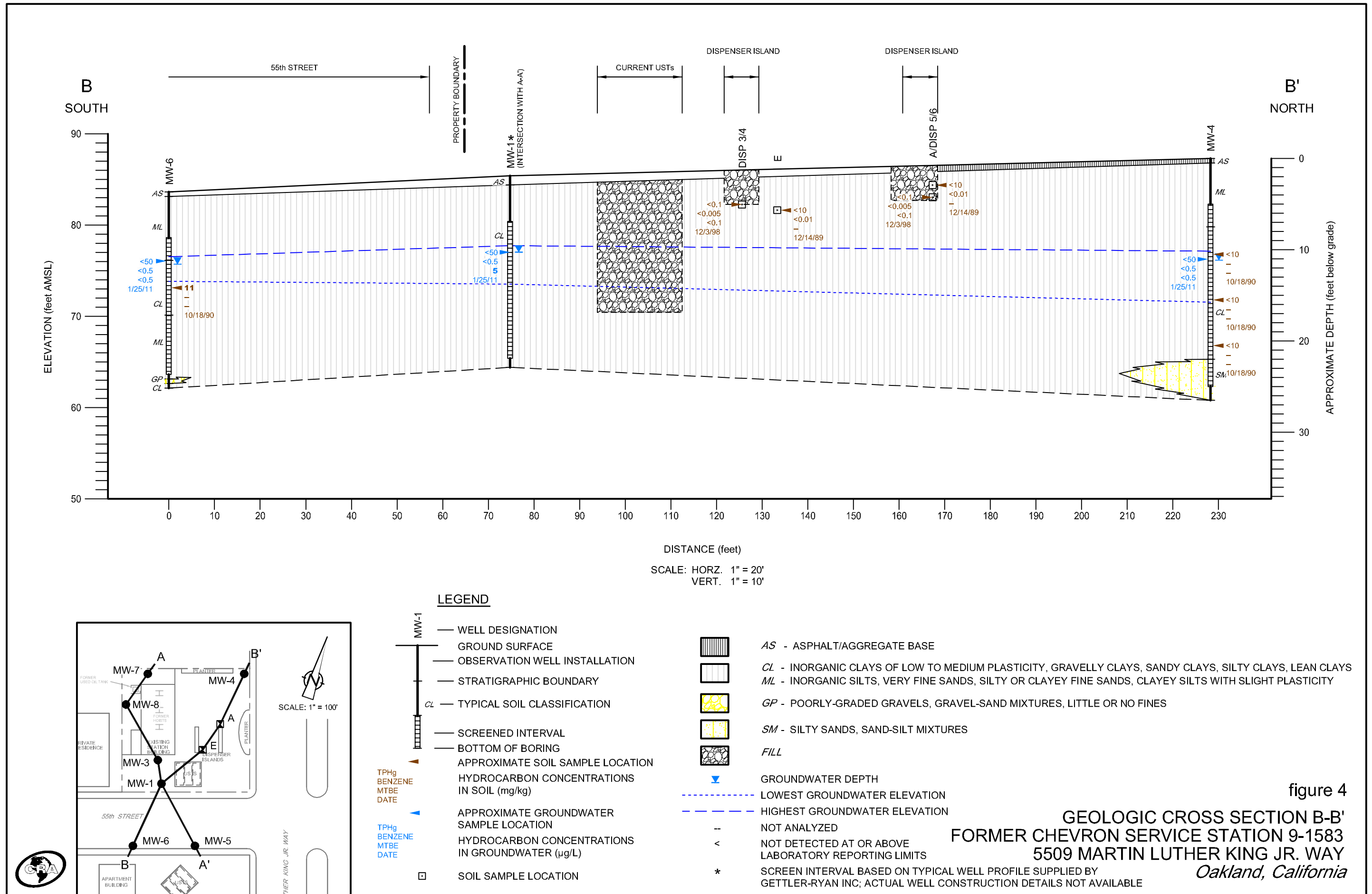


figure 4

GEOLOGIC CROSS SECTION B-B'
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
Oakland, California

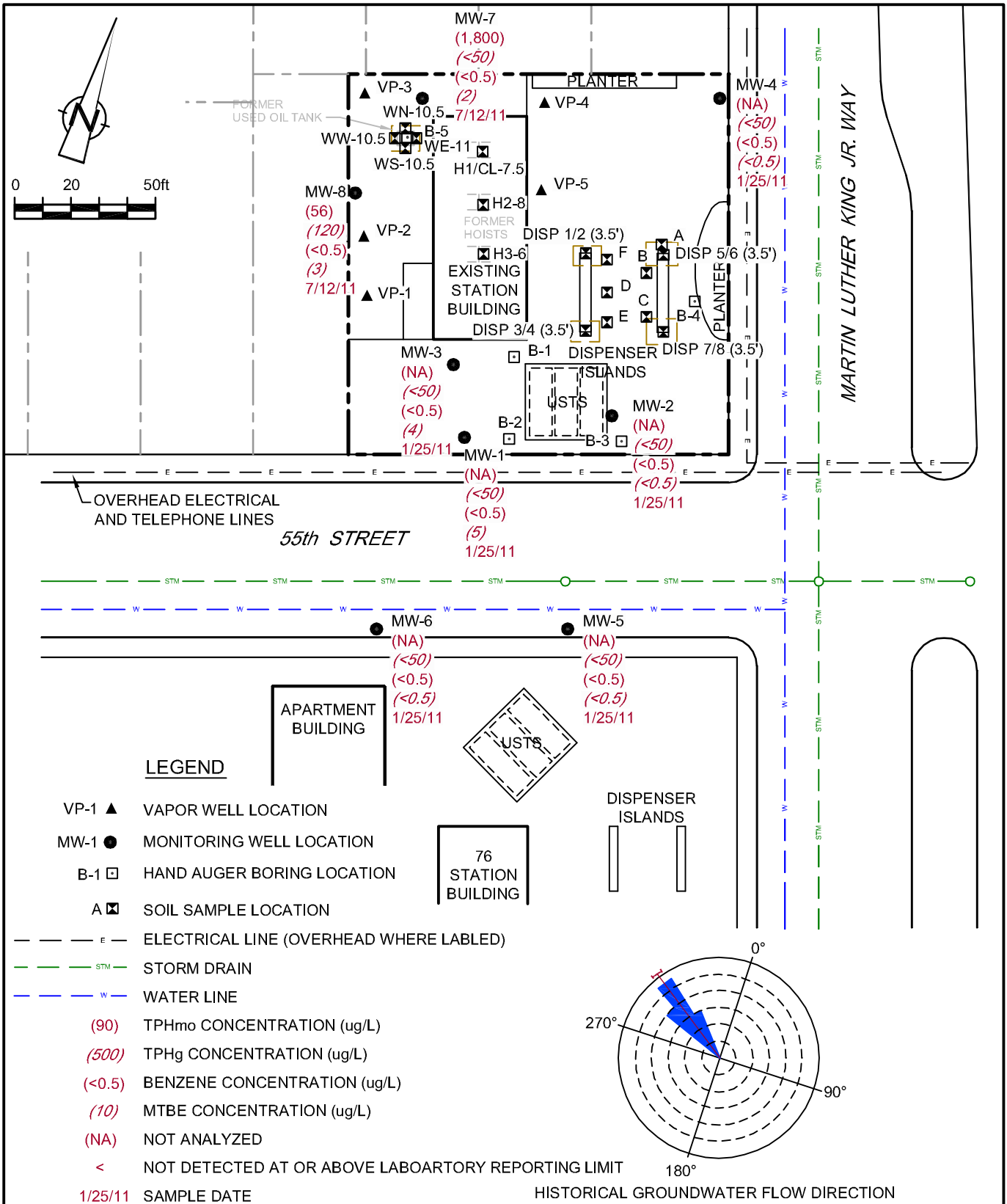


figure 5

GROUNDWATER CONCENTRATION MAP - 2011
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
Oakland, California



TABLES

TABLE 1

**SOIL SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA**

Sample/Boring ID	Sample Depth (fbg)	Date Sampled	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TRPH	TPHlf	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	HVOCs	Semi-VOCs	Cadmium	Chromium	Lead	Nickel	Zinc
<i>Concentrations reported in milligrams per kilogram (mg/kg)</i>																								
Piping Upgrade Sampling																								
A	2	12/14/89	--	<10	<0.01	<0.01	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B	3	12/14/89	--	1,700	0.14	9.7	14	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	3.5	12/14/89	--	<10	<0.01	<0.01	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	4.5	12/14/89	--	<10	<0.01	<0.01	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E	4.5	12/14/89	--	<10	<0.01	<0.01	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F	3.5	12/14/89	--	<10	<0.01	<0.01	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SS-1	Unknown	12/15/89	--	670	0.7	1.2	0.96	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Monitoring Well Borings																								
MW-4	10.5	10/18/90	--	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15.5	10/18/90	--	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20.5	10/18/90	--	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	10.5	10/18/90	--	190	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15.5	10/18/90	--	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10.5	10/18/90	--	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	5	2/22/94	--	<1	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15	2/22/94	--	<1	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10	2/22/94	--	<1	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15	2/22/94	--	<1	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Used-Oil Tank Removal																								
WE-11	11.0	4/17/95	75	<1.0	<0.005	<0.005	<0.005	<0.005	--	770	--	--	--	--	--	--	--	ND	ND	0.6	45	<5.0	55	72
WW-10.5	10.5	4/17/95	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	--	220	--	--	--	--	--	--	--	ND	ND	0.53	46	<5.0	61	68
WN-10.5	10.5	4/17/95	--	--	--	--	--	--	--	2,700	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WS-10.5	10.5	4/17/95	--	--	--	--	--	--	--	76	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hoist/Clarifier Removal																								
H/CLR-7.5	7.5	11/5/98	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.025	<33.3	<10	--	--	--	--	--	--	ND	ND	<1.0	32.1	<7.5	40.8	44
H2-8	8	11/5/98	--	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	--	--
H3-8	8	11/5/98	--	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	--	--
Dispenser Upgrade Sampling																								
Disp 1/2 (3.5')	3.5	12/3/98	--	<0.1	<0.005	<0.005	<0.005	<0.005	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Disp 3/4 (3.5')	3.5	12/3/98	--	<0.1	<0.005	<0.005	<0.005	<0.005	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Disp 5/6 (3.5')	3.5	12/3/98	--	<0.1	<0.005	<0.005	<0.005	<0.005	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Disp 7/8 (3.5')	3.5	12/3/98	--	<0.1	<0.005	<0.005	<0.005	<0.005	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Exploratory Borings																								
B-1	3	1/4/07	--	<1.0	<0.0005	0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	6	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	9	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	0.0006	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--

TABLE 1

**SOIL SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA**

Sample/Boring ID	Sample Depth (fbg)	Date Sampled	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TRPH	TPHhf	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	HVOCs	Semi-VOCs	Cadmium	Chromium	Lead	Nickel	Zinc
B-2	3	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	6	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	9	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
B-3	3	1/3/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	6	1/3/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	9	1/3/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
B-4	3	1/3/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	6	1/3/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	8	1/3/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
B-5	3	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
	5	1/4/07	--	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
Soil Vapor Well Borings																								
VP-1	3	8/26/08	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	--	--	--	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
VP-2	3	8/26/08	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	--	--	--	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
VP-3	3	8/26/08	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	--	--	--	<0.021	<0.001	<0.001	--	--	--	--	--	--	--
VP-4	3	8/26/08	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	--	--	--	<0.020	<0.001	<0.001	--	--	--	--	--	--	--
VP-5	3	8/26/08	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	--	--	--	--	--	<0.020	<0.001	<0.001	--	--	--	--	--	--	--

Abbreviations/Notes:

fbg = feet below grade

mg/kg = milligrams per kilogram

TPHd and TPHg = Total petroleum hydrocarbons as diesel and gasoline, respectively

MTBE = Methyl tertiary butyl ether

TRPH = Total recoverable petroleum hydrocarbons

TPHhf = Total petroleum hydrocarbons as hydraulic fluid

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

TBA = Tertiary butyl alcohol

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

HVOCs = Halogenated volatile organic compounds

Semi-VOCs = Semi-volatile organic compounds

<x = Indicates constituent not detected at or above the stated laboratory reporting limit

-- = Not analyzed

ND = Not detected; reporting limits vary

Note: shaded samples were collected from soil that was later excavated

**GRAB-GROUNDWATER SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND , CALIFORNIA**

<i>Boring ID</i>	<i>Date Sampled</i>	<i>TPHg</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethyl-benzene</i>	<i>Xylenes</i>	<i>MTBE</i>	<i>DIPE</i>	<i>ETBE</i>	<i>TAME</i>	<i>TBA</i>	<i>1,2-DCA</i>	<i>EDB</i>
Concentrations reported in micrograms per liter (µg/L)													
B-1	1/4/07	2,600	<0.5	<0.5	0.9	<0.5	2	<0.5	<0.5	<0.5	<2	<0.5	<0.5
B-2	1/4/07	4,500	<0.5	<0.5	<0.5	<0.5	5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
B-3	1/3/07	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
B-4	1/3/07	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5

Abbreviations/Notes:

TPHg = Total petroleum hydrocarbons as gasoline

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

TBA = Tertiary butyl alcohol

1,2 DCA= 1,2-dichloroethane

EDB= 1,2-dibromoethane

<x = Not detected at or above stated laboratory reporting limits

TABLE 3

SOIL VAPOR SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA

Sample ID	Sample Date	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TBA	1,2-DCA	EDB	Ethanol	Iso-octane	Helium	Oxygen	Carbon dioxide
		← Concentrations reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) →											← Reported in percent →			
VP-1	9/11/08	<170	550	<7.5	<8.9	<10	<10	<8.5	<28	<9.5	<18	<18	<11	<0.24	14	6.8
VP-2	9/11/08	6,900	330,000	<52	<62	<71	<71	<59	<200	<66	<130	<120	17,000	<0.12	16	8.7
VP-3	9/11/08	<180	540	<3.9	<4.6	<5.4	<5.4	<4.4	<15	<5.0	<9.5	<9.3	<5.8	<0.12	17	4.7
VP-4	9/11/08	920	38,000	<18	<21	<24	<24	<20	<67	<22	<42	<41	5,400	<0.11	11	10
VP-5	9/11/08	<160	46,000	<7.1	<8.4	<9.6	<9.6	<8.0	<27	<9.0	<17	<17	<10	<0.22	10	14
Commercial ESL		29,000	29,000	280	180,000	3,300	58,000	31,000	NE	310	14	NE	NE			
Residential ESL		10,000	10,000	84	63,000	980	21,000	9,400	NE	94	4.1	NE	NE			

Abbreviations/Notes:

Total petroleum hydrocarbons as diesel (TPHd) by EPA Method TO-17.

Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method TO-3.

Benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method TO-15.

Methyl tertiary butyl ether (MTBE) by EPA Method TO-15.

Tertiary butyl alcohol (TBA) by EPA Method TO-15.

1,2-Dichloroethane (1,2-DCA) by EPA Method TO-15.

1,2 Dibromoethane (EDB) by EPA Method TO-15.

Ethanol and iso-octane (2,2,4-Trimethylpentane) by EPA Method TO-15

Oxygen, carbon dioxide and helium by modified ASTM D-1946.

<x = Not detected at or above stated laboratory reporting limit.

ESL = Shallow soil gas environmental screening level associated with vapor intrusion concerns, RWQCB-May 2008 (Table E)

NE = Not established

Bold Indicates concentration exceeds commercial and/or residential ESL

**WELL CONSTRUCTION DETAILS
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. WAY
OAKLAND, CALIFORNIA**

<i>Well ID</i>	<i>Drilling Date</i>	<i>Well Depth (fbg)</i>	<i>Well Diameter (inches)</i>	<i>Well Screen Top (fbg)</i>	<i>Well Screen Bottom (fbg)</i>	<i>Well Screen Length (fbg)</i>	<i>Top of Casing Elevation (ft. msl)</i>
MW-1*	12/22/83	20	2	5	20	15	85.41 ¹
MW-2*	12/22/83	20	2	5	20	15	86.04 ¹
MW-3*	12/22/83	20	2	5	20	15	86.80 ¹
MW-4	10/18/90	26.5	2	5	25	20	87.29 ¹
MW-5	10/18/90	21.5	2	5	20	15	84.93 ¹
MW-6	10/18/90	21.5	2	5	20	15	83.63 ¹
MW-7	2/22/94	20	2	5	20	15	86.36 ¹
MW-8	2/22/94	20	2	5	20	15	85.95 ¹

Abbreviations:

fbg = feet below grade

ft. msl = feet above mean sea level

* Assumed well screen intervals based on typical well profile;
actual well construction diagrams do not exist¹ Wells re-surveyed in October 2009

APPENDIX A

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

**SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION
FORMER CHEVRON SERVICE STATION 9-1583
5509 MARTIN LUTHER KING JR. BLVD, OAKLAND, CALIFORNIA**

December 1983 Well Installations

Gettler-Ryan Inc. (G-R) installed onsite monitoring wells MW-1 through MW-3. No soil samples were collected for laboratory analysis from the well borings. The work was documented in a letter from G-R to Chevron dated January 5, 1984.

December 1989 Product Piping Upgrade Sampling

Geotest collected soil samples A through F at depths ranging from 2 to 4.5 feet below grade (fbg) from the piping trenches during upgrade work. Limited over-excavation (approximately 25 cubic yards) was performed in the area of sample B collected at 3 fbg adjacent to the northeast dispenser, and additional soil sample SS-1 collected from the bottom of the excavation. The sample depth is unknown; however, it reportedly was collected just above groundwater. A report documenting the details of this work is not available; the analytical data was provided to ACEH in a letter from Chevron dated July 30, 1993.

March 1990 Well Redevelopment and Sampling

Geraghty & Miller, Inc. (G&M) redeveloped and sampled wells MW-1 through MW-3. Details were presented in G&M's April 2, 1990 *Results of Groundwater Sampling Activities* letter report.

October 1990 Well Installations

G&M installed onsite monitoring well MW-4 and offsite wells MW-5 and MW-6 and collected soil samples from the well borings at depths ranging from 10.5 to 20.5 fbg. Details were presented in G&M's December 15, 1990 *Site Assessment Report*.

1992 Light Non-Aqueous Phase Liquid (LNAPL) Removal

During the October 1992 monitoring event, LNAPL (approximately 0.24 feet) was observed in MW-3. The tanks and product lines reportedly tested tight in September 1992 and a 90-day inventory audit did not indicate any loss of product. Weekly LNAPL bailing was initiated in November 1992 by Groundwater Technology, Inc. (GTI). Approximately 270 milliliters of LNAPL were removed from MW-3 in November and December 1992. The bailing was discontinued when only a sheen was observed in the well.

February 1994 Well Installations

GTI installed wells MW-7 and MW-8 near the used-oil underground storage tank (UST). Four soil samples were collected from the well borings at depths ranging from 5 to 15 fbg. Details were presented in GTI's April 8, 1994 *Additional Soil and Groundwater Assessment Report*.

April 1995 Used-Oil Tank Removal and Over-Excavation

Touchstone Developments (TD) observed the removal of a 1,000-gallon used-oil UST. Four soil samples were collected from the base of the excavation at depths of 10.5 or 11 fbg. The excavation was subsequently deepened to 12.5 fbg (groundwater encountered at approximately 12 fbg). Approximately 80 cubic yards of impacted soil was removed and disposed offsite. Details were presented in TD's June 12, 1995 *Used Oil Tank Removal Report*.

November 1998 Hydraulic Hoist and Clarifier Removal

TD observed the removal of three hydraulic hoists and an oil-water clarifier. Soil samples were collected beneath each of the hoists at 7.5 or 8 fbg. Details were presented in TD's January 19, 1999 *Hoist/Clarifier Removal and Sampling Report*.

December 1998 Dispenser Upgrade Soil Sampling

Geo-Logic collected a soil sample at approximately 3.5 fbg from excavations beneath each of the four dispensers during upgrade work. This work was documented in Geo-Logic's December 7, 1998 *Report of Soil Sampling Below Fuel Dispensers*.

January 2007 Subsurface Investigation

Cambria Environmental Technology, Inc. (Cambria [now CRA]) advanced exploratory borings B-1 through B-5 and collected soil samples at various depths from the borings. Grab-groundwater samples were also collected from borings B-1 through B-4. Details were presented in Cambria's February 28, 2007 *Subsurface Investigation Report*.

August 2008 Soil Vapor Survey

CRA installed and sampled shallow soil vapor wells VP-1 through VP-5. Soil samples were collected from each well boring at approximately 3 fbg. Details were presented in CRA's November 21, 2008 *Soil Vapor Assessment Report*.

APPENDIX B
HISTORICAL BORING LOGS

COMPANY: CHEVRON U.S.A. #1583

JOB NO: OR-5111

LOCATION: 5509 GROVE SE.

DATE: 12-22-83

CITY: OAKLAND

WELL #: 1

DEPTH	SAMPLE NO.	SOIL DESCRIPTION
0 Ft.		
-3"		A. C. PAVING
-8"		BASEROCK
-2'		DARK BROWN CLAY & FILLS
-8'		BROWN CLAY - DAMP
-9'		DARK BROWN CLAY - DAMP
-12'		DUVE GREEN SILTY CLAY - MOIST
-17'		BROWN SILTY CLAY - WET
-21'		DARK GRAY CLAY - BAY MUD - WET

FOREMAN: DAVID BYRON

SHEET: 1 OF 1

COMPANY: CHEVRON U.S.A. #1583

JOB NO: OR - 5111

LOCATION: 5509 GROVE ST.

DATE: 12-22-83

CITY: OAKLAND

WELL #: 2

DEPTH	SAMPLE NO.	SOIL DESCRIPTION
0 ft.		
3"		A.C. PAVING
1'		BASE ROCK
2 1/2'		DARK BROWN CLAY @ FILLS
7'		BROWN CLAY - DAMP
8'		DARK BROWN CLAY - DAMP
13'		OLIVE GREEN SILTY CLAY - MOIST
16'		BROWN SILTY CLAY - WET
21'		DARK GRAY CLAY - BAY MUD - WET

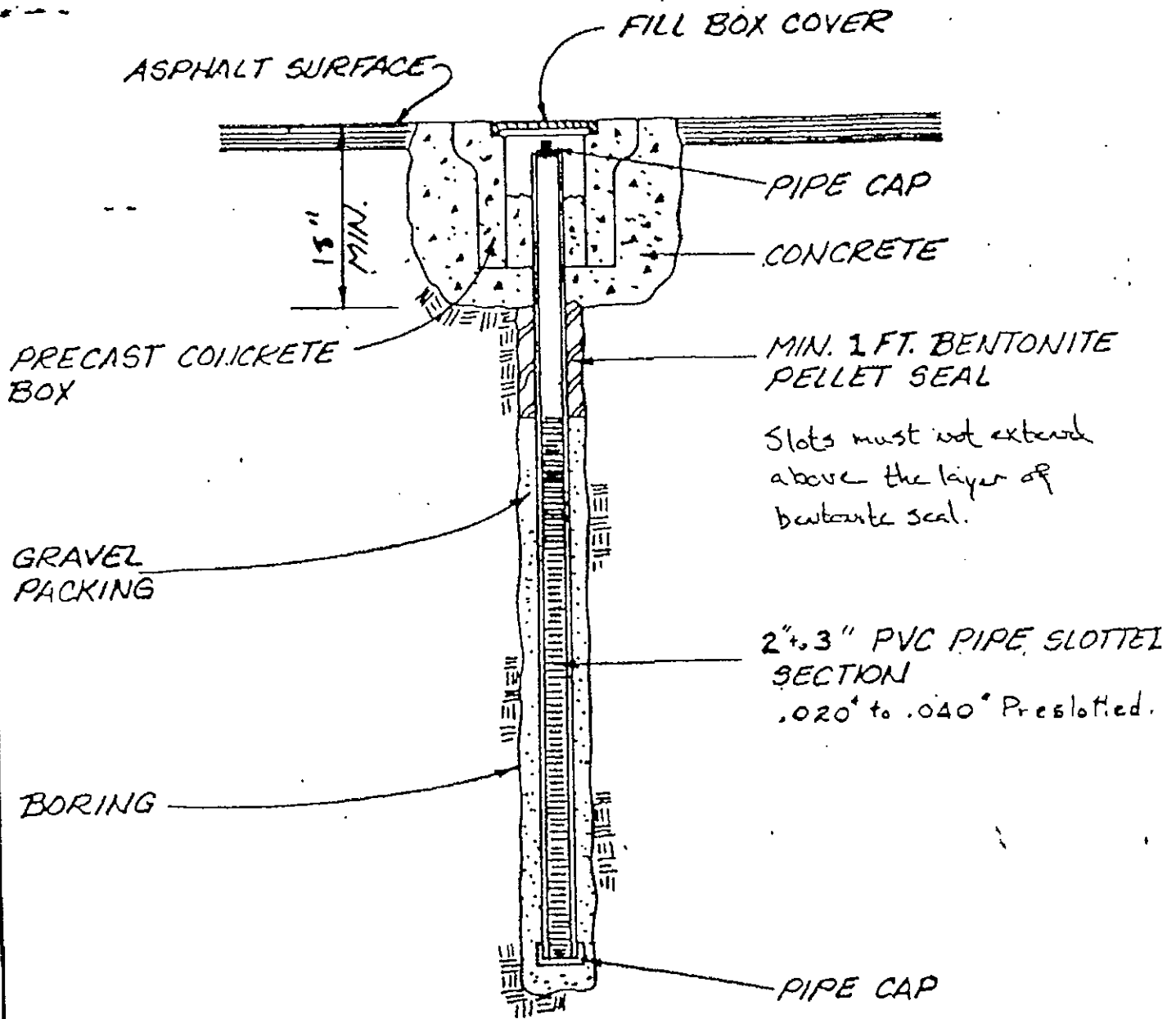
FOREMAN: DAVID BYRON

SHEET: 1 OF 1

COMPANY: CAEURON U.S.A. #1583
 LOCATION: 5509 GROVE ST.
 CITY: OAKLAND
 JOB NO: OR - 5111
 DATE: 12-22-83
 WELL #: 3

DEPTH	SAMPLE NO.	SOIL DESCRIPTION
0 ft.		
3"		A.C. PAVING
8"		BASEROCK
2'		DARK BROWN CLAY & FILLS
10'		BROWN CLAY - DAMP
11'		DARK BROWN CLAY - STIFF
14'		OLIVE GREEN SILTY CLAY - MOIST
18'		BROWN SILTY CLAY - WET
21'		DARK GRAY CLAY - BAY MUD - WET

FOREMAN: DAVID BYRON SHEET: 1 OF 1

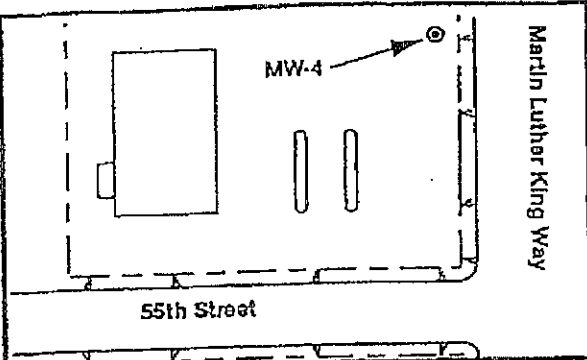


Slots must not extend above the layer of bentonite seal.

2"x3" PVC PIPE SLOTTED SECTION
.020" to .040" Preslotted.

DEPTH OF HOLE: 20'
TOTAL NUMBER OF HOLES REQUIRED: 3

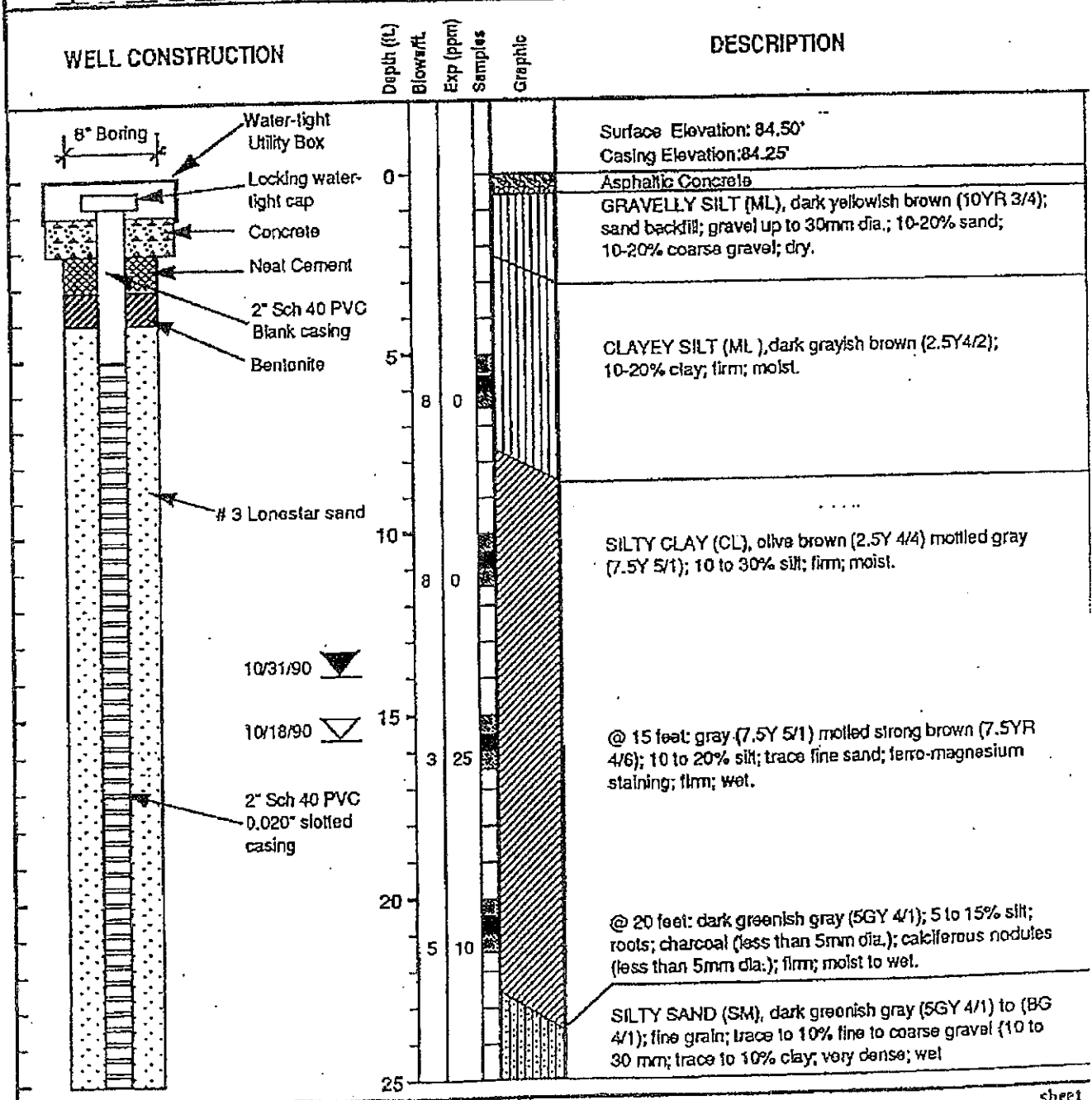
REV	◇								
<p><u>PLANS & SPECIFICATIONS</u> <u>TYPICAL WELL PROFILE</u></p>								DR. R.B. CH.	
								DR. APP.	
								ENGR.	
								OPR'G. DEPT.	
								APPRO	
								ENGR. DEPT.	
								2/1/83	
								SCALE NONE DATE	
								W.O.	
								S.O.	



LOG OF BORING MW-4

Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

Project No.: RC2603	Date Drilled: October 18, 1990
Logged By: Jim Wilmerhor	Drilling Method: 8" Hollow Stem Auger.
Drilling Co.: HEW	Sampling Method: 2" Split spoon
Driller: Hanibal	Inclination: Vertical



LOG OF BORING MW-4
(continued)

WELL CONSTRUCTION

DESCRIPTION

Depth (ft)
Blows/L
PID
Samples
Graphic

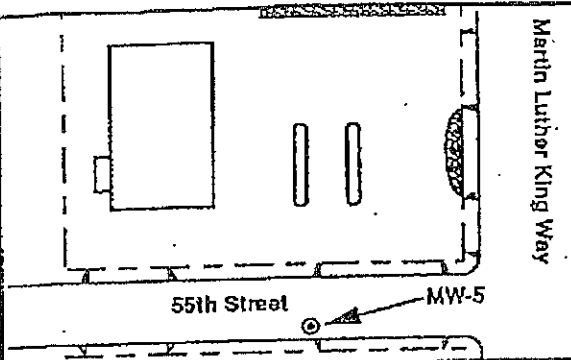
Depth (ft)	Blows/L	PID	Samples	Graphic	DESCRIPTION
0	52	0			SILTY SAND (SM), continued
30					
35					
40					
45					
50					
55					
60					

#3 Lonestar sand

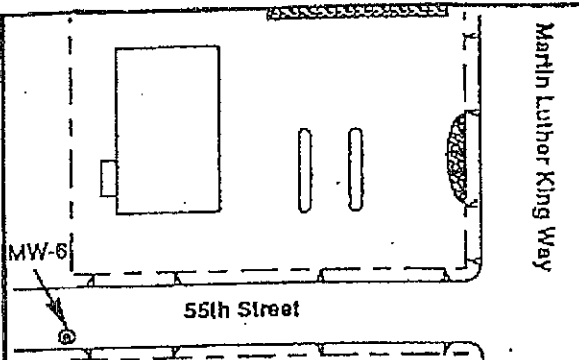
Bottom of Boring: 26.5 Feet
Time: 9:25 AM Date: 10/18/90

LOG OF BORING MW-5
Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

Project No.: RC2603 Date Drilled: October 18, 1990
 Logged By: Jim Wilmarsher Drilling Method: 8" Hollow Stem Auger.
 Drilling Co.: HEW Sampling Method: 2" Split spoon
 Driller: Hanibal Inclination: Vertical



WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Exp (ppm)	Samples	Graphic	DESCRIPTION
City of Oakland Utility Box	0					Surface Elevation: 82.24'
Locking water-tight cap	0					Casing Elevation: 81.95'
Concrete	0					Asphaltic Concrete
Neat Cement	0					GRAVELLY SILT (ML), backfill, dark yellowish brown (10 YR 3/4); 10 to 20% coarse gravel (less than 30mm dia.); 10 to 20% medium sand; dry.
2" Sch 40 PVC Blank casing	0					
Bentonite	0					
	5	50				SANDY CLAY (CL), dark brown (10YR 3/3); 20 to 30% fine to medium sand; trace to 10% silt; stiff; moist.
	10					
	10	400				CLAYEY SAND (SC), dark greenish gray (5GY 4/1); fine grain; 10 to 20% clay; loose; wet.
	10					
	15	10				GRAVELLY CLAY (CL), dark greenish gray (5GY 4/1); 10 to 20% fine gravel; trace to 10% coarse sand; wet.
	15					
	20	10				SAND (SP) light olive brown (2.5Y 5/4); fine to medium grain (30% medium grain); 10 to 20% silt; dense; wet.
	20					@ 16.5 feet: 10 to 20% coarse sand; trace to 5% fine gravel; moist.
	20					@ 20 feet: medium to coarse sand; trace to 10% fine gravel; trace coarse gravel.
	20					@ 20.5 feet: olive gray (5Y 5/2); trace fine gravel; wet.
	20					@ 21.5 feet: 10 to 15% silt; moist.
	20					CLAYEY GRAVEL (GC), olive gray (5Y 5/2); coarse gravel 20 to 30% clay (gray); 10 to 15% silt; very stiff; moist.
	25					Bottom of Boring: 21.5 feet
	25					Time: 12:05 PST Date: 10/18/90



LOG OF BORING MW-6

Chevron Service Station #9-1583 5509 Martin Luther King Way Oakland, California

Project No.: RC2603 Date Drilled: October 18, 1990
 Logged By: Jim Wilmersher Drilling Method: 8" Hollow Stem Auger.
 Drilling Co.: HEW Sampling Method: 2" Split spoon
 Driller: Hanibal Inclination: Vertical

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Exp (ppm)	Samples	Graphic	DESCRIPTION
City of Oakland Utility Box Locking water-tight cap Concrete Neat Cement 2" Sch 40 PVC Blank casing Bentonite 10/31/90 10/18/90 # 3 Lonestar sand 2" Sch 40 PVC 0.020" slotted casing 8" Boring	0 5 10 15 20 25	13 11 10 8 17				Surface Elevation: 80.94' Casing Elevation: 80.60' Asphaltic Concrete SANDY SILT (ML), very dark grayish brown (2.5Y 3/2); 10 to 30% fine to medium sand; roots; worm borings; medium dense; moist. SILTY CLAY (CL), gray (2.5 N/4) mottled light olive brown (2.5 4/3); 10 to 30% silt; stiff; moist. SANDY SILT (ML), gray (5Y 6/1) mottled olive brown (2.5Y 4/4); 20 to 30% medium to fine sand; 10 to 20% clay; charcoal; stiff; wet. CLAYEY SILT (ML), gray (5Y 6/1) mottled olive brown (2.5Y 4/4); 10 to 20% clay; trace to 10% fine gravel; moist to wet SANDY GRAVEL (GP), yellow brown (10YR 5/3); fine gravel; 20 to 30% coarse sand; dense; wet. GRAVELLY CLAY (CL), yellowish red (5YR 5/6); 10 to 20% coarse gravel; subangular; trace to 10% medium sand; ferro-magnesium staining; wet. Bottom of Boring: 20 feet Time: 07:53 PST Date: 10/18/90



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well MW-7

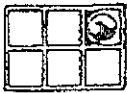
Project CHV/5509 Martin Luther King Jr. Way Owner Chevron U.S.A., Inc.
 Location Oakland, CA Proj. No. 020204528
 Surface Elev. 88.59 ft. Total Hole Depth 20 ft. Diameter 8 in.
 Top of Casing 86.36 ft. Water Level Initial 14 ft. Static 11.05 ft.
 Screen: Dia 2 in. Length 15 ft. Type/Size 0.020 in.
 Casing: Dia 2 in. Length 5 ft. Type PVC sch 40
 Fill Material #3 sand Rig/Core B-61/Split Spoon
 Drill Co. SES Inc. Method Hollow Stem Auger
 Driller Mike Duffy Log By Robert Fehr Date 2-22-94 Permit # N/A
 Checked By Michael Bkndell License No. RG# 5146 *DFB*

See Site Map
For Boring Location

COMMENTS:

Depth to water was approximately 14 feet below grade on 2/22/94. Installer under Zone 7 Water Agency, permit No. 94097

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
-2							Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0							Asphalt
2							
4							
6		2.3	MW7 (5)	3 6 9			lean CLAY, dark brown, about 5% medium sand (moist, stiff, no hydrocarbon odor, medium plasticity)
8							
10		1.5		3 5 6		CL	same, grading to medium gray with mottled medium brown, increasing moisture. Water level, 3/9/94
12							
14							Water encountered during drilling 2/22/94
16		35.4	MW7 (15)	1 2 3			same, trace organic matter, (saturated, soft, slight hydrocarbon odor)
18							
20		1.9		2 3 7			lean CLAY, dark gray, (no hydrocarbon odor, high plasticity) End of boring at 20 feet below grade.
22							
24							



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well MW-E

Project CHV/5509 Marlin Luther King Jr. Way Owner Chevron U.S.A., Inc.
 Location Oakland, CA Proj. No. 020204528
 Surface Elev. 86.30 ft. Total Hole Depth 20 ft. Diameter 8 in.
 Top of Casing 85.93 ft. Water Level Initial 14 ft. Static 10.59 ft.
 Screen: Dia 2 in. Length 15 ft. Type/Size 0.020 in.
 Casing: Dia 2 in. Length 5 ft. Type PVC sch 40
 Fill Material #3 sand Rig/Core B-B1/Spill Spoon
 Drill Co. SES Inc. Method Hollow Stem Auger
 Driller Mike Duffy Log By Robert Fehr Date 2-22-94 Permit # N/A
 Checked By Michael Blundell License No. RG# 5146 *RF*

See Site Map
For Boring Location

COMMENTS:

Depth to water was approximately 14 feet below grade on 2/22/94. Installed under Zone 7 Water Agency permit No. 94097

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID	Blow Count/ X 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						AC	Asphalt
2							
4							
6		1.5		3 5 7			lean CLAY, medium brown, (moist, stiff, no hydrocarbon odor, medium plasticity)
8							
10		1.5	MWB (10)	3 4 5		CL	same, grading to medium gray with mottled medium brown, increasing moisture, medium stiff. Water level, 3/9/94
12							
14							Water encountered during drilling 2/22/94
16		3.2	MWB (15)	2 3 3			same, medium brown with mottled dark brown, saturated.
18							
20		3.2		1 3 3			lean CLAY, dark gray, (saturated, soft, high plasticity), trace organic matter (0.25-inch wood fragment). End of boring at 20 feet below grade.
22							
24							



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 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	<u>Chevron Environmental Management Co.</u>	BORING/WELL NAME	<u>B-1</u>
JOB/SITE NAME	<u>9-1583</u>	DRILLING STARTED	<u>04-Jan-07</u>
LOCATION	<u>5509 Martin Luther King Blvd., Oakland</u>	DRILLING COMPLETED	<u>04-Jan-07</u>
PROJECT NUMBER	<u>61H-1860</u>	WELL DEVELOPMENT DATE (YIELD)	<u>NA</u>
DRILLER	<u>Cambria</u>	GROUND SURFACE ELEVATION	<u>Not Surveyed</u>
DRILLING METHOD	<u>Hand Auger</u>	TOP OF CASING ELEVATION	<u>Not Surveyed</u>
BORING DIAMETER	<u>3 inches</u>	SCREENED INTERVAL	<u>NA</u>
LOGGED BY	<u>L. Gearhart</u>	DEPTH TO WATER (First Encountered)	<u>12.0 fbg (04-Jan-07)</u> ▽
REVIEWED BY	<u>D. Herzog, PG# 7211</u>	DEPTH TO WATER (Static)	<u>NA</u> ▽

REMARKS

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
				0.5			Asphalt Fill	0.5	Concrete
0		B-1@3		2.0	CH		CLAY: dark brown; damp; 60% clay, 30% silt, 10% sand; high plasticity; low estimated permeability.	2.0	Portland Type I/II
0		B-1@8		4.0	CH		CLAY: brown; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.	4.0	
0		B-1@9		6.0	CH		@ 6 fbg: dark brown.	6.0	
				11.0	CH		CLAY with sand: grey; wet; 60% clay, 25% silt, 15% sand; high plasticity; low estimated permeability.	11.0	Bottom of Boring @ 12 fbg
				12.0				12.0	

WELL LOG (PID) [IROCK] IN CHEVRON-1583 OAKLAND\GINTG-1583.GPJ DEFAULT.GDT 8/21/08



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 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	BORING/WELL NAME	B-2
JOB/SITE NAME	9-1583	DRILLING STARTED	04-Jan-07
LOCATION	5509 Martin Luther King Blvd., Oakland	DRILLING COMPLETED	04-Jan-07
PROJECT NUMBER	81H-1960	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cambria	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hand Auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	3 inches	SCREENED INTERVAL	NA
LOGGED BY	J. Bostick	DEPTH TO WATER (First Encountered)	11.0 fbg (04-Jan-07)
REVIEWED BY	D. Herzog, PG# 7211	DEPTH TO WATER (Static)	NA

REMARKS

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Fill	2.0	Concrete
0		B-263			CL		CLAY with sand; brown; dry; 60% clay, 20% silt, 20% sand; medium plasticity; moderate estimated permeability.	5.0	
0		B-266			CH		CLAY; brown with red mottling; dry; fine grained sand; 75% clay, 15% silt, 10% sand; high plasticity; low estimated permeability.	7.0	Portland Type VII
0		B-269			CH		CLAY; dark brown; dry; firm; 80% clay, 15% silt, 5% sand; high plasticity; low estimated permeability.	11.0	Bottom of Boring @ 11 fbg

WELL LOG (PID) H:\ROCK\IN\CHEVRON\9-1583 OAKLAND\GINT\9-1583.GPJ DEFAULT.GDT 02/10/08



Conestoga-Rovers & Associates
 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	<u>Chevron Environmental Management Co.</u>	BORING/WELL NAME	<u>B-3</u>
JOB/SITE NAME	<u>9-1583</u>	DRILLING STARTED	<u>03-Jan-07</u>
LOCATION	<u>5509 Martin Luther King Blvd., Oakland</u>	DRILLING COMPLETED	<u>03-Jan-07</u>
PROJECT NUMBER	<u>61H-1960</u>	WELL DEVELOPMENT DATE (YIELD)	<u>NA</u>
DRILLER	<u>Cambria</u>	GROUND SURFACE ELEVATION	<u>Not Surveyed</u>
DRILLING METHOD	<u>Hand Auger</u>	TOP OF CASING ELEVATION	<u>Not Surveyed</u>
BORING DIAMETER	<u>3 inches</u>	SCREENED INTERVAL	<u>NA</u>
LOGGED BY	<u>L. Gearhart</u>	DEPTH TO WATER (First Encountered)	<u>11.0 fbg (03-Jan-07)</u>
REVIEWED BY	<u>D. Herzog, PG# 7211</u>	DEPTH TO WATER (Static)	<u>NA</u>

REMARKS

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0		B-3@3	0.5			Asphalt	0.5	<p>Concrete</p> <p>Portland Type I/II</p> <p>Bottom of Boring @ 11 fbg</p>
0		B-3@6	1.0	CH		CLAY: brown; moist; 60% clay, 30% silt, 10% sand; high plasticity; low estimated permeability.	1.0	
0		B-3@8	5.0	CH		CLAY: brown; dry; 70% clay, 25% silt, 5% sand; high plasticity; low estimated permeability. @ 7 fbg: dark brown; moist. @ 8 fbg: gray with brown mottling; moist.	5.0	
			11.0				11.0	

WELL LOG (PID) I:\ROCK\JIN-CHEVRON\9-1583 OAK ANDIGINTS-1583.GPJ_DEFAULT.GDT 9/21/03



Conestoga-Rovers & Associates
 200D Opportunity Drive, Suite 110
 Roseville, CA
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 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	<u>Chevron Environmental Management Co.</u>	BORING/WELL NAME	<u>B-4</u>
JOB/SITE NAME	<u>9-1583</u>	DRILLING STARTED	<u>03-Jan-07</u>
LOCATION	<u>5509 Martin Luther King Blvd., Oakland</u>	DRILLING COMPLETED	<u>03-Jan-07</u>
PROJECT NUMBER	<u>61H-1960</u>	WELL DEVELOPMENT DATE (YIELD)	<u>NA</u>
DRILLER	<u>Cambria</u>	GROUND SURFACE ELEVATION	<u>Not Surveyed</u>
DRILLING METHOD	<u>Hand Auger</u>	TOP OF CASING ELEVATION	<u>Not Surveyed</u>
BORING DIAMETER	<u>3 inches</u>	SCREENED INTERVAL	<u>NA</u>
LOGGED BY	<u>J. Bostick</u>	DEPTH TO WATER (First Encountered)	<u>13.0 fbg (03-Jan-07)</u> ▽
REVIEWED BY	<u>D. Herzog, PG# 7211</u>	DEPTH TO WATER (Static)	<u>NA</u> ▽
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
				SP		Concrete	0.5	
				CH		SAND CLAY: dark brown with black mottling; moist; 60% clay, 30% silt 10% sand; high plasticity; low estimated permeability.	1.0	
0		B-4-03		CH		CLAY: dark brown; moist; 70% clay, 25% silt, 5% sand; high plasticity; low estimated permeability.	3.0	
			5	CL		Sandy CLAY: light brown; moist; fine grained sand; 50% clay, 30% sand, 20% silt; medium plasticity; moderate estimated permeability.	5.0	
0		B-4-04		CH		CLAY: dark brown with red mottling; moist; 70% clay, 20% silt, 10% sand; high plasticity; low estimated permeability.	8.0	
0		B-4-05	10	CL		CLAY with sand: gray with red mottling; moist; 50% clay, 25% sand, 25% silt; medium plasticity; moderate estimated permeability.	10.0	
							▽ 13.0	Bottom of Boring @ 13 fbg

WELL LOG (PID) H:\ROCKLIN\CHEVRON\9-1583 OAKLAND\GINT9-1583.BPJ DEFAULT.GDT 8/21/06



Conestoga-Rovers & Associates
 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	<u>Chevron Environmental Management Co.</u>	BORING/WELL NAME	<u>B-5</u>
JOB/SITE NAME	<u>9-1583</u>	DRILLING STARTED	<u>04-Jan-07</u>
LOCATION	<u>5509 Martin Luther King Blvd., Oakland</u>	DRILLING COMPLETED	<u>04-Jan-07</u>
PROJECT NUMBER	<u>61H-1960</u>	WELL DEVELOPMENT DATE (YIELD)	<u>NA</u>
DRILLER	<u>Cambria</u>	GROUND SURFACE ELEVATION	<u>Not Surveyed</u>
DRILLING METHOD	<u>Hand Auger</u>	TOP OF CASING ELEVATION	<u>Not Surveyed</u>
BORING DIAMETER	<u>3 inches</u>	SCREENED INTERVAL	<u>NA</u>
LOGGED BY	<u>J. Bostick</u>	DEPTH TO WATER (First Encountered)	<u>(04-Jan-07)</u>
REVIEWED BY	<u>D. Herzog, PG# 7211</u>	DEPTH TO WATER (Static)	<u>NA</u>

REMARKS

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0		B-5@3				Asphalt FILL; brown; dry; medium to large grained sands; 40% sand, 35% gravel, 15% silt, 10% clay; high estimated permeability.	0.5	
0		B-5@5	5			@ 5 fbg: Refusal	5.5	Bottom of Boring @ 5.5 fbg

WELL LOG (PID) I:\ROCK\IR.CHEVRON\9-1583 OAKLAND\GINTS-1583.GPJ DEFAULT.GDT 8/21/03



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 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

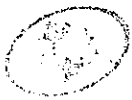
BORING/WELL LOG

CLIENT NAME	<u>Chevron Environmental Management Co.</u>	BORING/WELL NAME	<u>VP-1</u>
JOB/SITE NAME	<u>9-1583 Oakland</u>	DRILLING STARTED	<u>26-Aug-08</u>
LOCATION	<u>5509 Martin Luther King Jr Way</u>	DRILLING COMPLETED	<u>26-Aug-08</u>
PROJECT NUMBER	<u>611960</u>	WELL DEVELOPMENT DATE (YIELD)	<u>NA</u>
DRILLER	<u>V&W Drilling</u>	GROUND SURFACE ELEVATION	<u>Not Surveyed</u>
DRILLING METHOD	<u>Hand Auger</u>	TOP OF CASING ELEVATION	<u>Not Surveyed</u>
BORING DIAMETER	<u>3-inch</u>	SCREENED INTERVAL	<u>5 to 5.5 fbg</u>
LOGGED BY	<u>O. Yan</u>	DEPTH TO WATER (First Encountered)	<u>NA</u>
REVIEWED BY	<u>James Kiernan, PE</u>	DEPTH TO WATER (Static)	<u>NA</u>

REMARKS

WELL LOG (PID) \\ROCKLIN\CHEVRON\6119-1611960-9-1583 OAKLAND\611960-REPORTS\611960-RPT-1-SOIL VAPOR ASSESSMENT RPT\9-1583 VAPOR PROBES 2008.GPJ_DEFAULT.GDT_10/21/08

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Asphalt	0.5	
					GC		<u>Clayey GRAVEL with sand:</u> brown; moist; 50% gravel, 25% sand, 25% clay; fine to medium grained sand; low plasticity; high estimated permeability.	1.0	
					CL		<u>CLAY with sand:</u> brown; moist; 70% clay, 15% silt, 15% sand; medium plasticity; low estimated permeability.		
0.3		VP-1-3'							
				5					
								6.0	Bottom of Boring @ 6 fbg



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 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	BORING/WELL NAME	VP-2
JOB/SITE NAME	9-1583 Oakland	DRILLING STARTED	26-Aug-08
LOCATION	5509 Martin Luther King Jr Way	DRILLING COMPLETED	26-Aug-08
PROJECT NUMBER	611960	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	V&W Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hand Auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	3-inch	SCREENED INTERVAL	5 to 5.5 fbg
LOGGED BY	O. Yan	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	James Kiernan, PE	DEPTH TO WATER (Static)	NA
REMARKS			

WELL LOG (PID) HROCKLIN,CHEVRON\611960-REPORTS\611960-RPT1-SOIL VAPOR ASSESSMENT RPT\9-1583 VAPOR PROBES 2008.GPJ DEFAULT.GDT 10/21/08

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0.2		VP-2-3'		0.0		Asphalt		0.5	Concrete
				0.5	GC		<u>Clayey GRAVEL with sand:</u> dark brown; moist; 50% gravel, 25% sand, 25% clay; fine to medium grained sand; low plasticity; high estimated permeability.	1.0	1/4"-inner diam. Nylaflo® tubing
				1.0	CL		<u>CLAY with sand:</u> dark brown; moist; 75% clay, 25% sand; medium plasticity; low estimated permeability.		Hydrated Bentonite Gel
				5.0					Dry granular bentonite
				5.5					Monterey Sand #2/16
				6.0					1"-diam., 0.010" Slotted Schedule 40 PVC
				6.0					Bottom of Boring @ 6 fbg



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 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	BORING/WELL NAME	VP-3
JOB/SITE NAME	9-1583 Oakland	DRILLING STARTED	26-Aug-08
LOCATION	5509 Martin Luther King Jr Way	DRILLING COMPLETED	26-Aug-08
PROJECT NUMBER	611960	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	V&W Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hand Auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	3-inch	SCREENED INTERVAL	5 to 5.5 fbg
LOGGED BY	O. Yan	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	James Kiernan, PE	DEPTH TO WATER (Static)	NA

REMARKS

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Asphalt	0.5	
					GC		Clayey GRAVEL with sand: dark brown; moist; 50% gravel, 25% sand, 25% clay; fine to medium grained sand; low plasticity; high estimated permeability.	1.0	
					CL		CLAY: dark grey; moist; 70% clay, 20% silt, 10% sand; medium plasticity; low estimated permeability.		
0.1		VP-3-3'					At 4 fbg dark brown.		
				5					
								6.0	Bottom of Boring @ 6 fbg

WELL LOG (PID) I:\ROCKLIN\CHEVRON\6119-1583 OAKLAND\611960-REPORTS\611960-RPT1-SOIL VAPOR ASSESSMENT RPT\9-1583 VAPOR PROBES 2008 GPJ_DEFAULT.GDT 10/21/08



Geologists & Associates
 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	BORING/WELL NAME	VP-4
JOB/SITE NAME	9-1583 Oakland	DRILLING STARTED	26-Aug-08
LOCATION	5509 Martin Luther King Jr Way	DRILLING COMPLETED	26-Aug-08
PROJECT NUMBER	611960	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	V&W Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hand Auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	3-inch	SCREENED INTERVAL	5 to 5.5 fbg
LOGGED BY	O. Yan	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	James Kiernan, PE	DEPTH TO WATER (Static)	NA
REMARKS			

WELL LOG (PID) I:\ROCKLIN\CHEVRON\611960 - 9-1583 OAKLAND\611960-REPORTS\611960-RPT1-SOIL VAPOR ASSESSMENT RPT9-1583 VAPOR PROBES 2008.GPJ DEFAULT.GDT 10/21/08

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0.3		VP-4-3'					Asphalt	0.7	<p>Concrete</p> <p>1/4"-inner diam. Nylaflow® tubing</p> <p>Hydrated Bentonite Gel</p> <p>Dry granular bentonite</p> <p>Monterey Sand #2/16</p> <p>1"-diam., 0.010" Slotted Schedule 40 PVC</p> <p>Bottom of Boring @ 6 fbg</p>
					GC		Clayey GRAVEL with sand: dark brown; moist; 50% gravel, 25% sand, 25% clay; fine to medium grained sand; low plasticity; high estimated permeability.	1.2	
					CL		Sandy CLAY: dark brown; moist; 50% clay, 30% sand, 20% silt; low plasticity; moderate estimated permeability.	2.0	
					CL		CLAY: dark brown; moist; 70% clay, 20% silt, 10% sand; medium plasticity; low estimated permeability.	5.0	
								6.0	



Conestoga-Rovers & Associates
 2000 Opportunity Drive, Suite 110
 Roseville, CA
 Telephone: 916-677-3407
 Fax: 916-677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	BORING/WELL NAME	VP-5
JOB/SITE NAME	9-1583 Oakland	DRILLING STARTED	26-Aug-08
LOCATION	5509 Martin Luther King Jr Way	DRILLING COMPLETED	26-Aug-08
PROJECT NUMBER	611960	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	V&W Drilling	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hand Auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	3-inch	SCREENED INTERVAL	5 to 5.5 fbg
LOGGED BY	O. Yan	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	James Kiernan, PE	DEPTH TO WATER (Static)	NA

REMARKS

WELL LOG (PID) \HROCKLIN.CHEVRON\6119-1611960 - 9-1583 OAKLAND\611960-REPORTS\611960-RPT1-SOIL VAPOR ASSESSMENT RPT9-1583 VAPOR PROBES 2008.GPJ DEFAULT.GDT 10/2/08

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0.3		VP-5-3'					Asphalt	0.5	
					GC		<u>Clayey GRAVEL with sand:</u> dark brown; moist; 50% gravel, 25% sand, 25% clay; fine to medium grained sand; low plasticity; high estimated permeability.	1.0	
					CL		<u>CLAY:</u> dark grey; moist; 70% clay, 20% silt, 10% sand; medium plasticity; low estimated permeability.		
				5					
								6.0	Bottom of Boring @ 6 fbg

APPENDIX C

NEARBY WELL AND SENSITIVE RECEPTOR INFORMATION



3164 Gold Camp Drive
Suite 200
Rancho Cordova, CA 95670-6021
U.S.A.
916/638-2085
FAX: 916/638-8385

August 1, 2002

Ms. Karen Streich
Chevron Products Company
6001 Bollinger Canyon Road, Room L4050
San Ramon, CA 94502-6577

Subject: *Sensitive Receptor Survey*
Chevron Service Station No. 9-1583
5509 Martin Luther King Way
Oakland, California
Delta Project No. DG91-583

Dear Ms. Streich:

Delta Environmental Consultants, Inc. (Delta) has been authorized by Chevron Products Company (Chevron) to conduct a sensitive receptor survey in the vicinity of Chevron Service Station No. 9-1583, located at 5509 Martin Luther King Way, Oakland, Alameda County, California. The location of the site is presented in Figure 1 and a site map is presented as Figure 2. Photographs of the site were taken in April 2002 and are presented in Enclosure A. The purpose of this survey was to identify potential sensitive receptors of the residual petroleum hydrocarbons in soil and groundwater at the site.

Project Background Information

Petroleum hydrocarbons in soil and groundwater related to the operation of product storage and dispensing systems at the site were first reported in December 1989. During a product line upgrade it was discovered that gasoline had been released from a product line located near the dispenser islands. The piping was replaced and an investigation of the extent of gasoline release was initiated. Petroleum hydrocarbons were detected in one soil sample collected from the product line trenches in December 1989.

Between December 1983 and March 1994, eight groundwater monitoring wells were installed to define the extent of petroleum hydrocarbons in soil and groundwater. Quarterly groundwater monitoring was initiated in March 1990. Groundwater monitoring wells are currently sampled on a semi-annual and annual basis. In general, groundwater beneath the site flows toward the east-southeast.

In April 1995, the used oil underground storage tanks (USTs) was removed from the northwest corner of the site. Soil samples were collected from the base of the excavation at a depth of approximately 11 feet below surface grade (bsg). Petroleum hydrocarbons and trace metals were detected in soil samples collected. The former UST basin was overexcavated to approximately 12.5 feet bsg. In May 1995, approximately 80 cubic yards of used oil-impacted soil was transported and disposed of at BFI Waste Systems in Livermore, CA.

In November 1998, Musco Excavators removed two single-post, semi-hydraulic hoists and one dual-post, hydraulic hoist with a clarifier from the site. Soil samples were collected beneath each of the hoists at depths ranging from 7.5 to 8 feet bsg. Trace metals were detected in a soil sample collected beneath the dual-post hoist and clarifier.

Property Boundary and Land Use

The subject is currently operated as retail fueling station. Martin Luther King Way borders the site to the east, 55th Street to the south, and commercial businesses and residential housing to the north and west. The site consists of a station building, two dispenser islands, and three USTs that share a common pit near the southern site boundary. Pertinent site features are shown on Figure 2. Site photographs, with descriptions, are included in Enclosure A.

Site Sketch

A site map is presented in Figure 2. The following information is provided in the site map:

- Site property lines
- Existing UST locations
- Existing monitoring wells
- Street names
- Buildings on site and adjacent properties
- Drains
- Utility vaults and lines

Topography

The land surrounding the site is relatively flat. Regionally, the topography slopes gently to the west. A USGS topographic map with the site centered on the map is presented in Figure 1.

Distance To Surface Water Bodies

There are no surface water bodies within a one-mile radius of the site. The nearest surface water body identified is Glen Echo Creek, located approximately 7,400 feet southeast of the subject site.

Local Water Supply

The Alameda County Water District supplies water to Alameda County from three sources: treated surface water, purchased San Francisco water, and blended water. The treated surface water is imported from the Sacramento/San Joaquin Delta and/or Lake Del Valle via the South Bay Aqueduct. This water is purified at the local water treatment plants. Purchased San Francisco water is surface water, which originates in either Hetch Hetchy Reservoir in Yosemite National Park, or locally in Calaveras or San Antonio Reservoirs in the Alameda Creek watershed. Blended water consists of purchased San Francisco water and local groundwater. The groundwater supply comes from the Niles Cone Groundwater Basin and is replenished through infiltrations from local rainwater, runoff from the Alameda Creek watershed, and water from the South Bay Aqueduct.

Municipal Water Wells

Based on a review of available public records and reconnaissance in the vicinity of the site, there are no municipal water supply wells present within 2,000 feet of the site. Delta confirmed this by telephone with the County of Alameda Public Works Agency in May 2001.

Private Water Wells

On April 24, 2002, Delta conducted a search of Department of Water Resources (DWR) files for domestic, municipal, and irrigation supply wells within 2,000 feet of the subject site. Two well sites were identified from the DWR search and were listed as active. One of the well sites was listed as an industrial well and the other as a cathodic protection well. The industrial well is located approximately 1,200 feet northwest of the subject site. An inventory of wells identified within 2,000 feet of the subject site is presented in Table 1. The well locations are presented on Figure 3.

Utilities and Vaults

During the site visit conducted by Delta on April 26, 2002, there were no man-sized utility vaults identified within the search area. However, several minor utility vaults were identified that included Pacific Bell and PG&E. Utilities identified adjacent to the site included: storm drains, sanitary sewer, TV cable, and water buried at depths between 4 and 22 feet bsg. Historical depth to groundwater at the site has ranged between 6.70 and 13.99 feet bsg. Storm drains were located throughout the site and were measured at approximately 3.0 feet bsg. Their trenches could act as a potential pathway of dissolved and vapor phase hydrocarbons. Locations of utilities are shown on Figure 2.

Photographs of the vault boxes are presented in Enclosure A as photographs 7 through 10. Photographs 7 and 8 depict electrical vault boxes along the east property boundary, photograph 9 depicts two electrical vault boxes and a telephone vault box along the east property boundary, and photograph 10 depicts an electrical vault box along the south property boundary.

Basements and Tunnels

There were no basements or tunnels identified a 250-foot radius of the site.

Aquifer Information

The water-bearing material beneath the site has not been classified as a potential source of drinking water. Delta confirmed this in a telephone conversation with the County of Alameda Public Works Agency in May 2002.

Remarks/Signatures

The interpretations contained in this report represent our professional opinions and are based, in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

Ms. Karen Streich
Chevron Products Company
August 1, 2002
Page 4

If you have any questions regarding this document, please contact Ben Heningburg at 916-536-2623.

Sincerely,

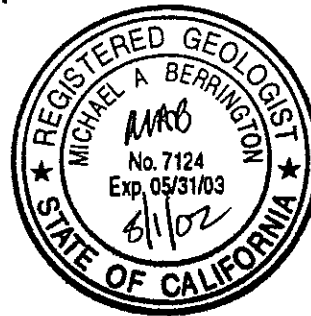
DELTA ENVIRONMENTAL CONSULTANT, INC.

Brett A. Bardsley

Brett A. Bardsley
Staff Geologist

Ben Heningburg
Benjamin E. Heningburg
Project Manager

Mike A. Berrington
Mike A. Berrington, R.G.
California Registered Geologist No. 7124



BAB (LRP001.9-1583)

Enclosure

cc: Mr. Jim Brownell – Delta Environmental Consultants
Ms. Donna Drogos - Alameda County Health Care Services



R.4 W.

GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 OAKLAND WEST, CA.
 7.5 MINUTE TOPOGRAPHIC
 PHOTOREVISED 1980



QUADRANGLE LOCATION

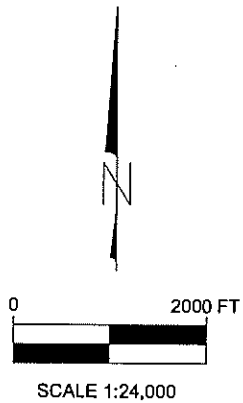
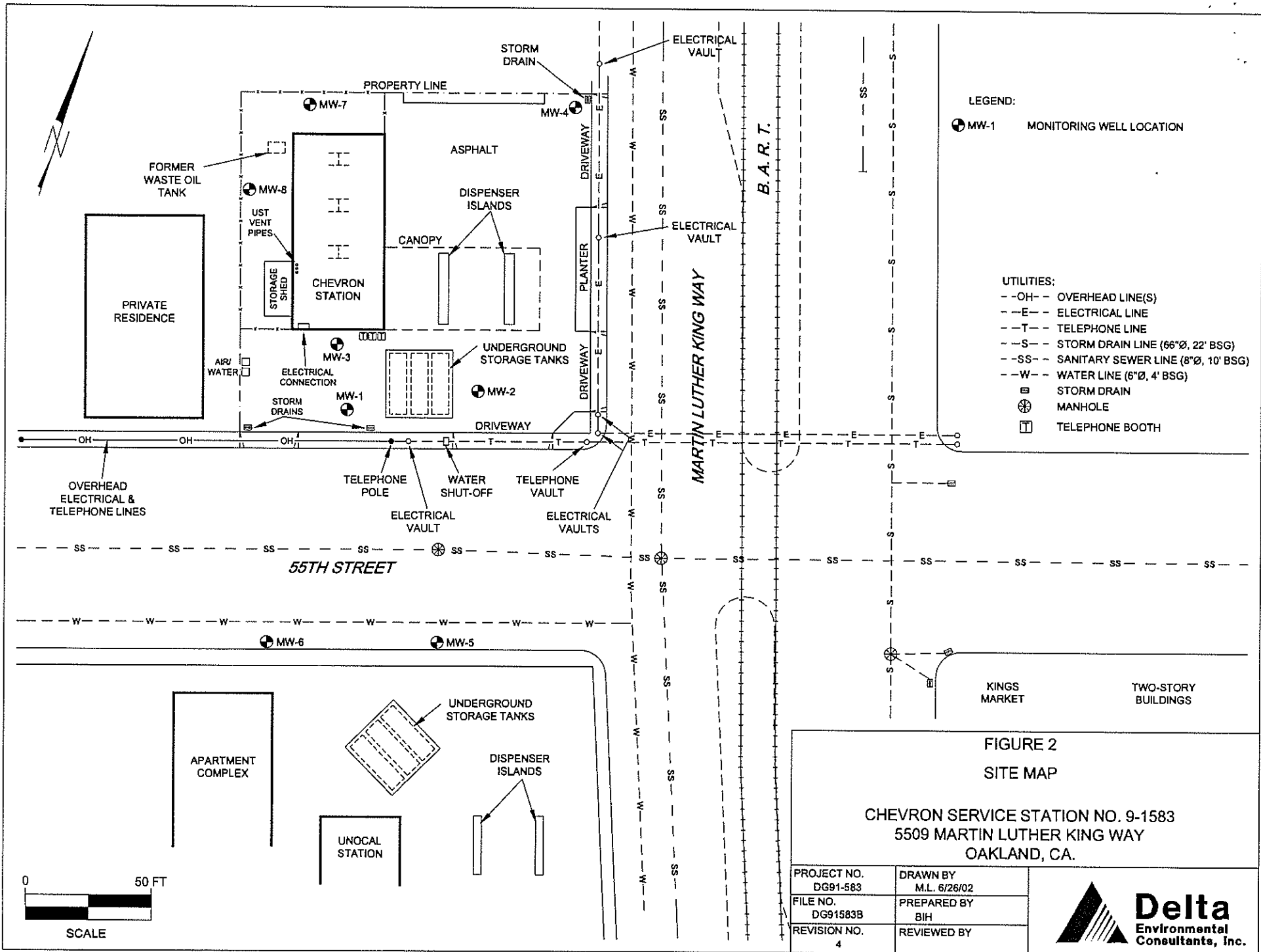


FIGURE 1
 SITE LOCATION MAP

CHEVRON SERVICE STATION NO. 9-1583
 5509 MARTIN LUTHER KING WAY
 OAKLAND, CA.

PROJECT NO. DG91-583	DRAWN BY M.L. 6/21/02
FILE NO. DG91583A	PREPARED BY BAB
REVISION NO. 2	REVIEWED BY





LEGEND:
 ⊕ MW-1 MONITORING WELL LOCATION

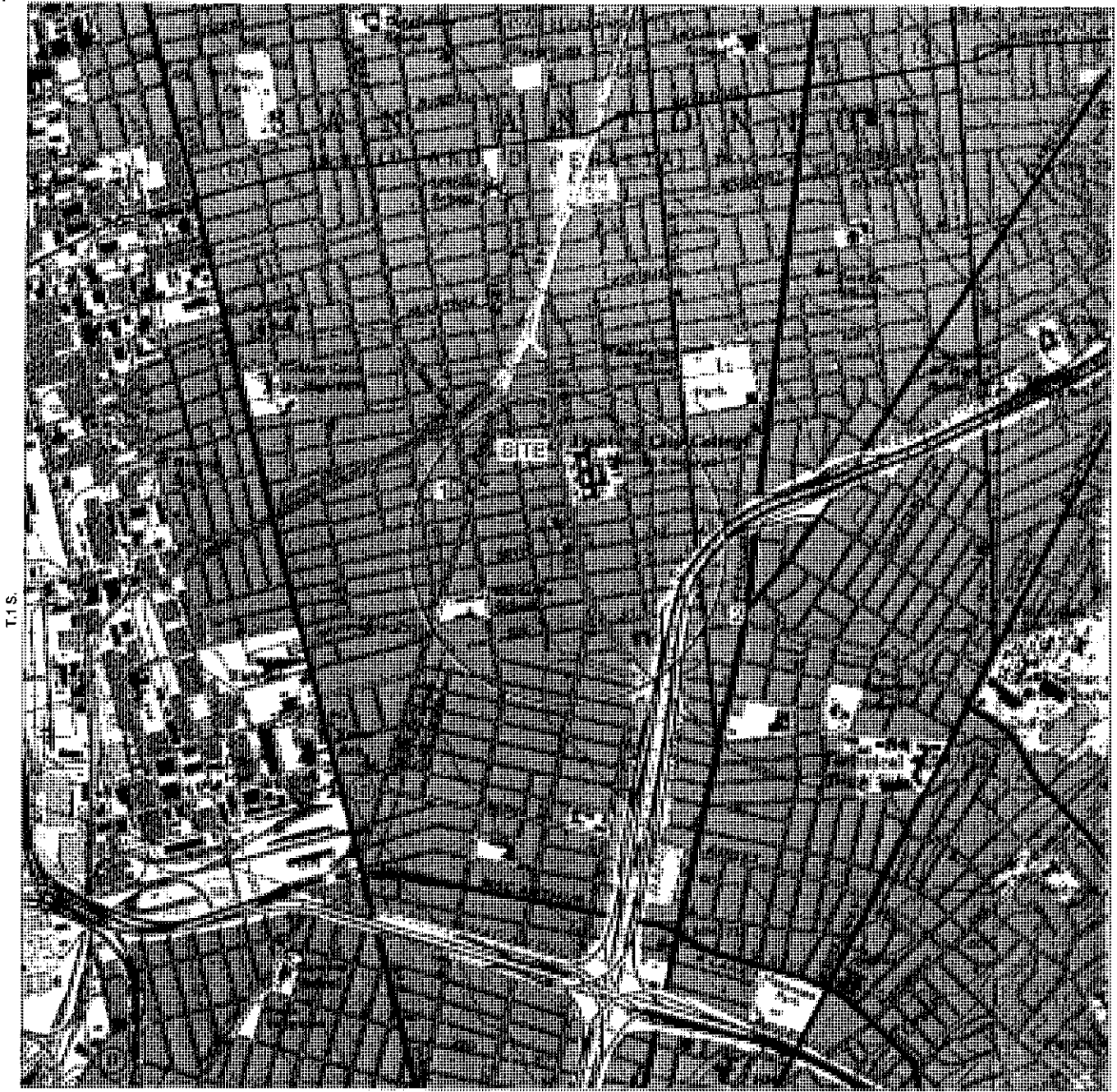
- UTILITIES:
- OH-- OVERHEAD LINE(S)
 - E-- ELECTRICAL LINE
 - T-- TELEPHONE LINE
 - S-- STORM DRAIN LINE (66"Ø, 22' BSG)
 - SS-- SANITARY SEWER LINE (8"Ø, 10' BSG)
 - W-- WATER LINE (6"Ø, 4' BSG)
 - ⊕ STORM DRAIN
 - ⊕ MANHOLE
 - ⊕ TELEPHONE BOOTH

FIGURE 2
 SITE MAP

CHEVRON SERVICE STATION NO. 9-1583
 5509 MARTIN LUTHER KING WAY
 OAKLAND, CA.

PROJECT NO. DG91-583	DRAWN BY M.L. 6/26/02
FILE NO. DG91583B	PREPARED BY BIH
REVISION NO. 4	REVIEWED BY





R.4 W.

LEGEND:

- ① WATER WELL LOCATION

GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 OAKLAND WEST, CA.
 7.5 MINUTE TOPOGRAPHIC
 PHOTOREVISED 1980



QUADRANGLE LOCATION



FIGURE 3

WATER WELL LOCATION MAP WITHIN
 A 2,000 FOOT RADIUS OF SITE
 CHEVRON SERVICE STATION NO. 9-1583
 5509 MARTIN LUTHER KING WAY
 OAKLAND, CA.

PROJECT NO. DG91-583	DRAWN BY M.L. 6/21/02
FILE NO. DG91583A	PREPARED BY BAB
REVISION NO. 1	REVIEWED BY



TABLE 1

INVENTORY OF WATER WELLS WITHIN 2,000 FEET OF SITE

Chevron Service Station No. 9-1583
5509 Martin Luther King Way,
Oakland, California

Site Map Location	DWR Well I.D.	Well Location	Date Drilled	Proposed Use	Total Depth (ft)	Screened Interval(s) (ft)	Sanitary Seal Depth	Status
1	1S/4W 14L1	5702 B Adeline Street	07/26/77	Industrial	92	42-88	20	Active
2	1S/4W 14P1	4801 Oakport Street	04/11/74	Cathodic	120	None	93	Active

3. Beneficial Uses

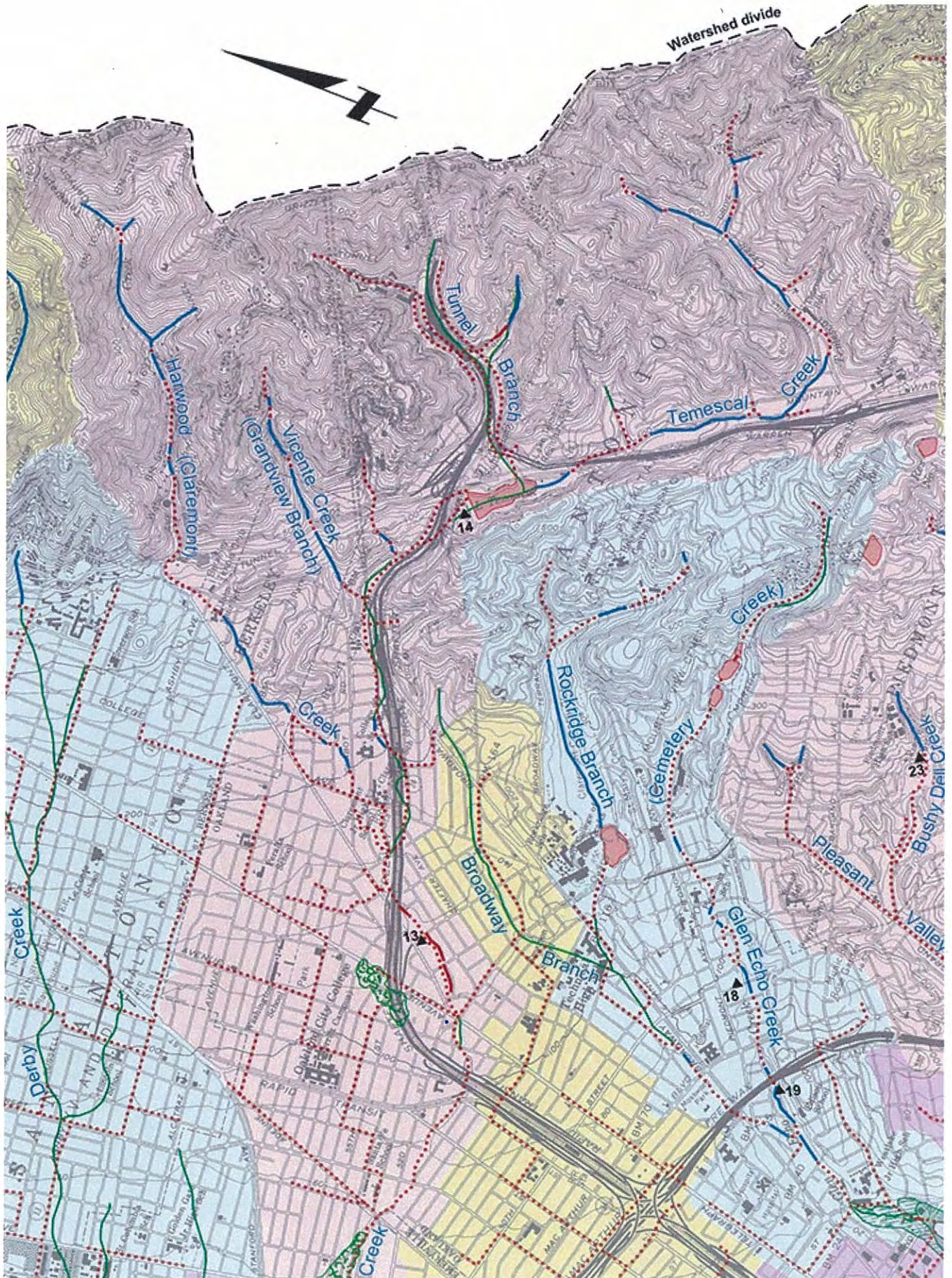
3.1 San Francisco Bay RWQCB Basin Plan

Existing and potential beneficial uses for groundwater are presented in the *San Francisco Bay Basin (Region 2) Water Quality Control Plan* (Basin Plan; Regional Water Quality Board [RWQCB] 2007). According to the Basin Plan (RWQCB 2007), the site is situated in the East Bay Plain groundwater sub-basin (basin number 2-9.04). Water supply uses, including municipal and domestic, industrial process, industrial service and agricultural, are identified in the Basin Plan (RWQCB 2007) as existing beneficial uses, based on best available information. The nearest surface-water body is the San Francisco Bay, located approximately 1.5 miles west of the site.

3.2 Sensitive Receptor Survey and Potential Exposure Pathways

To address the potentially complete exposure pathways (groundwater, soil and soil vapor), ARCADIS conducted a sensitive receptor survey (SRS) in January 2010. The objective of the SRS was to identify potential downgradient and aboveground risk receptors within 2,500 feet of the site. Potential risk receptors included water-producing wells, schools, hospitals and surface-water bodies and aquatic environments. The Alameda County Public Works Agency (ACPWA) was contacted for a survey of all subsurface wells within 2,500 feet (0.5 miles) of the site. An email reply from the ACPWA indicated that 1 irrigation well, 2 industrial wells, 58 monitoring wells, 5 wells for geotechnical investigations, 3 extraction/vapor wells, 4 test wells, and no municipal wells are present within 2,500 feet of the site. Results of the well survey are confidential and therefore are not presented in this report. However, many of the wells are not located downgradient of the site, and those that are downgradient of the site are located at the furthest extent of the 0.5 mile radius and are predominantly monitoring wells. The lone irrigation well is located approximately 0.2 miles (approximately 1,050 feet) southeast of the site.

A local internet search of the area surrounding the site yielded the presence of three schools within 2,500 feet of the site: Santa Fe Elementary School located approximately 1,200 feet southwest of the site; Oakland High School located approximately 1,700 feet southwest of the site, and Grace Children's Center located approximately 2,400 feet southwest of the site. The nearest surface-water body is the San Francisco Bay, located approximately 1.5 miles west of the site.



APPENDIX D

SECOND SEMI-ANNUAL 2011 GROUNDWATER MONITORING REPORT



GETTLER-RYAN INC.



TRANSMITTAL

August 10, 2011
G-R #386506

TO: Mr. James Kiernan
Conestoga-Rovers & Associates
10969 Trade Center Drive, Suite 107
Rancho Cordova, CA 95670

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: **Former Chevron Service Station
#9-1583 (MTI)
5509 Martin Luther King Way
Oakland, California
RO 000002**

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	August 4, 2011	Groundwater Monitoring and Sampling Report Second Semi-Annual Event of July 12, 2011

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced report for **your use and distribution to the following (including PDF submittal of the entire report to GeoTracker):**

Ms. Olivia Skance, Chevron Environmental Management Company, 6101 Bollinger Canyon Road,
San Ramon, CA 94583

cc: Mr. Mark Detterman, Alameda County Health Care Services, Dept. of Environmental Health,
1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577
(No Hard Copy-CRA UPLOAD TO ALAMEDA CO.)

Mr. Ben Shimek, (Owner), 31 Industrial Way, Greenbrae, CA 94904

Enclosures

trans/9-1583-OS

WELL CONDITION STATUS SHEET

Client/Facility #: **Chevron #9-1583**
 Site Address: **5509 Martin Luther King Way**
 City: **Oakland, CA**

Job #: **386506**
 Event Date: **7 / 12 / 11**
 Sampler: **HAIG KEVORK**

WELL ID	Vault Frame Condition	Gasket/O-Ring (M)missing	BOLTS (M) Missing (R) Replaced	Bolt Flanges B= Broken S= Stripped R=Retap	APRON Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y/N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Yes / No
MW-1	OK	N/A	N/A	N/A	OK	OK	OK	N	N	CHRISTY BOX	NO
MW-2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW-3	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW-7	OK	OK	OK	2-5	OK	OK	OK	↓	↓	MORRISON - 17" / 2	↓
MW-8	OK	OK	OK	2-5	OK	OK	OK	↓	↓	EMCO - 12" / 2	↓

Comments _____



GETTLER-RYAN INC.



August 4, 2011
G-R Job #386506

Ms. Olivia Skance
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

RE: Second Semi-Annual Event of July 12, 2011
Groundwater Monitoring & Sampling Report
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

Dear Ms. Skance:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

Static groundwater levels were measured and the wells were checked for the presence of separate-phase hydrocarbons. Static water level data, groundwater elevations, and separate-phase hydrocarbon thickness (if any) are presented in the attached Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells and submitted to a state certified laboratory for analyses. The field data sheets for this event are attached. Analytical results are presented in the table(s) listed below. The chain of custody document and laboratory analytical report are also attached. All groundwater and decontamination water generated during sampling activities was removed from the site, per the Standard Operating Procedure

Please call if you have any questions or comments regarding this report. Thank you.

Sincerely,

Deanna L. Harding
Project Coordinator

Douglas J. Lee
Senior Geologist, P.G. No. 6882

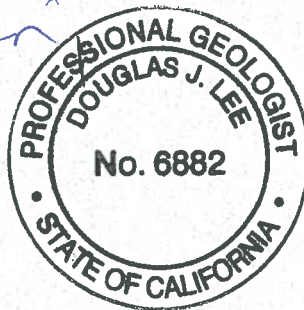
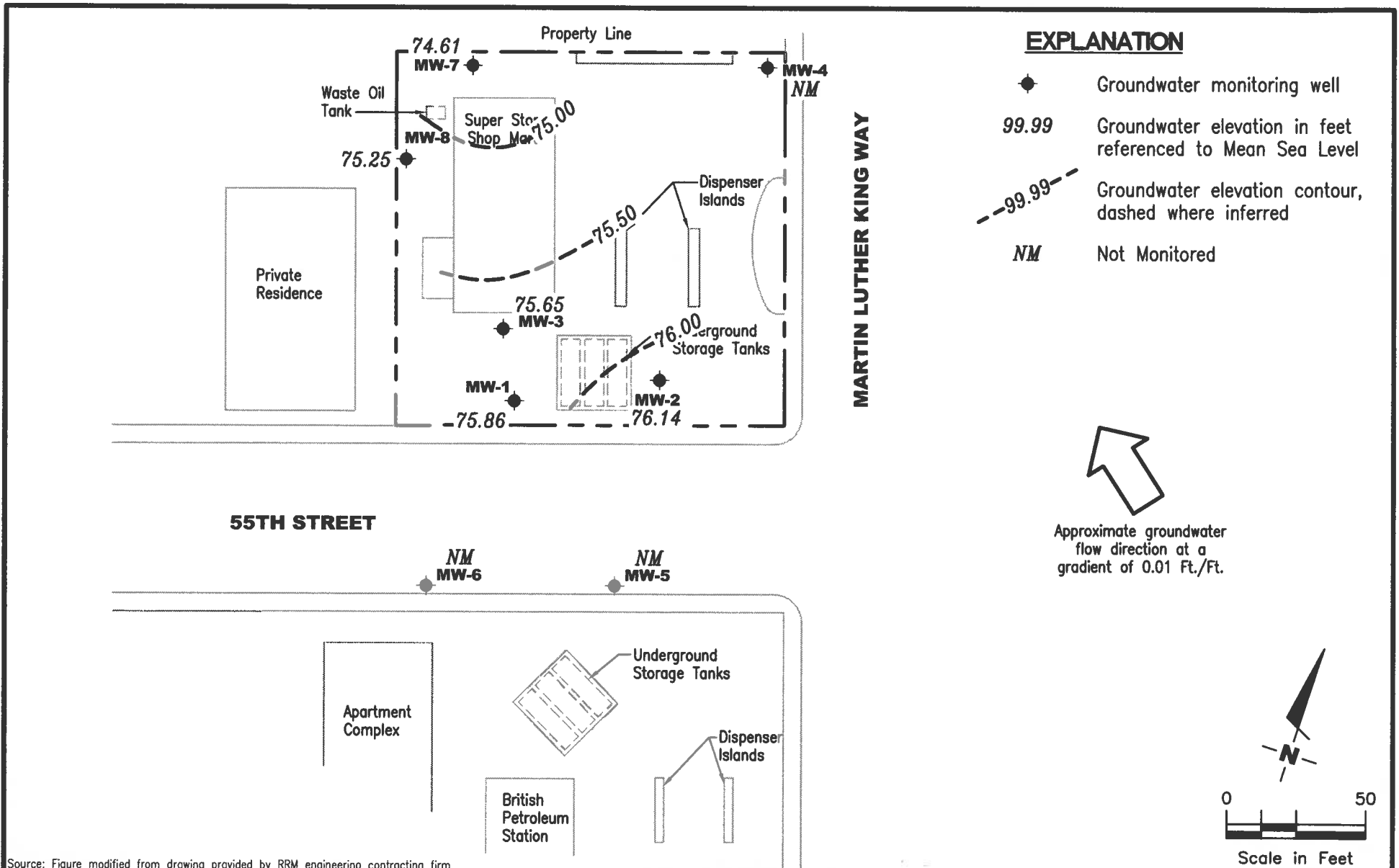


Figure 1: Potentiometric Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results - Oxygenate Compounds
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports



EXPLANATION

- ◆ Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level
- - - 99.99 - - - Groundwater elevation contour, dashed where inferred
- NM Not Monitored

Source: Figure modified from drawing provided by RRM engineering contracting firm.

GETTLER - RYAN INC.
 6747 Sierra Court, Suite J
 Dublin, CA 94568 (925) 551-7555

POTENTIOMETRIC MAP
 Former Chevron Service Station #9-1583
 5509 Martin Luther King Way
 Oakland, California

FIGURE
1

PROJECT NUMBER 386506	REVIEWED BY	DATE July 12, 2011	REVISED DATE
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Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID/ DATE	TOC (ft)	GWE (msl)	DTW (ft)	SPHT (ft)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-1													
12/22/83	81.97	71.72	10.25	--	--	--	--	--	--	--	--	--	--
12/30/83	81.97	72.80	9.17	--	--	--	--	--	--	--	--	--	--
03/12/90	81.97	71.89	10.08	--	--	--	50,000	3,000	7,300	1,900	18,000	--	--
03/25/90	82.42	71.51	10.46	--	--	--	--	--	--	--	--	--	--
10/18/90	82.42	--	--	--	--	--	--	--	--	--	--	--	--
10/31/90	82.42	--	--	--	--	--	--	--	--	--	--	--	--
11/16/90	82.42	70.84	11.58	--	--	--	--	--	--	--	--	--	--
02/08/91	82.42	72.31	10.11	--	--	--	100,000	4,200	8,400	16,000	2,600	--	--
05/08/91	82.42	71.97	10.45	--	--	--	31,000	200	66	670	2,000	--	--
08/12/91	82.42	71.19	11.23	--	--	--	17,000	81	7.2	270	710	--	--
11/07/91	82.42	71.72	10.70	--	--	--	7,100	24	6.0	130	170	--	--
02/05/92	82.42	72.05	10.37	--	--	--	110,000	8,900	14,000	2,700	12,000	--	--
05/13/92	82.42	71.84	10.58	--	--	--	19,000	450	85	480	870	--	--
07/17/92	82.42	71.37	11.05	--	--	--	8,500	170	<10	360	600	--	--
10/05/92	82.42	71.01	11.41	--	--	--	22,000	4,300	5,100	570	2,900	--	--
11/11/92	82.42	--	--	--	--	--	--	--	--	--	--	--	--
11/17/92	82.42	--	--	--	--	--	--	--	--	--	--	--	--
11/24/92	82.42	--	--	--	--	--	--	--	--	--	--	--	--
12/01/92	82.42	--	--	--	--	--	--	--	--	--	--	--	--
12/29/92	82.42	--	--	--	--	--	--	--	--	--	--	--	--
01/05/93	82.42	--	--	--	--	--	--	--	--	--	--	--	--
01/08/93	82.42	74.31	8.11	--	--	--	14,000,000	12,000	79,000	270,000	1,300,000	--	--
02/02/93	82.42	--	--	--	--	--	--	--	--	--	--	--	--
04/14/93	82.42	72.57	9.85	--	--	--	48,000	670	1,100	1,600	6,300	--	--
08/06/93	82.42	71.59	10.83	--	--	--	44,000	660	990	1,600	6,100	--	--
10/21/93	82.42	71.52	10.90	--	--	--	18,000	270	460	1,300	4,700	--	--
01/05/94	82.42	72.09	10.33	--	--	--	22,000	160	160	630	2,300	--	--
04/08/94	82.42	72.24	10.18	--	--	--	21,000	37	110	570	1,400	--	--
07/06/94	82.42	71.78	10.64	--	--	--	28,000	210	100	540	1,200	--	--
08/04/94	82.42	71.91	10.51	--	--	--	--	--	--	--	--	--	--
10/05/94	82.42	71.51	10.91	--	--	--	120,000	39	22	320	900	--	--
01/18/95	82.42	73.80	8.62	--	--	--	12,000	<20	<20	130	160	--	--
04/07/95	82.42	72.89	9.53	--	--	--	2,500	<2.5	<2.5	71	38	--	--
07/06/95	82.42	72.03	10.39	--	--	--	5,700	<0.5	<0.5	110	110	--	--
10/11/95	82.42	70.54	11.88	--	--	--	2,700	13	<5.0	13	5.7	650	--
01/17/96	82.42	73.14	9.28	--	--	--	4,200	12	<5.0	43	24	300	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-1 (cont)													
04/05/96	82.42	72.82	9.60	--	--	--	1,300	<1.2	<1.2	7.6	2.8	220	--
07/23/96	82.42	72.19	10.23	--	--	--	700	<1.0	<1.0	7.0	4.8	240	--
10/02/96	82.42	71.67	10.75	--	--	--	1,700	<2.5	9.8	10	13	610	--
01/23/97	82.42	74.75	7.67	--	--	--	1,300	21	<10	<10	<10	2,700	--
04/01/97	82.42	72.22	10.20	--	--	--	670	<2.0	<2.0	4.1	3.6	1,200	--
07/09/97	82.42	72.12	10.30	--	--	--	460	<1.0	<1.0	<1.0	<1.0	440	--
10/07/97	82.42	71.73	10.69	--	--	--	1,100	8.5	<2.0	<2.0	2.0	250	--
01/22/98	82.42	74.20	8.22	--	--	--	460	1.4	5.8	<0.5	<0.5	150	--
04/02/98	82.42	72.89	9.53	--	--	--	220	2.5	1.2	<1.0	1.9	260	--
07/02/98	82.42	72.08	10.34	--	--	--	270	<0.5	0.82	<0.5	<0.5	140	--
10/02/98	82.42	71.70	10.72	--	--	--	170	1.3	<0.5	<0.5	<1.5	320	--
01/18/99	82.42	72.87	9.55	--	--	--	416	<2.5	<2.5	<2.5	<2.5	316/295 ²	--
07/22/99	82.42	71.61	10.81	--	--	--	186	<0.5	3.94	1.46	2.37	63.7	--
01/17/00	82.42	72.21	10.21	--	--	--	248	1.6	<0.5	<0.5	<0.5	41.0	--
07/05/00	82.42	72.12	10.30	0.00	--	--	76 ³	<0.50	<0.50	<0.50	0.79	69	--
01/15/01	82.42	73.01	9.41	0.00	--	--	66.6	<0.500	<0.500	<0.500	0.585	22.5	--
07/03/01	82.42	72.13	10.29	0.00	--	--	<50	<0.50	<0.50	<0.50	<0.50	8.8	--
02/28/02	82.42	72.74	9.68	0.00	--	--	58	<0.50	<0.50	<0.50	<1.5	21	--
07/08/02	82.42	72.14	10.28	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	23	--
01/01/03	82.42	74.28	8.14	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	15	--
07/14/03 ⁸	82.42	72.12	10.30	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	5	--
01/12/04 ⁸	82.42	73.40	9.02	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	61	--
07/27/04 ⁸	82.42	72.10	10.32	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	54	--
01/25/05 ⁸	82.42	74.24	8.18	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	5	--
07/26/05 ⁸	82.42	72.40	10.02	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	25	--
01/24/06 ⁸	82.42	74.22	8.20	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	25	--
07/25/06 ⁸	82.42	72.30	10.12	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	14	--
01/23/07 ⁸	82.42	72.57	9.85	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	17	--
07/24/07 ⁸	82.42	70.59	11.83	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	7	--
01/22/08 ⁸	82.42	73.12	9.30	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	8	--
07/22/08 ⁸	82.42	71.69	10.73	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/13/09 ⁸	82.42	72.41	10.01	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	2	--
07/14/09	82.42	71.52	10.90	0.00	SAMPLED ANNUALLY		--	--	--	--	--	--	--
01/12/10 ⁸	85.41	76.70	8.71	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	15	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-1 (cont)													
07/13/10	85.41	75.09	10.32	0.00	SAMPLED ANNUALLY			--	--	--	--	--	--
01/25/11 ⁸	85.41	77.03	8.38	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	5	--
07/12/11	85.41	75.86	9.55	0.00	SAMPLED ANNUALLY			--	--	--	--	--	--
MW-2													
12/22/83	83.48	72.98	10.50	--	--	--	--	--	--	--	--	--	--
12/30/83	83.48	73.56	9.92	--	--	--	--	--	--	--	--	--	--
03/12/90	83.48	72.46	11.02	--	--	--	800	400	22	18	55	--	--
03/25/90	83.48	72.15	11.33	--	--	--	--	--	--	--	--	--	--
10/18/90	83.48	71.17	12.31	--	--	--	--	--	--	--	--	--	--
10/31/90	83.48	--	--	--	--	--	--	--	--	--	--	--	--
11/16/90	83.48	--	--	--	--	--	--	--	--	--	--	--	--
02/08/91	83.48	72.43	11.05	--	--	--	4,600	820	440	720	210	--	--
05/08/91	83.48	72.12	11.36	--	--	--	<50	5.0	<0.5	<0.5	<0.5	--	--
08/12/91	83.48	71.51	11.97	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/07/91	83.48	71.98	11.50	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/05/92	83.48	72.29	11.19	--	--	--	1,700	390	170	60	200	--	--
05/13/92	83.48	71.99	11.49	--	--	--	74	9.3	<0.5	<0.5	<0.5	--	--
07/17/92	83.48	71.63	11.85	--	--	--	<50	2.0	<0.5	<0.5	<0.5	--	--
10/05/92	83.48	71.48	12.00	--	--	--	3,500	1,200	530	86	220	--	--
11/11/92	83.48	--	--	--	--	--	--	--	--	--	--	--	--
11/17/92	83.48	--	--	--	--	--	--	--	--	--	--	--	--
11/24/92	83.48	--	--	--	--	--	--	--	--	--	--	--	--
12/01/92	83.48	--	--	--	--	--	--	--	--	--	--	--	--
12/29/92	83.48	--	--	--	--	--	--	--	--	--	--	--	--
01/05/93	83.48	--	--	--	--	--	--	--	--	--	--	--	--
01/08/93	83.48	74.65	8.83	--	--	--	390	140	0.8	7.7	26	--	--
02/02/93	83.48	--	--	--	--	--	--	--	--	--	--	--	--
04/14/93	83.48	72.69	10.79	--	--	--	<50	5.0	<0.5	<0.5	<0.5	--	--
08/06/93	83.48	71.77	11.71	--	--	--	<50	1.0	<0.5	<0.5	<0.5	--	--
10/21/93	83.48	71.74	11.74	--	--	--	<50	1.0	<0.5	9.0	<0.5	--	--
01/05/94	83.48	72.30	11.18	--	--	--	<50	0.7	<0.5	<0.5	0.9	--	--
04/08/94	83.48	72.42	11.06	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/06/94	83.48	71.80	11.68	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/04/94	83.48	72.29	11.19	--	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-2 (cont)													
10/05/94	83.48	71.79	11.69	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/18/95	83.48	74.26	9.22	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/95	83.48	73.62	9.86	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/06/95	83.48	72.74	10.74	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/11/95	83.48	72.26	11.22	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/17/96	83.48	73.74	9.74	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/05/96	83.48	73.52	9.96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/23/96	83.48	72.57	10.91	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/02/96	83.48	72.41	11.07	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/23/97	83.48	75.18	8.30	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	3.4	--
04/01/97	83.48	72.90	10.58	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/09/97	83.48	72.58	10.90	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/07/97	83.48	72.52	10.96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/22/98	83.48	74.73	8.75	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/02/98	83.48	73.66	9.82	--	--	--	89	3.0	5.4	4.1	21	<2.5	--
07/02/98	83.48	72.74	10.74	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/02/98	83.48	72.43	11.05	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--
01/18/99	83.48	73.09	10.39	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
07/22/99	83.48	72.61	10.87	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
01/17/00	83.48	72.89	10.59	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/05/00	83.48	72.84	10.64	0.00	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
01/15/01	83.48	73.77	9.71	0.00	--	--	555 ⁶	<0.500	<0.500	<0.500	<0.500	<2.50	--
07/03/01	83.48	73.02	10.46	0.00	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
02/28/02	83.48	73.49	9.99	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
07/08/02	83.48	72.98	10.50	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
01/01/03	83.48	75.33	8.15	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
07/14/03 ⁸	83.48	72.96	10.52	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/12/04 ⁸	83.48	74.31	9.17	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/27/04 ⁸	83.48	72.85	10.63	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/25/05 ⁸	83.48	74.36	9.12	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/26/05 ⁸	83.48	73.56	9.92	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/24/06 ⁸	83.48	74.33	9.15	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/25/06 ⁸	83.48	73.03	10.45	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/23/07 ⁸	83.48	73.37	10.11	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/24/07 ⁸	83.48	72.90	10.58	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/22/08 ⁸	83.48	73.85	9.63	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	BTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-2 (cont)													
07/22/08 ^B	83.48	73.08	10.40	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	2	--
01/13/09 ^B	83.48	73.10	10.38	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/14/09	83.48	72.93	10.55	0.00	SAMPLED ANNUALLY			--	--	--	--	--	--
01/12/10 ^B	86.04	76.38	9.66	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/13/10	86.04	76.09	9.95	0.00	SAMPLED ANNUALLY			--	--	--	--	--	--
01/25/11 ^B	86.04	76.68	9.36	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/12/11	86.04	76.14	9.90	0.00	SAMPLED ANNUALLY			--	--	--	--	--	--
MW-3													
12/22/83	84.36	72.78	11.58	--	--	--	--	--	--	--	--	--	--
12/30/83	84.36	73.19	11.17	--	--	--	--	--	--	--	--	--	--
03/12/90	84.36	72.22	12.14	--	--	--	47,000	1,000	9,900	1,700	9,800	--	--
03/25/90	84.38	71.81	12.55	--	--	--	--	--	--	--	--	--	--
10/18/90	84.38	--	--	--	--	--	--	--	--	--	--	--	--
10/31/90	84.38	--	--	--	--	--	--	--	--	--	--	--	--
11/16/90	84.38	70.76	13.62	--	--	--	--	--	--	--	--	--	--
02/08/91	84.38	72.20	12.18	--	--	--	58,000	4,900	5,200	9,500	2,000	--	--
05/08/91	84.38	71.86	12.52	--	--	--	50,000	2,100	1,400	2,000	9,400	--	--
08/12/91	84.38	71.11	13.27	--	--	--	15,000	1,300	160	920	1,900	--	--
11/07/91	84.38	71.57	12.81	--	--	--	26,000	1,000	310	1,900	5,900	--	--
02/05/92	84.38	71.91	12.47	--	--	--	35,000	2,800	1,300	1,500	4,700	--	--
05/13/92	84.38	71.76	12.62	--	--	--	47,000	1,500	1,200	1,100	4,800	--	--
07/17/92	84.38	71.25	13.13	--	--	--	15,000	120	11	88	140	--	--
10/05/92	84.38	70.95	13.62	0.24	--	--	--	--	--	--	--	--	--
11/11/92	84.38	71.63	12.89	0.17	--	--	--	--	--	--	--	--	--
11/17/92	84.38	71.54	12.89	0.06	--	--	--	--	--	--	--	--	--
11/24/92	84.38	71.56	12.86	0.05	--	--	--	--	--	--	--	--	--
12/01/92	84.38	71.48	12.92	0.03	--	--	--	--	--	--	--	--	--
12/29/92	84.38	73.14	11.24	Sheen	--	--	--	--	--	--	--	--	--
01/05/93	84.38	73.23	11.15	Sheen	--	--	--	--	--	--	--	--	--
01/08/93	84.38	74.28	10.10	--	--	--	250,000	5,000	17,000	5,500	28,000	--	--
02/02/93	84.38	--	--	--	--	--	--	--	--	--	--	--	--
04/14/93	84.38	72.48	11.91	0.01	--	--	--	--	--	--	--	--	--
08/06/93	84.38	71.49	12.90	0.01	--	--	150,000	3,800	6,600	3,700	17,000	--	--
10/21/93	84.38	71.41	12.97	--	--	--	22,000	2,300	1,700	1,400	5,100	--	--

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Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-3 (cont)													
01/05/94	84.38	71.96	12.42	--	--	--	37,000	1,600	1,100	1,300	6,500	--	--
04/08/94	84.38	72.51	11.87	--	--	--	16,000	250	310	500	2,500	--	--
07/06/94	84.38	71.64	12.74	--	--	--	43,000	660	320	1,900	6,400	--	--
08/04/94	84.38	71.71	12.67	--	--	--	--	--	--	--	--	--	--
10/05/94	84.38	71.43	12.95	--	--	--	12,000	280	90	480	370	--	--
01/18/95	84.38	73.72	10.66	--	--	--	20,000	200	230	700	3,500	--	--
04/07/95	84.38	72.84	11.54	--	--	--	22,000	120	120	810	4,400	--	--
07/06/95	84.38	71.99	12.39	--	--	--	15,000	110	<50	630	2,100	--	--
10/11/95	84.38	72.07	12.31	--	--	--	8,600	24	<10	360	560	1,100	--
01/17/96	84.38	73.68	10.70	--	--	--	9,300	<50	<50	230	1,100	2,300	--
04/05/96	84.38	73.35	11.03	--	--	--	8,700	16	<10	110	650	990	--
07/23/96	84.38	72.38	12.00	--	--	--	5,400	20	<5.0	190	480	2,300	--
10/02/96	84.38	72.20	12.18	--	--	--	6,200	43	<20	130	140	2,800	--
01/23/97	84.38	75.12	9.26	--	--	--	5,600	<5.0	<5.0	39	160	550	--
04/01/97	84.38	72.75	11.63	--	--	--	6,900	17	<10	150	330	3,900	--
07/09/97	84.38	72.38	12.00	--	--	--	5,300	31	<5.0	100	180	2,300	--
10/07/97	84.38	72.27	12.11	--	--	--	2,400	15	<2.0	30	15	900	--
01/22/98	84.38	74.73	9.65	--	--	--	3,200	2.5	7.9	70	220	660	--
04/02/98	84.38	73.49	10.89	--	--	--	1,300	14	9.7	25	63	430	--
07/02/98	84.38	72.69	11.69	--	--	--	750	6.9	<5.0	18	9.1	370	--
10/02/98	84.38	72.23	12.15	--	--	--	1,400	5.3	0.73	18	6.6	900	--
01/18/99	84.38	74.05	10.33	--	--	--	1,270	<1.0	<1.0	7.95	<1.0	100/99.7 ²	--
07/22/99	84.38	72.08	12.30	--	--	--	2,240	<1.0	<1.0	29.4	13.7	189	--
01/17/00	84.38	72.78	11.60	--	--	--	848	6.72	2.53	5.02	2.49	90	--
07/05/00	84.38	72.67	11.71	0.00	--	--	90 ³	5.3	<0.50	0.70	<0.50	770	--
01/15/01	84.38	73.93	10.45	0.00	--	--	206	<0.500	<0.500	<0.500	1.09	4.04	--
07/03/01	84.38	72.62	11.76	0.00	--	--	<50	0.53	<0.50	<0.50	1.1	20	--
02/28/02	84.38	73.29	11.09	0.00	--	--	170	<1.0	<1.0	<1.0	1.6	45	--
07/08/02	84.38	71.38	13.00	0.00	--	--	430	0.60	<0.50	0.79	<1.5	42	--
01/01/03	84.38	74.89	9.49	0.00	--	--	140	<0.50	<0.50	<0.50	<1.5	6.1	--
07/14/03 ⁸	84.38	71.36	13.02	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	43	--
01/12/04 ⁸	84.38	74.00	10.38	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	2	--
07/27/04 ⁸	84.38	72.60	11.78	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	41	--
01/25/05 ⁸	84.38	73.96	10.42	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	27	--
07/26/05 ⁸	84.38	72.17	12.21	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	12	--
01/24/06 ⁸	84.38	73.99	10.39	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	0.8	--

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WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-3 (cont)													
07/25/06 ^B	84.38	72.76	11.62	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	23	--
01/23/07 ^B	84.38	73.44	10.94	0.00	--	--	130	<0.5	<0.5	<0.5	<0.5	2	--
07/24/07 ^B	84.38	74.10	10.28	0.00	--	--	210	<0.5	<0.5	<0.5	<0.5	20	--
01/22/08 ^B	84.38	73.83	10.55	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/22/08 ^B	84.38	72.40	11.98	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	7	--
01/13/09 ^B	84.38	72.82	11.56	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	10	--
07/14/09	84.38	72.25	12.13	0.00	SAMPLED ANNUALLY		--	--	--	--	--	--	--
01/12/10 ^B	86.80	75.93	10.87	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	14	--
07/13/10	86.80	75.37	11.43	0.00	SAMPLED ANNUALLY		--	--	--	--	--	--	--
01/25/11 ^B	86.80	76.19	10.61	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	4	--
07/12/11	86.80	75.65	11.15	0.00	SAMPLED ANNUALLY		--	--	--	--	--	--	--
MW-4													
10/18/90	84.25	68.50	15.75	--	--	--	--	--	--	--	--	--	--
10/31/90	84.25	70.35	13.90	--	--	--	<50	<0.5	<0.5	<0.5	1.0	--	--
11/16/90	84.25	70.00	14.25	--	--	--	--	--	--	--	--	--	--
02/08/91	84.25	71.93	12.32	--	--	--	60	17	2.0	12	<0.5	--	--
05/08/91	84.25	72.02	12.23	--	--	--	65	<0.5	<0.5	<0.5	<0.5	--	--
08/12/91	84.25	70.32	13.93	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/07/91	84.25	70.83	13.42	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/05/92	84.25	71.42	12.83	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/13/92	84.25	70.97	13.28	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/17/92	84.25	70.27	13.98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/05/92	84.25	70.02	14.23	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/11/92	84.25	--	--	--	--	--	--	--	--	--	--	--	--
11/17/92	84.25	--	--	--	--	--	--	--	--	--	--	--	--
11/24/92	84.25	--	--	--	--	--	--	--	--	--	--	--	--
12/01/92	84.25	--	--	--	--	--	--	--	--	--	--	--	--
12/29/92	84.25	--	--	--	--	--	--	--	--	--	--	--	--
01/05/93	84.25	--	--	--	--	--	--	--	--	--	--	--	--
01/08/93	84.25	74.09	10.16	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/02/93	84.25	--	--	--	--	--	--	--	--	--	--	--	--
04/14/93	84.25	72.21	12.04	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/06/93	84.25	70.34	13.91	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/21/93	84.25	70.26	13.99	--	--	--	<50	<0.5	<0.5	<0.5	1.0	--	--

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WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOC (µg/L)	
MW-4 (cont)														
01/05/94	84.25	71.30	12.95	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
04/08/94	84.25	71.31	12.94	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
07/06/94	84.25	70.57	13.68	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
08/04/94	84.25	70.71	13.54	--	--	--	--	--	--	--	--	--	--	
10/05/94	84.25	70.65	13.60	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
01/18/95	84.25	74.77	9.48	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
04/07/95	84.25	72.70	11.55	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
07/06/95	84.25	71.25	13.00	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	
10/11/95	84.25	70.27	13.98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
01/17/96	84.25	73.17	11.08	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
04/05/96	84.25	72.65	11.60	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
07/23/96	84.25	70.86	13.39	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
10/02/96	84.25	70.27	13.98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
01/23/97	84.25	74.72	9.53	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
04/01/97	84.25	71.68	12.57	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
07/09/97	84.25	70.64	13.61	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
10/07/97	84.25	70.51	13.74	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
01/22/98	84.25	74.90	9.35	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
04/02/98	84.25	73.00	11.25	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
07/02/98	84.25	71.84	12.41	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	
10/02/98	84.25	71.00	13.25	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	
01/18/99	84.25	72.65	11.60	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--	
07/22/99	84.25	70.70	13.55	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--	
01/17/00	84.25	71.32	12.93	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	
07/05/00	84.25	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--	--
01/15/01	84.25	72.73	11.52	0.00	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	
07/03/01	84.25	71.30	12.95	0.00	--	--	--	--	--	--	--	--	--	
02/28/02	84.25	72.54	11.71	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	
07/08/02	84.24	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--	--
01/01/03	84.24	INACCESSIBLE - VEHICLE PARKED OVER WELL				--	--	--	--	--	--	--	--	--
07/14/03	84.24	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--	--
01/12/04 ⁸	84.24	73.23	11.01	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
01/25/05 ⁸	84.24	73.28	10.96	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
07/26/05	84.24	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--	--
01/24/06 ⁸	84.24	73.36	10.88	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
07/25/06	84.24	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--	--

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Oakland, California

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MW-4 (cont)													
01/23/07 ^B	84.24	71.85	12.39	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/24/07	84.24	MONITORED/SAMPLED ANNUALLY											
01/22/08 ^B	84.24	72.77	11.47	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/22/08	84.24	MONITORED/SAMPLED ANNUALLY											
01/13/09 ^B	84.24	71.56	12.68	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/14/09	84.24	MONITORED/SAMPLED ANNUALLY											
01/12/10 ^B	87.29	76.14	11.15	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/13/10	87.29	MONITORED/SAMPLED ANNUALLY											
01/25/11 ^B	87.29	76.21	11.08	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/12/11	87.29	MONITORED/SAMPLED ANNUALLY											
MW-5													
10/18/90	81.95	71.17	10.78	--	--	--	--	--	--	--	--	--	--
10/31/90	81.95	71.32	10.63	--	--	--	110	<0.5	<0.5	<0.5	<0.5	--	--
11/16/90	81.95	71.27	10.68	--	--	--	--	--	--	--	--	--	--
02/08/91	81.95	72.78	9.17	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/08/91	81.95	73.27	8.68	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/12/91	81.95	71.62	10.33	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/07/91	81.95	72.19	9.76	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/05/92	81.95	72.48	9.47	--	--	--	69	<0.5	<0.5	<0.5	<0.5	--	--
05/13/92	81.95	72.25	9.70	--	--	--	74	<0.5	<0.5	<0.5	<0.5	--	--
07/17/92	81.95	71.74	10.21	--	--	--	880	2.6	<1.2	4.6	11	--	--
10/05/92	81.95	71.34	10.61	--	--	--	120	<0.5	<0.5	0.6	4.9	--	--
11/11/92	81.95	--	--	--	--	--	--	--	--	--	--	--	--
11/17/92	81.95	--	--	--	--	--	--	--	--	--	--	--	--
11/24/92	81.95	--	--	--	--	--	--	--	--	--	--	--	--
12/01/92	81.95	--	--	--	--	--	--	--	--	--	--	--	--
12/29/92	81.95	--	--	--	--	--	--	--	--	--	--	--	--
01/05/93	81.95	--	--	--	--	--	--	--	--	--	--	--	--
01/08/93	81.95	74.61	7.34	--	--	--	61	<0.5	<0.5	<0.5	<0.5	--	--
02/02/93	81.95	--	--	--	--	--	--	--	--	--	--	--	--
04/14/93	81.95	--	--	--	--	--	--	--	--	--	--	--	--
08/06/93	81.95	71.99	9.96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/21/93	81.95	71.89	10.06	--	--	--	<50	<0.5	<0.5	2.0	4.0	--	--

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Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-5 (cont)													
01/05/94	81.95	72.52	9.43	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/08/94	81.95	72.56	9.39	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/06/94	81.95	72.19	9.76	--	--	--	<50	0.6	<0.5	<0.5	<0.5	--	--
08/04/94	81.95	72.13	9.82	--	--	--	--	--	--	--	--	--	--
10/05/94	81.95	71.89	10.06	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/18/95	81.95	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
04/07/95	81.95	73.31	8.64	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/06/95	81.95	72.52	9.43	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/11/95	81.95	72.12	9.83	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/17/96	81.95	73.63	8.32	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/05/96	81.95	73.23	8.72	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/23/96	81.95	72.25	9.70	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/02/96	81.95	72.06	9.89	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/23/97	81.95	74.72	7.23	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/01/97	81.95	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
07/09/97	81.95	72.27	9.68	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/07/97	81.95	72.14	9.81	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/22/98	81.95	74.80	7.15	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/02/98	81.95	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
07/02/98	81.95	72.43	9.52	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/02/98	81.95	72.14	9.81	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--
01/18/99	81.95	73.11	8.84	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
07/22/99	81.95	72.01	9.94	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
01/17/00	81.95	72.70	9.25	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/05/00	81.95	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/15/01	81.95	73.41	8.54	0.00	--	--	423 ⁶	<0.500	<0.500	<0.500	<0.500	<2.50	--
07/03/01	81.95	72.62	9.33	0.00	--	--	--	--	--	--	--	--	--
02/28/02	81.95	73.24	8.71	0.00	--	--	270	<0.50	<0.50	<0.50	<1.5	<2.5	--
07/08/02	81.95	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/01/03	81.95	INACCESSIBLE - VEHICLE PARKED OVER WELL				--	--	--	--	--	--	--	--
07/14/03	81.95	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/12/04 ⁸	81.95	73.91	8.04	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/25/05 ⁸	81.95	73.94	8.01	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/26/05	81.95	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/24/06 ⁸	81.95	73.89	8.06	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--

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WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-5 (cont)													
07/25/06	81.95	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/23/07	81.95	INACCESSIBLE - VEHICLE PARKED OVER WELL											
07/24/07	81.95	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/22/08 ⁸	81.95	73.50	8.45	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/22/08	81.95	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/13/09 ⁸	81.95	71.69	10.26	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/14/09	81.95	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/12/10 ⁸	84.93	76.45	8.48	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/13/10	84.93	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/25/11 ⁸	84.93	76.69	8.24	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/12/11	84.93	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
MW-6													
10/18/90	80.60	70.81	9.79	--	--	--	--	--	--	--	--	--	--
10/31/90	80.60	70.91	9.69	--	--	--	<50	<0.5	<0.5	<0.5	3.0	--	--
11/16/90	80.60	70.86	9.74	--	--	--	--	--	--	--	--	--	--
02/08/91	80.60	--	--	--	--	--	--	--	--	--	--	--	--
05/08/91	80.60	71.06	9.54	--	--	--	56	<0.5	<0.5	<0.5	<0.5	--	--
08/12/91	80.60	71.10	9.50	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/07/91	80.60	71.71	8.89	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/05/92	80.60	72.01	8.59	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/13/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
07/17/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
10/05/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
11/11/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
11/17/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
11/24/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
12/01/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
12/29/92	80.60	--	--	--	--	--	--	--	--	--	--	--	--
01/05/93	80.60	--	--	--	--	--	--	--	--	--	--	--	--
01/08/93	80.60	--	--	--	--	--	--	--	--	--	--	--	--
02/02/93	80.60	72.89	7.71	--	--	--	<50	2.1	<0.5	<0.5	2.2	--	--
04/14/93	80.60	72.41	8.19	--	--	--	<50	1.0	<0.5	<0.5	<0.5	--	--
08/06/93	80.60	71.52	9.08	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/21/93	80.60	71.46	9.14	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--

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WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-6 (cont)													
01/05/94	80.60	72.06	8.54	--	--	--	<50	4.0	<0.5	<0.5	<0.5	--	--
04/08/94	80.60	--	--	--	--	--	--	--	--	--	--	--	--
07/06/94	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
08/04/94	80.60	71.66	8.94	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/05/94	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
01/18/95	80.60	73.50	7.10	--	--	--	<50	0.69	<0.5	<0.5	0.57	--	--
04/07/95	80.60	72.77	7.83	--	--	--	<50	1.8	<0.5	<0.5	<0.5	--	--
07/06/95	80.60	72.03	8.57	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/11/95	80.60	71.54	9.06	--	--	--	<125	<1.2	<1.2	<1.2	<1.2	540	--
01/17/96	80.60	73.20	7.40	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	180	--
04/05/96	80.60	72.70	7.90	--	--	--	<125	1.4	<1.2	<1.2	<1.2	700	--
07/23/96	80.60	71.86	8.74	--	--	--	<500	<5.0	<5.0	<5.0	<5.0	540	--
10/02/96	80.60	71.62	8.98	--	--	--	<100	<1.0	<1.0	<1.0	1.8	910	--
01/23/97	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
04/01/97	80.60	72.22	8.38	--	--	--	<250	<2.5	<2.5	<2.5	<2.5	640	--
07/09/97	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
10/07/97	80.60	71.71	8.89	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	640	--
01/22/98	80.60	73.90	6.70	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	200	--
04/02/98	80.60	72.79	7.81	--	--	--	<250	<2.5	<2.5	<2.5	<2.5	480	--
07/02/98	80.60	71.62	8.98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	420	--
10/02/98	80.60	71.68	8.92	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	270	--
01/18/99	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
07/22/99	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
01/17/00	80.60	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
07/05/00	80.60	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/15/01	80.60	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--	--	--
07/03/01	80.60	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--	--	--
02/28/02	80.60	72.70	7.90	0.00	--	--	<50	<0.50	<0.50	<0.50	<1.5	55	--
07/08/02	80.60	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/01/03	80.60	INACCESSIBLE - VEHICLE PARKED OVER WELL				--	--	--	--	--	--	--	--
07/14/03	80.60	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/12/04 ⁸	80.60	73.23	7.37	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	25	--
01/25/05 ⁸	80.60	73.17	7.43	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	3	--
07/26/05	80.60	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--
01/24/06 ⁸	80.60	73.20	7.40	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/25/06	80.60	MONITORED/SAMPLED ANNUALLY				--	--	--	--	--	--	--	--

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MW-6 (cont)													
01/23/07 ^B	80.60	72.53	8.07	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	8	--
07/24/07	80.60	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/22/08 ^B	80.60	73.07	7.53	0.00	--	--	<50	<0.5	<0.5	1	2	4	--
07/22/08	80.60	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/13/09 ^B	80.60	70.73	9.87	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	6	--
07/14/09	80.60	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/12/10 ^B	83.63	75.71	7.92	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/13/10	83.63	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
01/25/11 ^B	83.63	76.05	7.58	0.00	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/12/11	83.63	MONITORED/SAMPLED ANNUALLY			--	--	--	--	--	--	--	--	--
MW-7													
03/08/94	86.36	74.99	11.37	--	<10	4,100	1,200	440	31	73	200	--	--
07/06/94	86.36	--	--	--	--	--	--	--	--	--	--	--	--
08/04/94	86.36	73.86	12.50	--	--	--	120	15	<0.5	3.8	1.8	--	--
10/05/94	86.36	73.99	12.37	--	--	--	150	1.2	<0.5	1.2	1.7	--	--
01/18/95	86.36	74.82	11.54	--	--	--	260	11	<1.0	17	6.8	--	--
04/07/95	86.36	75.63	10.73	--	--	--	230	<0.5	<0.5	25	0.93	--	--
07/06/95	86.36	74.36	12.00	--	--	--	320	<1.0	<1.0	<1.0	<1.0	--	6,900
10/11/95	86.36	73.56	12.80	--	--	2,300 ¹	<50	<0.5	<0.5	<0.5	<0.5	120	--
01/17/96	86.36	75.90	10.46	--	--	1,700	<50	<0.5	<0.5	<0.5	<0.5	460	--
04/05/96	86.36	76.56	9.80	--	--	590	130	<0.5	<0.5	<0.5	<0.5	120	--
07/23/96	86.36	74.57	11.79	--	--	820	<500	<5.0	<5.0	<5.0	<0.5	1,200	--
10/02/96	86.36	73.10	13.26	--	--	1,500	<100	<1.0	<1.0	<1.0	<1.0	360	--
01/23/97	86.36	77.64	8.72	--	--	<500	<100	<1.0	<1.0	<1.0	<1.0	490	--
04/01/97	86.36	75.09	11.27	--	--	1,600	<250	<2.5	<2.5	<2.5	<2.5	1,200	--
07/09/97	86.36	73.92	12.44	--	--	5,700	<250	5.9	<2.5	<2.5	<2.5	1,200	--
10/07/97	86.36	73.44	12.92	--	--	<500	<50	<0.5	<0.5	<0.5	<0.5	240	--
01/22/98	86.36	75.14	11.22	--	--	<500	<50	<0.5	<0.5	<0.5	<0.5	400	--
04/02/98	86.36	75.67	10.69	--	--	<500	56	<0.5	<0.5	<0.5	<0.5	290	--
07/02/98	86.36	75.94	10.42	--	--	<500	<50	<0.5	<0.5	<0.5	<0.5	380	--
10/02/98	86.36	74.14	12.22	--	--	1,700	<50	<0.5	<0.5	<0.5	<1.5	660	--
01/18/99	86.36	75.36	11.00	--	--	543	<100	<1.0	<1.0	<1.0	<1.0	281/296 ²	--
07/22/99	86.36	74.06	12.30	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	155	--
01/17/00	86.36	75.84	10.52	--	256 ¹	1,040	<50	<0.5	<0.5	<0.5	<0.5	104	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID/ DATE	TOC (ft)	GWE (mst)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-7 (cont)													
07/05/00	86.36	74.23	12.13	0.00	--	1,400 ⁴	<50	<0.50	<0.50	<0.50	<0.50	110	--
01/15/01	86.36	75.23	11.13	0.00	--	2,700	<50.0	<0.500	<0.500	<0.500	<0.500	84.3	--
07/03/01	86.36	74.47	11.89	0.00	--	760 ⁷	<50	<0.50	<0.50	<0.50	<0.50	27	--
02/28/02	86.36	75.26	11.10	0.00	--	<1,000	<50	<0.50	<0.50	<0.50	<1.5	66	--
07/08/02	86.36	74.05	12.31	0.00	--	1,400	<50	<0.50	<0.50	<0.50	<1.5	49	--
01/01/03	86.36	76.65	9.71	0.00	--	1,300	<50	<0.50	<0.50	<0.50	<1.5	35	--
07/14/03 ⁸	86.36	74.01	12.35	0.00	--	130	<50	<0.5	<0.5	<0.5	<0.5	20	--
01/12/04 ⁸	86.36	75.66	10.70	0.00	--	250	<50	<0.5	<0.5	<0.5	<0.5	27	--
07/27/04 ⁸	86.36	74.08	12.28	0.00	--	730	<50	<0.5	<0.5	<0.5	<0.5	44	--
01/25/05 ⁸	86.36	75.56	10.80	0.00	--	980	<50	<0.5	<0.5	<0.5	<0.5	34	--
07/26/05 ⁸	86.36	73.69	12.67	0.00	--	1,100	<50	<0.5	<0.5	<0.5	<0.5	19	--
01/24/06 ⁸	86.36	75.60	10.76	0.00	--	230	<50	<0.5	<0.5	<0.5	<0.5	18	--
07/25/06 ⁸	86.36	74.17	12.19	0.00	--	160	<50	<0.5	<0.5	<0.5	<0.5	19	--
01/23/07 ⁸	86.36	74.60	11.76	0.00	--	2,100	<50	<0.5	<0.5	<0.5	<0.5	15	--
07/24/07 ⁸	86.36	73.91	12.45	0.00	--	3,100	<50	<0.5	<0.5	<0.5	<0.5	24	--
01/22/08 ⁸	86.36	75.36	11.00	0.00	--	4,400	<50	<0.5	<0.5	<0.5	<0.5	12	--
07/22/08 ⁸	86.36	73.38	12.98	0.00	--	200	<50	<0.5	<0.5	<0.5	<0.5	25	--
01/13/09 ⁸	86.36	73.85	12.51	0.00	--	1,400	<50	<0.5	<0.5	<0.5	<0.5	7	--
07/14/09 ⁸	86.36	73.18	13.18	0.00	--	1,000	<50	<0.5	<0.5	<0.5	<0.5	10	--
01/12/10 ⁸	86.36	75.01	11.35	0.00	--	1,500	<50	<0.5	<0.5	<0.5	<0.5	5	--
07/13/10 ⁸	86.36	73.72	12.64	0.00	--	1,100	<50	<0.5	<0.5	<0.5	<0.5	4	--
01/25/11 ⁸	86.36	75.30	11.06	0.00	--	2,300	<50	<0.5	<0.5	<0.5	<0.5	2	--
07/12/11 ⁸	86.36	74.61	11.75	0.00	--	1,800	<50	<0.5	<0.5	<0.5	<0.5	2	--
MW-8													
03/08/94	85.93	75.06	10.87	--	<10	<100	28,000	2,900	1,300	1,200	6,800	--	--
07/06/94	85.93	--	--	--	--	--	--	--	--	--	--	--	--
08/04/94	85.93	73.77	12.16	--	--	--	22,000	3,000	260	870	4,400	--	--
10/05/94	85.93	72.71	13.22	--	--	--	12,000	1,800	34	4.6	890	--	--
01/18/95	85.93	75.51	10.42	--	--	--	19,000	1,000	65	1,100	3,500	--	--
04/07/95	85.93	75.48	10.45	--	--	--	14,000	310	<25	720	1,700	--	--
07/06/95	85.93	74.30	11.63	--	--	--	19,000	280	<50	1,200	2,600	--	--
10/11/95	85.93	73.51	12.42	--	--	--	6,100	140	5.5	320	280	1,200	--
01/17/96	85.93	75.95	9.98	--	--	<500	12,000	86	<20	590	1,400	1,100	--
04/05/96	85.93	75.60	10.33	--	--	<500	7,500	180	23	410	480	560	--

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Former Chevron Service Station #9-1583
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Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
MW-8 (cont)													
07/23/96	85.93	74.56	11.37	--	--	<500	3,800	47	<5.0	350	84	1,800	--
10/02/96	85.93	73.90	12.03	--	--	<500	4,400	65	<5.0	140	28	1,500	--
01/23/97	85.93	77.73	8.20	--	--	<500	3,800	36	5.9	140	36	910	--
04/01/97	85.93	75.80	10.13	--	--	<500	6,100	43	<20	380	76	1,800	--
07/09/97	85.93	73.77	12.16	--	--	<500	7,300	48	<25	120	<25	2,400	--
10/07/97	85.93	73.77	12.16	--	--	<500	3,100	<10	<10	67	<10	1,400	--
01/22/98	85.93	75.83	10.10	--	--	<500	1,900	5.5	8.3	120	17	780	--
04/02/98	85.93	75.55	10.38	--	--	<500	2,900	43	19	110	<10	800	--
07/02/98	85.93	74.78	11.15	--	--	<500	5,000	31	<10	120	15	780	--
10/02/98	85.93	74.03	11.90	--	--	1,200 ¹	2,200	6.5	<0.5	21	2.6	140	--
01/18/99	85.93	75.12	10.81	--	554	<250	2,870	<5.0	<5.0	9.02	<5.0	476/478 ²	--
07/22/99	85.93	74.38	11.55	--	--	--	2,190	<1.0	<1.0	3.51	1.61	228	--
01/17/00	85.93	75.06	10.87	--	955 ¹	<500	1,220	1.3	1.56	1.56	1.87	344	--
07/05/00	85.93	74.55	11.38	0.00	--	260 ⁵	1,900 ³	15	6.6	<5.0	<5.0	170	--
01/15/01	85.93	75.59	10.34	0.00	--	<250	2,820	<1.00	<1.00	5.13	3.90	110	--
07/03/01	85.93	74.77	11.16	0.00	--	<250	1,900 ³	6.0	<5.0	<5.0	<5.0	46	--
02/28/02	85.93	75.26	10.67	0.00	--	<1,000	1,500	4.6	<2.0	0.80	2.2	56	--
07/08/02	85.93	74.30	11.63	0.00	--	<400	2,500	4.2	0.85	0.68	2.5	46	--
01/01/03	85.93	76.01	9.92	0.00	--	<400	1,300	2.1	0.66	1.1	2.1	45	--
07/14/03 ⁸	85.93	74.27	11.66	0.00	--	160	1,900	<0.5	<0.5	<0.5	<0.5	58	--
01/12/04 ⁸	85.93	75.92	10.01	0.00	--	<40	1,400	<0.5	<0.5	<0.5	<0.5	110	--
07/27/04 ⁸	85.93	74.33	11.60	0.00	--	<40	1,100	<0.5	<0.5	<0.5	<0.5	89	--
01/25/05 ⁸	85.93	75.96	9.97	0.00	--	130	900	<0.5	<0.5	<0.5	<0.5	52	--
07/26/05 ⁸	85.93	74.08	11.85	0.00	--	99	580	<0.5	<0.5	<0.5	<0.5	23	--
01/24/06 ⁸	85.93	76.06	9.87	0.00	--	69	620	<0.5	<0.5	<0.5	<0.5	31	--
07/25/06 ⁸	85.93	74.77	11.16	0.00	--	<40	420	<0.5	<0.5	<0.5	<0.5	20	--
01/23/07 ⁸	85.93	74.78	11.15	0.00	--	200	710	<0.5	<0.5	<0.5	<0.5	26	--
07/24/07 ⁸	85.93	74.15	11.78	0.00	--	730	560	<0.5	<0.5	<0.5	<0.5	30	--
01/22/08 ⁸	85.93	75.59	10.34	0.00	--	500	520	<0.5	<0.5	<0.5	<0.5	27	--
07/22/08 ⁸	85.93	73.86	12.07	0.00	--	90	330	<0.5	<0.5	<0.5	<0.5	21	--
01/13/09 ⁸	85.93	74.35	11.58	0.00	--	62	360	<0.5	<0.5	<0.5	<0.5	14	--
07/14/09 ⁸	85.93	73.68	12.25	0.00	--	90	500	<0.5	<0.5	<0.5	<0.5	10	--
01/12/10 ⁸	85.95	75.50	10.45	0.00	--	100	370	<0.5	<0.5	<0.5	<0.5	8	--
07/13/10 ⁸	85.95	74.33	11.62	0.00	--	73	260	<0.5	<0.5	<0.5	<0.5	6	--
01/25/11 ⁸	85.95	75.88	10.07	0.00	--	<40	200	<0.5	<0.5	<0.5	<0.5	4	--
07/12/11 ⁸	85.95	75.25	10.70	0.00	--	56	120	<0.5	<0.5	<0.5	<0.5	3	--

Table 1
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WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
TRIP BLANK													
03/12/90	--	--	--	--	--	--	<50	<0.3	<0.3	<0.3	<0.6	--	--
02/08/91	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/08/91	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/12/91	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/07/91	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/05/92	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/13/92	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/17/92	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/05/92	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/11/92	--	--	--	--	--	--	--	--	--	--	--	--	--
11/17/92	--	--	--	--	--	--	--	--	--	--	--	--	--
11/29/92	--	--	--	--	--	--	--	--	--	--	--	--	--
12/01/92	--	--	--	--	--	--	--	--	--	--	--	--	--
12/29/92	--	--	--	--	--	--	--	--	--	--	--	--	--
01/05/93	--	--	--	--	--	--	--	--	--	--	--	--	--
01/08/93	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/02/93	--	--	--	--	--	--	--	--	--	--	--	--	--
04/14/93	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/06/93	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/21/93	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/05/94	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/08/94	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/06/94	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/04/94	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/05/94	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/18/95	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/95	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
07/06/95	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/11/95	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/17/96	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/05/96	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/23/96	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/02/96	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/23/97	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/01/97	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/09/97	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--

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Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TOG (µg/L)
TRIP BLANK (cont)													
10/07/97	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/22/98	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/02/98	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/02/98	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/02/98	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--
01/18/99	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
07/05/00	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
01/15/01	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--
07/03/01	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
QA													
02/28/02	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
07/08/02	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
01/01/03	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
07/14/03 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/12/04 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/27/04 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/25/05 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/26/05 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/24/06 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/25/06 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/23/07 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/24/07 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/22/08 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/22/08 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
01/13/09 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
07/14/09 ⁸	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
DESTROYED													

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to July 5, 2000, were compiled from reports prepared by Blaine Tech Services, Inc.

TOC = Top of Casing
(ft.) = Feet

GWE = Groundwater Elevation
(msl) = Mean sea level

DTW = Depth to Water

SPHT = Separate Phase Hydrocarbon Thickness

TPH = Total Petroleum Hydrocarbons

DRO = Diesel Range Organics

MO = Motor Oil

GRO = Gasoline Range Organics

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl Tertiary Butyl Ether

TOG = Total Oil & Grease

(µg/L) = Micrograms per liter

-- = Not Measured/Not Analyzed

QA = Quality Assurance/Trip Blank

* TOC elevations were surveyed on October 27, 2009, by Virgil Chavez Land Surveying. The benchmark for this survey was a cut square on top of easterly curb of Broadway, opposite 5718 Broadway. Benchmark Elevation = 180.06 feet. Vertical Datum is NGVD 29 from GPS observations.

¹ Laboratory report indicates an unidentified hydrocarbon.

² Confirmation run.

³ Laboratory report indicates gasoline C6-C12.

⁴ Laboratory report indicates motor oil C16-C36.

⁵ Laboratory report indicates unidentified hydrocarbons C9-C24.

⁶ Laboratory report indicates hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel. The pattern more closely resembles that of a heavier fuel.

⁷ Laboratory report indicates unidentified hydrocarbons >C16.

⁸ BTEX and MTBE by EPA Method 8260.

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID	DATE	ETHANOL (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
MW-1	07/14/03	<50	--	5	--	--	--
	01/12/04	<50	--	61	--	--	--
	07/27/04	<50	--	54	--	--	--
	01/25/05	<50	--	5	--	--	--
	07/26/05	<50	--	25	--	--	--
	01/24/06	<50	--	25	--	--	--
	07/25/06	<50	--	14	--	--	--
	01/23/07	<50	--	17	--	--	--
	07/24/07	<50	--	7	--	--	--
	01/22/08	<50	--	8	--	--	--
	07/22/08	<50	--	<0.5	--	--	--
	01/13/09	<50	--	2	--	--	--
	01/12/10	--	--	15	--	--	--
	01/25/11	--	--	5	--	--	--
MW-2	07/14/03	<50	--	<0.5	--	--	--
	01/12/04	<50	--	<0.5	--	--	--
	07/27/04	<50	--	<0.5	--	--	--
	01/25/05	<50	--	<0.5	--	--	--
	07/26/05	<50	--	<0.5	--	--	--
	01/24/06	<50	--	<0.5	--	--	--
	07/25/06	<50	--	<0.5	--	--	--
	01/23/07	<50	--	<0.5	--	--	--
	07/24/07	<50	--	<0.5	--	--	--
	01/22/08	<50	--	<0.5	--	--	--
	07/22/08	<50	--	2	--	--	--
	01/13/09	<50	--	<0.5	--	--	--
	01/12/10	--	--	<0.5	--	--	--
	01/25/11	--	--	<0.5	--	--	--
MW-3	07/14/03	<50	--	43	--	--	--
	01/12/04	<50	--	2	--	--	--
	07/27/04	<50	--	41	--	--	--
	01/25/05	<50	--	27	--	--	--
	07/26/05	<50	--	12	--	--	--

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID	DATE	ETHANOL (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
MW-3 (cont)	01/24/06	<50	--	0.8	--	--	--
	07/25/06	<50	--	23	--	--	--
	01/23/07	<50	--	2	--	--	--
	07/24/07	<50	--	20	--	--	--
	01/22/08	<50	--	<0.5	--	--	--
	07/22/08	<50	--	7	--	--	--
	01/13/09	<50	--	10	--	--	--
	01/12/10	--	--	14	--	--	--
	01/25/11	--	--	4	--	--	--
MW-4	07/14/03	SAMPLED ANNUALLY		--	--	--	--
	01/12/04	<50	--	<0.5	--	--	--
	01/25/05	<50	--	<0.5	--	--	--
	01/24/06	<50	--	<0.5	--	--	--
	01/23/07	<50	--	<0.5	--	--	--
	01/22/08	<50	--	<0.5	--	--	--
	01/13/09	<50	--	<0.5	--	--	--
	01/12/10	--	--	<0.5	--	--	--
	01/25/11	--	--	<0.5	--	--	--
MW-5	07/14/03	SAMPLED ANNUALLY		--	--	--	--
	01/12/04	<50	--	<0.5	--	--	--
	01/25/05	<50	--	<0.5	--	--	--
	01/24/06	<50	--	<0.5	--	--	--
	01/23/07	INACCESSIBLE - VEHICLE PARKED OVER WELL		--	--	--	--
	01/22/08	<50	--	<0.5	--	--	--
	01/13/09	<50	--	<0.5	--	--	--
	01/12/10	--	--	<0.5	--	--	--
	01/25/11	--	--	<0.5	--	--	--
MW-6	07/14/03	SAMPLED ANNUALLY		--	--	--	--
	01/12/04	<50	--	25	--	--	--
	01/25/05	<50	--	3	--	--	--
	01/24/06	<50	--	<0.5	--	--	--

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

WELL ID	DATE	ETHANOL (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
MW-6 (cont)	01/23/07	<50	--	8	--	--	--
	01/22/08	<50	--	4	--	--	--
	01/13/09	<50	--	6	--	--	--
	01/12/10	--	--	<0.5	--	--	--
	01/25/11	--	--	<0.5	--	--	--
MW-7	07/14/03	<50	--	20	--	--	--
	01/12/04	<50	--	27	--	--	--
	07/27/04	<50	--	44	--	--	--
	01/25/05	<50	--	34	--	--	--
	07/26/05	<50	--	19	--	--	--
	01/24/06	<50	--	18	--	--	--
	07/25/06	<50	--	19	--	--	--
	01/23/07	<50	--	15	--	--	--
	07/24/07	<50	--	24	--	--	--
	01/22/08	<50	--	12	--	--	--
	07/22/08	<50	--	25	--	--	--
	01/13/09	<50	--	7	--	--	--
	07/14/09	--	--	10	--	--	--
	01/12/10	--	--	5	--	--	--
	07/13/10	--	--	4	--	--	--
01/25/11	--	--	2	--	--	--	
07/12/11	--	--	2	--	--	--	
MW-8	07/14/03	<50	--	58	--	--	--
	01/12/04	<50	--	110	--	--	--
	07/27/04	<50	--	89	--	--	--
	01/25/05	<50	--	52	--	--	--
	07/26/05	<50	--	23	--	--	--
	01/24/06	<50	--	31	--	--	--
	07/25/06	<50	--	20	--	--	--
	01/23/07	<50	--	26	--	--	--
	07/24/07	<50	--	30	--	--	--
	01/22/08	<50	--	27	--	--	--
07/22/08	<50	--	21	--	--	--	

Table 2
Groundwater Analytical Results - Oxygenate Compounds
 Former Chevron Service Station #9-1583
 5509 Martin Luther King Way
 Oakland, California

WELL ID	DATE	ETHANOL (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
MW-8 (cont)	01/13/09	<50	--	14	--	--	--
	07/14/09	--	--	10	--	--	--
	01/12/10	--	--	8	--	--	--
	07/13/10	--	--	6	--	--	--
	01/25/11	--	--	4	--	--	--
	07/12/11	--	--	3	--	--	--

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Former Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, California

EXPLANATIONS:

TBA = t-Butyl alcohol
MTBE = Methyl Tertiary Butyl Ether
DIPE = di-Isopropyl ether
ETBE = Ethyl t-butyl ether

TAME = t-Amyl methyl ether
($\mu\text{g/L}$) = Micrograms per liter
-- = Not Analyzed

ANALYTICAL METHODS:

EPA Method 8260 for Oxygenate Compounds

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by IWM to Chemical Waste Management located in Kettleman Hills, California.



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-1583
 Site Address: 5509 Martin Luther King Way
 City: Oakland, CA

Job Number: 386506
 Event Date: 7/12/11 (inclusive)
 Sampler: HAIG K

Well ID: MW-1
 Well Diameter: 2 1/3 in.
 Total Depth: 19.43 ft.
 Depth to Water: 9.55 ft.
10.18 xVF _____ = _____ x3 case volume = Estimated Purge Volume: N/A gal.

Date Monitored: 7/12/11

Volume	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
Factor (VF)	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: N/A

Purge Equipment:

- Disposable Bailer _____
- Stainless Steel Bailer _____
- Stack Pump _____
- Suction Pump _____
- Grundfos _____
- Peristaltic Pump _____
- QED Bladder Pump _____
- Other: _____

Sampling Equipment:

- Disposable Bailer _____
- Pressure Bailer _____
- Discrete Bailer _____
- Peristaltic Pump _____
- QED Bladder Pump _____
- Other: _____

M / O

Time Started: _____	(2400 hrs)
Time Completed: _____	(2400 hrs)
Depth to Product: _____	ft
Depth to Water: _____	ft
Hydrocarbon Thickness: _____	ft
Visual Confirmation/Description: _____	
Skimmer / Absorbant Sock (circle one)	
Amt Removed from Skimmer: _____	gal
Amt Removed from Well: _____	gal
Water Removed: _____	
Product Transferred to: _____	

Start Time (purge): _____
 Sample Time/Date: N/A
 Approx. Flow Rate: _____ gpm.
 Did well de-water? _____ If yes, Time: _____

Weather Conditions: CLOUDY
 Water Color: _____ Odor: Y / N
 Sediment Description: _____
 Volume: _____ gal. DTW @ Sampling: N/A

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)
	x 1 liter ambers	YES	NP	LANCASTER	TPH-MO (8015)

COMMENTS: M / O

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-1583
 Site Address: 5509 Martin Luther King Way
 City: Oakland, CA

Job Number: 386506
 Event Date: 7/12/11 (inclusive)
 Sampler: HAI G K

Well ID: MW-2
 Well Diameter: 21(3) in.
 Total Depth: 18.85 ft.
 Depth to Water: 9.90 ft.
8.95 xVF _____ = _____ x3 case volume = Estimated Purge Volume: N/A gal.

Date Monitored: 7/12/11

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: N/A

Purge Equipment:

- Disposable Bailer _____
- Stainless Steel Bailer _____
- Stack Pump _____
- Suction Pump _____
- Grundfos _____
- Peristaltic Pump _____
- QED Bladder Pump _____
- Other: _____

Sampling Equipment:

- Disposable Bailer _____
- Pressure Bailer _____
- Discrete Bailer _____
- Peristaltic Pump _____
- QED Bladder Pump _____
- Other: _____

M / O

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: <u>Ø</u>
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ gal
Amt Removed from Well: _____ gal
Water Removed: _____
Product Transferred to: _____

Start Time (purge): _____
 Sample Time/Date: N/A
 Approx. Flow Rate: _____ gpm.
 Did well de-water? _____ If yes, Time: _____

Weather Conditions: cloudy
 Water Color: _____ Odor: Y / N
 Sediment Description: _____
 Volume: _____ gal. DTW @ Sampling: N/A

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)
	x 1 liter ambers	YES	NP	LANCASTER	TPH MO (8015)

COMMENTS: M / O

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-1583 Job Number: 386506
 Site Address: 5509 Martin Luther King Way Event Date: 7/12/11 (inclusive)
 City: Oakland, CA Sampler: HAIG K

Well ID: MW-3
 Well Diameter: 2/3 in.
 Total Depth: 19.48 ft.
 Depth to Water: 11.15 ft.
8.33 xVF _____ = _____ x3 case volume = Estimated Purge Volume: N/A gal.

Date Monitored: 7/12/11

Volume	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
Factor (VF)	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: N/A

Purge Equipment:

Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

M / O

Time Started:	_____ (2400 hrs)
Time Completed:	_____ (2400 hrs)
Depth to Product:	_____ ft
Depth to Water:	_____ ft
Hydrocarbon Thickness:	_____ ft
Visual Confirmation/Description:	<u>✓</u>
Skimmer / Absorbant Sock (circle one)	
Amt Removed from Skimmer:	_____ gal
Amt Removed from Well:	_____ gal
Water Removed:	_____ gal
Product Transferred to:	_____ gal

Start Time (purge): _____ Weather Conditions: CLOUDY
 Sample Time/Date: N/A Water Color: _____ Odor: Y / N
 Approx. Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: N/A

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)
	x 1 liter ambers	YES	NP	LANCASTER	TPH-MO (8015)

COMMENTS: M / O

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-1583
 Site Address: 5509 Martin Luther King Way
 City: Oakland, CA

Job Number: 386506
 Event Date: 7/12/11 (inclusive)
 Sampler: HAIG K.

Well ID: MW-7
 Well Diameter: 2.3 in.
 Total Depth: 19.46 ft.
 Depth to Water: 11.75 ft.

Date Monitored: 7/12/11

Volume Factor (VF)	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 13.29
 xVF 0.17 = 1.31 x3 case volume = Estimated Purge Volume: 4 gal.

Purge Equipment:
 Disposable Bailer
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer
 Pressure Bailer _____
 Discrete Bailer _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Time Started: _____ (2400 hrs)
 Time Completed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: 0 ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): 0905 Weather Conditions: CLOUDY
 Sample Time/Date: 0925 7/12/11 Water Color: CLOUDY Odor: YN MODERATE
 Approx. Flow Rate: _____ gpm. Sediment Description: SILT
 Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 12.62

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm - DS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
<u>0910</u>	<u>1.5</u>	<u>7.35</u>	<u>346</u>	<u>16.9</u>		
<u>0913</u>	<u>3</u>	<u>7.31</u>	<u>350</u>	<u>17.0</u>		
<u>0916</u>	<u>4</u>	<u>7.28</u>	<u>352</u>	<u>17.0</u>		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-7</u>	<u>6</u> x voa vial	<u>YES</u>	<u>HCL</u>	<u>LANCASTER</u>	<u>TPH-GRO(8015)/BTEX+MTBE(8260)</u>
	<u>2</u> x 1 liter ambers	<u>YES</u>	<u>NP</u>	<u>LANCASTER</u>	<u>TPH-MO (8015)</u>

COMMENTS: _____

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-1583
 Site Address: 5509 Martin Luther King Way
 City: Oakland, CA

Job Number: 386506
 Event Date: 7/12/11 (inclusive)
 Sampler: HAIG K.

Well ID: MW-8
 Well Diameter: (2) 3 in.
 Total Depth: 17.12 ft.
 Depth to Water: 10.70 ft.
6.42 xVF 0.17 = 1

Date Monitored: 7/12/11

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.
 Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.98
 x3 case volume = Estimated Purge Volume: 3 gal.

Purge Equipment:
 Disposable Bailer ✓
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer ✓
 Pressure Bailer _____
 Discrete Bailer _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Time Started: _____ (2400 hrs)
 Time Completed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: Ø ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): 0947 Weather Conditions: CLOUDY
 Sample Time/Date: 1010 / 7/12/11 Water Color: CLEAR Odor: Ø MODERATE
 Approx. Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 11.36

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - DS)	Temperature (C / F)	D.O (mg/L)	ORP (mV)
<u>0951</u>	<u>1</u>	<u>7.18</u>	<u>388</u>	<u>17.2</u>	_____	_____
<u>0954</u>	<u>2</u>	<u>7.16</u>	<u>394</u>	<u>17.3</u>	_____	_____
<u>0957</u>	<u>3</u>	<u>7.13</u>	<u>392</u>	<u>17.5</u>	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)
	2 x 1 liter ambers	YES	NP	LANCASTER	TPH-MO (8015)

COMMENTS: _____

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

Chevron California Region Analysis Request/Chain of Custody



071211-02

For Lancaster Laboratories use only

Acct. #: 12099 Sample # 6342309-10 Group #: 007708

CRA MTI Project #: 61H-1960

1255943

Facility #: <u>SS#9-1583 G-R#386506 Global ID#T0600T00348</u> Site Address: <u>5509 MARTIN LUTHER KING WAY, OAKLAND, CA</u> Chevron PM: <u>MTI</u> Lead Consultant: <u>CRAKJ Kiernan</u> Consultant/Office: <u>G-R, Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568</u> Consultant Prj. Mgr.: <u>Deanna L. Harding (deanna@grinc.com)</u> Consultant Phone #: <u>925-551-7555</u> Fax #: <u>925-551-7899</u> Sampler: <u>HAIG KEVORK</u>			Matrix <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air		Analyses Requested Preservation Codes H H BTEX + MTBE 8260 <input checked="" type="checkbox"/> 8021 TPH 8015 MOD GRO TPH 8015 MOD DRO <input type="checkbox"/> Silica Gel Cleanup 8260 full scan Oxygenates Total Lead Method Dissolved Lead Method TPH - MO (8015)										Preservative Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ O = Other <input type="checkbox"/> J value reporting needed <input checked="" type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds 8021 MTBE Confirmation <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ___ oxy's on highest hit <input type="checkbox"/> Run ___ oxy's on all hits			
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE 8260	TPH 8015 MOD GRO	TPH 8015 MOD DRO	8260 full scan	Oxygenates	Total Lead Method	Dissolved Lead Method	Comments / Remarks	
MW-7	7/12/11	0925	X			X			800	X	X					X		
MW-8	7/12/11	1010	X			X			800	X	X					X		
Turnaround Time Requested (TAT) (please circle) <input checked="" type="checkbox"/> STD TAT 24 hour 72 hour 48 hour 4 day 5 day			Relinquished by: <u>[Signature]</u> Date: <u>7/12/11</u> Time: <u>1130a</u>		Received by: <u>[Signature]</u> Date: <u>12 JUL 11</u> Time: <u>1130a</u>		Relinquished by: <u>[Signature]</u> Date: <u>12 JUL 11</u> Time: <u>1630</u>		Received by: <u>FEDEX</u> Date: _____ Time: _____		Relinquished by Commercial Carrier: _____ Date: _____ Time: _____		Received by: <u>[Signature]</u> Date: <u>7/13/11</u> Time: <u>0950</u>		Temperature Upon Receipt: <u>23.3</u> °C		Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Data Package Options (please circle if required) EDF/EDD QC Summary Type I - Full Type VI (Raw Data) <input type="checkbox"/> Coelt Deliverable not needed WIP (RWQCB) Disk																		

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

July 21, 2011

Project: 91583

Submittal Date: 07/13/2011

Group Number: 1255943

PO Number: 91583

Release Number: MTI

State of Sample Origin: CA

RECEIVED

JUL 22 2011

GETTLER-RYAN INC.
GENERAL CONTRACTORSClient Sample DescriptionMW-7-W-110712 Grab Water
MW-8-W-110712 Grab WaterLancaster Labs (LLI) #6342309
6342310

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC Gettler-Ryan, Inc.
COPY TO
ELECTRONIC Chevron c/o CRA
COPY TO
ELECTRONIC Chevron
COPY TO

Attn: Rachelle Munoz

Attn: Report Contact

Attn: Anna Avina



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

A handwritten signature in cursive script that reads "Valeria L. Tomayko".

Valeria L. Tomayko
Principal Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Sample Description: MW-7-W-110712 Grab Water
Facility# 91583 Job# 386506 MTI# 61H-1960 GRD
5509 Martin Luther-Oakland T0600100348 MW-7

LLI Sample # WW 6342309
LLI Group # 1255943
Account # 12099

Project Name: 91583

Collected: 07/12/2011 09:25 by HK

Chevron c/o CRA
Suite 107

Submitted: 07/13/2011 09:50

10969 Trade Center Dr

Reported: 07/21/2011 16:51

Rancho Cordova CA 95670

15837

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l					
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	2	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles SW-846 8015B ug/l					
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
GC Extractable TPH SW-846 8015B modified ug/l					
02500	Total TPH	n.a.	1,800	39	1
02500	TPH Motor Oil C16-C36	n.a.	1,800	39	1

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.

General Sample Comments

State of California Lab Certification No. 2501

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	F111992AA	07/18/2011 05:55	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F111992AA	07/18/2011 05:55	Anita M Dale	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	11199A07A	07/18/2011 11:12	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11199A07A	07/18/2011 11:12	Laura M Krieger	1
02500	TPH Fuels by GC (Waters)	SW-846 8015B modified	1	111970002A	07/18/2011 21:58	Heather E Williams	1
11191	TPH Fuels Waters Extraction	SW-846 3510C	1	111970002A	07/17/2011 11:30	Kathryn I DeHaven	1

Sample Description: MW-8-W-110712 Grab Water
**Facility# 91583 Job# 386506 MTI# 61H-1960 GRD
5509 Martin Luther-Oakland T0600100348 MW-8**
LLI Sample # WW 6342310
LLI Group # 1255943
Account # 12099
Project Name: 91583

Collected: 07/12/2011 10:10 by HK

Chevron c/o CRA

Suite 107

Submitted: 07/13/2011 09:50

10969 Trade Center Dr

Reported: 07/21/2011 16:51

Rancho Cordova CA 95670

15838

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	3	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles SW-846 8015B			ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	120	50	1
GC Extractable TPH SW-846 8015B modified			ug/l	ug/l	
02500	Total TPH	n.a.	56	38	1
02500	TPH Motor Oil C16-C36	n.a.	56	38	1

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.

General Sample Comments

State of California Lab Certification No. 2501

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	F111992AA	07/18/2011	06:16	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F111992AA	07/18/2011	06:16	Anita M Dale	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	11199A07A	07/18/2011	11:38	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11199A07A	07/18/2011	11:38	Laura M Krieger	1
02500	TPH Fuels by GC (Waters)	SW-846 8015B modified	1	111970002A	07/18/2011	22:23	Heather E Williams	1
11191	TPH Fuels Waters Extraction	SW-846 3510C	1	111970002A	07/17/2011	11:30	Kathryn I DeHaven	1

Quality Control Summary

 Client Name: Chevron c/o CRA
 Reported: 07/21/11 at 04:51 PM

Group Number: 1255943

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F111992AA	Sample number(s): 6342309-6342310							
Benzene	N.D.	0.5	ug/l	94		79-120		
Ethylbenzene	N.D.	0.5	ug/l	90		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	84		76-120		
Toluene	N.D.	0.5	ug/l	90		79-120		
Xylene (Total)	N.D.	0.5	ug/l	89		80-120		
Batch number: 11199A07A	Sample number(s): 6342309-6342310							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	118	109	75-135	8	30
Batch number: 111970002A	Sample number(s): 6342309-6342310							
Total TPH	N.D.	40.	ug/l	95	104	60-120	9	20
TPH Motor Oil C16-C36	N.D.	40.	ug/l					

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: F111992AA	Sample number(s): 6342309-6342310 UNSPK: 6342310								
Benzene	96	96	80-126	0	30				
Ethylbenzene	96	95	71-134	1	30				
Methyl Tertiary Butyl Ether	85	85	72-126	0	30				
Toluene	92	92	80-125	0	30				
Xylene (Total)	92	92	79-125	0	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

 Analysis Name: UST VOCs by 8260B - Water
 Batch number: F111992AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6342309	97	103	97	91
6342310	98	102	98	96
Blank	99	102	98	92

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 07/21/11 at 04:51 PM

Group Number: 1255943

Surrogate Quality Control

LCS	97	104	97	97
MS	97	105	98	101
MSD	98	103	97	99

Limits: 80-116 77-113 80-113 78-113

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 11199A07A
Trifluorotoluene-F

6342309	100
6342310	99
Blank	102
LCS	113
LCSD	109

Limits: 63-135

Analysis Name: TPH Fuels by GC (Waters)
Batch number: 111970002A
Chlorobenzene Orthoterphenyl

6342309	87	87
6342310	116	104
Blank	96	103
LCS	116	109
LCSD	103	118

Limits: 28-152 52-131

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	l	liter(s)
m3	cubic meter(s)	ul	microliter(s)
<	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
J	estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	B	Value is $<$ CRDL, but \geq IDL
B	Analyte was also detected in the blank	E	Estimated due to interference
C	Pesticide result confirmed by GC/MS	M	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	N	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	S	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	U	Compound was not detected
P	Concentration difference between primary and confirmation columns $>$ 25%	W	Post digestion spike out of control limits
U	Compound was not detected	*	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	+	Correlation coefficient for MSA $<$ 0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

APPENDIX E

TREND GRAPHS AND DEGRADATION CALCULATIONS

Predicted Time to Reach TPHmo ESL in Well MW-7

Former Chevron Service Station 9-1583, 5509 Martin Luther King Jr. Way, Oakland, CA

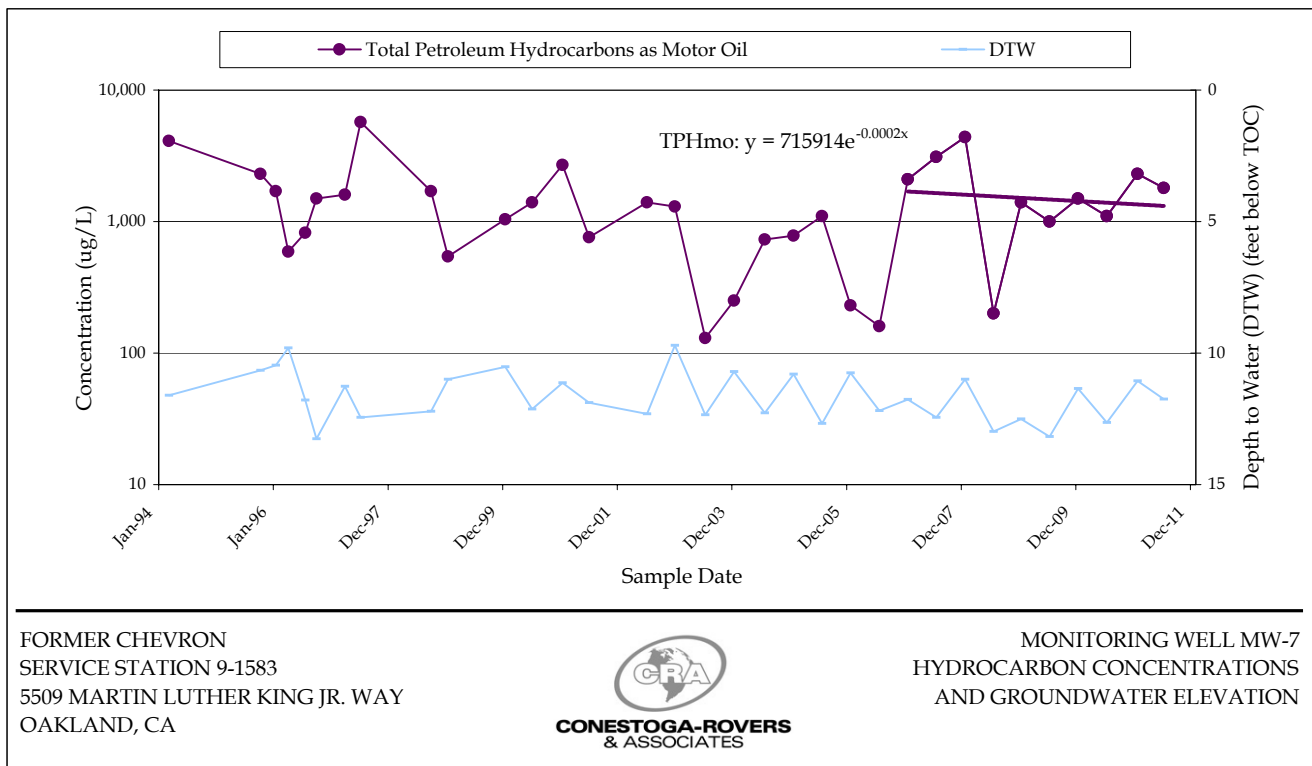
$$y = b e^{ax} \quad \implies \quad x = \ln(y/b) / a$$

where: y = concentration in $\mu\text{g/L}$ a = decay constant
 b = concentration at time (x) x = time (x) in days

Given	Constituent	Total Petroleum Hydrocarbons as Motor Oil (TPHmo)
Environmental Screening Level (ESL):	y	100
Constant:	b	7.16E+05
Constant:	a	-1.55E-04
Starting date for current trend:		1/23/2007

Calculate

Attenuation Half Life (years):	$(-\ln(2)/a)/365.25$	12.27
Estimated Date to Reach ESL:	$(x = \ln(y/b) / a)$	Feb 2057



FORMER CHEVRON
 SERVICE STATION 9-1583
 5509 MARTIN LUTHER KING JR. WAY
 OAKLAND, CA



MONITORING WELL MW-7
 HYDROCARBON CONCENTRATIONS
 AND GROUNDWATER ELEVATION

Predicted Time to Reach TPHg ESL in Well MW-8

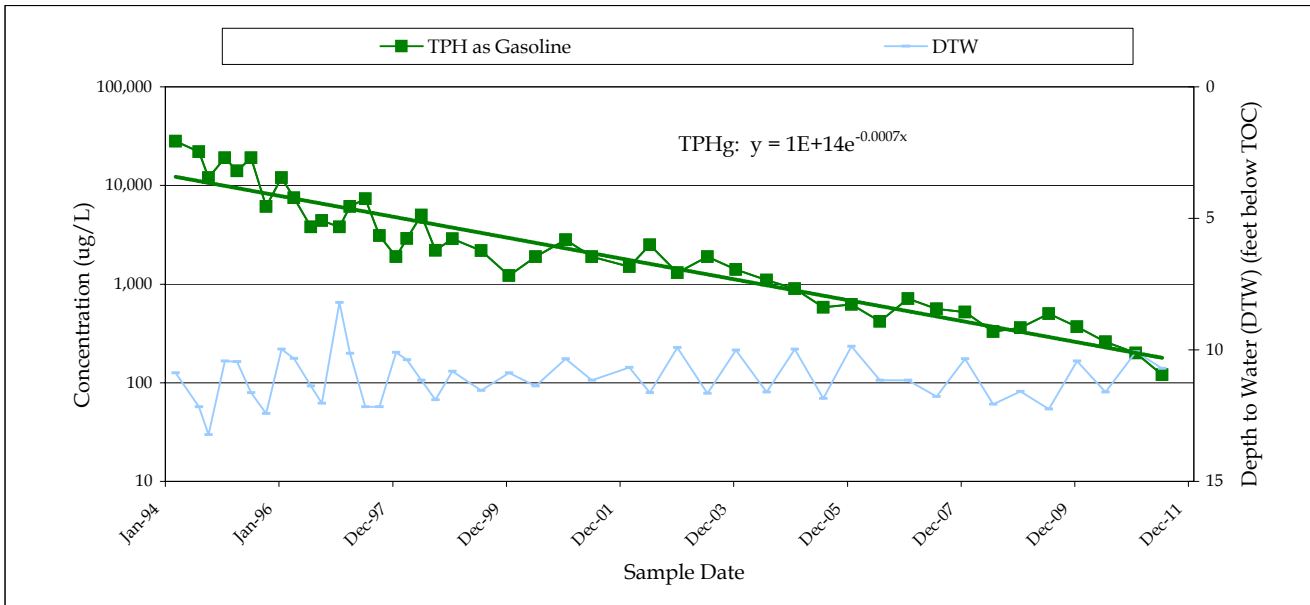
Former Chevron Service Station 9-1583, 5509 Martin Luther King Jr. Way, Oakland, CA

$$y = b e^{ax} \quad \implies \quad x = \ln(y/b) / a$$

where: y = concentration in $\mu\text{g/L}$ a = decay constant
 b = concentration at time (x) x = time (x) in days

Given	Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)
Environmental Screening Level (ESL):	y	100
Constant:	b	1.13E+14
Constant:	a	-6.67E-04
Starting date for current trend:		3/8/1994

Calculate		
Attenuation Half Life (years):	$(-\ln(2)/a)/365.25$	2.85
Estimated Date to Reach ESL:	$(x = \ln(y/b) / a)$	Nov 2013



FORMER CHEVRON
 SERVICE STATION 9-1583
 5509 MARTIN LUTHER KING JR. WAY
 OAKLAND, CA



MONITORING WELL MW-8
 HYDROCARBON CONCENTRATIONS
 AND GROUNDWATER ELEVATION

APPENDIX F
DOMENICO MODEL

DOMENICO MULTI-DIMENSIONAL ADVECTION-DISPERSION MODEL FOR BENZENE TRANSPORT¹

FORMER CHEVRON SERVICE STATION 9-1583

5509 MARTIN LUTHER KING JR. WAY, OAKLAND, CALIFORNIA

Source concentration	C_0	3,000	ppb
X axis dispersivity	α_x	0.10	ft
Y axis dispersivity	α_y	0.05	ft
Z axis dispersivity	α_z	0.01	ft
Groundwater seepage velocity	V_s	0.014	ft/day
Source dimension Y	Y	20	
Source dimension Z	Z	5	
First order attenuation rate	λ	0.00229	1/day
$[1-(1+(4\lambda\alpha_x/V_s))^{1/2}]$	[...]	-0.0322	

Distance Traveled from Source - x (feet)	C_x Concentration (ppb)	Travel Time (years)
0	3000	0.0
5	1341	1.0
10	600	2.0
15	268	2.9
20	120	3.9
25	54	4.9
30	24	5.9
35	11	6.8
40	5	7.8
45	2	8.8
50	1	9.8
55	0	10.8
60	0	11.7
65	0	12.7
70	0	13.7
75	0	14.7
80	0	15.6
85	0	16.6
90	0	17.6
95	0	18.6
100	0	19.6

Analytical Solution for Steady-State Concentration Along Downgradient Centerline¹:

$$C_x = C_0 \cdot \exp\left(\frac{x}{2\alpha_x} \left[1 - \left(1 + \frac{4\lambda\alpha_x}{V_s}\right)^{1/2}\right]\right) \cdot \operatorname{erf}\left[\frac{Y}{4} \left(\frac{\alpha_y}{\alpha_x x}\right)^{1/2}\right] \cdot \operatorname{erf}\left[\frac{Z}{4} \left(\frac{\alpha_z}{\alpha_x x}\right)^{1/2}\right]$$

¹Domenico, P.A., 1987, An analytical model for multidimensional transport of a decaying contaminant species: Journal of Hydrology, v. 91; pp. 49-58.

APPENDIX G
SOIL VAPOR ANALYTICAL REPORT

7/7/2009

Ms. Lindsay Marsh
Conestoga-Rovers Associates (CRA)
2000 Opportunity Drive
Suite 110
Roseville CA 95678

Project Name: 9-1583 Oakland
Project #:
Workorder #: 0809246AR1

Dear Ms. Lindsay Marsh

The following report includes the data for the above referenced project for sample(s) received on 9/12/2008 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 0809246AR1

Work Order Summary

CLIENT:	Ms. Lindsay Marsh Conestoga-Rovers Associates (CRA) 2000 Opportunity Drive Suite 110 Roseville, CA 95678	BILL TO:	Ms. Lindsay Marsh Conestoga-Rovers Associates (CRA) 2000 Opportunity Drive Suite 110 Roseville, CA 95678
PHONE:	916-677-3407 x123	P.O. #	
FAX:	916-677-3687	PROJECT #	9-1583 Oakland
DATE RECEIVED:	09/12/2008	CONTACT:	Kelly Buettner
DATE COMPLETED:	09/26/2008		
DATE REISSUED:	07/07/2009		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VP-5	Modified TO-15	2.5 "Hg	15 psi
02A	VP-4	Modified TO-15	2.5 "Hg	15 psi
02AA	VP-4 Lab Duplicate	Modified TO-15	2.5 "Hg	15 psi
03A	VP-1	Modified TO-15	4.0 "Hg	15 psi
04A	VP-2	Modified TO-15	5.5 "Hg	15 psi
05A	VP-3	Modified TO-15	5.5 "Hg	15 psi
06A	Dupe	Modified TO-15	4.0 "Hg	15 psi
07A	Lab Blank	Modified TO-15	NA	NA
07B	Lab Blank	Modified TO-15	NA	NA
07C	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
08B	CCV	Modified TO-15	NA	NA
08C	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09B	LCS	Modified TO-15	NA	NA
09C	LCS	Modified TO-15	NA	NA

CERTIFIED BY: 

DATE: 07/07/09

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
Modified TO-15 Std & Soil Gas
Conestoga-Rovers Associates (CRA)
Workorder# 0809246AR1**

Six 1 Liter Summa Canister (100% Certified) samples were received on September 12, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan mode. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Daily CCV	+/- 30% Difference	<=/= 30% Difference with two allowed out up to <=/=40%.; flag and narrate outliers
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported LCS from instrument MSD-W has been derived from more than one analytical file.

PER CLIENT REQUEST, THE WORK ORDER WAS RE-ISSUED ON 7/7/09 TO REPORT THE TOP TWENTY TENTATIVELY IDENTIFIED COMPOUNDS (TICS) AND THE PERCENTAGE OF ALIPHATIC AND AROMATIC COMPOUNDS FOR SAMPLES VP-5, VP-4 AND VP-2.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: VP-5

Lab ID#: 0809246AR1-01A

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount (ppbv)
Arsenous acid, tris(trimethylsilyl) este	55429-29-3	56%	47 N J
Cyclotetrasiloxane, octamethyl-	556-67-2	43%	980 N J
3-HYDROXYMANDELIC ACID ETHYL ESTER DITMS	0-00-0	72%	260 N J

Client Sample ID: VP-4

Lab ID#: 0809246AR1-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2,2,4-Trimethylpentane	5.5	1100	26	5400

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount (ppbv)
Pentane, 2,4-dimethyl-	108-08-7	91%	260 N J
Pentane, 2,3-dimethyl-	565-59-3	59%	93 N J
Hexane, 2,5-dimethyl-	592-13-2	70%	110 N J
Hexane, 1-(hexyloxy)-2-methyl-	74421-17-3	64%	260 N J
Pentane, 2,2,3-trimethyl-	564-02-3	64%	130 N J
Pentane, 2,3,4-trimethyl-	565-75-3	91%	550 N J
Pentane, 2,3,3-trimethyl-	560-21-4	90%	850 N J
Hexane, 2,2,4-trimethyl-	16747-26-5	83%	2700 N J
Hexane, 2,3,3-trimethyl-	16747-28-7	78%	220 N J
Heptane, 2,3,5-trimethyl-	20278-85-7	83%	68 N J
Octane, 3-methyl-	2216-33-3	53%	130 N J
3-Heptene, 3-ethyl-	74764-46-8	78%	85 N J
Decane, 2,2,6-trimethyl-	62237-97-2	64%	130 N J
Unknown	NA	NA	130 J
Decane, 2,2,7-trimethyl-	62237-99-4	64%	220 N J
Octane, 3,3-dimethyl-	4110-44-5	83%	100 N J
Unknown	NA	NA	63 J
Octane, 2,2,6-trimethyl-	62016-28-8	83%	110 N J
Cyclotetrasiloxane, octamethyl-	556-67-2	86%	220 N J
3-HYDROXYMANDELIC ACID ETHYL ESTER DITMS	0-00-0	81%	100 N J



**Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: VP-4 Lab Duplicate

Lab ID#: 0809246AR1-02AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2,2,4-Trimethylpentane	5.5	1100	26	5000

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount (ppbv)
Pentane, 2,4-dimethyl-	108-08-7	91%	250 N J
Pentane, 2,3-dimethyl-	565-59-3	91%	91 N J
Hexane, 2,5-dimethyl-	592-13-2	70%	110 N J
Hexane, 1-(hexyloxy)-2-methyl-	74421-17-3	64%	260 N J
Pentane, 2,2,3-trimethyl-	564-02-3	40%	120 N J
Pentane, 2,3,4-trimethyl-	565-75-3	91%	540 N J
Pentane, 2,3,3-trimethyl-	560-21-4	90%	830 N J
Hexane, 2,2,4-trimethyl-	16747-26-5	83%	2600 N J
Hexane, 2,3,3-trimethyl-	16747-28-7	78%	220 N J
Heptane, 2,3,5-trimethyl-	20278-85-7	64%	66 N J
Octane, 3-methyl-	2216-33-3	43%	130 N J
3-Heptene, 3-ethyl-	74764-46-8	72%	84 N J
Decane, 2,2,6-trimethyl-	62237-97-2	64%	130 N J
Unknown	NA	NA	130 J
Decane, 2,2,7-trimethyl-	62237-99-4	78%	210 N J
Octane, 3,3-dimethyl-	4110-44-5	74%	100 N J
Unknown	NA	NA	62 J
Octane, 2,2,6-trimethyl-	62016-28-8	72%	110 N J
Cyclotetrasiloxane, octamethyl-	556-67-2	47%	220 N J
3-HYDROXYMANDELIC ACID ETHYL ESTER DITMS	0-00-0	72%	100 N J

Client Sample ID: VP-1

Lab ID#: 0809246AR1-03A

No Detections Were Found.

Client Sample ID: VP-2

Lab ID#: 0809246AR1-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2,2,4-Trimethylpentane	16	3700	77	17000



**Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: VP-2

Lab ID#: 0809246AR1-04A

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount (ppbv)
Pentane, 2,4-dimethyl-	108-08-7	91%	1300 N J
Pentane, 2,3-dimethyl-	565-59-3	80%	2000 N J
Hexane, 2,5-dimethyl-	592-13-2	70%	2300 N J
Hexane, 1,1'-oxybis-	112-58-3	78%	2900 N J
Cyclopentane, 1,2,4-trimethyl-, (1.alpha	4850-28-6	91%	1300 N J
Pentane, 2,3,4-trimethyl-	565-75-3	87%	4000 N J
Pentane, 2,3,3-trimethyl-	560-21-4	80%	7000 N J
Hexane, 3,4-dimethyl-	583-48-2	64%	2800 N J
Hexane, 2,2,5-trimethyl-	3522-94-9	83%	7800 N J
Unknown	NA	NA	860 J
Heptane, 2,5-dimethyl-	2216-30-0	90%	1000 N J
Unknown	NA	NA	690 J
Unknown	NA	NA	510 J
Hexane, 2,3,4-trimethyl-	921-47-1	78%	1000 N J
Decane, 2,5-dimethyl-	17312-50-4	72%	820 N J
Decane, 2,2,6-trimethyl-	62237-97-2	59%	680 N J
Heptane, 3,3,5-trimethyl-	7154-80-5	64%	630 N J
Heptane, 2,3,4-trimethyl-	52896-95-4	50%	710 N J
Nonane, 3-methyl-	5911-04-6	72%	510 N J
Nonane, 2-methyl-	871-83-0	64%	1000 N J

Client Sample ID: VP-3

Lab ID#: 0809246AR1-05A

No Detections Were Found.

Client Sample ID: Dupe

Lab ID#: 0809246AR1-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2,2,4-Trimethylpentane	24	4300	110	20000

Client Sample ID: VP-5

Lab ID#: 0809246AR1-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092508R1	Date of Collection: 9/11/08 10:14:00 AM
Dil. Factor:	4.44	Date of Analysis: 9/25/08 12:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	2.2	Not Detected	8.0	Not Detected
Benzene	2.2	Not Detected	7.1	Not Detected
Toluene	2.2	Not Detected	8.4	Not Detected
Ethyl Benzene	2.2	Not Detected	9.6	Not Detected
m,p-Xylene	2.2	Not Detected	9.6	Not Detected
o-Xylene	2.2	Not Detected	9.6	Not Detected
tert-Butyl alcohol	8.9	Not Detected	27	Not Detected
1,2-Dibromoethane (EDB)	2.2	Not Detected	17	Not Detected
1,2-Dichloroethane	2.2	Not Detected	9.0	Not Detected
2,2,4-Trimethylpentane	2.2	Not Detected	10	Not Detected
Ethanol	8.9	Not Detected	17	Not Detected

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount ((ppbv))
Arsenous acid, tris(trimethylsilyl) este	55429-29-3	56%	47 N J
Cyclotetrasiloxane, octamethyl-	556-67-2	43%	980 N J
3-HYDROXYMANDELIC ACID ETHYL ESTER DITMS	0-00-0	72%	260 N J

92% Aliphatic

8% Aromatic

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: VP-4

Lab ID#: 0809246AR1-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092424R1	Date of Collection: 9/11/08 10:56:00 AM
Dil. Factor:	11.0	Date of Analysis: 9/25/08 01:27 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	5.5	Not Detected	20	Not Detected
Benzene	5.5	Not Detected	18	Not Detected
Toluene	5.5	Not Detected	21	Not Detected
Ethyl Benzene	5.5	Not Detected	24	Not Detected
m,p-Xylene	5.5	Not Detected	24	Not Detected
o-Xylene	5.5	Not Detected	24	Not Detected
tert-Butyl alcohol	22	Not Detected	67	Not Detected
1,2-Dibromoethane (EDB)	5.5	Not Detected	42	Not Detected
1,2-Dichloroethane	5.5	Not Detected	22	Not Detected
2,2,4-Trimethylpentane	5.5	1100	26	5400
Ethanol	22	Not Detected	41	Not Detected

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount ((ppbv))
Pentane, 2,4-dimethyl-	108-08-7	91%	260 N J
Pentane, 2,3-dimethyl-	565-59-3	59%	93 N J
Hexane, 2,5-dimethyl-	592-13-2	70%	110 N J
Hexane, 1-(hexyloxy)-2-methyl-	74421-17-3	64%	260 N J
Pentane, 2,2,3-trimethyl-	564-02-3	64%	130 N J
Pentane, 2,3,4-trimethyl-	565-75-3	91%	550 N J
Pentane, 2,3,3-trimethyl-	560-21-4	90%	850 N J
Hexane, 2,2,4-trimethyl-	16747-26-5	83%	2700 N J
Hexane, 2,3,3-trimethyl-	16747-28-7	78%	220 N J
Heptane, 2,3,5-trimethyl-	20278-85-7	83%	68 N J
Octane, 3-methyl-	2216-33-3	53%	130 N J
3-Heptene, 3-ethyl-	74764-46-8	78%	85 N J
Decane, 2,2,6-trimethyl-	62237-97-2	64%	130 N J
Unknown	NA	NA	130 J
Decane, 2,2,7-trimethyl-	62237-99-4	64%	220 N J
Octane, 3,3-dimethyl-	4110-44-5	83%	100 N J
Unknown	NA	NA	63 J
Octane, 2,2,6-trimethyl-	62016-28-8	83%	110 N J
Cyclotetrasiloxane, octamethyl-	556-67-2	86%	220 N J
3-HYDROXYMANDELIC ACID	0-00-0	81%	100 N J
ETHYL ESTER DITMS			

100% Aliphatic

Container Type: 1 Liter Summa Canister (100% Certified)

Client Sample ID: VP-4

Lab ID#: 0809246AR1-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092424R1	Date of Collection: 9/11/08 10:56:00 AM
Dil. Factor:	11.0	Date of Analysis: 9/25/08 01:27 AM

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: VP-4 Lab Duplicate

Lab ID#: 0809246AR1-02AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092425R1	Date of Collection: 9/11/08 10:56:00 AM
Dil. Factor:	11.0	Date of Analysis: 9/25/08 02:06 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	5.5	Not Detected	20	Not Detected
Benzene	5.5	Not Detected	18	Not Detected
Toluene	5.5	Not Detected	21	Not Detected
Ethyl Benzene	5.5	Not Detected	24	Not Detected
m,p-Xylene	5.5	Not Detected	24	Not Detected
o-Xylene	5.5	Not Detected	24	Not Detected
tert-Butyl alcohol	22	Not Detected	67	Not Detected
1,2-Dibromoethane (EDB)	5.5	Not Detected	42	Not Detected
1,2-Dichloroethane	5.5	Not Detected	22	Not Detected
2,2,4-Trimethylpentane	5.5	1100	26	5000
Ethanol	22	Not Detected	41	Not Detected

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount ((ppbv))
Pentane, 2,4-dimethyl-	108-08-7	91%	250 N J
Pentane, 2,3-dimethyl-	565-59-3	91%	91 N J
Hexane, 2,5-dimethyl-	592-13-2	70%	110 N J
Hexane, 1-(hexyloxy)-2-methyl-	74421-17-3	64%	260 N J
Pentane, 2,2,3-trimethyl-	564-02-3	40%	120 N J
Pentane, 2,3,4-trimethyl-	565-75-3	91%	540 N J
Pentane, 2,3,3-trimethyl-	560-21-4	90%	830 N J
Hexane, 2,2,4-trimethyl-	16747-26-5	83%	2600 N J
Hexane, 2,3,3-trimethyl-	16747-28-7	78%	220 N J
Heptane, 2,3,5-trimethyl-	20278-85-7	64%	66 N J
Octane, 3-methyl-	2216-33-3	43%	130 N J
3-Heptene, 3-ethyl-	74764-46-8	72%	84 N J
Decane, 2,2,6-trimethyl-	62237-97-2	64%	130 N J
Unknown	NA	NA	130 J
Decane, 2,2,7-trimethyl-	62237-99-4	78%	210 N J
Octane, 3,3-dimethyl-	4110-44-5	74%	100 N J
Unknown	NA	NA	62 J
Octane, 2,2,6-trimethyl-	62016-28-8	72%	110 N J
Cyclotetrasiloxane, octamethyl-	556-67-2	47%	220 N J
3-HYDROXYMANDELIC ACID	0-00-0	72%	100 N J
ETHYL ESTER DITMS			

100% Aliphatic

Container Type: 1 Liter Summa Canister (100% Certified)

Client Sample ID: VP-4 Lab Duplicate

Lab ID#: 0809246AR1-02AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092425R1	Date of Collection: 9/11/08 10:56:00 AM
Dil. Factor:	11.0	Date of Analysis: 9/25/08 02:06 AM

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: VP-1

Lab ID#: 0809246AR1-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092507	Date of Collection: 9/11/08 11:41:00 AM
Dil. Factor:	4.71	Date of Analysis: 9/25/08 12:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	2.4	Not Detected	8.5	Not Detected
Benzene	2.4	Not Detected	7.5	Not Detected
Toluene	2.4	Not Detected	8.9	Not Detected
Ethyl Benzene	2.4	Not Detected	10	Not Detected
m,p-Xylene	2.4	Not Detected	10	Not Detected
o-Xylene	2.4	Not Detected	10	Not Detected
tert-Butyl alcohol	9.4	Not Detected	28	Not Detected
1,2-Dibromoethane (EDB)	2.4	Not Detected	18	Not Detected
1,2-Dichloroethane	2.4	Not Detected	9.5	Not Detected
2,2,4-Trimethylpentane	2.4	Not Detected	11	Not Detected
Ethanol	9.4	Not Detected	18	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: VP-2

Lab ID#: 0809246AR1-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092426R1	Date of Collection: 9/11/08 1:32:00 PM
Dil. Factor:	32.9	Date of Analysis: 9/25/08 03:28 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	16	Not Detected	59	Not Detected
Benzene	16	Not Detected	52	Not Detected
Toluene	16	Not Detected	62	Not Detected
Ethyl Benzene	16	Not Detected	71	Not Detected
m,p-Xylene	16	Not Detected	71	Not Detected
o-Xylene	16	Not Detected	71	Not Detected
tert-Butyl alcohol	66	Not Detected	200	Not Detected
1,2-Dibromoethane (EDB)	16	Not Detected	130	Not Detected
1,2-Dichloroethane	16	Not Detected	66	Not Detected
2,2,4-Trimethylpentane	16	3700	77	17000
Ethanol	66	Not Detected	120	Not Detected

TENTATIVELY IDENTIFIED COMPOUNDS

Compound	CAS Number	Match Quality	Amount ((ppbv))
Pentane, 2,4-dimethyl-	108-08-7	91%	1300 N J
Pentane, 2,3-dimethyl-	565-59-3	80%	2000 N J
Hexane, 2,5-dimethyl-	592-13-2	70%	2300 N J
Hexane, 1,1'-oxybis-	112-58-3	78%	2900 N J
Cyclopentane, 1,2,4-trimethyl-, (1.alpha	4850-28-6	91%	1300 N J
Pentane, 2,3,4-trimethyl-	565-75-3	87%	4000 N J
Pentane, 2,3,3-trimethyl-	560-21-4	80%	7000 N J
Hexane, 3,4-dimethyl-	583-48-2	64%	2800 N J
Hexane, 2,2,5-trimethyl-	3522-94-9	83%	7800 N J
Unknown	NA	NA	860 J
Heptane, 2,5-dimethyl-	2216-30-0	90%	1000 N J
Unknown	NA	NA	690 J
Unknown	NA	NA	510 J
Hexane, 2,3,4-trimethyl-	921-47-1	78%	1000 N J
Decane, 2,5-dimethyl-	17312-50-4	72%	820 N J
Decane, 2,2,6-trimethyl-	62237-97-2	59%	680 N J
Heptane, 3,3,5-trimethyl-	7154-80-5	64%	630 N J
Heptane, 2,3,4-trimethyl-	52896-95-4	50%	710 N J
Nonane, 3-methyl-	5911-04-6	72%	510 N J
Nonane, 2-methyl-	871-83-0	64%	1000 N J

100% Aliphatic

Container Type: 1 Liter Summa Canister (100% Certified)

Client Sample ID: VP-2

Lab ID#: 0809246AR1-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092426R1	Date of Collection: 9/11/08 1:32:00 PM
Dil. Factor:	32.9	Date of Analysis: 9/25/08 03:28 AM

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: VP-3

Lab ID#: 0809246AR1-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092427	Date of Collection: 9/11/08 12:26:00 PM
Dil. Factor:	2.47	Date of Analysis: 9/25/08 04:36 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Benzene	1.2	Not Detected	3.9	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.4	Not Detected
o-Xylene	1.2	Not Detected	5.4	Not Detected
tert-Butyl alcohol	4.9	Not Detected	15	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.5	Not Detected
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.8	Not Detected
Ethanol	4.9	Not Detected	9.3	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: Dupe

Lab ID#: 0809246AR1-06A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	w092408	Date of Collection: 9/11/08 1/1/1990
Dil. Factor:	4.78	Date of Analysis: 9/24/08 03:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
tert-Butyl alcohol	96	Not Detected	290	Not Detected
Ethanol	96	Not Detected	180	Not Detected
Methyl tert-butyl ether	24	Not Detected	86	Not Detected
2,2,4-Trimethylpentane	24	4300	110	20000
Benzene	24	Not Detected	76	Not Detected
1,2-Dichloroethane	24	Not Detected	97	Not Detected
Toluene	24	Not Detected	90	Not Detected
1,2-Dibromoethane (EDB)	24	Not Detected	180	Not Detected
Ethyl Benzene	24	Not Detected	100	Not Detected
m,p-Xylene	24	Not Detected	100	Not Detected
o-Xylene	24	Not Detected	100	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: Lab Blank

Lab ID#: 0809246AR1-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092410	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/08 02:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
tert-Butyl alcohol	2.0	Not Detected	6.1	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: Lab Blank

Lab ID#: 0809246AR1-07B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092506	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/25/08 11:33 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
tert-Butyl alcohol	2.0	Not Detected	6.1	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	82	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: Lab Blank

Lab ID#: 0809246AR1-07C

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	w092405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/08 01:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
tert-Butyl alcohol	20	Not Detected	61	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: CCV

Lab ID#: 0809246AR1-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092409	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/08 01:42 PM

Compound	%Recovery
Methyl tert-butyl ether	99
Benzene	99
Toluene	101
Ethyl Benzene	106
m,p-Xylene	107
o-Xylene	109
tert-Butyl alcohol	81
1,2-Dibromoethane (EDB)	108
1,2-Dichloroethane	98
2,2,4-Trimethylpentane	88
Ethanol	85

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: CCV

Lab ID#: 0809246AR1-08B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/25/08 08:58 AM

Compound	%Recovery
Methyl tert-butyl ether	97
Benzene	94
Toluene	100
Ethyl Benzene	104
m,p-Xylene	104
o-Xylene	106
tert-Butyl alcohol	80
1,2-Dibromoethane (EDB)	105
1,2-Dichloroethane	93
2,2,4-Trimethylpentane	83
Ethanol	84

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: CCV

Lab ID#: 0809246AR1-08C

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	w092402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/08 11:16 AM

Compound	%Recovery
tert-Butyl alcohol	94
Ethanol	100
Methyl tert-butyl ether	82
2,2,4-Trimethylpentane	107
Benzene	100
1,2-Dichloroethane	88
Toluene	99
1,2-Dibromoethane (EDB)	101
Ethyl Benzene	100
m,p-Xylene	102
o-Xylene	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: LCS

Lab ID#: 0809246AR1-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/08 09:19 AM

Compound	%Recovery
Methyl tert-butyl ether	105
Benzene	103
Toluene	110
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	109
tert-Butyl alcohol	90
1,2-Dibromoethane (EDB)	106
1,2-Dichloroethane	103
2,2,4-Trimethylpentane	99
Ethanol	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: LCS

Lab ID#: 0809246AR1-09B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t092504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/25/08 10:16 AM

Compound	%Recovery
Methyl tert-butyl ether	102
Benzene	96
Toluene	107
Ethyl Benzene	104
m,p-Xylene	104
o-Xylene	107
tert-Butyl alcohol	81
1,2-Dibromoethane (EDB)	104
1,2-Dichloroethane	97
2,2,4-Trimethylpentane	82
Ethanol	82

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: LCS

Lab ID#: 0809246AR1-09C

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	w092403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/24/08 12:01 PM

Compound	%Recovery
tert-Butyl alcohol	102
Ethanol	108
Methyl tert-butyl ether	86
2,2,4-Trimethylpentane	99
Benzene	100
1,2-Dichloroethane	88
Toluene	99
1,2-Dibromoethane (EDB)	100
Ethyl Benzene	100
m,p-Xylene	102
o-Xylene	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	98	70-130