



**CONESTOGA-ROVERS
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TRANSMITTAL

DATE: 8/25/2011 REFERENCE NO.: LOC# RO466
PROJECT NAME: Former Texaco Station 20-9339
TO: Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

RECEIVED

4:03 pm, Sep 02, 2011
Alameda County
Environmental Health

Please find enclosed: Draft Final
 Originals Other PDF
 Prints

Sent via: Mail Same Day Courier
 Overnight Courier Other ACEH FTP Website and GeoTracker

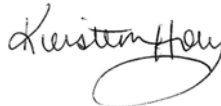
QUANTITY	DESCRIPTION
1	Case Closure Request

As Requested For Review and Comment
 For Your Use _____

COMMENTS:

Copy to:

Mr. Eric Frohnapple, Chevron
Mr. Donald Sweet, San Francisco Property MGMT

Completed by: Kiersten Hoey Signed: 

Filing: **Correspondence File**



Eric Frohnapple
Project Manager
Marketing Business Unit

**Chevron Environmental
Management Company**
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6692
ericf@chevron.com

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

Re: Former Chevron Service Station No. 20-9339
5940 College Avenue
Oakland, California

I accept the **Case Closure Request** dated August 25, 2011.

I agree with the conclusions and recommendations presented in this document. The information included is accurate to the best of my knowledge, and appears to meet local agency and Regional Board guidelines. This **Case Closure Request** was prepared by Conestoga Rovers & Associates, upon whose assistance and advice I have relied.

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

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

Sincerely,

A handwritten signature in black ink that reads "Eric Frohnapple".

Eric Frohnapple
Project Manager

Attachment: Case Closure Request



CASE CLOSURE REQUEST

**Former Chevron Service Station 20-9339
5940 College Avenue
Oakland, California
ACEH Case No. RO0000466**

Prepared for:

**Mr. Mark Detterman
Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway
Alameda, California 94502**

**AUGUST 25, 2011
REF. NO. 311954 (7)**

This report is printed on recycled paper.

**Prepared by:
Conestoga-Rovers
& Associates**

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CASE CLOSURE REQUEST

Former Chevron Service Station 20-9339
5940 College Avenue
Oakland, California
ACEH Case No. RO0000466

Kiersten Hoey



Scott MacLeod

AUGUST 25, 2011
REF. NO. 311954 (7)
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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is submitting this *Case Closure Request* on behalf of Chevron Environmental Management Company (Chevron) for the former Chevron service station located at 5940 College Avenue in Oakland, California. Based on our review of the site background and conditions, this site meets the San Francisco Bay Region-Regional Water Quality Control Board's (RWQCB) definition of a low-risk fuel site as described in its memorandum "*Interim Guidance on Required Clean-up at Low-Risk Fuel Sites*" dated January 5, 1996. Site background, conditions, and our request for closure, based on the low-risk fuel site criteria, are addressed below.

1.1 SITE BACKGROUND

The site is a former Chevron gasoline service station located on the southeast corner of the intersection of College and Harwood Avenues in Oakland, California (Figure 1). The station occupied the site from 1938 to 1968. Former site facilities consisted of four underground storage tanks (USTs), one dispenser island and a building (Figure 2). From 1968, until the construction of the current building, the site was used as a parking lot. The current multi-story building was constructed in 1979 and contains multiple businesses (Figure 2). Adjacent and south of the site is the former Sheaff's Garage (Sheaff), now Stauder Automotive service facility, with an open ACEH fuel leak case (RO0000377).

Four soil borings and two monitoring wells have been installed at the site. Soil was excavated when the current building was constructed 3 to 4 feet below street level in 1979, but the depth and volume of the excavation is not known. A summary of the past investigation work performed at the site is included in Appendix A.

1.2 SITE GEOLOGY

The site is approximately 195 feet above mean sea level with a regional topographic slope east-northeastward toward San Francisco Bay. Native materials encountered appear to be Holocene-age alluvial fan and fluvial deposits consisting of interbedded sands, silts and clays to the total explored depth of 21 feet below grade (fbg). Lithology is not consistent between borings and there are no universal lithologic horizons. Brick fragments encountered at 5 fbg in MW-2 suggests that the shallow soils encountered in this area are backfill material. Boring logs are included in Appendix B.

A review of the Golden Gate Tank Removal's August 26, 2006 *Additional Site Characterization and Groundwater Monitoring Report*, indicates subsurface soil at the adjacent former Sheaff site (5930 College Avenue) is generally similar to subsurface soils encountered at the former Chevron site.

1.3 SITE HYDROLOGY

The site is located in the East Bay Plain basin. Groundwater in this basin is designated as a potential drinking water source; however, it is not currently used as a municipal drinking water supply due to readily available imported surface water. Depth to groundwater ranges from approximately 6 to 14 fbg. There are only two monitoring wells associated with the former Chevron site, but joint groundwater monitoring has been conducted with the former Sheaff's Garage semi-annually since 2001 (Figure 2). Based on the joint groundwater monitoring data, groundwater flow is variable, but predominately toward the west.

2.0 HYDROCARBON DISTRIBUTION

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

2.1 SOIL

No TPHg or benzene, toluene, ethylbenzene, xylenes (BTEX), or MTBE were detected in the two samples collected from monitoring wells MW-1, located across College Avenue. Well MW-2 is located within the approximate location of the former USTs and contained toluene, ethylbenzene and total xylenes, but the concentrations were below the Environmental Screening Levels (ESLs)¹ (Table 1).

¹ Environmental Screening Levels from San Francisco Regional Water Quality Control Board's *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, Interim Final November 2007 (Revised May 2008). Table A.

2.2 GROUNDWATER

Joint groundwater monitoring with Sheaff has been ongoing for 10 years. Groundwater monitoring data from the most recent report submitted, is presented in Table 2. Grab-groundwater data collected at the Chevron site is included in Table 3. Historic groundwater monitoring data is presented in Appendix C. Sheaff's grab-groundwater and groundwater monitoring data are presented in Appendix D. Groundwater monitoring data for 2010 through 2011 is listed in Table A.

TABLE A: HYDROCARBON CONCENTRATIONS IN GROUNDWATER						
	<i>Date</i>	<i>TPHg</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>Xylenes</i>
<i>Drinking Water ESLs</i>		100	1	40	30	20
<i>concentrations in micrograms per liter (µg/L)</i>						
MW-1	4/12/2010	<50	<0.5	<0.5	<0.5	<1.5
	10/15/2010	<50	<0.5	<0.5	<0.5	<1.5
	4/14/2011	<50	<0.5	<0.5	<0.5	<1.5
MW-2	4/12/2010	310	1.0	<0.5	0.5	<1.5
	10/15/2010	480	1.3	<2.0	<2.0	7.1
	4/14/2011	150	<0.5	<0.5	<0.5	<5.0
<i>Adjacent Former Sheaff's Garage site (5930 College Avenue)</i>						
MW-1	4/12/2010	Not sampled				
	10/18/2010	24,000	8,100	820	2,200	4,400
	4/14/2011	Not sampled				
MW-2	4/12/2010	Not Sampled				
	10/18/2010	3,200	460	16	230	110
	4/14/2011	Not sampled				
MW-3	4/12/2010	Not Sampled				
	10/18/2010	2,700	270	11	290	399.2
	4/14/2011	Not sampled				
PW-1	4/12/2010	Not Sampled				
	10/18/2010	860	8.8	0.55	44	44
	4/14/2011	Not sampled				

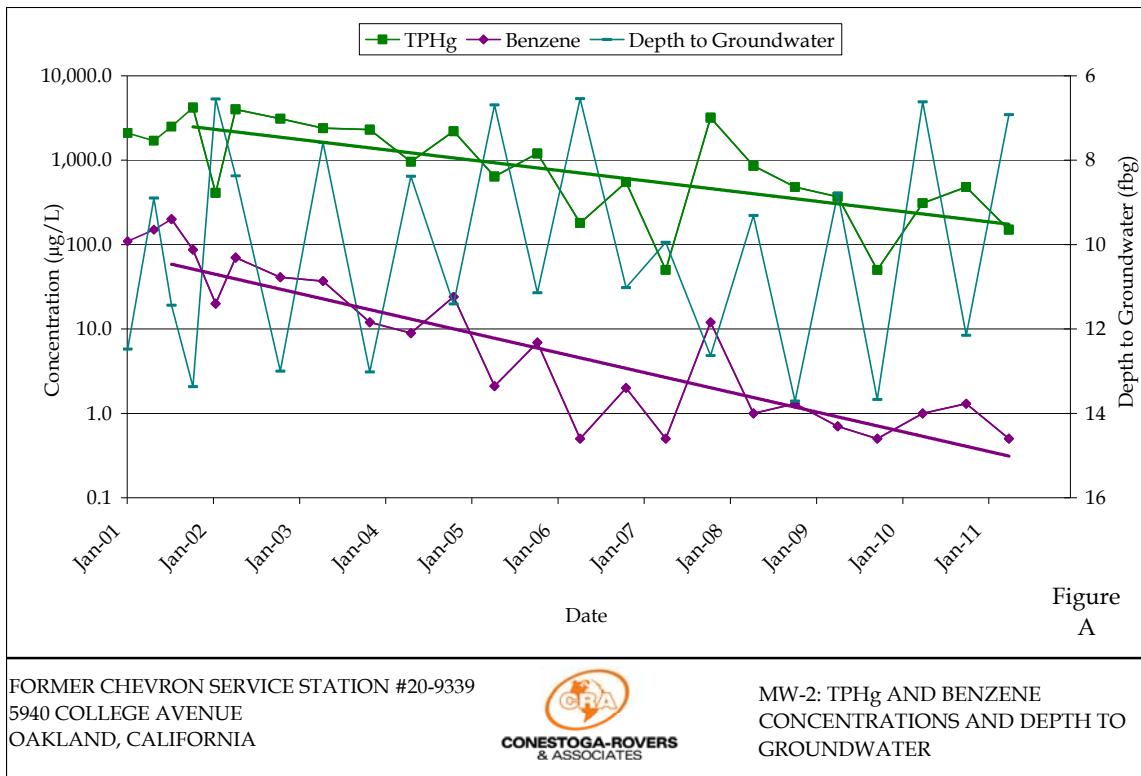
Hydrocarbon Delineation

TPHg and benzene are detected in MW-2 at concentrations near the ESLs for groundwater that is a drinking water resource. No hydrocarbons have been detected in MW-1 since 2008, defining the downgradient extent of hydrocarbons in groundwater. Based on historic Chevron and Sheaff groundwater monitoring data and grab-groundwater sampling data, hydrocarbon concentrations detected at the Sheaff site are three orders of magnitude higher than those detected in Chevron wells. Hydrocarbons from the Sheaff site also appear to have migrated north across the

Chevron property (Figures 3 through 9). This is supported by the MTBE distribution shown Figure 5. The Chevron station has not been in operation since approximately 1968 and the first use of MTBE as a fuel additive was not until late 1970s to early 1980s. Figures 3, 4, and 5 illustrate the distribution of TPHg, benzene, and MTBE in the 1998-1999 time frame, Figures 6 and 7 illustrate the distribution of TPHg and benzene in 2002 and Figures 8 and 9 illustrate the distribution of TPHg and benzene in 2005. These dates correspond with previous subsurface investigations, wherein grab groundwater samples were collected. Note that data from both grab groundwater samples and wells are contoured on Figures 3 through 9. This is for qualitative use only, as it is not typical to mix grab-groundwater and well data sets. Figures 10 and 11 illustrate the distribution of TPHg and benzene in wells during the most recent monitoring and sampling event.

Hydrocarbon Trend and Degradation Calculations

No hydrocarbons have been detected in MW-1 since 2008. A graph illustrating TPHg and benzene concentrations over time in well MW-2 is presented on Figure A. Concentrations have steadily decreased since monitoring and sampling began in 2001.



CRA calculated dissolved-phase TPHg and benzene concentration trends for well MW-2 using the historical peak concentration. To estimate the time to meet RWQCB drinking water ESLs, CRA used the following first order exponential decay rate calculation:

$$y = be^{(ax)}, \text{ where } y \text{ is concentration and } x \text{ is time.}$$

Concentrations in well MW-2, are expected to reach the drinking water ESLs for TPHg and benzene within 2 years. Degradation calculations are presented in Appendix E and summarized in Table B below. Based on decreasing hydrocarbon concentration trends, hydrocarbons originating from the former Chevron facilities have reached their maximum extent and are decreasing in size and mass. Based on dissolved hydrocarbon concentration contours over time, illustrated on Figures 3 through 9, the extent of hydrocarbons that have migrated onto the Chevron site from the Sheaff's site are also decreasing in size and mass.

TABLE B - SUMMARY OF DEGRADATION RATE CALCULATIONS (CHEVRON WELLS)						
<i>Well</i>	<i>Analyte</i>	<i>Maximum Concentration (µg/L)</i>	<i>Current Concentration (µg/L)</i>	<i>Half-Life (years)</i>	<i>Date to Reach ESL</i>	<i>Years to Reach ESL</i>
MW-1	TPHg	1,700	< 50	NA	NA	Below ESLs
	Benzene	3.4	< 0.5	NA	NA	Below ESLs
MW-2	TPHg	4,200	150	2.52	April 2013	2
	Benzene	200	< 0.5	1.26	Feb 2009	Below ESLs
Notes and Abbreviations:						
µg/L = Micrograms per liter						
NA = Not applicable						

3.0 REGULATORY STATUS REVIEW

Based on all the information presented above, the site meets the RWQCB criteria for a low-risk fuel site. As described by the January 5, 1996 RWQCB memorandum *Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites*, a low-risk groundwater case has the following general characteristics:

- The leak has stopped and ongoing sources, including free product, have been removed or remediated

- The site has been adequately characterized
- The dissolved hydrocarbon plume is 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 of the low-risk groundwater case characteristics are discussed below.

3.1 THE LEAK HAS STOPPED AND ONGOING SOURCES, INCLUDING FREE PRODUCT, HAVE BEEN REMOVED

The former USTs and dispensers were removed in 1968. No free product has ever been observed and hydrocarbon concentrations in groundwater and soil are not indicative of residual free product. Hydrocarbon concentrations in source area groundwater monitoring well MW-2 are predicted to reach ESLs in 2 years, indicating there is no residual hydrocarbon source mass of concern in soil.

3.2 THE SITE HAS BEEN ADEQUATELY CHARACTERIZED

Ten years of groundwater monitoring and grab-groundwater samples from soil borings adequately delineate the aqueous-phase hydrocarbon plume. Well MW-1 defines the downgradient extent of hydrocarbons in groundwater, and hydrocarbon concentrations in source area well MW-2 are approaching ESLs.

3.3 THE DISSOLVED HYDROCARBON PLUME IS NOT MIGRATING

The dissolved hydrocarbon plume is stable and concentrations are decreasing (Figure A above). The plume has reached its maximum extent, is shrinking in area and mass, and is not migrating.

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

The remaining dissolved hydrocarbon mass is limited in extent and is not migrating. In Golden Gate Tank Removal's August 29, 2006 *Report of Additional Site Characterization*

and Groundwater Monitoring, for the Sheaff property, a sensitive receptor survey was conducted and found no beneficial domestic or irrigation wells within ¼-miles from the site. Based on the limited extent of hydrocarbons in groundwater, it is unlikely any wells beyond ¼-miles could be affected by hydrocarbons originating from the Chevron site. The nearest surface water body is an abandoned quarry located approximately 1-mile south of the site. Due to the large distance from the site, there is no risk to the abandoned quarry from hydrocarbons originating at the site.

3.5 THE SITE PRESENTS NO SIGNIFICANT RISK TO HUMAN HEALTH OR THE ENVIRONMENT

The subject property was a former Chevron service station that has been redeveloped as a commercial building and is expected to remain so for the foreseeable future. Surrounding land use is both commercial and residential. Possible exposure pathways include ingestion, direct contact with soil, and vapor intrusion to indoor air. We further discuss each of these pathways below.

Although the site is located above a groundwater basin with potential drinking water uses, Chevron's dissolved hydrocarbon plume is predicted to reach drinking water ESLs within 2 years. It is unlikely that any future well will be installed in the shallow water-bearing zone before the hydrocarbon plume from the Chevron site has fully attenuated.

Direct exposure to shallow soil by residents during home maintenance activities, yard work, and outdoor play activities or commercial/industrial workers during maintenance and ground-keeping is possible at this site; however, no hydrocarbons are detected in shallow soil above 8 fbg and the majority is either beneath a building or concrete. Therefore, it is unlikely any resident or commercial worker will come in contact with hydrocarbon-bearing soil.

Vapor intrusion of hydrocarbons to indoor air is a potential exposure pathway; however, hydrocarbons detected in groundwater from the Chevron site are two orders of magnitude below the ESLs for potential vapor intrusion.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the site conditions and data presented above, this site meets the RWQCB criteria for a low-risk fuel site. Therefore, on behalf of Chevron, we recommend no further action and request low-risk case closure for the site.

FIGURES

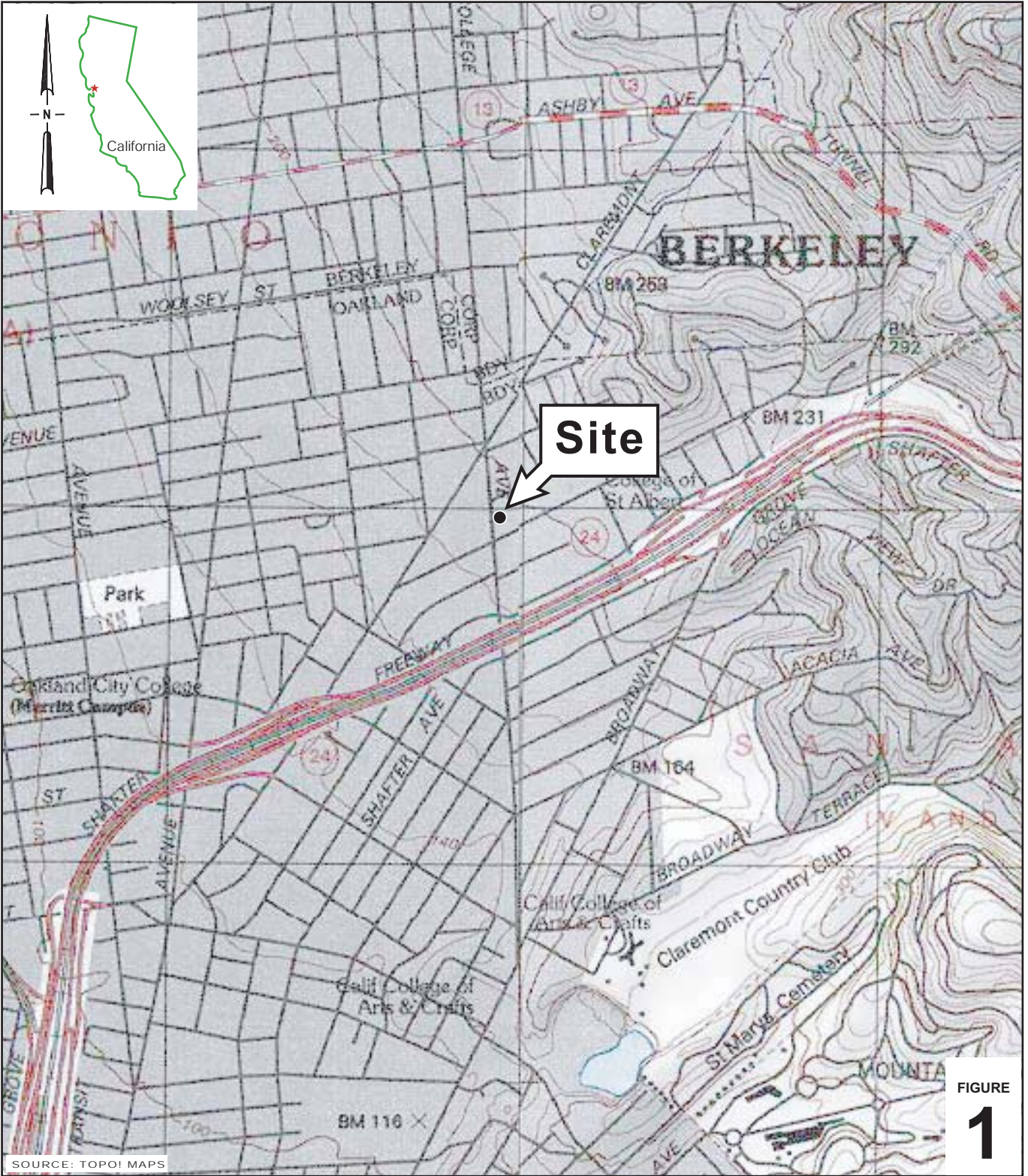


FIGURE 1

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Chevron Service Station 20-9339
 5940 College Avenue
 Oakland, California



CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

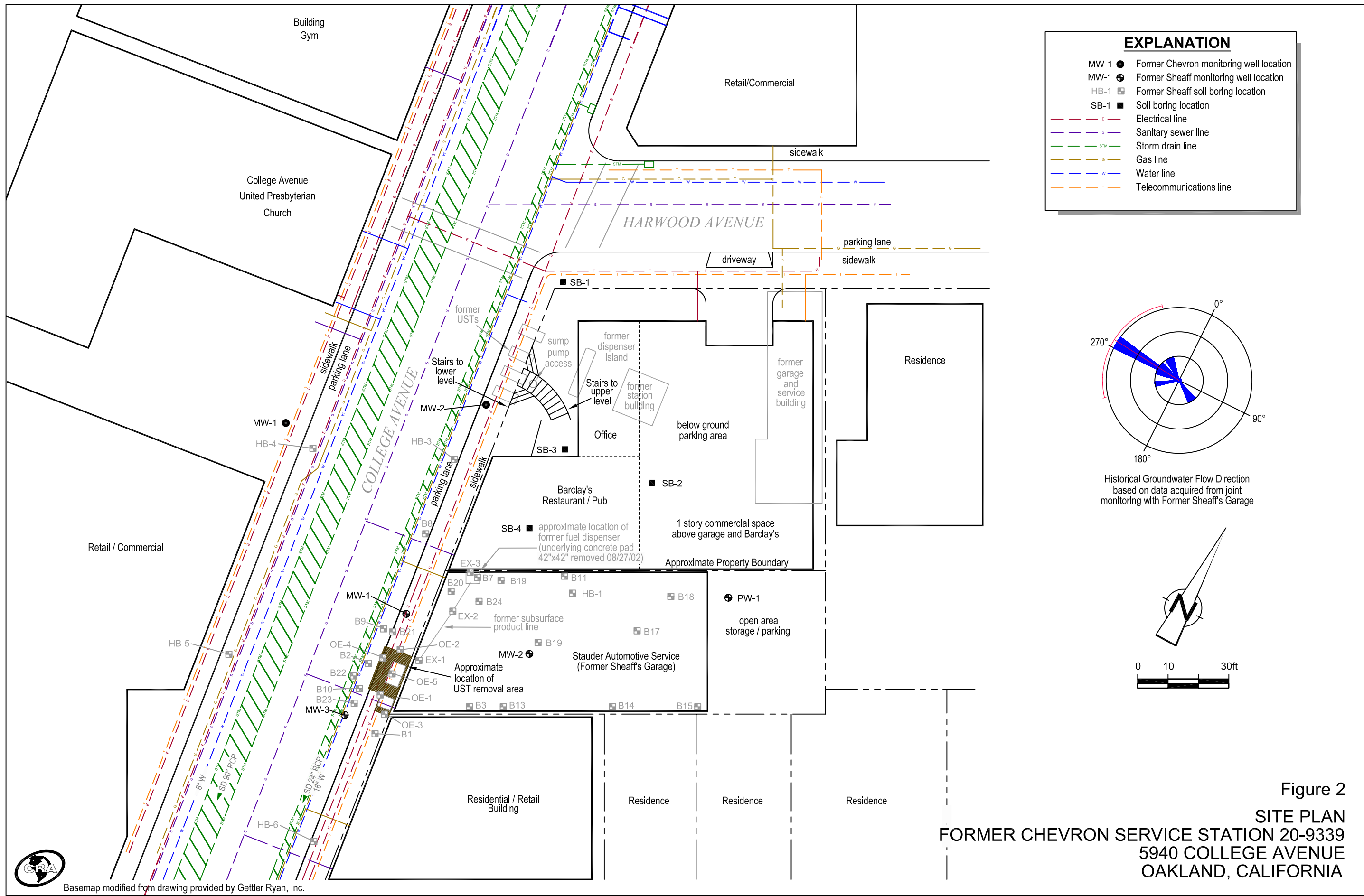


Figure 2
SITE PLAN
FORMER CHEVRON SERVICE STATION 20-9339
5940 COLLEGE AVENUE
OAKLAND, CALIFORNIA



Basemap modified from drawing provided by Gettler Ryan, Inc.

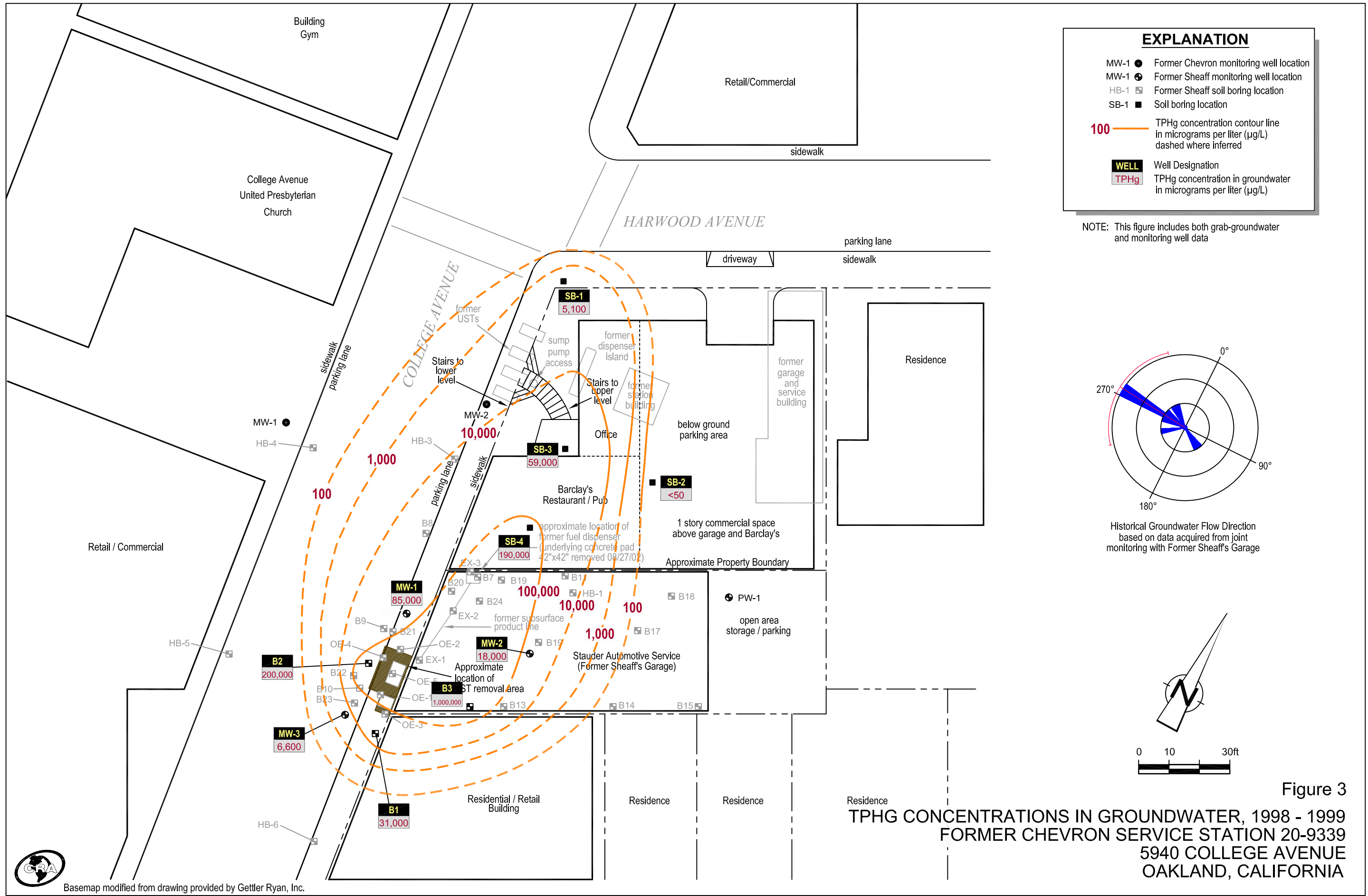


Figure 3
 TPHG CONCENTRATIONS IN GROUNDWATER, 1998 - 1999
 FORMER CHEVRON SERVICE STATION 20-9339
 5940 COLLEGE AVENUE
 OAKLAND, CALIFORNIA



Basemap modified from drawing provided by Gettler Ryan, Inc.

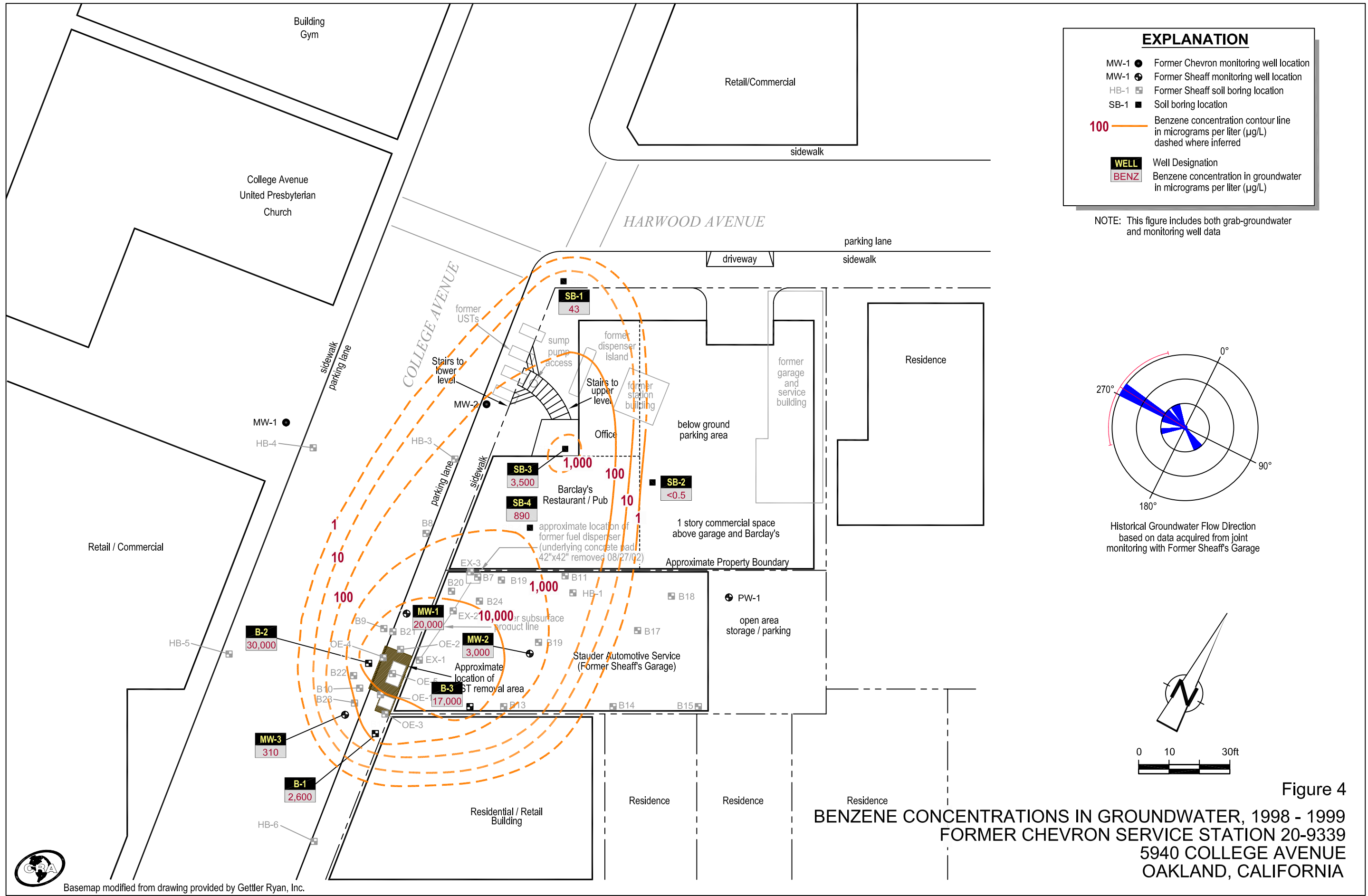


Figure 4
BENZENE CONCENTRATIONS IN GROUNDWATER, 1998 - 1999
FORMER CHEVRON SERVICE STATION 20-9339
5940 COLLEGE AVENUE
OAKLAND, CALIFORNIA



Basemap modified from drawing provided by Gettler Ryan, Inc.

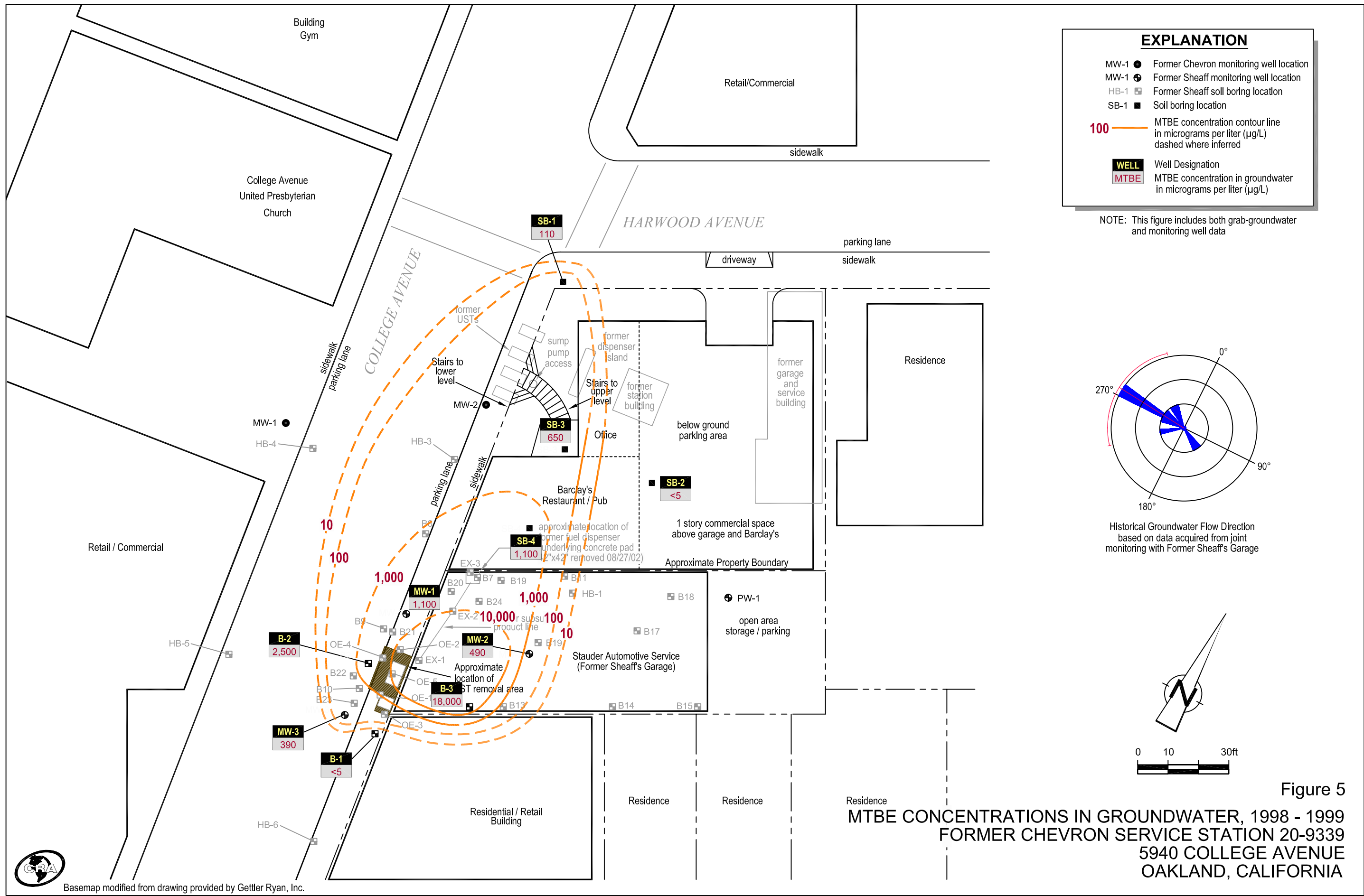
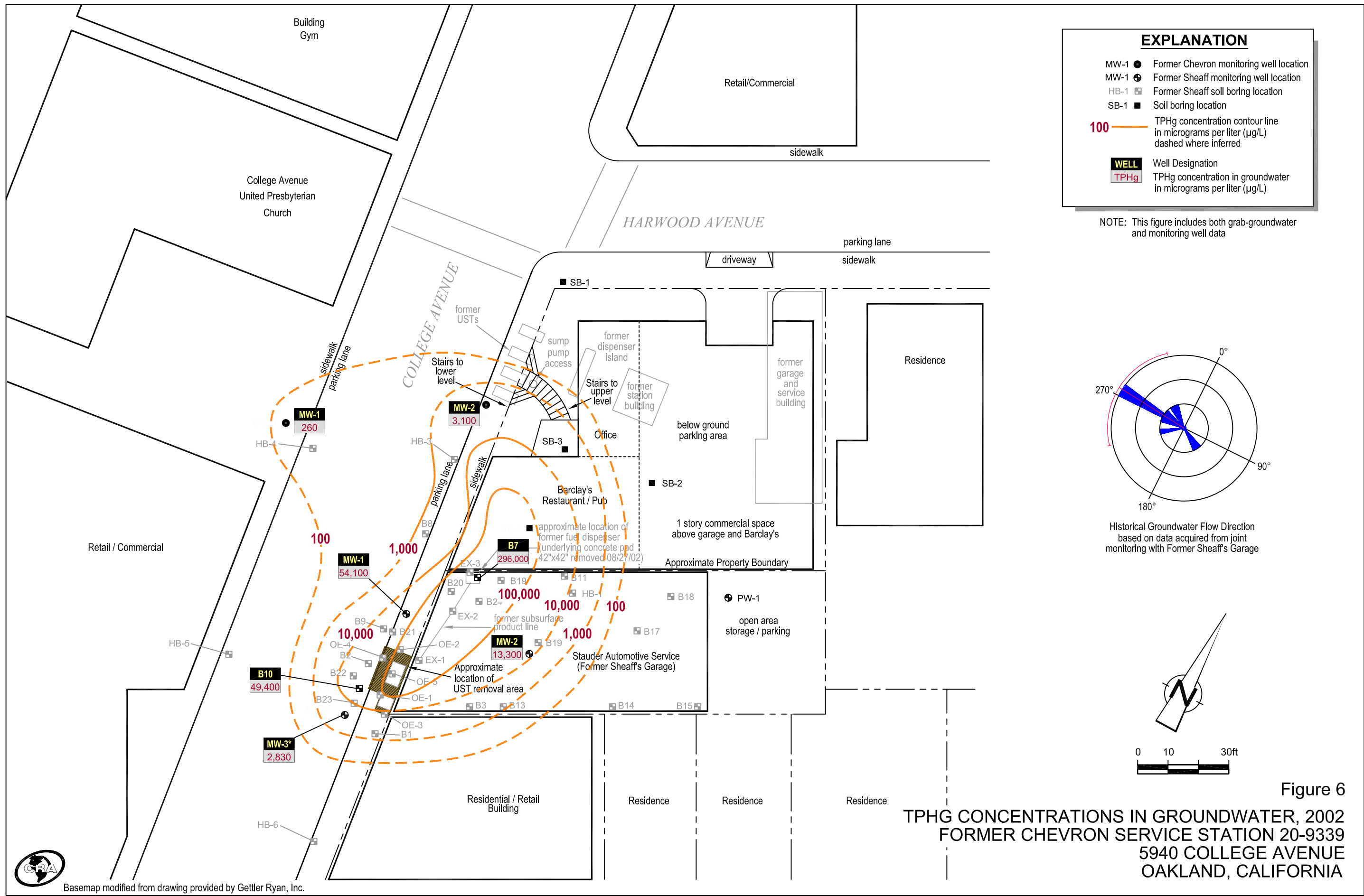
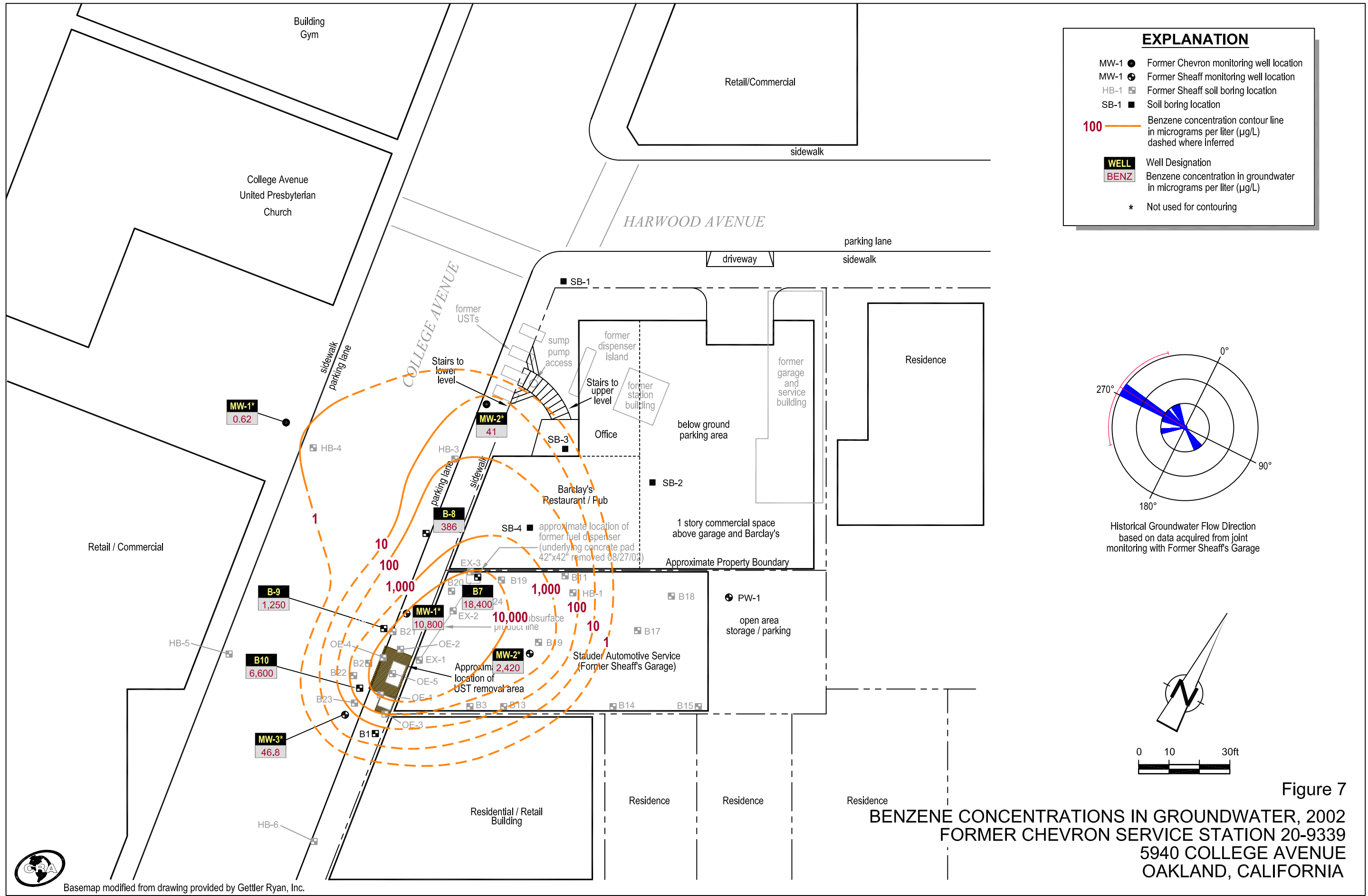


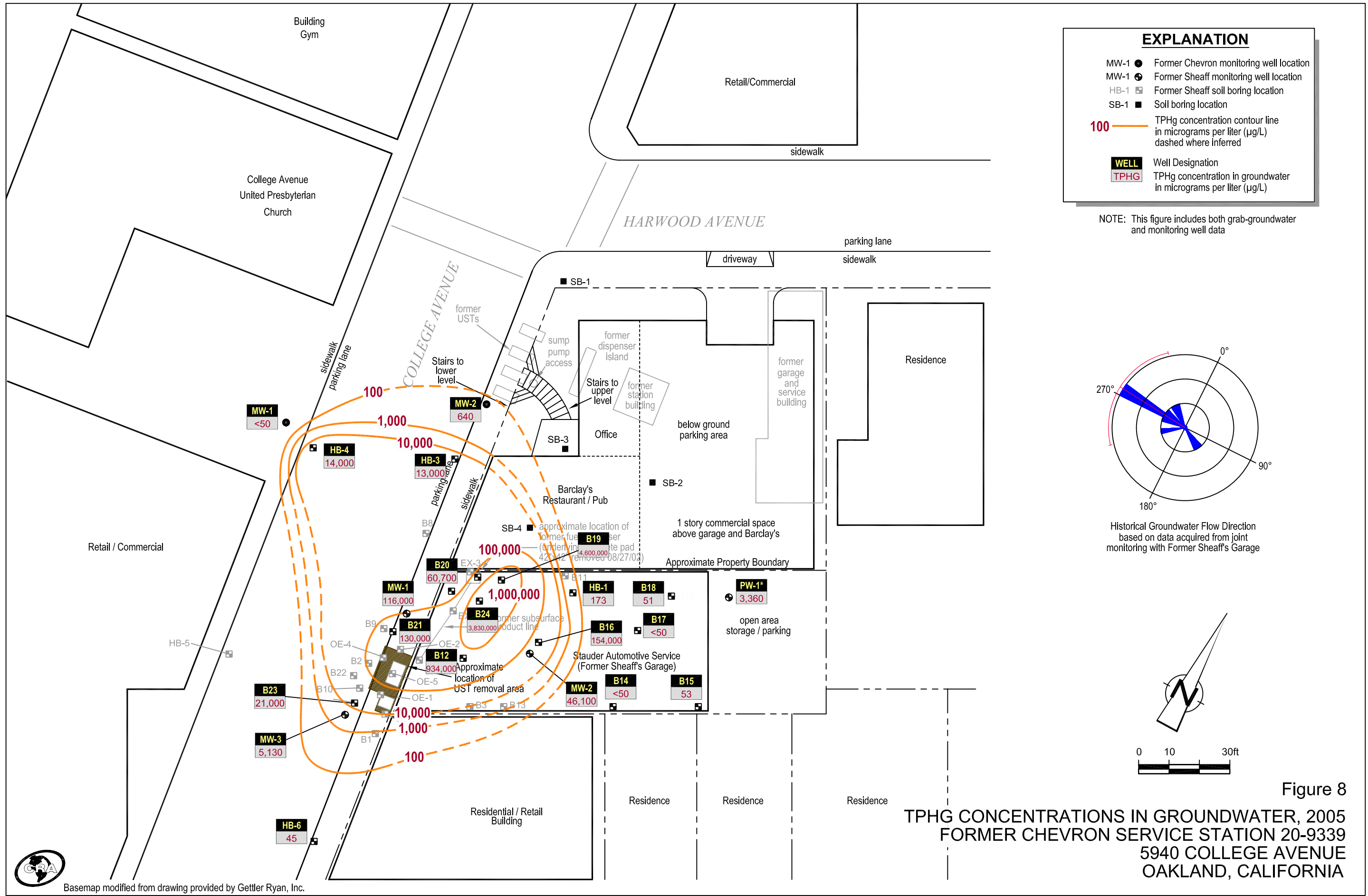
Figure 5
 MTBE CONCENTRATIONS IN GROUNDWATER, 1998 - 1999
 FORMER CHEVRON SERVICE STATION 20-9339
 5940 COLLEGE AVENUE
 OAKLAND, CALIFORNIA



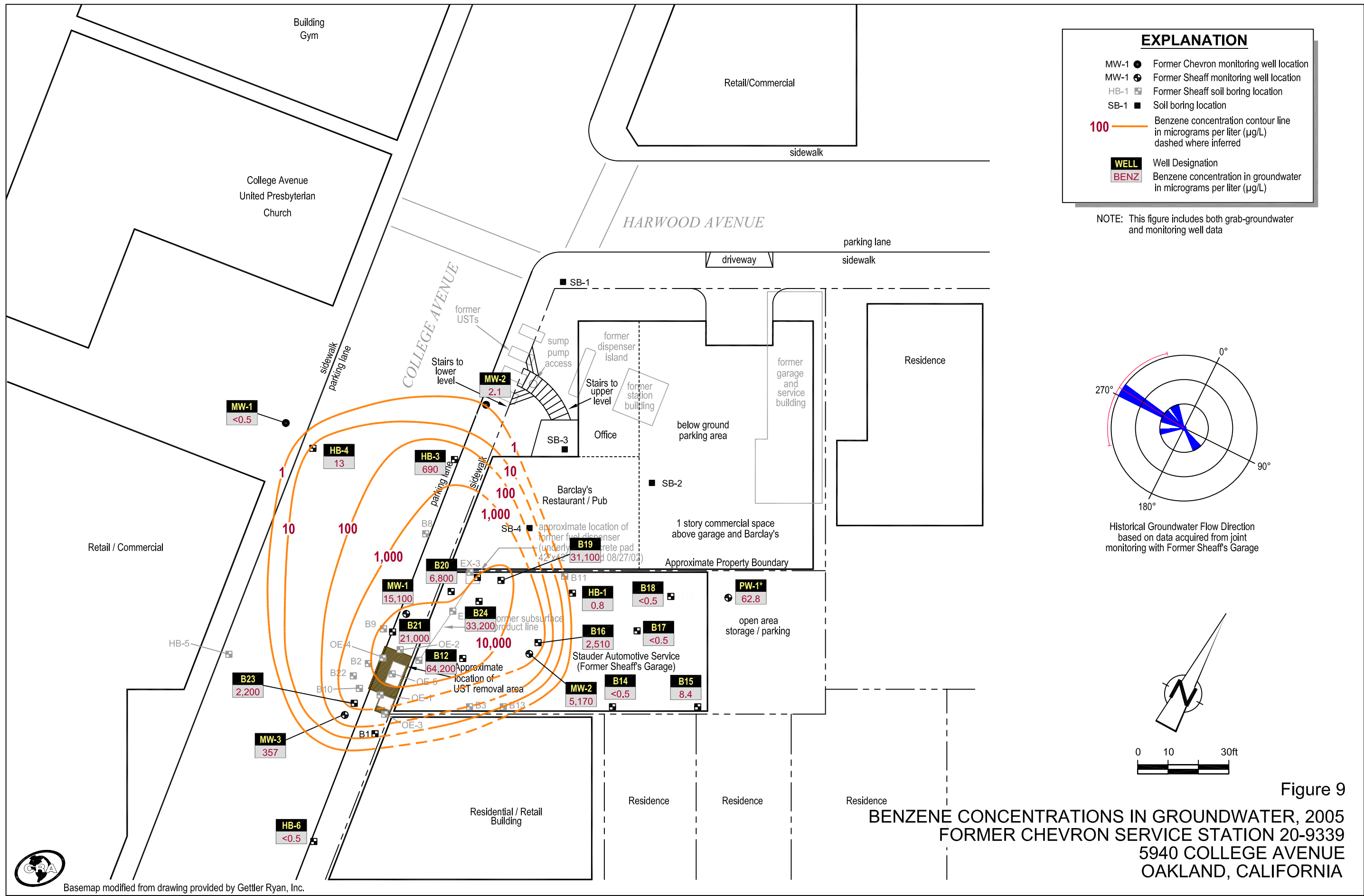
Basemap modified from drawing provided by Gettler Ryan, Inc.



Basemap modified from drawing provided by Gettler Ryan, Inc.



Basemap modified from drawing provided by Gettler Ryan, Inc.



EXPLANATION

- MW-1 ● Former Chevron monitoring well location
- MW-1 ⊕ Former Sheaff monitoring well location
- HB-1 □ Former Sheaff soil boring location
- SB-1 ■ Soil boring location
- 100 — Benzene concentration contour line in micrograms per liter ($\mu\text{g/L}$) dashed where inferred
- WELL** Well Designation
- BENZ** Benzene concentration in groundwater in micrograms per liter ($\mu\text{g/L}$)

NOTE: This figure includes both grab-groundwater and monitoring well data

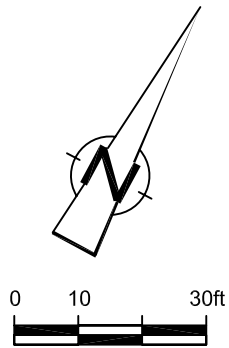
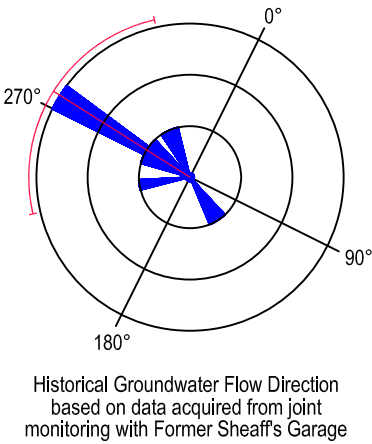
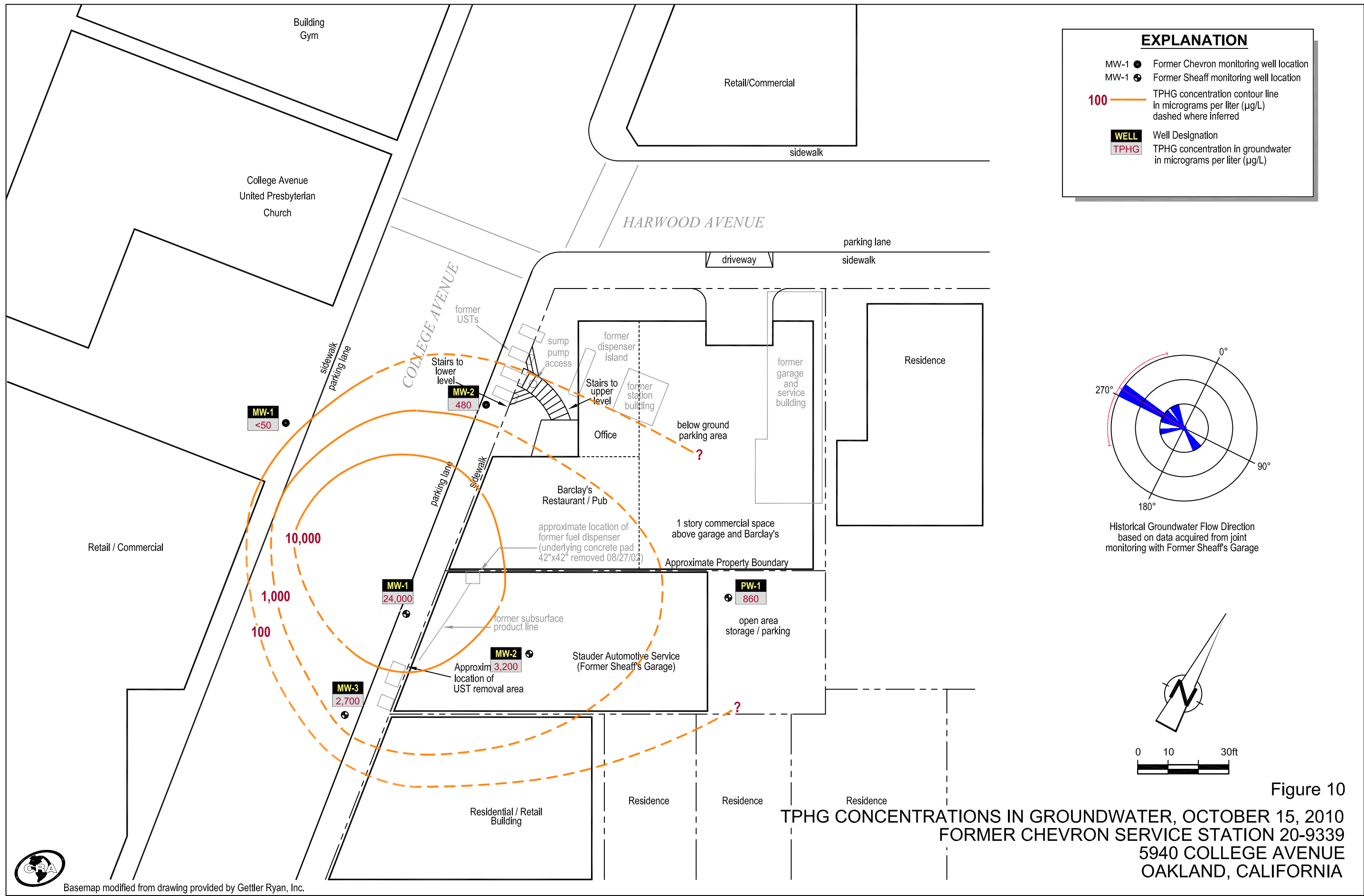
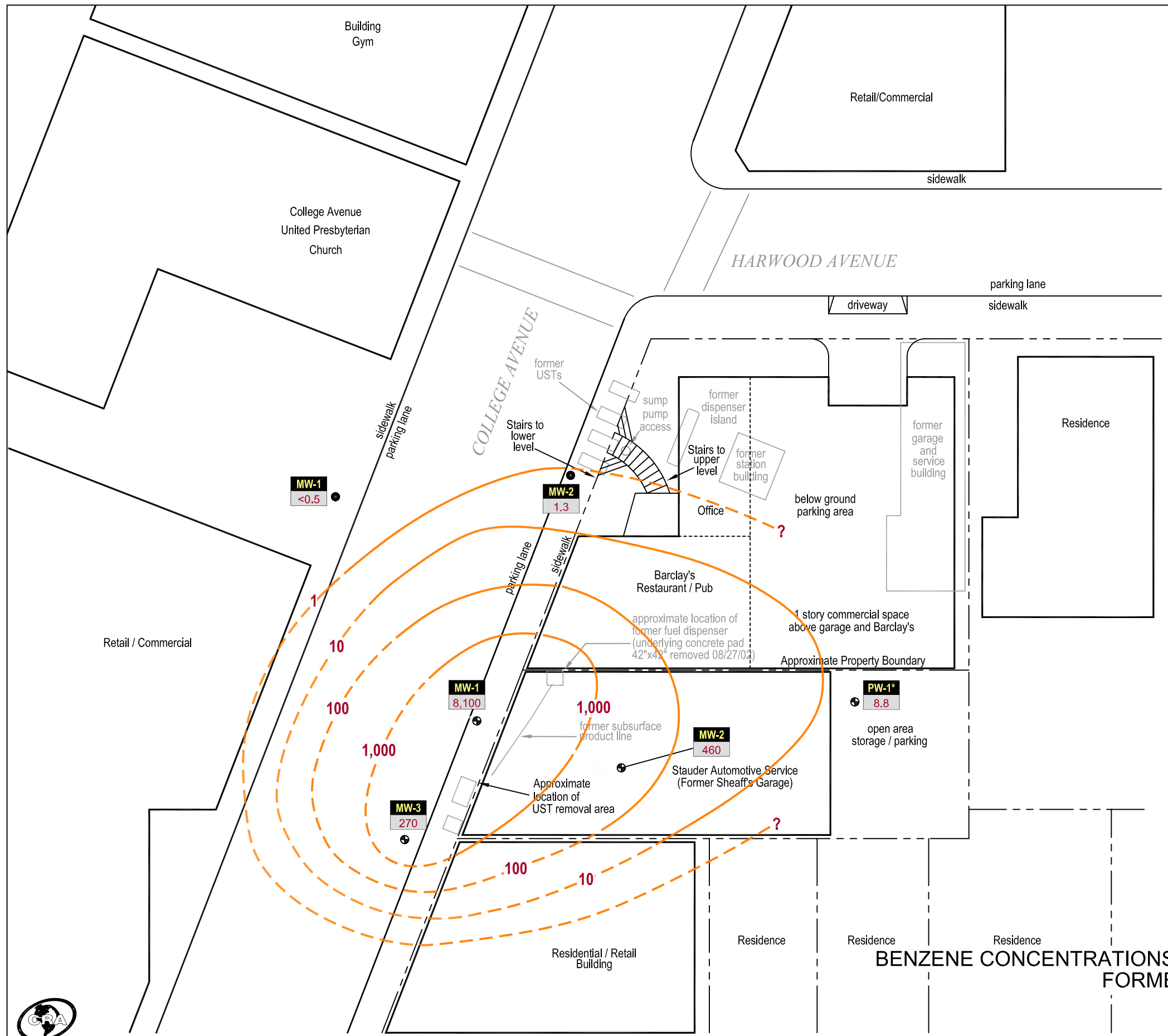


Figure 9
BENZENE CONCENTRATIONS IN GROUNDWATER, 2005
FORMER CHEVRON SERVICE STATION 20-9339
5940 COLLEGE AVENUE
OAKLAND, CALIFORNIA

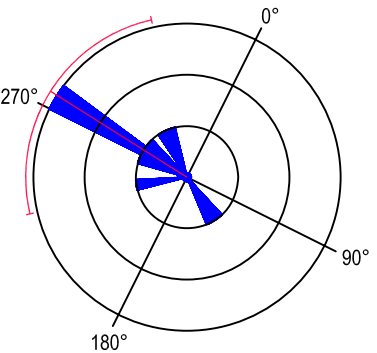


Basemap modified from drawing provided by Gettler Ryan, Inc.



EXPLANATION

- MW-1 ● Former Chevron monitoring well location
- MW-1 ⊕ Former Sheaff monitoring well location
- 100 — Benzene concentration contour line in micrograms per liter (µg/L) dashed where inferred
- WELL** Well Designation
- BENZ** Benzene concentration in groundwater in micrograms per liter (µg/L)
- * Not used for contouring



Historical Groundwater Flow Direction based on data acquired from joint monitoring with Former Sheaff's Garage

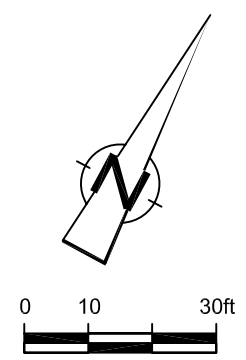


Figure 11
BENZENE CONCENTRATIONS IN GROUNDWATER, OCTOBER 15, 2010
FORMER CHEVRON SERVICE STATION 20-9339
5940 COLLEGE AVENUE
OAKLAND, CALIFORNIA



Basemap modified from drawing provided by Gettler Ryan, Inc.

TABLES

**CUMULATIVE SOIL ANALYTICAL DATA
FORMER CHEVRON SERVICE STATION
5940 COLLEGE AVENUE., OAKLAND, CALIFORNIA**

Sample ID	Date	Depth (fbg)	← Reported in milligrams per kilogram (mg/kg) →						
			TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Lead
<i>ESLs for Soil Leaching Screening Level (Drinking Water Source) Table G</i>			83	0.044	2.9	3.3	2.3	0.023	NE
<i>ESLs for Soil Direct Exposure Construction/Trench Worker Table K-3</i>			4,200	12	650	210	420	2,800	750
MW-1-4.5	12/6/2000	4.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	--
MW-1-9.5	12/6/2000	9.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	--
MW-2-4.5	12/6/2000	4.5	<1.0	<0.0050	0.0062	0.0054	0.021	<0.05	--

Notes:

Total petroleum hydrocarbons as gasoline (TPHg) analyzed by EPA method 8015B modified 8260B

Environmental Screening Levels (ESLs) for commercial land use where groundwater is a current or potential drinking water source from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* presented by the California Regional Water Quality Control Board - San Francisco Bay Region Interim Final November 2007, revised May 2008.

NE = Not established

fbg = feet below grade

<x = Not detected at reporting limit x

-- = Not analyzed/not applicable

**GROUNDWATER MONITORING AND SAMPLING DATA
FORMER CHEVRON SERVICE STATION 20-9339
5940 COLLEGE AVENUE
OAKLAND, CALIFORNIA**

Location	Date	TOC	DTW	GWE	HYDROCARBONS	PRIMARY VOCS			
					TPH-GRO	B	T	E	X
	Units	ft	ft	ft-amsl	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	10/14/2010	196.91	13.25	183.66	<50	<0.5	<0.5	<0.5	<1.5
MW-1	04/14/2011	196.91	7.81	189.10	<50	<0.5	<0.5	<0.5	<1.5
MW-2	10/14/2010	197.35	12.15	185.20	480	1.3	<2.0	<2.0	7.1
MW-2	04/14/2011	197.35	6.92	190.43	150	<0.5	<0.5	<0.5	<5.0
QA	10/14/2010	-	-	-	<50	<0.5	<0.5	<0.5	<1.5
QA	04/14/2011	-	-	-	<50	<0.5	<0.5	<0.5	<1.5

Abbreviations and Notes:

TOC = Top of Casing

DTW = Depth to Water

GWE = Groundwater elevation

(ft-amsl) = Feet Above Mean sea level

ft = Feet

µg/L = Micrograms per Liter

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

VOCS = Volatile Organic Compounds

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylene

-- = Not available / not applicable

<x = Not detected above laboratory method detection limit

*

TOC elevations were surveyed on December 27, 2000, by Virgil Chavez Land Surveying.

The benchmark used for the survey was the City of Oakland benchmark being

a cut square in the top of curb, at the curb return at the northeast corner of

College Avenue and Miles Avenue (Benchmark Elev. 179.075 feet msl).

**CUMULATIVE GRAB-GROUNDWATER ANALYTICAL DATA
FORMER CHEVRON SERVICE STATION
5940 COLLEGE AVENUE, OAKLAND, CALIFORNIA**

<i>Sample ID</i>	<i>Date</i>	<i>Depth (fbg)</i>	<i>TPHg</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>Xylenes</i>	<i>MTBE</i>
			← Reported in micrograms per liter (µg/L) →					
<i>ESLs for Final Screening Levels where Groundwater is a Potential or Current Drinking Water Resource (Table F-1a)</i>			100	1.0	40	30	20	5.0
<i>ESLs for Potential Vapor Intrusion Into Buildings Comercial/Industrial (Table E-1a)</i>			<i>Uses soil gas</i>	1,800	530,000	170,000	160,000	80,000
SB-1	8/31/1999	7.0	5,100	43	34	40	<5	110
SB-2	8/31/1999	9.5	<50	<0.5	<0.5	<0.5	<0.5	<5
SB-3	8/31/1999	9.0	59,000	3,500	310	2,000	1,900	650
SB-4	9/1/1999	7.0	190,000	890	110	4,000	7,500	1,100

Notes:

Total petroleum hydrocarbons as gasoline (TPHg) analyzed by EPA Method 8020

Benzene, toluene, ethylbenzene, and xylenes (BTEX); methyl tertiary-butyl ether (MTBE) by EPA Method 8020

ESL's = Environmental Screening Levels for groundwater that is a current or potential drinking water source (commercial/industrial land use) from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater Interim Final November 2007, revised May 2008 by the California Regional Water Quality Control Board, San Francisco Bay Region

fbg = feet below grade

<x = Not detected at reporting limit x

ND = Not detected above various laboratory method detection limits

APPENDIX A

PREVIOUS ENVIRONMENTAL INVESTIGATION AND REMEDIATION

PREVIOUS ENVIRONMENTAL INVESTIGATION AND REMEDIATION
FORMER CHEVRON SERVICE STATION 20-9339

1979 Site Redevelopment

According to title records, the site was redeveloped in 1979 into the current two-story, multi-tenant commercial building. The current building contains commercial suites and parking below street level as well as an active sump pump for surface runoff. Construction of this current building required soil excavation to at least 4 feet below grade (fbg). There are no excavation records available. Prior to 1979, Dreyer's Grand Ice Cream used the site for additional parking.

1999 Soil Borings

In August and September 1999, Piers Environmental Services, Inc. (Piers) advanced soil borings SB-1 through SB-4 to assess the potential presence of hydrocarbons in groundwater resulting from the historical use of the site as a service station. No soil samples were analyzed. The activities are summarized in Piers' September 27, 1999 *Report of Findings Groundwater Investigation Report*.

2000 Monitoring Well Installations

In December 2000, Delta Environmental Consultants, Inc. (Delta) oversaw the installation of offsite monitoring wells MW-1 and MW-2. In April 2001, joint groundwater monitoring between the Chevron site and the former Sheaff's Garage site began per a request by Alameda County Environmental Health. The activities are summarized in Delta's February 20, 2001 *Well Installation Report*.

APPENDIX B
BORING LOGS

Gettler-Ryan, Inc.

Log of Boring MW-1

PROJECT: Former Chevron Service Station No. 20-9339

LOCATION: 5940 College Avenue, Oakland, California

GR PROJECT NO.: 346521.02

CASING ELEVATION: 196.51

DATE STARTED: 12/06/00

WL (ft. bgs): DATE: TIME:

DATE FINISHED: 12/06/00

WL (ft. bgs): DATE: TIME:

DRILLING METHOD: 8 in. Hollow Stem Auger

TOTAL DEPTH: 21 feet

DRILLING COMPANY: Cascade Drilling

GEOLOGIST: Andrew Smith

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
0							Concrete.	
4	6.1	17	MW-1-4.5			CL	CLAY (CL) - reddish brown (5YR 4/4), dry, very stiff; 85% clay, 10% silt, 5% angular fine gravel.	
8	5.5	34	MW-1-9.5				At 5 feet color changes to very dark gray (7.5YR 3/1), becomes moist; 90% clay, 10% silt.	
12							At 10 feet becomes hard; includes some brick fragments.	
16						SM	SILTY SAND (SM) - brown (10YR 5/3), moist, dense; 75% fine sand, 25% silt.	
20	24.0	>100	MW-1-19.5				At 20 feet color changes to light yellowish brown (10YR 6/4), becomes wet, very dense.	
21							Bottom of boring at 21 feet bgs.	
24							(* = converted to equivalent standard penetration blows/foot.)	
28								

Gettler-Ryan, Inc.

Log of Boring MW-2

PROJECT: Former Chevron Service Station No. 20-9339

LOCATION: 5940 College Avenue, Oakland, California

GR PROJECT NO.: 346521.02

CASING ELEVATION: 197.35

DATE STARTED: 12/06/00

WL (ft. bgs): 10 DATE: 12/06/00 TIME: 14:25

DATE FINISHED: 12/06/00

WL (ft. bgs): DATE: TIME:

DRILLING METHOD: 8 in. Hollow Stem Auger

TOTAL DEPTH: 21 feet

DRILLING COMPANY: Cascade Drilling

GEOLOGIST: Andrew Smith

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
0						SM	Concrete.	
4	1.4	42	MW-2-4.5			SM	SILTY SAND WITH GRAVEL (SM) - brown (7.5YR 4/3), dry, soft; 65% fine sand, 20% angular gravel, 15% silt. At 5 feet includes brick fragments. At 8 feet becomes wet, dense.	
8						CL	CLAY (CL) - dark olive green (5Y 3/2), moist, hard; 90% clay, 10% silt.	
12						SM	SILTY SAND (SM) - yellowish brown (10YR 5/6), moist, dense; 85% fine sand, 15% silt.	
20							Bottom of boring at 21 feet bgs. (* = converted to equivalent standard penetration blows/foot.)	
16	4.2	42	MW-2-14.5				At 5 feet color changes to dark grayish brown (2.5Y 4/2).	
24								
28								

PIERS Environmental Services

Exploratory Boring Log

Project No. _____ Client: P. Elwood
 Location: 5947 Calhoun Ave. Oakland
 Drilling Method: 3" Hand Auger Permit: N/A

Boring # SB-1 Date 8-31-99
 Logged By: BL
 Page 1 of 1

Sample No.	Blow Count	Sample Type	Location Depth USGS	Lithology Description Detail	H2O	Well Const.
SB-1				concrete w/ 3/4" Drain rock		Mark Portland Cement
			LL	Low Plasticity CLAY, 30-35% silt light brown, med. stiff		
			5'			
			GM	Silty/Sandy GRAVEL w/ 15% clay Angular, poor gradet slight Hydrocarbon odor.		
			water ↓	Bo H		
			10'			
			15'			
			20'			
			25'			
			30'			
			35'			
			40'			

PIERS Environmental Services

Exploratory Boring Log

Project No. _____ Client: P. Elwood
 Location: 5942 Collegen Av. Oakland
 Drilling Method: 3" dia. Wash & Auger Permit: N/A

Boring # BR-2 Date 8-31-99
 Logged By: BT
 Page 1 of 1

Sample No.	Blow Count	Sample Type	Location	Depth	USGS	Lithology Description Detail	H2O	Well Const.	
BR-2		water				conc. w/ 3/4" rock (grain)			
					CL	low Plast. CLAY, light brown, 30% silt med. stiff			
				5'					
					CL	same 40% silt.			
				10'					
						Bottom			
				15'					
				20'					
				25'					
				30'					
				35'					
				40'					

Portland Cement

*Note: Depths calculated from basement floor, approx. 3.5' below sidewalk elevation.

Environmental Restoration Services Exploratory Boring Log

Project No. _____ Client: P. Elwood
 Location: 5942 College Ave Oakland
 Drilling Method: 3' Hand Auger Permit: N/A

Boring # EB-3 Date 8/3/99
 Logged By: BA
 Page 1 of 1

Sample No.	Blow Count	Sample Type	Location Depth USGS	Lithology Description	Well Const.
EB-3		water		Concrete / 3/4 drain Rock	Hand Auger
				cl. Low Plast. CLAY, 30-35% silt, light brown, med. stiff	
			5'		
				6.1 Silty Sandy GRAVEL 15% clay, light greenish grey med. dense, mod. Hydro carbon odor.	
			10'		
			15'		
			20'		
			25'		
30'					
35'					
40'					

PIERS Environmental Services

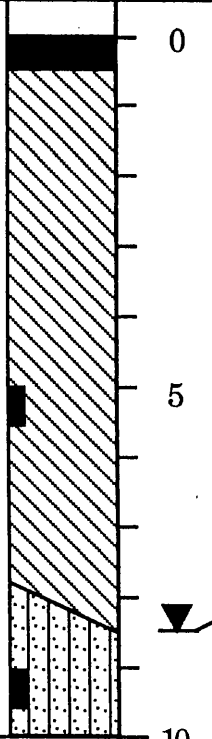
Exploratory Boring Log

Project No _____ Client: P Elwood
 Location: 5942 College Ave Oakland
 Drilling Method: 3" dia Hand Auger Permit: N/A

Boring # SB-4 Date 9/1/99
 Logged By: BH Page 1 of 1

Sample No	Blow Count	Sample Type	Location Depth USGS	Lithology Description Detail	H2O	Well Const
SB-4				concrete/sand/gravel		
			CL	Low Plasticity CLAY, 30-35% silt, light brown, med stiff		
			5'			
			water ▽			
			GM	Silty GRAVEL, 70% silt w/ 20% clay Med dense, wet strong Hydrocarbon odor		Portland Cement
			10'	→ Bot @ 19 feet		
			15'			
			20'			
			25'			
			30'			
			35'			
			40'			

Note: Depths calc from basement floor, approx 35 feet below sidewalk elevation

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
7335-B1-5	hand sample	CL	0910		0 5 10	4 inches of sidewalk pavement section. Black silty clay, medium stiff moist. changing in color to brown. first water encountered during drilling. Gray-brown clayey SILT to clayey sand (ML-SC), medium stiff, to medium dense, wet.
7335-B1-9	hand sample	ML-SC	0925			

Boring Drilled May 6, 1998 to 10 feet.
using 4 inch diameter "minute man" augers.

Water encountered at about 8.5' during drilling.
Grab groundwater sample taken at 0945.
Boring grouted after drilling.

Golden Gate Tank Removal

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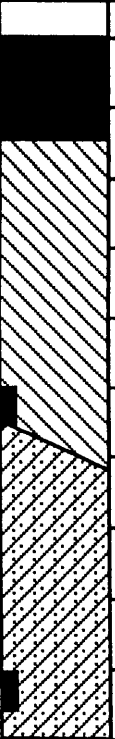
Log of Boring Number: B1

5930 College Avenue
Oakland, California

Project Number: 7335

Date: June, 1998

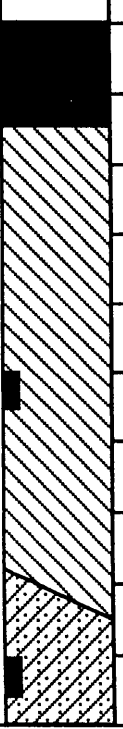
Figure Number 4

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
7335-B2-5	hand sample	CL	1015		0 5 10	5 inches of asphalt over 12 inches of base rock street pavement section. Dark brown silty clay, medium stiff moist. first water encountered during drilling. Brown sandy silty clay to silty clayey sand (CL-SC), medium stiff, wet.
7335-B2-9	hand sample	ML-SC	1030			

Boring Drilled May 6, 1998 to 10 feet.
using 4 inch diameter "minute man" augers.

Water encountered at about 6.5' during drilling.
Grab groundwater sample taken at 1100.
Boring grouted after drilling.

Golden Gate Tank Removal 255 Shipley Street • San Francisco, CA 94107 (415) 512 1555 • Fax (415) 512 0964		Log of Boring Number: B2 5930 College Avenue Oakland, California	
Project Number: 7335		Date: June, 1998	Figure Number 5

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
7335-B3-6	hand sample	CL	1215		0 5 10	6 inches of concrete over 8 inches of base rock garage floor section. Black silty clay, medium stiff damp. grading to moist. first water encountered during drilling. Brown silty clay with some gravel inclusions, medium stiff, wet.
7335-B3-10	hand sample	CL	1240			

Boring Drilled May 6, 1998 to 10 feet.
using 4 inch diameter "minute man" augers.

Water encountered at about 6.5' during drilling.
Grab groundwater sample taken at 1240.
Boring grouted after drilling.

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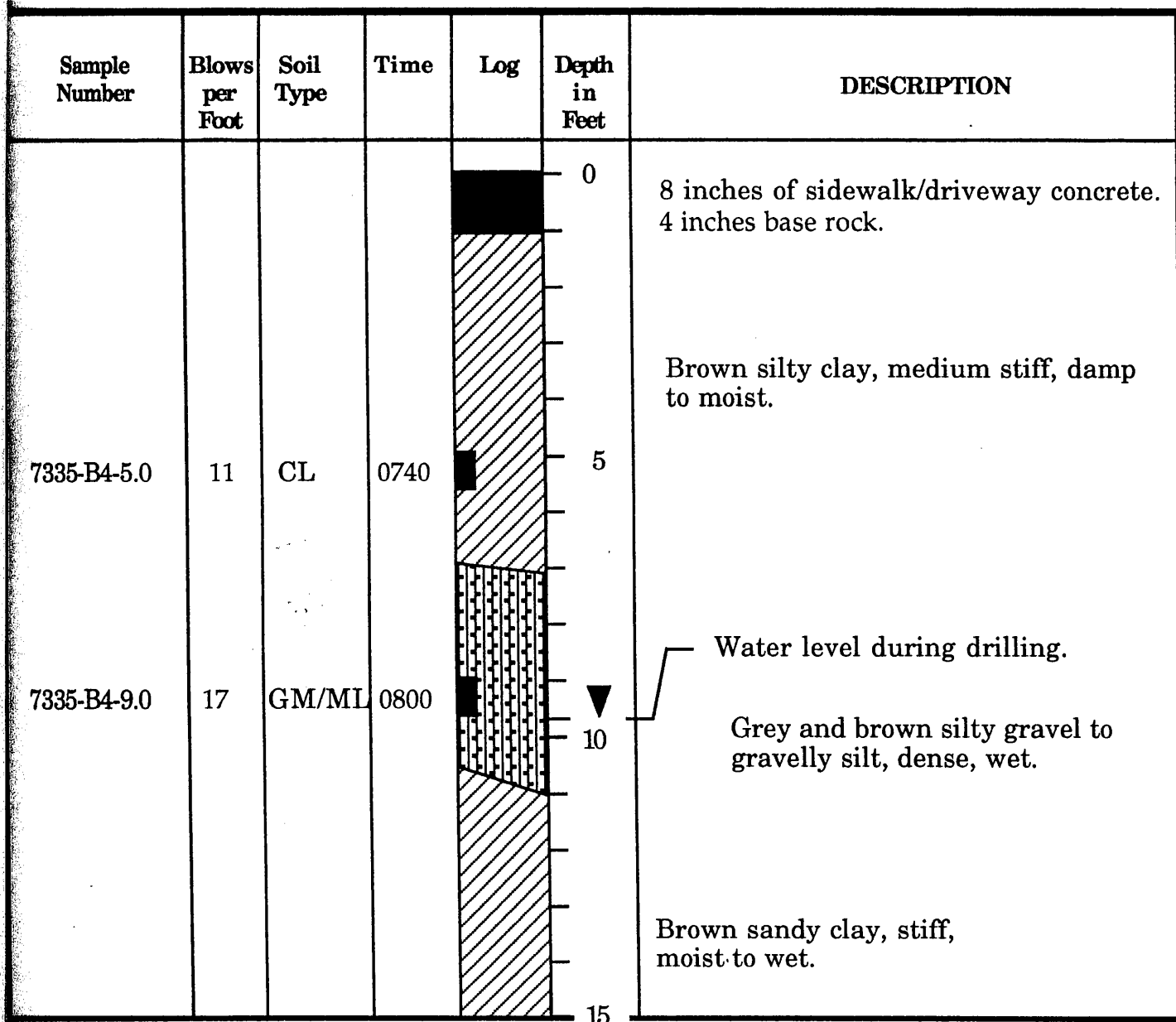
Log of Boring Number: B3

5930 College Avenue
Oakland, California

Project Number: 7335

Date: June, 1998

Figure Number 6



Drilled May 20, 1998 using 8 inch hollow stem augers. Water encountered at about 10 feet during drilling. Boring converted to Monitoring Well MW1 upon completion of sampling.

GOLDEN GATE TANK REMOVAL

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Log of Boring Number B4 (MW1)

5930 College Avenue
Oakland, California

Project Number: 7335

Date: June, 1998

Figure Number: 6

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
7335-B5-3.0	push	CL	0845		0	6 inches of garage concrete slab. Black silty clay, medium stiff damp, with occassional gravel.
7335-B5-5.0	push	CL/ML	0905		5	Brown silty clay to clayey silt, medium stiff to stiff, moist.
7335-B5-9.0	push	CL	0920		10	Dark brown to grey silty clay stiff, moist.
7335-B5-15.5	push	CL	0945		15	Brown silty clay with gravel fragments stiff, moist to wet
7335-B5-20.0	push	CL	1030		20	grading very stiff to hard small seepage areas around gravel fragments

Boring Drilled October 2, 1999 to 20 feet using 8 inch diameter hollow stem augers.
No groundwater encountered during drilling. Boring converted to Monitoirng Well MW2 after drilling.


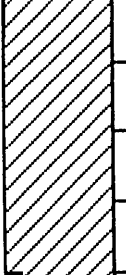
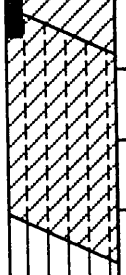
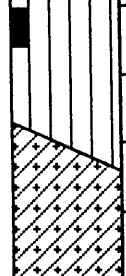

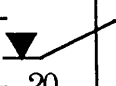
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Log of Boring Number: B5/MW2
5930 College Avenue
Oakland, California

Project Number: 7335

Date: October, 1999

Figure Number 4

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
		CL			0	12 inches of sidewalk pavement section.
7335-B6-5.0	push	ML/CL	1245		5	Black silty clay with minor gravel, medium stiff, damp.
7335-B6-10.0	push	ML	1310		10	Brown clayey silt to silty clay, stiff, moist to wet.
7335-B6-15.5	push	CL/GC	1400		15	Gray clayey SILT, stiff, moist.
7335-B6-19.5	push	CL/GC	1430		20	Brown gravelly clay to silty clay with gravel (rock fragments), very stiff to hard.
						first water encountered during drilling.

Boring Drilled October 2, 1999 to 20 feet using 8 inch diameter hollow stem augers. Groundwater encountered at about 19.5 feet during drilling. Boring converted to Monitoring Well MW3 after drilling.

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Log of Boring Number: B6/MW3
 5930 College Avenue
 Oakland, California

Project Number: 7335

Date: October, 1999

Figure Number 5

LOG OF BORING B7

Depth (fbg)	Recovery/ Sample ID	Blow Counts (#/6")	Organic Vapor (ppm)	USCS Soil Type	Description	Boring Backfill Detail
1	Hand Auger			ML	Concrete (6 Inches) Moist, dusky yellowish brown (10YR 2/2), clayey SILT with trace sand	Concrete (0'-0.5')
5				ML		
10	7335-B7-8		13	CL	Moist, dark yellowish brown (10YR 4/2) striated with dark greenish gray (5GY 4/1), silty CLAY with trace sand	Portland Cement (0.5'-20')
15	7335-B7-12 7335-B7-13		8 22	SM CL	Moist, dark yellowish brown (10YR 4/2) with dark greenish gray (5GY 4/1), clayey, silty SAND with moderate gravel Same; silty CLAY	
16.4	7335-B7-16		55	ML	Moist to wet, dark greenish gray (5GY 4/1), clayey, sandy SILT with slight hydrocarbon odor	
20	7335-B7-20		19	SM/ML	Wet, moderate yellowish brown (10YR 5/4), clayey, silty SAND / sandy SILT	
25					Total Boring Depth @ 20 fbg	2 Inches

Fn:7335.sc.B7

BORING NUMBER: B7
LOCATION: 5930 College Avenue
 Oakland, CA
PROJECT NO: 7335
DRILLING CONTRACTOR: Gregg Drilling, Inc.
DRILLING METHOD: 2" OD Percussion
DRILLING DATE: October 30, 2002

Logged By: B. Wheeler **Checked By:** M. Youngkin

Legend/Notes:

fbg = feet below grade
 ppm = parts per million
 NR = no recovery

▼ = Depth to groundwater measured from
 (16.4) grade surface on October 30, 2002

LOG OF BORING B8

Depth (fbg)	Recovery/ Sample ID	Blow Counts (#/6")	Organic Vapor (ppm)	USCS Soil Type	Description	Boring Backfill Detail
1				SM	Asphalt (3 Inches)	← Asphalt Patch (0'-0.5')
				ML	Road Base (Silty, gravelly SAND)	
				ML	Moist, dark yellowish brown (10YR 4/2), clayey SILT with trace sand	
5						
	NR				No Sample	
				CL	Moist, dark yellowish brown (10YR 4/2) mottled with moderate yellowish (10YR 5/4), silty CLAY	
10			0	CL		← Portland Cement (0.5'-20')
	7335-B8-12					
				ML	Moist, dark yellowish brown (10YR 4/2) with dark greenish gray (5GY 4/1), clayey, SILT with trace fine-grained sand	
15			33	ML		
	7335-B8-16			CL	Moist to wet, dark greenish gray (5GY 4/1), silty CLAY with trace rock fragments (slight to moderate hydrocarbon odor)	
	7335-B8-18			ML	Wet, moderate yellowish brown (10YR 5/4), clayey, sandy SILT	
20			15	ML		↔ 2 Inches
	7335-B8-20					
					Total Boring Depth @ 20 fbg	
25						

Fr:7335.sc.B8

BORING NUMBER: B8
LOCATION: 5930 College Avenue
 Oakland, CA
PROJECT NO: 7335
DRILLING CONTRACTOR: Gregg Drilling, Inc.
DRILLING METHOD: 2" OD Percussion
DRILLING DATE: October 30, 2002
Logged By: B. Wheeler **Checked By:** M. Youngkin

Legend/Notes:
 fbg = feet below grade
 ppm = parts per million
 NR = no recovery
 ▼^(18.2) = Depth to groundwater measured from grade surface on October 30, 2002

Page 1 of 1

Golden Gate Tank Removal, Inc.

LOG OF BORING B9

Depth (fbg)	Recovery/ Sample ID	Blow Counts (#/6")	Organic Vapor (ppm)	USCS Soil Type	Description	Boring Backfill Detail	
1				SM	Asphalt (3 Inches)	Asphalt Patch (0'-0.5')	
				SM/ML	Road Base (Silty, gravelly SAND)		
5				SM/ML	Moist, dusky yellowish brown (10YR 2/2), slightly clayey, silty SAND / Sandy SILT with gravel ($\leq 0.25"$)	Portland Cement (0.5'-20')	
	7335-B9-9			SM	Moist, dark yellowish brown (10YR 4/2), slightly clayey SAND with trace rock fragments		
10	NR		0	Not Logged			
	7335-B9-12			CL	Moist, dark yellowish brown (10YR 4/2); silty CLAY; moderate hydrocarbon odor; gards to dark greenish gray (5GY 4/1) at 14 fbg		
15	7335-B9-15		33	ML	Moist, moderate to dark yellowish brown (10YR 5/4,4/2), clayey SILT with rock fragments		
				ML	Moist, moderate yellowish brown (10YR 5/4) with greenish gray (5GY 4/1), clayey, sandy SILT with rock fragments		
20	7335-B9-20		15		Total Boring Depth @ 20 fbg		2 Inches
25							

BORING NUMBER: B9
LOCATION: 5930 College Avenue
 Oakland, CA
PROJECT NO: 7335
DRILLING CONTRACTOR: Gregg Drilling, Inc.
DRILLING METHOD: 2" OD Percussion
DRILLING DATE: October 30, 2002
Logged By: B. Wheeler **Checked By:** M. Youngkin

Legend/Notes:

fbg = feet below grade
 ppm = parts per million
 NR = no recovery

▼ = Depth to groundwater measured from grade surface on November 1, 2002
(16.9)

Golden Gate Tank Removal, Inc.

LOG OF BORING B10

Depth (fbg)	Recovery/ Sample ID	Blow Counts (#/6")	Organic Vapor (ppm)	USCS Soil Type	Description	Boring Backfill Detail
1	Hand Auger			SM	Asphalt (3 Inches) Road Base (Silty, gravelly SAND)	Asphalt Patch (0'-0.5')
				ML	Moist, dusky yellowish brown (10YR 2/2), slightly clayey SILT with sand	
5	NR			Not Logged	Moist, dark yellowish brown (10YR 4/2) silty CLAY with trace sand and rock fragments	
			0		Moist, dark yellowish brown (10YR 4/2), clayey SILT	Portland Cement (0.5'-19')
10	7335-B10-11		206	ML	Same: dark greenish gray (5GY 4/1) with trace sand, moderate hydrocarbon odor	
	7335-B10-15		208		Moist to wet, moderate yellowish brown (10YR 5/4), clayey SILT with trace fine- to coarse-grained sand	
15	7335-B10-17		59	CL	Moist, dark yellowish brown (10YR 4/2) silty CLAY with rock fragments	
			18	ML	Wet, moderate yellowish brown (10YR 5/4) with greenish gray (5GY 4/1), sandy SILT with rock fragments	
20					Total Boring Depth @ 19 fbg	2 Inches
25						

Fr: 7335.sc.B10

BORING NUMBER: B10
LOCATION: 5930 College Avenue
 Oakland, CA
PROJECT NO: 7335
DRILLING CONTRACTOR: Gregg Drilling, Inc.
DRILLING METHOD: 2" OD Percussion
DRILLING DATE: October 30, 2002
Logged By: B. Wheeler **Checked By:** M. Youngkin



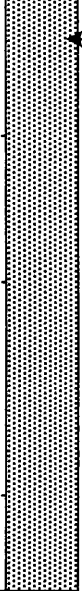

Legend/Notes:

fbg = feet below grade
 ppm = parts per million
 NR = no recovery

▼ = Depth to groundwater measured from grade surface on November 1, 2002
(13.85)

Golden Gate Tank Removal, Inc.

LOG OF BORING B11

Depth (fbg)	Recovery/ Sample ID	Blow Counts (#/6")	Organic Vapor (ppm)	USCS Soil Type	Description	Boring Backfill Detail
1				SM	Concrete (3 Inches)	 ← Concrete (0'-0.5')
					Base (Silty, gravelly SAND)	
					Moist, dusky yellowish brown (10YR 2/2), slightly clayey SILT with sand	
5	NR				Moist, dark yellowish brown (10YR 4/2) clayey SILT with fine- to coarse-grained sand	
	7335-B11-8		0	ML		 ← Portland Cement (0.5'-20')
10					Moist to wet, moderate to dark yellowish brown (10YR 4/2) clayey SILT	
	7335-B11-13		0			
15					Moist to wet, moderate yellowish brown (10YR 5/4), clayey SILT with trace fine- to coarse-grained sand	
	7335-B11-20		0	SM/ML	Same; grades to a slightly clayey, silty SAND / sandy SILT	
20					Total Boring Depth @ 20 fbg	
25						

Fr:7335.sc.B11

<p>BORING NUMBER: B11 LOCATION: 5930 College Avenue Oakland, CA PROJECT NO: 7335 DRILLING CONTRACTOR: Gregg Drilling, Inc. DRILLING METHOD: 2" OD Percussion DRILLING DATE: October 30, 2002</p> <p>Logged By: B. Wheeler Checked By: M. Youngkin</p>	<p>Legend/Notes:</p> <p>fbg = feet below grade ppm = parts per million NR = no recovery Groundwater not encountered in borehole</p> <p style="text-align: right;">Page 1 of 1</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">Golden Gate Tank Removal, Inc.</p>
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APPENDIX C

HISTORIC GROUNDWATER MONITORING AND SAMPLING DATA

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-1									
01/03/01	196.91	12.75	184.16	930 ¹	2.9	6.9	2.7	7.6	14/<2.0 ³
04/25/01	196.91	9.23	187.68	210 ⁴	2.0	1.5	2.0	3.3	5.3/<2.0 ³
07/09/01	196.91	11.86	185.05	290 ⁵	1.8	2.0	2.5	0.96	<2.5
06/08/00	196.91	13.49	183.42	200	<0.50	<0.50	<0.50	<1.5	<2.5
01/13/02	196.91	7.33	189.58	<50	<0.50	<0.50	<0.50	<0.50	<2.5
04/08/02	196.91	7.45	189.46	670	<0.50	<2.0	<1.0	5.6	<2.5
10/15/02	196.91	13.68	183.23	260	0.62	0.82	<0.50	<1.5	--
04/15/03	196.91	6.82	190.09	1,700	1.3	<5.0	<2.0	<5.0	--
10/31/03	196.91	13.72	183.19	150	<2.0	0.7	<2.0	<5.0	--
04/23/04	196.91	9.02	187.89	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/04	196.91	11.50	185.41	63	<0.5	<0.5	<0.5	<1.5	--
04/14/05	196.91	7.11	189.80	<50	<0.5	<0.5	<0.5	<1.5	--
10/14/05	196.91	11.90	185.01	160	<0.5	<0.5	0.6	<5.0	--
04/14/06	196.91	6.95	189.96	<50	<0.5	<0.5	<0.5	<1.5	--
10/26/06	196.91	11.68	185.23	<50	<0.5	<0.5	<0.5	<1.5	--
04/13/07 ⁶	196.91	10.71	186.20	1,200	3.4	<5.0	2.1	<20	--
10/22/07	196.91	13.75	183.16	<50	<0.5	<0.5	<0.5	<1.5	--
04/21/08	196.91	9.95	186.96	120	<0.5	<0.5	<0.5	<1.5	--
10/15/08	196.91	14.30	182.61	<50	<0.5	<0.5	<0.5	<1.5	--
04/15/09	196.91	9.20	187.71	<50	<0.5	<0.5	<0.5	<1.5	--
10/01/09	196.91	14.26	182.65	<50	<0.5	<0.5	<0.5	<1.5	--
04/12/10	196.91	7.04	189.87	<50	<0.5	<0.5	<0.5	<1.5	--
MW-2									
01/03/01	197.35	12.48	184.87	2,100 ²	110	11	63	25	83/2.2 ³
04/25/01	197.35	8.90	188.45	1,700 ⁴	150	12	30	15	150/<2.0 ³
07/09/01	197.35	11.44	185.91	2,500 ⁵	200	21	55	26	<50
04/08/02	197.35	13.37	183.98	4,200	87	2.8	29	9.8	<2.5
01/13/02	197.35	6.55	190.80	410	20	2.9	<2.5	4.4	27/<2.0 ³
04/08/02	197.35	8.37	188.98	4,000	70	1.7	17	17	<2.5
10/15/02	197.35	13.00	184.35	3,100	41	2.2	16	<6.0	--
04/15/03	197.35	7.58	189.77	2,400	37	<2.5	12	<7.5	--
10/31/03	197.35	13.02	184.33	2,300	12	3.4	4.8	<7.5	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-2 (cont)									
04/23/04	197.35	8.38	188.97	960	8.9	1.0	2.4	<1.5	--
10/22/04	197.35	11.41	185.94	2,200	24	<2.5	4.1	<10	--
04/14/05	197.35	6.69	190.66	640	2.1	<2.0	<2.0	7.5	--
10/14/05	197.35	11.14	186.21	1,200	6.9	<2.5	<2.5	<7.5	--
04/14/06	197.35	6.54	190.81	180	<0.5	<0.5	<0.5	<5.0	--
10/26/06	197.35	11.02	186.33	550	<2.0	0.5	<2.0	<10	--
04/13/07 ⁶	197.35	9.95	187.40	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/07	197.35	12.63	184.72	3,200	12	<5.0	4.7	<20	--
04/21/08	197.35	9.31	188.04	860	1.0	<2.0 ⁷	<2.0 ⁷	<10 ⁷	--
10/15/08	197.35	13.71	183.64	480	1.3	0.8	1.1	<5.0 ⁸	--
04/15/09	197.35	8.79	188.56	370	0.7	1.3	0.9	6.5	--
10/01/09	197.35	13.67	183.68	<50	<0.5	<0.5	<0.5	<1.5	--
04/12/10	197.35	6.62	190.73	310	1.0	<0.5	0.5	<1.5	--
TRIP BLANK									
TB-LB									
01/03/01	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
04/25/01	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
07/09/01	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
QA									
10/08/01	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
01/13/02	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
04/08/02	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
10/15/02	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--
04/15/03	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/31/03	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/23/04	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/22/04	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/14/05	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/14/05	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/14/06	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/26/06	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/13/07	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
QA (cont)									
10/22/07	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/21/08	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/15/08	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/15/09	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/01/09	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/12/10	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

EXPLANATIONS:

TOC = Top of Casing
(ft.) = Feet

DTW = Depth to Water

GWE = Groundwater Elevation
(msl) = Mean sea level

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl Tertiary Butyl Ether

(µg/L) = Micrograms per liter

-- = Not Measured/Not Analyzed

QA = Quality Assurance/Trip Blank

* TOC elevations were surveyed on December 27, 2000, by Virgil Chavez Land Surveying. The benchmark used for the survey was a City of Oakland benchmark being a cut square in the top of curb, at the curb return at the northeast corner of College Avenue and Miles Avenue, (Benchmark Elev. = 179.075 feet, msl).

¹ Laboratory report indicates unidentified hydrocarbons C6-C12.

² Laboratory report indicates gasoline C6-C12.

³ MTBE by EPA Method 8260.

⁴ Laboratory report indicates gasoline C6-C12 + unidentified hydrocarbons <C6.

⁵ Laboratory report indicates gasoline C6-C12 + unidentified hydrocarbons C6-C12.

⁶ Current laboratory analytical results do not coincide with historical data, although the laboratory results were confirmed.

⁷ Laboratory report indicates that due to the presence of interferent near their retention time, normal reporting limits were not attained for toluene, ethylbenzene, and total xylenes. The presence or concentration of these compounds cannot be determined below the reporting limits due to the presence of these interferents.

⁸ Laboratory report indicates that due to the presence of an interferent near its retention time, the normal reporting limit was not attained for total xylenes. The presence or concentration of this compound cannot be determined due to the presence of this interferent.

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

WELL ID	DATE	ETHANOL (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)
MW-1	01/03/01	<500	<50	<2.0	<2.0	<2.0	<2.0	<2.0
	04/25/01	--	<20	<2.0	<2.0	<2.0	<2.0	--
MW-2	01/03/01	<500	<50	2.2	<2.0	<2.0	<2.0	<2.0
	04/25/01	--	<20	<2.0	<2.0	<2.0	<2.0	--
	01/13/02	--	<20	<2.0	<2.0	<2.0	<2.0	--

EXPLANATIONS:

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

TAME = t-Amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
(µg/L) = Micrograms per liter
-- = Not Analyzed

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

Table 3
Groundwater Analytical Results
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

WELL ID	DATE	FERROUS IRON (mg/L)	TOTAL ALKALINITY (mg/L)	SULFATE AS SO ₄ (mg/L)
MW-1	04/25/01	0.15	380	11
	07/09/01	<0.050	410	6.8
	10/08/01	-- ¹	414	5.4
	01/13/02	<0.10 ²	390	10
MW-2	04/25/01	0.093	680	21
	07/09/01	0.44	600	9.3
	10/08/01	-- ¹	683	3.8
	01/13/02	<0.10 ²	630	7.0

EXPLANATIONS:

(mg/L) = milligrams per liter

-- = Not Analyzed

ANALYTICAL METHODS:

EPA Method SM 3500 Fe for Ferrous Iron

EPA Method 310.1 for Total Alkalinity

EPA Method 300.0 for Sulfate as SO₄

¹ Analysis was not performed by the laboratory as requested on the Chain of Custody.

² Due to sample transfer by the lab from one laboratory to another, the sample was received beyond the EPA recommended holding time.

Table 4

Field Measurements

Former Chevron Service Station #209339

5940 College Avenue

Oakland, California

WELL ID	DATE	D.O.	ORP
		Before Purging (mg/L)	Before Purging (mV)
MW-1	07/09/01	1.25	111
	10/08/01	1.20	64
	01/13/02 ¹	--	--
MW-2	07/09/01	1.89	16
	10/08/01	1.04	58
	01/13/02 ¹	--	--

EXPLANATIONS:

D.O. = Dissolved Oxygen Concentration

(mg/L) = Milligrams per liter

ORP = Oxygen Reduction Potential

(mV) = Millivolt

-- = Not Measured

¹ D.O. and ORP meter erratic; measurements not taken.

APPENDIX D
SHEAFF'S GARAGE GROUNDWATER DATA

TABLE 2A

**Historical Results of Grab Groundwater Hydrocarbon Sample Analysis
5930 College Avenue, Oakland, CA**

Sample Location	Sample ID	Sample Depth (ft)	Sample Date	THP (µg/L)	THPH (µg/L)	THPH (ng/L)	OWC (µg/L)	THP (µg/L)	MHEB (µg/L)	
B1	B1-GW	8.5	5/6/1998	31000	6000	--	--	ND<5	ND<5	2600 / 390 / 1600 / 4200
B2	B2-GW	6.5		200000	ND<5000	--	--	2500	2500	30000 / 49000 / 45000 / 21000
B3	B3-GW	6.5		1x10 ⁶	7000	--	--	18000	18000	17000 / 24000 / 20000 / 80000
B7	B7-W	16.4	10/30/2002	296000	--	--	--	--	1360	18400 / 21900 / 8310 / 33800
B8	B8-W	11.5		1480	--	--	--	--	35	386 / 9 / 74 / 81
B9	B9-W	16.95	11/1/2002	16100	--	--	--	--	879	1250 / 1380 / 820 / 3480
B10	B10-W	13.85		49400	--	--	ND<5000	--	2680	6600 / 9940 / 1610 / 7600
B12	B12-W	--	5/2/2005	934000	--	--	92000*	ND<500,000	ND<5000	64200 / 450000 / 550000 / 2697000
B14	B14-W	--	5/19/2005	ND<50	--	--	--	ND<50	2.2	ND<0.5 / 1.2 / 0.6 / 3.5
B15	B15-W	--		53	--	--	--	ND<50	ND<0.5	8.4 / ND<0.5 / ND<0.5 / ND<1.0
B16	B16-W	--	5/2/2005	154000	--	--	--	ND<5000	197	2510 / 3020 / 4300 / 20400
B17	B17-W	--	5/19/2005	ND<50	--	--	--	ND<50	ND<0.5	ND<0.5 / ND<0.5 / ND<0.5 / ND<1.0

Table Notes Following

5930 College Avenue, Oakland, CA

TABLE 2A (Cont.)
Historical Results of Grab Groundwater Hydrocarbon Sample Analysis
5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (ft)	Sample Date	CHC (mg/L)	BTEX (mg/L)	PAHs (mg/L)	OC (mg/L)	Organics (mg/L)	PHEN (mg/L)	Notes
B18	B18-W	6.4	4/14/2005	51	--	--	--	ND≤50	ND<0.5	ND<0.5 / ND<0.5 / ND<0.5 / 1.8
B19	B19-W	--	5/2/2005	4600000	--	--	--	ND≤5000	146	31100 / 70500 / 75600 / 228000
B20	B20-W	--	5/19/2005	60700	--	--	--	ND≤1000	394	6800 / 2600 / 1550 / 6520
B21	B21-W	15	6/22/2005	130000	--	--	5800000	ND≤1000 (EDB,EDC)	--	21000 / 24000 / 4500 / 23000
B23	B23-W	6.9	7/11/2005	21000	1800	--	9200	ND	880	2200 / 2600 / 450 / 3000
B24	B24-W	--	5/2/2005	3830000	--	--	--	--	ND<50	33200 / 46300 / 65500 / 175000
HB-1	HB-1-W	7.52	4/14/2005	173	--	--	--	ND≤50	0.9	0.8 / ND<0.5 / 0.9 / 3.9
HB-3	HB-3-W	8.05	7/11/2005	13000	--	--	--	ND≤2000	ND<20	690 / 21 / 1200 / 190
HB-4	HB-4-W	8.43		14000	--	--	--	ND≤2000	ND<20	13 / ND<10 / 10 / ND<10
HB-6	HB-6-W	6.45		45	--	--	--	ND≤100	ND<1	ND<0.5

Table Notes Following

5930 COLLEGE AVENUE, OAKLAND, CA
 94618-1100
 TEL: (415) 771-1100
 FAX: (415) 771-1101
 WWW: WWW.CITYOFOAKLAND.CA

TABLE 2B
Historical Results of Grab Groundwater Volatile Organic Compound Analysis
5930 College Avenue, Oakland, CA

B10	B10-W	13.85	11/1/2002	74	230	1610	441	ND<50	ND<50	765	ND<500	ND<100	ND<5000	ND<50	ND<250	ND<50
B12	B12-W	—	5/2/2005	61200	236000	430000	1270000	28600	ND<10000	305000	ND<10000	ND<5000	ND<250000	ND<10000	ND<10000	ND<5000
B21	B21-W	15	6/22/2005	ND<1000	ND<5000	ND<5000	ND<5000	ND<5000	ND<5000	ND<5000	ND<20000	ND<500	ND<5000	ND<500	ND<500	ND<500
B23	B23-W	6.9	7/11/2005	ND<50	ND<250	ND<250	320	ND<250	ND<250	ND<250	ND<1000	ND<25	ND<250	ND<25	ND<25	ND<25

TABLE NOTES:

ppb - parts per billion

NC - no criteria established for this chemical constituent

— not analyzed for this constituent; parameter not measured

fbg - feet below grade surface

IPB - Isopropylbenzene

n-PB - n-Propylbenzene

1,3,5-TMB - 1,3,5-Trimethylbenzene

1,2,4-TMB - 1,2,4-Trimethylbenzene

Sec-BB - Sec-Butylbenzene

n-BB - n-Butylbenzene

MIBK - Methyl Isobutyl Ketone

TCE - Trichloroethene

MC - Methylene Chloride

cis-1,2-DCE - cis-1,2-Dichloroethene

Tri-CFM - Trichlorofluoromethane

PCE - Tetrachloroethene

All other soil boring grab GW samples not analyzed for VOCs

CRWQCB/ESL = California Regional Water Quality Control Board's Interim Final - February 2005, Tier 1 Environmental Screening Level for groundwater that is a potential source of drinking water

TABLE 2C
Results of Grab Groundwater Sample Analysis for LUFT-5 Metals
5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Depth (fbg)	Date	Cd (ug/L)	Cr (ug/L)	Pb (ug/L)	Ni (ug/L)	Zn (ug/L)
B10	B10-W	13.85	11/1/2002	ND<0.5	0.28	0.26	0.33	0.41
B12	B12-W		5/2/2005	17.4	9.51	106	30.7	100
B21	B21-W	15	6/22/2005	38	1400	75	1500	1900
B23	B23-W	6.9	7/11/2005	ND<2	ND<5	10	13	32
B23**	B23-W	6.9	7/11/2005	ND<2	ND<5	ND<5	11	30

TABLE 2C NOTES:

Cd - Cadmium

Cr - Chromium

Pb - Lead

Ni - Nickel

Zn - Zinc

mg/Kg - milligrams per Kilogram; parts per million (ppm)

fbg - feet below grade

** Results of dissolved sample (pre-filtered in field)

All other soil boring grab GW samples not analyzed for LUFT 5 Metals

CRWQCB/ESL = California Regional Water Quality Control Board's Interim Final - February 2005,

Tier 1 Environmental Screening Level for
groundwater that is a potential source of drinking water

TABLE 1
Historical Groundwater Levels & Hydrocarbon Analytical Results
5930 College Avenue, Oakland, CA

Well ID	Sample Date	Casing Elevation (ft, MSL)	Depth to GW (ft, TOC)	Water Elevation (ft, MSL)	Product Odor/ Sheen	TPH-G (ug/L)	MTBE (ug/L)	BTEX (ug/L)	
MW-1	6/1/98	50.00 *	4.81	45.19	slight sheen	160000	1900	28000 / 21000 / 3800 / 21000	
	9/10/98	50.00 *	7.5	42.5	Odor	290000	440	<50 / 25000 / 7100 / 32000	
	10/7/99	50.00 *	10.04	39.96	Odor	85000	1100	20000 / 13000 / 3800 / 17000	
	1/26/00	50.00 *	8.26	41.74	slight sheen	130000	470	25000 / 18000 / 4500 / 22000	
	10/25/00	50.00 *	10.1	39.9	Odor	130000	1300	23000 / 12000 / 3900 / 18000	
	2/2/01	50.00 *	9.61	40.39	Odor	128000	780	19000 / 11000 / 3800 / 18000	
	4/25/01	195.9	7.39	188.51	Odor	120000	900	21000 / 13000 / 390 / 18000	
	7/10/01		9.72	186.18	Odor	79000	660	15000 / 7800 / 3000 / 15000	
	10/8/01		10.88	185.02	Odor/sheen	112000	374	25300 / 11800 / 4280 / 20600	
	1/7/02		4.34	191.56	Odor	96100	596	21100 / 13500 / 4160 / 21900	
	4/8/02		6.84	189.06	slight odor	111000	679	21200 / 13400 / 4230 / 21000	
	7/9/02		9.4	186.5	slight odor	110000	570	20300 / 13300 / 4060 / 19800	
	10/23/02		11.04	184.86	None	54100	1010 (1080)**	10800 / 3870 / 2320 / 9440	
	10/15/03		10.8	185.1	None	90700	724	17800 / 4740 / 3150 / 13900	
	2/2/04		7.35	188.55	None	108000	194	14200 / 7420 / 3450 / 19800	
	4/23/04		6.83	189.07	slight odor	49200	114	7910 / 1480 / 1810 / 10100	
	7/19/04		8.95	186.95	Odor	63900	303	7260 / 2270 / 2510 / 10100	
	10/22/04		10.15	185.75	None	80700	493 (296)**	13900 / 1670 / 3550 / 15200	
	1/21/05		5.45	190.45	Odor	278000	271 (174)**	14700 / 25300 / 10800 / 73500	
	4/14/05		5.3	190.6	Odor /sheen	116000	366 (410)**	15100 / 7080 / 4220 / 20700	
	7/26/05		7.6	188.3	Odor	82000	ND<250	12000 / 4500 / 3300 / 14000	
	10/14/05		9.58	186.32	Odor/sheen	64000	ND<250	13000 / 5700 / 3400 / 16000	
	1/13/06		4.6	191.3	Odor/sheen	49000	ND<250	12000 / 5300 / 3500 / 17000	
	4/14/06		3.08	192.82	Odor	51000	270	14000 / 5300 / 3500 / 17000	
	10/26/06		9.22	186.68	Odor	34000	ND<250	12000 / 1600 / 3100 / 8600	
	1/30/07		9.6	186.3	Odor	39000	ND<200	10000 / 2200 / 2900 / 10000	
	4/13/07		9.24	186.66	NM	52000	150	9100 / 2600 / 3100 / 11000	
	7/24/07		10.67	185.23	None	46000	240	10000 / 1200 / 3500 / 6200	
	4/21/08		7.24	188.66	None	50000	ND<100	7800 / 1500 / 3000 / 12000	
	7/22/08		9.71	186.19	Odor	60000	470 ¹	8100 / 1500 / 2700 / 9800	
10/21/08	11.63		184.27	Odor	15000	110	4900 / 430 / 1900 / 2260		
1/19/09	10.91		184.99	Odor/Sheen	33000	143	8830/837/2160/3880		
4/27/09	7.7		188.2	Odor	75000	53	8500/2100/2300/11000		
10/27/09	9.34		186.56	Odor	61000	75	8300/1500/2600/7900		
	10/14/10			10.3	185.6	Clear/Odor	24000²	220	8100/820/2200/4400
CRWQCB ESL - Nov 2007						100	5	1.0 / 40 / 30 / 20	

Table Notes Following

TABLE 1 (Cont.)
Historical Groundwater Levels & Hydrocarbon Analytical Results
5930 College Avenue, Oakland, CA

Well ID	Sample Date	Casing Elevation (ft, MSL)	Depth to GW (ft, TOC)	Water Elevation (ft, MSL)	Product Odor/ Sheen	TPH-G (ug/L)	MTBE (ug/L)	BTEX (ug/L)
MW-2	10/7/99	51.42*	11.49	39.93	slight/odor	18000	490	3000 / 1700 / 1000 / 3900
	1/26/00	51.42*	7.85	43.57	None	42000	560	9300 / 2200 / 2300 / 7700
	10/25/00	51.42*	11.57	39.85	slight/odor	31000	500	5500 / 370 / 1700 / 2600
	2/2/01	51.42*	10.77	40.65	Odor	36000	400	4300 / 530 / 1800 / 4500
	4/25/01	197.28	8.52	188.76	Odor	56000	460	6700 / 1700 / 2600 / 8200
	7/10/01		11.05	186.23	Odor	39000	180	6200 / 730 / 2300 / 6100
	10/8/01		12.79	184.49	Odor/sheen	40700	6460	6310 / 399 / 2100 / 5320
	1/7/02		4.92	192.36	Odor	59600	366**	10300 / 3250 / 4180 / 14400
	4/8/02		8.4	188.88	slight odor	66700	583**	10200 / 2670 / 3840 / 13200
	7/9/02		10.55	186.73	slight odor	37100	303 (298)**	5340 / 890 / 2110 / 6920
	10/23/02		13.85	183.43	None	13300	322 (360)**	2420 / 216 / 922 / 1470
	10/15/03		12.38	184.9	None	11300	264 (322)**	2660 / 51 / 1180 / 1220
	2/2/04		8.8	188.48	None	21700	168 (200)**	2130 / 51 / 1030 / 2060
	4/23/04		8.4	188.88	Slight odor	30400	112 (203)**	3570 / 322 / 1620 / 4140
	7/19/04		10.3	186.98	Odor	28300	283 (373)**	2540 / 239 / 1320 / 2300
	10/22/04		10.25	187.03	Mod odor	13500	273 (229)**	1790 / 54 / 892 / 915
	1/21/05		6.65	190.63	Mod odor	278000	161 (163)**	5980 / 1030 / 2890 / 9070
	4/14/05		8.7	188.58	None	46100	155 (150)**	5170 / 787 / 2530 / 6010
	7/26/05		8.95	188.33	Mod odor	41000	ND (ND)**	5600 / 550 / 2600 / 4600
	10/14/05		10.92	186.36	Odor/sheen	13000	130	2900 / 100 / 1300 / 1200
	1/13/06		5.48	191.8	Odor	20000	ND<100	4900 / 490 / 2400 / 4200
	4/14/06		3.61	193.67	Odor	21000	ND<100	4000 / 740 / 2300 / 5100
	10/26/06		10.58	186.7	Odor	8200	68	1400 / 51 / 840 / 500
	1/30/07		10.98	186.3	Odor	17000	62	3200 / 150 / 2200 / 1800
	4/13/07		10.54	186.74	NM	19000	57	2000 / 85 / 1300 / 1100
	7/24/07		12.04	185.24	None	10000	84	1300 / 41 / 710 / 270
	4/21/08		8.01	189.27	None	17000	48	1800 / 100 / 1400 / 1300
	7/22/08		11.12	186.16	None	16000	100 ¹	1900 / 98 / 1600 / 741
	10/21/08		13.11	184.17	Odor/sheen	4900	65	700 / 20 / 370 / 52
	1/19/09		12.31	184.97	Odor	2500	90	167/8.49/114/50.3
4/27/09	9.01		188.27	Odor/sheen	21000	ND<0.5	1700/130/1100/1800	
10/27/09	10.52		186.76	Odor	7000	ND<0.5***	510/19/330/160	
10/14/2010	11.56		185.72	None	3200²	35	460/16/230/110	
CRWQCB ESL - Nov 2007						100	5	1.0 / 40 / 30 / 20

Table Notes Following

TABLE 1 (Cont.)
Historical Groundwater Levels & Hydrocarbon Analytical Results
5930 College Avenue, Oakland, CA

Well ID	Sample Date	Casing Elevation (ft, MSL)	Depth to GW (ft, TOC)	Water Elevation (ft, MSL)	Product Odor/ Sheen	TPH-G (ug/L)	MTBE (ug/L)	BTEX (ug/L)
MW-3	10/7/99	49.39*	9.67	39.72	None	6600	390	310 / 110 / 430 / 1000
	1/26/00	49.39*	5.4	43.99	None	3300	40	110 / 8 / 100 / 32
	10/25/00	49.39*	9.24	40.15	Slight odor	4500	ND	100 / 2 / 120 / 130
	2/2/01	49.39*	8.73	40.66	Slight odor	2900	35	35 / 3 / 160 / 298
	4/25/01	195.22	6.61	188.61	Slight odor	8400	56	260 / 33 / 290 / 510
	7/10/01		8.85	186.37	Slight odor	12000	35	39 / 10 / 690 / 1600
	10/8/01		9.75	185.47	Odor/sheen	4913	52	108 / 4 / 99 / 133
	1/7/02		4.25	190.97	Odor/sheen	7260	81.7**	723 / 138 / 492 / 887
	4/8/02		6.33	188.89	Odor	11700	ND**	540 / 108 / 706 / 1710
	7/9/02		8.56	186.66	Odor	2320	28.3 (20)**	37.1 / 4.7 / 98.5 / 187
	10/23/02		10.02	185.2	Odor/sheen	2830	ND (ND)**	46.8 / 4.7 / 43.6 / 65.5
	10/15/03		9.8	185.42	Odor/sheen	3040	ND (ND)**	91.3 / 8.4 / 69.9 / 148
	2/2/04		6.85	188.37	Odor/sheen	5140	ND (ND)**	126 / 8.7 / 134 / 238
	4/23/04		6.17	189.05	None	7210	ND (ND)**	227 / 39.5 / 448 / 879
	7/19/04		8.25	186.97	Slight odor	9860	ND (ND)**	20.4 / 3.2 / 30.6 / 117
	10/22/04		9.25	185.97	None	7420	96 (21)**	152 / 12.8 / 267 / 480
	1/21/05		5.22	190	Slight odor	2420	ND (ND)**	111 / 11.4 / 139 / 265
	4/14/05		6.64	188.58	Odor/sheen	5130	54 (41.4)**	357 / 19.4 / 287 / 510
	7/26/05		6.9	188.32	None	9800	ND (21)**	200 / 23 / 220 / 360
	10/14/05		8.83	186.39	Odor/sheen	6100	ND	76 / 19 / 170 / 350
	1/13/06		4.61	190.61	Odor	3900	24	380 / 17 / 230 / 300
	4/14/06		3.41	191.81	Odor	5000	69	760 / 44 / 230 / 190
	10/26/06		8.57	186.65	Odor	3100	17	120 / 9.8 / 55 / 54
	1/30/07		8.83	186.39	Odor	4500	ND<10	90 / 7.6 / 75 / 44
	4/13/07		8.57	186.65	NM	2800	ND<5	55 / 4.9 / 19 / 6.1
	7/24/07		9.98	185.24	None	4800	ND<5	140 / 8.3 / 66 / 22
	4/21/08		9.3	185.92	None	4300	ND<5	200 / 11 / 30 / 14
	7/22/08		9.05	186.17	None	2400	53 ¹	140 / 13 / 26 / 18.5
	10/21/08		11.12	184.1	Slight Odor	2900	2.2	170 / 9.2 / 99 / 25.8
	1/19/09		10.29	184.93	Odor	3600	ND<0.5	148/6.73/24.5/22.1
4/27/09	7.15		188.07	Odor/sheen	5800	8.8	370/12/82/84	
10/27/09	8.96		186.26	Odor	4900 ²	ND<0.5***	130/8.5/89/130	
10/14/2010	9.76		185.46	None	2700 ²	ND<4.4	270/11/290/399.2	
CRWQCB ESL - Nov 2007						100	5	1.0 / 40 / 30 / 20

Table Notes Following

TABLE 1 (Cont.)
Historical Groundwater Levels & Hydrocarbon Analytical Results
5930 College Avenue, Oakland, CA

Well ID	Sample Date	Casing Elevation (ft, MSL)	Depth to GW (ft, TOC)	Water Elevation (ft, MSL)	Product Odor/ Sheen	TPH-G (ug/L)	MTBE (ug/L)	BTEX (ug/L)
PW-1	4/14/05	197.17	6.4	190.77	None	3360	ND (ND**)	62.8 / 6.7 / 79.5 / 317
	7/26/05		8.63	188.54	None	1300	ND (ND**)	22 / ND / 48 / 110
	10/14/05		10.71	186.46	None	4300	ND	93 / 1.2 / 100 / 140
	1/13/06		4.87	192.3	None	450	ND<2.0	10 / ND / 37 / 72
	4/14/06		2.27	194.9	Odor	120	ND<2.0	2.3 / ND<1.0 / 3.5 / 9.3
	10/26/06		10.3	186.87	Odor	2800	ND<10	61 / ND<5.0 / 130 / 34
	1/30/07		10.8	186.37	Odor	1200	ND<2	22 / ND<1.0 / 100 / 200
	4/13/07		10.31	186.86	NM	510	ND<1	6 / ND<0.5 / 30 / 56
	7/24/07		11.81	185.36	None	3400	ND<5	63 / ND<2.5 / 180 / 5.6
	4/21/08		9.08	188.09	None	300	ND<1	3 / ND<0.5 / 16 / 26
	7/22/08		9.83	187.34	None	710	3.1 ¹	9.3 / 1.2 ¹ / 49 / 67.86
	10/21/08		12.9	184.27	None	1500 ²	1	20 / ND<0.5 / 57 / 20
	1/19/09		12.11	185.06	Odor/sheen	1100 ²	ND<0.5	12.3/ND<0.5/30.8/9.20
	4/27/2009		8.69	188.48	None	360 ³	ND<0.5	2.7/ND<0.5/12/18
	10/27/2009		10.32	186.85	None	1100 ²	ND<0.5	12/ND<0.5/36/34
10/14/2010	11.38	185.79	None	860³	ND<0.5	8.8/55/44/44		
CRWQCB ESL - Nov 2007						100	5	1.0 / 40 / 30 / 20

NOTES:

ft, MSL = feet Above Mean Sea Level

TOC = Top of Well Casing

GW = Depth to Groundwater in feet Below TOC

TPH-G = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tertiary Butyl Ether

BTEX = Benzene / Toluene / Ethylbenzene / Total Xylenes

ug/L = micrograms per liter

ND = Not detected above laboratory reporting limit

¹ = Presence confirmed, but Relative Percentage Difference (RPD) between columns exceeds 40%

² = Sample exhibit chromatographic pattern that does not resemble standard; See laboratory report for additional information

³ = Although TPH-gas compounds are present, value is elevated due to discrete peak (PCE) within C5-C12 range quantified as gasoline

* = Arbitrary datum point with assumed elevation of 50 ft used prior to MSL survey on 4/ 25/01

** = Concentration confirmed by EPA Method 8260

** = Sample also analyzed for other Fuel oxygenates (EPA Method 8260); All results ND (See Lab Report)

CRWQCB/ESL = California Regional Water Quality Control Board's Interim Final - November 2007, Tier 1 Environmental Screening Level for groundwater that **IS** a potential source of drinking water

TABLE 2
Historical Groundwater VOC Analytical Results in PW-1
5930 College Avenue, Oakland, CA

Well ID	Sample Date	IPB (ug/L)	n-PB (ug/L)	1,3,5-TMB (ug/L)	1,2,4-TMB (ug/L)	Sec-BB (ug/L)	n-BB (ug/L)	Naphthalene (ug/L)	TCE (ug/L)	MC (ug/L)	cis-1,2-DCE (ug/L)	Vinyl Chloride (ug/L)	PCE (ug/L)
PW-1	4/14/05	11	22	110	100	ND,10	ND<10	43	3.3	ND<25	12	ND<0.5	84.9
	7/26/05	7.3	17	37	100	ND<10	ND<10	43	ND<1	ND<10	7	ND<1	48
	10/14/05	28	72	67	120	12	17	43	4.1	ND<40	29	ND<1	25
	1/13/06	ND<20	ND<10	ND<10	37	ND<10	ND<10	ND<10	1.4	ND<40	5	ND<1	95
	4/14/06	ND<2	ND<10	ND<10	ND<10	ND<10	ND<10	ND<10	1.1	ND<40	2.8	ND<1	68
	10/26/06	ND<10	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	6.2	ND<200	32	ND<5.0	26
	1/30/07	ND<2	23	31	120	ND<10	ND<10	18	ND<1	ND<40	11	ND<1	29
	4/13/07	2.4	6.1	7	30	ND<5	ND<5	6.8	0.84	ND<20	4.7	ND<0.5	64
	7/24/07	ND<5.0	60	ND<25	ND<25	ND<25	ND<25	ND<25	ND<2.5	ND<100	58	ND<2.5	50
	4/21/08	1.1	ND<5	ND<5	15	ND<5	ND<5	ND<5	0.88	ND<20	3.7	ND<0.5	91
	7/22/08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/21/08	17	14	5	15	9.4	14	5.1	6.2	ND<10	56	0.6	44
	4/27/09	1.2	3.3	3.4	16	ND<0.5	ND<0.5	ND<1.0	1.4	ND<5.0	4	ND<0.5	120
10/27/09	6	4.8	ND<0.5	15	ND<0.5	ND<0.5	ND<1.0	ND<0.5	ND<5.0	35	ND<0.5	78	
10/14/10	9.8	15	12	44	4.4	ND<0.5	4	5	ND<5.0	61	ND<0.5	35	
CRWQCB ESL	NC	NC	NC	NC	NC	NC	NC	17	5	5	6	0.5	5

NOTES:

VOC = Volatile Organic Compounds

IPB = Isopropylbenzene

n-PB = n-Propylbenzene

1,3,5-TMB = 1,3,5-Trimethylbenzene

1,2,4-TMB = 1,2,4-Trimethylbenzene

sec-BB = sec-Butylbenzene

n-BB = n-Butylbenzene

TCE = Trichloroethene

MC = Methylene Chloride

cis-1,2-DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

ug/l = micrograms per liter

ND = Not detected above laboratory reporting limit

NC = No Criteria Listed

NA = Not Analyzed

CRWQCB/ESL = California Regional Water Quality Control Board's Interim Final - November 2007, Tier 1 Environmental Screening Level
for groundwater that **IS** a potential source of drinking water

APPENDIX E

TREND GRAPHS AND DEGRADATION CALCULATIONS

**Table A - Summary of Degradation Rate Calculations
Chevron Service Station #20-9339, 5940 College Avenue, Oakland, California**

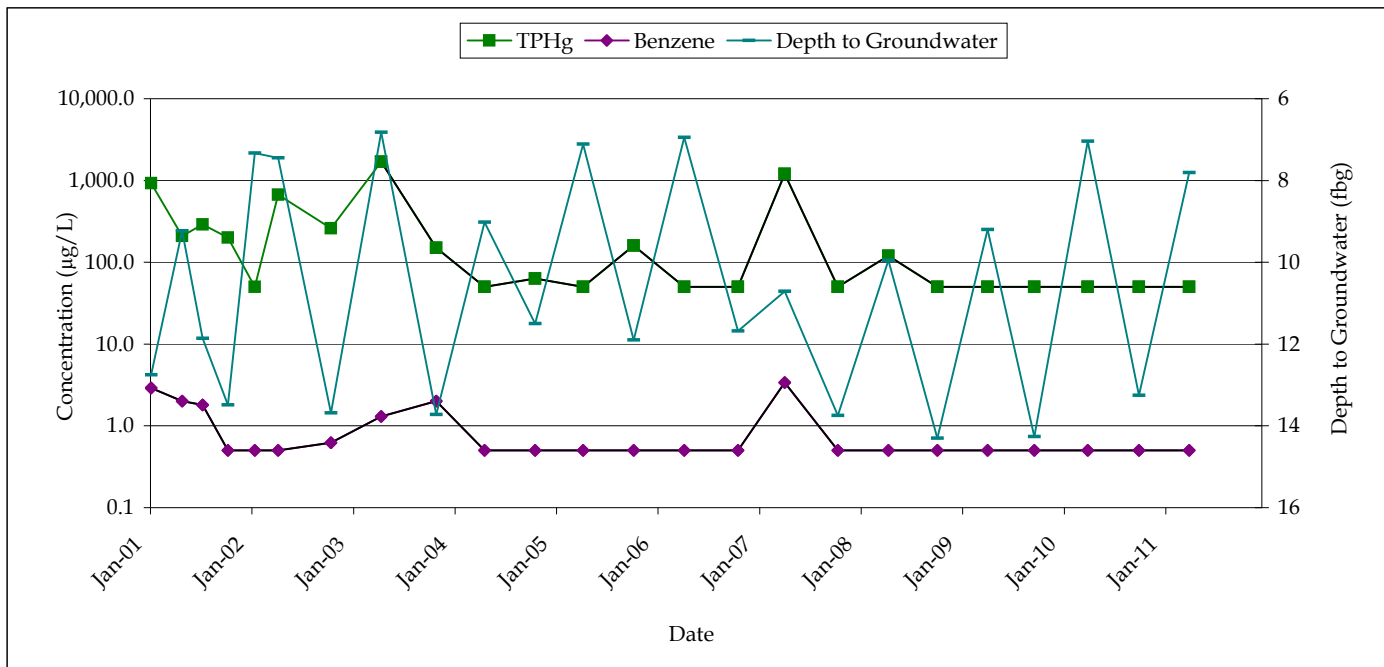
Well	Analyte	Maximum Concentration (ug/L)	Current Concentration (ug/L)	Half-Life (years)	Date to Reach ESL	Years to Reach ESL
MW-1	TPHg	1,700	< 50	NA	NA	Below ESLs
	Benzene	3.4	< 0.5	NA	NA	Below ESLs
MW-2	TPHg	4,200	150	2.48	Apr 2013	2
	Benzene	200	< 0.0	1.29	Feb 2009	Near ESLs
<p>Notes and Abbreviations: TPHg = Total petroleum hydrocarbons as gasoline ug/L = Micrograms per liter ESL = Environmental Screening Level NA = Not applicable</p>						

Predicted Time to Reach Environmental Screening Levels (ESL) in Well MW-1
Chevron Service Station #20-9339, 5940 College Avenue, Oakland, California

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

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

	Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)	Benzene
Given			
Environmental Screening Levels (ESL) :	y	100	1
Constant:	b	NA	NA
Constant:	a	NA	NA
Starting date for current trend:		NA	NA
Calculate			
Attenuation Half Life (years):	$(-\ln(2)/a)/365.25$	NA	NA
Estimated Date to Reach ESL:	$(x = \ln(y/b) / a)$	BELOW ESL	BELOW ESL



FORMER CHEVRON SERVICE STATION #20-9339
 5940 COLLEGE AVENUE
 OAKLAND, CALIFORNIA



MW-1: TPHg AND BENZENE
 CONCENTRATIONS AND DEPTH
 TO GROUNDWATER

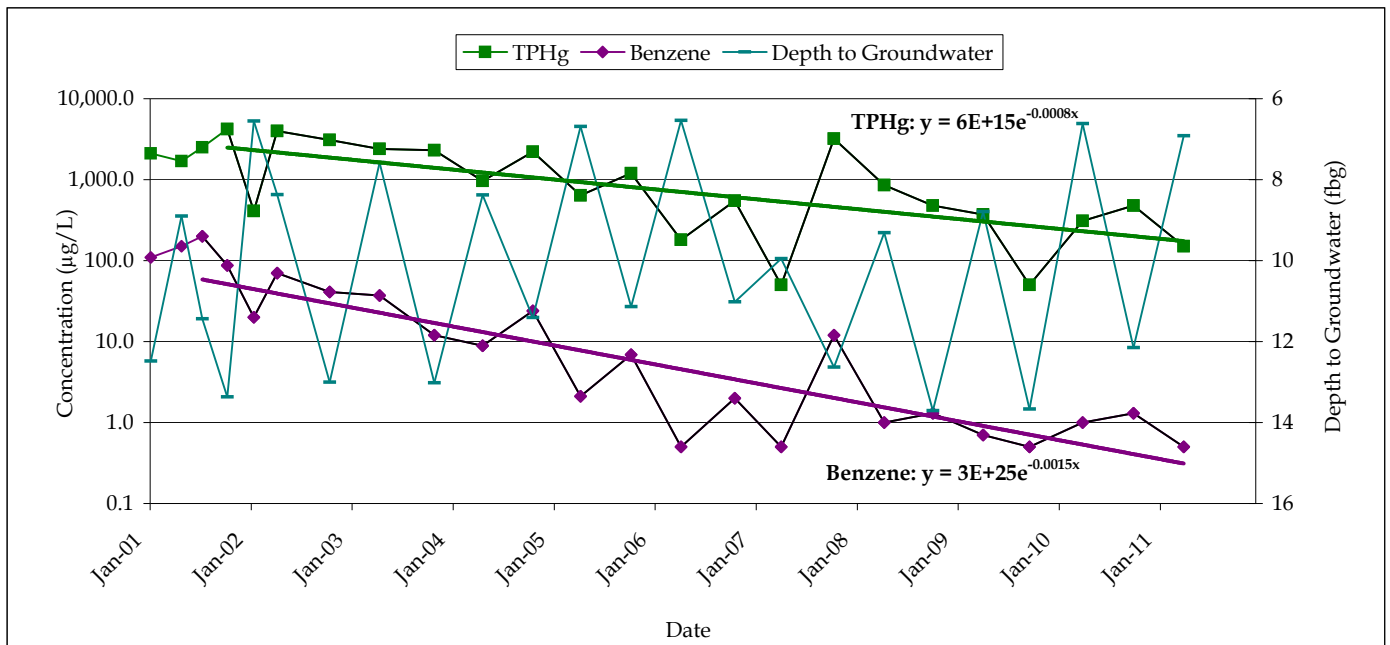
Predicted Time to Reach Environmental Screening Levels (ESL) in Well MW-2
Chevron Service Station #20-9339, 5940 College Avenue, Oakland, California

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

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

Given	Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)	Benzene
Environmental Screening Levels (ESL) :	y	100	1
Constant:	b	5.70E+15	2.58E+25
Constant:	a	-7.66E-04	-1.47E-03
Starting date for current trend:		10/8/2001	7/9/2001

Calculate		TPHg	Benzene
Attenuation Half Life (years):	$(-\ln(2)/a)/365.25$	2.48	1.29
Estimated Date to Reach ESL:	$(x = \ln(y/b) / a)$	Apr 2013	Feb 2009



FORMER CHEVRON SERVICE STATION #20-9339
 5940 COLLEGE AVENUE
 OAKLAND, CALIFORNIA



MW-2: TPHg AND BENZENE
 CONCENTRATIONS AND DEPTH TO
 GROUNDWATER