June 2, 2009

Barbara Jakub, P.G.
Alameda County Health Care Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RE: Soil & Water Investigation Work Plan & Site Conceptual Model

SITE: Sheaff's Garage
5930 College Avenue, Oakland, California
ACHCSA Fuel Leak Case No. RO0000377
GGTR Project 7335

Dear Ms. Jakub:

On behalf of the William J Sheaff TTE Trust, Golden Gate Tank Removal, Inc. (GGTR) is pleased to submit the enclosed copy of our *Soil & Water Investigation Work Plan & Conceptual Site Model* for the subject property located at 5930 College Avenue in Oakland, California. GGTR has uploaded an electronic copy of the document to the State Water Resources Control Board's GeoTracker Database System. A copy of the work plan has also been submitted to the William J Sheaff TTE Trust care of Dr. Brian Sheaff.

Should you have any questions, please contact us at your earliest convenience. In my absence from the office, I may be reached by cellular service at (415) 686-8846.

Sincerely,
Golden Gate Tank Removal, Inc.

Brent A. Wheeler
Project Manager

Enclosure/1

SOIL AND WATER INVESTIGATION WORK PLAN

&

SITE CONCEPTUAL MODEL

Sheaffs Garage
5930 College Avenue
Oakland, California
ACHCSA Site # RO0000377

Prepared For:

Dr. Brian Sheaff
William G. Sheaff Trust
1945 Parkside Avenue
Concord, California 94519

Prepared By:

Golden Gate Tank Removal, Inc.
3730 Mission Street
San Francisco, California 94110

GGTR Project No. 7335
Date of Report: June 1, 2009

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

1,2-DCE	1,2-Dichloroethylene or 1,2-Dichloroethene
ACEH	Alameda County Environmental Health
ACHCSA	Alameda County Health Care Services Agency
BAAQMD	Bay Area Air Quality Management District
bgs	below ground surface
CalEPA	California Environmental Protection Agency
CAP	Corrective Action Plan
CPT	Cone Penetration Testing
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CHHSL	California Human Health Screening Level
COC	contaminant of concern
COPC	Contaminant of potential concern
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
ESL	Environmental Screening Level (Regional Water Quality Control Board)
J&E	Johnson & Ettinger Model
HASP	Health and Safety Plan
HERD	Human and Ecological Risk Division (Cal/EPA)
HSC	California Health and Safety Code
HVOC	Halogenated volatile organic compounds
LOP	Local Oversight Program
LUST	Leaking Underground Storage Tank
MTBE	Methyl tert butyl ether
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
PCE	Perchloroethylene, Tetrachloroethene or Tetrachloroethylene (Perc)
PRG	Preliminary Remediation Goal (U.S. Environmental Protection Agency)
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RWQCB	Regional Water Quality Control Board
SBT	Soil Behavior Type used in logs of CPT borings
SWRCB	State Water Resources Control Board
TCE	Trichloroethylene or Trichloroethene
TCLP	Toxicity characteristic leaching procedure
TOC	Top of casing in monitor wells
TPHg	total petroleum hydrocarbons as gasoline
TPHd	total petroleum hydrocarbons as diesel
USA	Underground Service Alert
UST	Underground storage tank
$\mu g/m^3$	micrograms per cubic meter
$\mu g/kg$	micrograms per kilogram
$\mu g/L$	Micrograms per liter
VOC	Volatile organic compounds

SOIL AND WATER INVESTIGATION WORK PLAN

&

SITE CONCEPTUAL MODEL

SHEAFFS GARAGE
5930 College Avenue, Oakland, CA
ACHCSA Site No. RO0000377

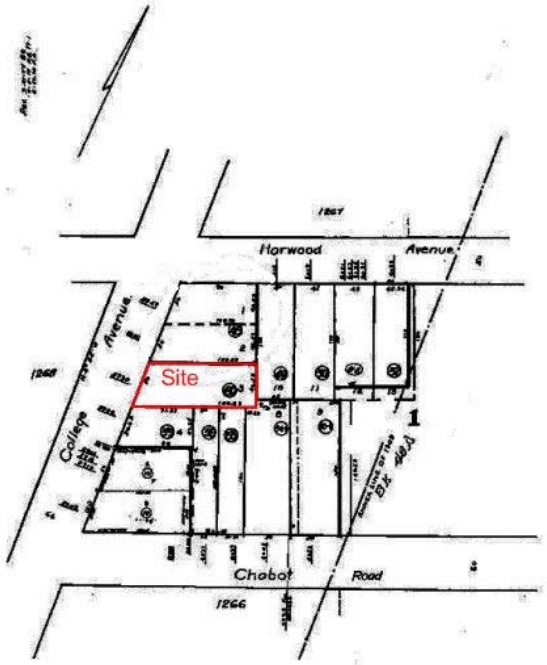
INTRODUCTION

Golden Gate Tank Removal, Inc. (GGTR) is pleased to submit this Soil and Water Investigation Work Plan & Site Conceptual Model proposing additional investigation activities at the property located at 5930 College Avenue in Oakland, California (Site). The work plan was prepared in response to the July 25, 2008 letter issued by Alameda County Environmental Health (ACEH) requesting additional soil and groundwater characterization at the Site. ACEH refers to the fuel leak case at the Site by the historical business name "Sheaffs Garage" and as fuel leak case No. RO0000377. Under the Regional Water Quality Control Board's Local Oversight Program (LOP), the ACEH is the lead regulatory agency for the fuel leak case at the Site. Appendices A and B contain figures and photographs of the Site. Figure 1 is a *Site Location Map* showing the general location of the subject property. Figure 2 is a Site Vicinity Map showing land use of the surrounding neighborhood. Figure 3 is a *Site Plan* showing the approximate location of the former underground storage tanks (UST), historical soil borings, and existing groundwater monitoring field points (MW-1, MW-2, MW-3 and piezometer PW-1).

As directed by the ACEH, this work plan includes a Site Conceptual Model (SCM). The SCM is a integral part of the decision making process used in this work plan to propose additional investigation activities. In general accordance with the technical comments presented in the aforementioned letter, the purpose of this work plan is to describe the procedures and methods used to conduct the following additional site characterization activities: 1) further define the vertical and horizontal extent of the hydrocarbon-effected groundwater plume, 2) investigate for potential source areas of PCE groundwater contamination, and 3) further investigate the extent of groundwater contamination in the direct vicinity of the 90-inch cutoff conduit for Harwood Creek. The investigation activities will be performed in general accordance with the State Water Resources Control Board's Leaking Underground Fuel Tank (LUFT) manual and the TRI-Regional Board Staff Recommendation for Preliminary Evaluation and Investigation of Underground Tank Sites. A copy of the July 25, 2008, ACEH correspondence is attached to the work plan in Appendix E.

Site Location

The Site is a commercial property located at 5930 College Avenue along the east side of College Avenue between Harwood Street and Chabot Road in Oakland, California. See accompanying copy of the plat map for the Site and surrounding block. The Site lies approximately 0.2 mile (1,000 feet) north of Highway 24 and about two miles east of Interstate 80 and the San Francisco Bay. The elevation of the Site is approximately 195 feet above Mean Sea Level. The property is relatively flat lying with the local topographic relief directed toward the west-southwest in the general direction of the San Francisco Bay as shown on Figure 1, Site Location Map. The topographic map of Figure 1 depicts the area of the subject property as dense urban development. Figure 2, Site Vicinity Map, shows the mixed-use commercial-residential character of the surrounding neighborhood. Commercial-retail corridors are located along main thoroughfares such as College Avenue with residential neighborhoods situated between the corridors. The character of the Site's neighborhood has remained consistent since the 1950s.



Site Description

The property is currently 100% occupied by Stauder Automotive Service for the maintenance and repair of automobiles. The building is a single-story industrial-style building constructed in 1952. The Site is approximately 5,500 square feet in area with about 75% utilized by an industrial-style garage building and 25% used as an exterior paved storage yard/parking lot. Two underground storage tanks (UST) were formerly located beneath the sidewalk at the southwest corner of the Site. No active USTs, fuel storage, or fuel distribution system currently exist onsite. Most of the building consists of open work / storage area (see photographs in Appendix B).

Source of Water:	Municipal – 100% imported surface water
Sewage Disposal:	Municipal to sewage treatment plant
Storm water	Catch basin drains to storm water conduits under nearby streets that discharge to San Francisco Bay
Solid Waste Disposal:	Municipal
Year of Construction:	circa 1952
Occupant	Stauder Automotive Service – 100%
Access to Property:	Driveway/roll-up doorway from College Avenue

A sidewalk borders the western side of the building along College Avenue. The wall of a commercial-retail building constructed in 1978 abuts the subject building on the north. A narrow corridor-walkway runs along the southern wall of the subject building separating a multi-story apartment building with ground floor retail and parking. The rear of the property contains a paved

parking and storage yard. Two residence backyards adjoin the subject property along the southern and western borders. The property is completely paved with asphalt or concrete with the building constructed on a concrete slab.

Site History

Sanborn® Fire Insurance Maps are available for the years 1911, 1950, 1952, 1959, 1960, 1966, 1967, and 1969. Aerial photographs are available for the years 1939, 1946, 1959, 1965, 1982, and 1993. According to the 1911 Sanborn map, the subject property and adjacent properties along the College Avenue between Harwood Avenue and Chabot Road (59th Street) were vacant lots. The neighborhood in 1911 appeared to be developing residential. The 1939-1946 aerial photographs show the Site as a vacant lot. The 1950 Sanborn map shows the subject property as a vacant lot and the adjacent property to the south was occupied by the existing 12-unit apartment building. Historic gasoline stations were located at the corner of Chabot Road and College Avenue and adjacent to the Site on the north. Historic gasoline stations (now Shell and Unocal 76) are also present at the corner of College and Claremont Avenues north of the Site.

In 1952, an auto repair facility called Sheaffs Service Garage was constructed at the Site. Historical research shows that auto repair shops have continuously occupied the Site since construction in 1952. Between 1960 and 1969, the Site and neighboring properties appeared to remain unchanged. During this period, the neighborhood appeared to be residential with commercial corridors along major streets such as College Avenue. The 1965 aerial photograph clearly shows that the subject building with the rear storage yard in the existing configuration. The property located at the northeast corner of Chabot Road and College Avenue was occupied by a gasoline station from approximately 1939 to 1965. A gasoline station also formerly existed at the northwest corner of Chabot Road and College Avenue at the current Dreyers Grand Ice Cream building. The adjacent property to the north was formerly occupied by Chevron Service Station #209339 prior to 1968 and was replaced with the existing commercial-retail development (College Square) circa 1978. In the 1982 aerial photograph, the neighborhood appears as currently existing.

Current Uses of Adjacent Properties

The following table summarizes the adjacent land use surrounding the subject property. The surrounding properties are also shown on Figure 2, Site Vicinity Map.

Compass Direction from Site	*Description of Adjoining Land Use*
North	College Square commercial-retail property / former Chevron gasoline service station (pre-1968)
Northwest	College Avenue with church beyond / Shell gasoline station at corner of Claremont Avenue
Northeast	Residence and backyard
East	Residence backyard and patio
Southeast	Residence backyard and open courtyard
South	Multi-family Residential building with ground floor garage and residence backyard
West-Southwest	Commercial building / Dreyers Grand Ice Cream

A multi-story commercial-residential building is adjacent to the Site on the south at 5916-20 College Avenue. This building contains a parking garage and a retail store (T-Mobile) on the ground floor with 12 multi-family apartments on upper floors. To the south and east of the Site is an older single-family residential neighborhood with residence backyards adjoining the Site's rear parking lot. The surface channel of Harwood Branch creek is located within residential backyards about one block east and up-gradient of the Site. On the west, an Alameda County Flood Control District cutoff storm water conduit (90" diameter) associated with Harwood Branch creek is located within College Avenue. The adjacent property to the north was formerly occupied by Chevron Service Station #209339 from 1938 to 1968 and was replaced with a commercial-retail development in 1978 called College Square. College Square is currently occupied by a restaurant (Barclays Restaurant & Pub) and office space (5940 College Avenue). This commercial development's ground floor retail space and parking garage are approximately 3-4 feet below the grade of the subject property. A sump pump pit is located near the location of Gettler-Ryan well GR-MW1.

SITE CHARACTERIZATION

The following discussion presents a summary of site characterization activities performed at the Site. For additional detail and supporting documentation refer to the original documents cited below.

Underground Tank Removal 1996

Two underground storage tanks (UST) were formerly located beneath the sidewalk at the southwest corner of the Site (see Figure 3, Site Plan). The USTs were not in service when first observed in 1996. The following table presents a summary of the tank designations, size, type of construction and historical contents:

Designation	Construction	Diameter	Length	Volume	Contents
		(Feet)	(Feet)	(Gallons)	
TANK 1 (T1)	Steel	4	7	675	Gasoline
TANK 2 (T2)	Steel	4	3.5	340	Waste Oil

In August 1996, GGTR removed the two USTs under permit from the City of Oakland Fire Department. GGTR removed the residual fuel from the subsurface product piping (left in place), thoroughly flushed and drained the piping then capped both ends (the piping was subsequently removed).

Obvious gasoline impacted soil was present on the sidewalls and bottom of the former UST cavity. On October 2, 1996, GGTR over-excavated the gasoline-contaminated soil to the extent feasible considering the adjacent building foundation, multiple utility conduits, and a large tree. GGTR was unable to completely remove the contaminated soil because of these constraints. The over-excavation confirmation soil samples, as shown on the following table, reveal residual gasoline contamination of the final excavation limits. The tank removal and over-excavation activities are documented in the GGTR document titled *Tank Removal Report* dated October 11, 1996. Analytical results of soil samples collected during the UST removal and over-excavation activities are summarized in the attached Table 1A (Appendix C) and in the following table.

Table of UST Removal Confirmation Soil Sampling

Sample Location	*Sample ID*	*Depth Feet*	*Date*	*TPH-G mg/Kg*	*TRPH mg/Kg*	*TPH-D mg/Kg*	*B/T/E/X (mg/Kg)*
north end T1 excavation	7189-T1-N	8	8/6/1996	6000.00	--	--	19/240/76/470
south end T2 excavation	7189-T1-S	8		8100.00	--	--	16/240/72/530
center of T1 excavation	7189-T1-C	10		1200.00	--	--	9.1/68/10/79
center of T2 excavation	7189-T2-C	8		560.00	16000.00	ND	2.7/16/3.3/33
T1 Soil Stockpile	7189-SP1	--		ND	--	ND	ND/ND/ND/ND
T2 Soil Stockpile	7189-SP2	--		1.30	14000.00	ND	ND/ND/ND/0.020
Over-Excav. T1 & T2	7189-OE-1	10.5	10/2/1996	14001.00	1700.00	ND	9.8/81/14/110[1]
Over-Excav. T1 & T2	7189-OE-2	10.5		8401.00	320.00	ND	3.3/51/12/91[1]
Over-Excav. T1 & T2	7189-OE-3	10.5		ND	21.00	ND	ND/0.01/ND/0.027
Over-Excav. T1 & T2	7189-OE-4	10.5		4301.00	240.00	ND	0.93/18/4.6/41[1]
Over-Excav. T1 & T2	7189-OE-5	10.5		14001.00	1100.00	ND	2.2/40/14/120[1]

The confirmation soil sample recovered from beneath the center of the waste oil tank T-2 contained a PCE concentration of 24 µg/Kg, with non-detectable (<5 µg/Kg) TCE and cis-1,2-DCE. The laboratory analysis of soil samples from the following subsequent exploratory borings in the vicinity of the former USTs: B10 at 11 feet bsg, B-12 at 10 and 15 feet bsg, B21 at 9.5 feet bsg, and B22 at 10 feet bsg, were all non-detectable for PCE, TCE and cis-1,2-DCE. Significant PCE contamination does not appear associated with the former waste oil UST location.

Preliminary Subsurface Investigation 1998-1999

On May 6, 1998, three soil borings B1, B2 and B3 were advanced south, east, and west of the former UST cavity at the locations shown on Figure 3, Site Plan. The soil sample collected in boring B2 at approximately 9 fbg contained 2800 mg/kg of TPH as gasoline and 13 mg/kg benzene. All other soil boring sample concentrations were either insignificant or below the respective laboratory reporting limit. Grab groundwater samples collected in each borehole between 6.5 and 8.5 fbg contained a maximum of 1,000,000 micrograms per liter (ug/l) TPH-G (B3), 30000 ug/l benzene (B2), and 18000 ug/l MTBE (B3). Additional details are presented in the GGTR report titled June 17, 1998 Soil & Groundwater Investigation Report.

Based on review of the preliminary soil and grab groundwater sample results, the ACEH in their letter dated April 20, 1999, requested additional work to further assess the extent of contamination in soil and groundwater in the vicinity of the former USTs. In June-October 1999, GGTR advanced additional soil borings B4 to B6 to approximately 20 fbg and converted each to respective 2-inch-

diameter groundwater monitoring wells, MW-1 thru MW-3. Soil samples collected from each associated boring contained a maximum of 280 mg/kg TPH-G and 4 mg/kg benzene (B4 @ 9 fbg). Representative well samples collected in MW-1 in June and September 1998 contained maximum concentrations of 290000 ug/l of TPH as gasoline, 28000 ug/l of benzene, and 1900 ug/l of MTBE. Samples collected in each well in October 1999, contained a maximum of 85000 ug/l of TPH as gasoline, 20000 ug/l of benzene, and 1100 ug/l of MTBE (MW-1). The locations of the soil borings/monitor wells are shown on Figure 3, Site Plan. Additional details are presented in the GGTR Soil & Groundwater Investigation Report dated October 22, 1999. The results of the laboratory analyses of soil and grab groundwater samples are summarized on the attached Tables 1 and 2 in the appendices.

Quarterly Groundwater Monitoring 2000 to 2002

The ACEH in their letter dated November 4, 1999, requested that all onsite wells be sampled on a quarterly basis. Gettler-Ryan was conducting a separate groundwater investigation adjacent to the Site at 5940 College Avenue (College Square) where a Chevron gasoline station historically existed prior to 1968. ACEH requested in their March 1, 2001 letter, that joint groundwater monitoring be performed with the adjacent former Chevron station case in collaboration with Gettler-Ryan, Inc. GGTR jointly monitored and sampled each well on a quarterly basis between January 2000 and October 2002. Thereafter, Gettler-Ryan conducted semi-annual monitoring and sampling only. The locations of the subject monitor wells and Gettler-Ryan's monitoring wells are shown on Figure 3, Site Plan. The attached Table 3 presents the historical monitor well fluid-level data and groundwater analytical results for samples collected in MW-1 thru MW-3. Additional details are presented in the associated GGTR Groundwater Monitoring Reports. The historical results of groundwater sampling at the adjacent College Square wells is summarized in the Gettler-Ryan *Groundwater Monitoring & Sampling Report* dated May 28, 2008, presented in Appendix E, Additional Documentation.

Additional Subsurface Investigation 2002

Based on review of analytical results of the GGTR April 2001 Groundwater Monitoring Report, the ACEH, in a letter dated July 9, 2001, requested a work plan to assess whether any additional contaminant sources potentially exist that may be contributing to the elevated hydrocarbon concentration in groundwater in the vicinity of MW-1. GGTR submitted the work plan for additional investigation on December 19, 2001, which was subsequently approved by the ACEH in a letter dated January 3, 2002. In August, October, and November 2002, GGTR implemented the UST product line excavation/removal and soil boring (B7-B11) activities.

The location of the product piping, extending between the former fuel dispenser and UST cavity, is shown on Figure 3, Site Plan. GTTR removed the existing concrete pavement above the product piping and the existing concrete pad (42-inch by 42-inch) previously used to support the former product fuel dispenser located adjacent to the north interior wall of the building structure (Figure 3). GGTR then excavated a 16-inch wide trench (extending the entire length of the piping @ 30 feet) to approximately 2 fbg, exposing the entire surface of the product piping for inspection. Immediately following excavation activities, under the direction of Ms. Eva Chu of the ACEH, GGTR collected a soil sample beneath the south (Sample ID: 7335-EX1[3.5]) and north (Sample ID: 7335-EX3[2.5]) ends of the product piping as well as beneath the piping joint (Sample ID: 7335-EX2[3.5]) as shown on Figure 3, Site Plan. The soil samples were collected from 0.5 and 1.5 feet below the invert of the

piping in relatively undisturbed soil. The soil samples collected beneath the product line contained insignificant or non-detectable concentrations of TPH-G, BTEX, and MTBE. Following soil sampling activities, the entire length of piping was removed and disposed as scrap metal. The entire length of piping was found in good condition with no visible holes or cracks. No soil discoloration or staining was observed below the piping joints or elbow connections.

GGTR also drilled additional soil borings B7-B11 at the locations shown in Figure 3, Site Plan. Soil samples collected in B7 (former fuel dispenser location) and B8 & B9 (east parking lane of College Avenue) between 8 and 20 fbg contained insignificant concentrations of TPH-G and BTEX. However, grab groundwater samples collected in B7 to B9 contained significant TPH-G, BTEX and MTBE. Soil and groundwater samples in B10 (Vicinity of former USTs, east parking lane of College Avenue) contained significant TPH-G, BTEX and MTBE. Soil collected in B11 at 8 and 13 fbg, located along the north property line, contained insignificant concentrations of TPH-G, BTEX, and MTBE. No groundwater was encountered in B11. Additional details of the additional site characterization are presented in the GGTR June 10, 2003, *Report of Additional Soil and Groundwater Investigation*. The results of the laboratory analyses of soil and grab groundwater samples are summarized on the attached Tables 1 and 2.

Preferential Migration Pathway Survey 2003

Subsurface Utility Corridor Survey

The ACEH in their September 8, 2003, letter requested a subsurface utility corridor survey in the general vicinity of the Site to evaluate whether any underground utility corridors may potentially act as preferential pathways for migration of dissolved-phase contaminant hydrocarbons. On November 13, 2003, GGTR visited the City of Oakland Department of Engineering to obtain a copy of their subsurface utility map associated with the sanitary and storm sewer lines located in the direct vicinity of the site along College Avenue. GGTR also contacted the East Bay Municipal Utilities District (EBMUD), Engineering/Mapping Division to obtain utility map(s) associated with the municipal supply water mains/laterals in the vicinity of the site. GGTR also obtained information from the Pacific Bell Engineering Division and Pacific Gas & Electric (PG&E) for the associated utility corridors, which were located beneath the sidewalk and parking lane locations only. Information obtained from each agency included utility line dimensions (diameter), invert depths, and flow directions.

The results were presented in the GGTR's *Work Plan for Additional Site Characterization* dated December 29, 2003. The approximate locations of the pertinent subsurface site vicinity utilities are shown in Figure 7, *Subsurface Utility Map*, of this document. The results of the utility survey are further discussed in the Site Conceptual Model section of this report. Based on the information provided by the subsurface utility corridor survey and on the historical fluctuation of the shallow water table at the Site (about 3 to 12 fbg), it appears that some of the utility conduits located within College Avenue occur at the lower limit of the historical water table fluctuation and potentially act as a pathway for on- and/or off-site migration of groundwater and contaminant hydrocarbons.

Site Vicinity Receptor Well Survey

As part of the preferential migration pathway survey, the ACEH also requested that a Site vicinity well survey be conducted within a 0.25-mile radius. The purpose of the survey was to determine

whether any domestic and/or irrigation water-producing wells and monitor wells exist within this area that may both potentially act as receptors for offsite migration of the hydrocarbon-affected groundwater and potentially act as conduits for continued vertical migration. On November 4, 2003, GGTR submitted a Well Completion Report Release Agreement to the Department of Water Resources (DWR), Central District for all domestic/irrigation and monitoring wells installed within a 0.25-mile radius of the subject property. On November 12, 2003, GGTR visited the DWR Central District office in Sacramento to access their database for the associated well search. Well Completion Reports were provided within a 2-mile radius of the subject property.

The results of the sensitive receptor survey are summarized on Figure 1, Site Location Map. The results of the sensitive receptor survey are further discussed in the Site Conceptual Model section of this report. Based on results of the receptor well survey, no known active domestic and/or irrigation wells exist within the 0.25-mile survey radius of the subject property. Only two irrigation wells were reported about 0.75 miles from the Site and located regionally up-gradient of the Site. Only three groundwater monitoring wells were reported within 0.75 mile of the subject property. The three above reported monitor wells are located regionally up- and lateral gradient of the Site. Because of their distance from the subject property impacted groundwater, the reported irrigation and monitor wells will not act as potential receptors or vertical conduits for continued contaminant migration. Additional monitor wells occur in the vicinity of the Site as listed on GeoTracker and LOP databases and these wells are further discussed in the Site Conceptual Model section of this report.

Additional Site Characterization 2005

ACEH in their letter dated September 8, 2003, requested a work plan proposing additional characterization of soil and groundwater. GGTR submitted their *Work Plan for Additional Site Characterization* on December 29, 2003, and a June 3, 2004 Addendum which were conditionally approved by the ACEH in letters dated September 30, 2004 and February 22, 2005. Between April and July 2005, GGTR installed borings B12 to B24 to 25 fbg and Hydropunch borings HB-1 to HB-6 to 15 fbg, and converted HB-2 to piezometer well PW-1. The location of each boring is shown in Figure 3, Site Plan. The results of the laboratory analyses of soil and grab groundwater samples are summarized on the attached Tables 1 and 2. The results of the investigation were presented in the GGTR report titled *Report of Additional Site Characterization & Groundwater Monitoring* dated August 29, 2006. The following discussion is summarized from this report.

During April to June 2005, GGTR and Gregg Drilling (Gregg) performed soil boring and sampling activities. Continuous soil samples were collected in all soil borings (and HB-2/PW-1) at 4-feet intervals between 5 and 25 fbg. Following soil sampling activities, Gregg placed 0.75-inch-diameter, factory-sealed, screened piezometer casing to the total depth of selected boreholes. Groundwater was not observed in borings B13, B22, and HB-5, most likely due to the relatively impermeable silty clay / clayey silt material observed in each boring. Following grab groundwater sampling GGTR removed the temporary well casing from the borings and backfilled each borehole with neat Portland cement. GGTR converted soil boring HB-2 located in the rear paved parking lot to a groundwater piezometer labeled PW-1.

Three exploratory borings were drilled at the dispenser-piping run location during this investigation. Borings B20 and B24 encountered no significant TPH as gasoline contamination (<63 ppm). Boring B19 encountered no significant soil contamination until a depth of 15 feet, where TPH as gasoline at

139 ppm was detected within the saturated zone. Only low concentrations of gasoline hydrocarbons were discovered in soil beneath the former fuel dispenser in boring B7 to a depth of 20 fbg. Upon removal, the product piping to the dispenser was found in good condition and subsequently removed and does not appear to be a contributing source of the elevated gasoline hydrocarbons present in the groundwater.

Based on the laboratory analytical results of soil samples, it appears that only low concentrations of gasoline-range hydrocarbons (i.e., TPH-G, benzene, and total xylenes) are present in the soil within the vadose-interface zone interval (less than 8.5 feet deep). One soil sample (B21-8.5) analysis for total chromium was reported at a concentration of 74 ppm above the ESL of 58 ppm but within the range of Bay Area background chromium concentrations. However, a total of six soil samples have been analyzed at the site for total chromium with concentrations of 49, 34, 38, 74, 43 and 47 ppm. The mean total chromium concentration for these six samples is 47.5 ppm below the ESL of 58 ppm.

Elevated concentrations of gasoline-range hydrocarbons were detected in the groundwater within the western half of the subject property and extending into the utility corridor beneath College Avenue. No significant free product phase is observed at the Site. A sheen of petroleum product is commonly observed on groundwater purge water from onsite wells accounting for the relatively high concentrations observed in wells MW-1 and MW-3. TPH as gasoline concentrations in groundwater to the south of the Site is constrained by exploratory boring HB-6 with a grab water sample concentration of 45 ug/L.

Continued Quarterly Groundwater Monitoring 2003 to Present

The attached Table 3 includes the historical monitoring data and groundwater analytical results for samples collected in MW-1, MW-2, MW-3 and PW-1. Additional details are presented in the individual GGTR Groundwater Monitoring Reports. The groundwater levels measured in each well during the monitoring event were used to calculate an approximate groundwater gradient and flow direction across the site. The groundwater gradient data calculated for the period from April 14, 2005 through October 21, 2008 monitoring events are shown on Figure10, *TPH Gasoline in Groundwater 2008*. The groundwater elevations are referenced to mean sea level (MSL) as determined by the April 26, 2001, Virgil Chavez Land Surveying; Wellhead Elevation and Coordinate Survey. The benchmark for the survey was a City of Oakland benchmark being a cut square in the top of curb at the northeast corner of College Avenue and Miles Avenue (benchmark elevation is 179.075 feet MSL).

Monitoring well MW-2 is believed to be influenced by exfiltration from water leaks-sewer lateral and beginning in April 2005, gradient calculations have utilized data from piezometer PW-1. The groundwater gradient and flow direction was calculated using the U.S. Environmental Protection Agency (EPA) On-Line Tools for Site Assessment Calculation – Gradient and Direction from Four or More Points. Groundwater elevations from the three onsite monitoring field points (MW-1, MW-3 and PW-1) were utilized to calculate an overall site gradient and flow direction as shown on the rose diagram of Figure 10. The April 14, 2006, groundwater elevations are the highest elevations at the Site since 2001. The high groundwater elevation reflects the abundant rainfall experienced during April 2006. The October 21, 2008, mean groundwater elevations were the lowest recorded since 2001 reflecting the low rainfall received during 2007-2008. Further evaluation of the data indicates that well MW-3 located in the College Avenue parking strip is influenced by utility conduits and skews

the groundwater gradient data southward during winter months producing erroneous flow directions. GGTR concludes that the flow direction across the Site is west-southwest similar to nearby LUST cases.

Conditions at Nearby LUST Sites

The Alameda County Environmental Health (ACEH) website allows historical documents submitted for Leaking Underground Storage Tank (LUST) cases to be downloaded and reviewed. The technical documents and other correspondence were submitted to the ACEH under their Local Oversight Program (LOP) supervision of LUST cases. The following summaries of neighborhood LUST cases were derived from the ACEH database of documents.

Former Chevron Service Station #209339, 5940-42 College Avenue

The former Chevron Station #20-9339 is located adjacent to the north side of the Site at 5940-42 College Avenue (College Square). A Standard Oil-Chevron gas station operated at this property from 1938 until demolition of the station in 1968. From 1968 to 1978, this property was a vacant parking lot owned eventually by Dryers Ice Cream. In 1978, the College Square development was constructed on the adjacent property. During August-September 1999, Pier Environmental Services provided for the hand auger drilling and grab groundwater sampling of four borings SB-1 through SB-4 at the College Square property. No soil samples were recovered from the borings. Groundwater was encountered at approximately 5 feet bsg (surface grade is 3-4 feet below sidewalk grade). The boring locations are shown on Figure 3, Site Plan. The following table copied from the 1999 Pier Environmental Services report shows the results of the groundwater sampling.

The results of the groundwater samples were as follows:

Results in Parts Per Billion (PPB)

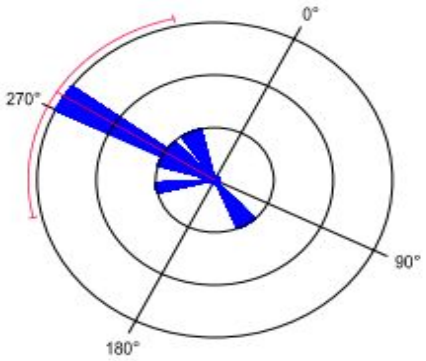
Sample#	TPH/g	Benzene	Toluene	EthylBenzene	Xylene	MTBE
SB1	5100	43	34	40	ND	110
SB2	ND	ND	ND	ND	ND	ND
SB3	59,000	3500	310	2000	1900	650
SB4	190,000	890	110	4000	7500	1100 → ND w/ 8240

In 2001, Gettler-Ryan, Inc. and Delta Environmental Consultants, Inc. installed two groundwater monitoring wells labeled MW-1 and MW-2 used to conduct groundwater monitoring and evaluate the hydrocarbon concentrations in groundwater at the Chevron case. Both borings were drilled to 21 feet bgs and 15 feet of 2-inch diameter screened well casing was installed to 20 feet bsg. The well screen was 0.02-inch with Lonestar #3 sand pack. The borings encountered clay and silty sand to approximately 15-19 feet bsg with brick fragments that appeared to be fill material. A silty sand stratum was encountered at the bottom of each boring at 15-19 feet bsg. Soil samples collected from 4.5 and 9.5 feet contained non-detectable or relatively low concentrations of petroleum hydrocarbons.

GGTR and Gettler-Ryan, Inc. conducted joint monitoring and sampling activities on a quarterly basis from October 2000 through 2001. Beginning on the April 8, 2002 monitoring event, Gettler-Ryan

decreased their monitoring schedule to a biannual basis. Gettler-Ryan, Inc. performed a biannual monitoring and sampling of GR-MW1 & GR-MW2 on April 21, 2008, as reported in their Groundwater Monitoring and Sampling Report dated May 28, 2008 (see Appendix E Additional Documentation). The Gettler-Ryan report contains monitoring and sampling data from January 3, 2001 through April 21, 2008. Figure 1 in the Gettler-Ryan report also shows the historic location of the former USTs, dispensers and service building associated with the former Chevron service station. The current operator of Stauder Automotive remembers the former Chevron Station and believes the former used oil UST was located at the south end of the former "Garage and Service Building." Figure 3, Site Plan, shows the location of the Chevron station monitor wells relative to the subject property, the former gasoline station features from Figure 1 of the Gettler-Ryan report, and the anecdotal account of where the former used oil UST was located.

As recorded on Table 1 of the Gettler-Ryan report, well MW-1 has varied in depth to water from 7.11 to 13.72 feet below grade or from an elevation of 189.8 to 183.19 feet. In well MW-1, TPH as gasoline concentrations have varied from non-detect to 1,700 ug/l. In well MW-2, TPH as gasoline concentrations have varied from non-detect to 4,200 ug/l. No floating petroleum product has been observed in the wells. Exploratory borings HB-3 and HB-4 located in the vicinity of wells GR-MW1 and GR-MW2 revealed high concentrations of TPH as gasoline in grab water samples of 13,000 and 14,000 ug/l. The rose diagram is copied from the Conestoga-Rovers & Associates report dated December 30, 2008, showing the historical groundwater flow direction measured from 2001 through 2008.



Historical Groundwater Flow Direction
2001 through 2008
based on data acquired from joint
monitoring with Former Sheaff's Garage

The Gettler-Ryan monitoring also includes results for the groundwater analysis of ferrous iron, total alkalinity, sulfate, dissolved oxygen and ORP as shown in the following table.

Well ID	*Date*	*Ferrous Iron ppm*	*Tot. Alkalinity ppm*	*Sulfate SO4 ppm*	*D.O. Mg/L*	*ORP mV*
MW-1	04/25/2001	0.15	380	11	--	--
	07/09/2001	<0.050	410	6.8	1.25	111
	10/08/2001	--	414	5.4	1.20	64
	01/13/2002	<0.10	390	10	--	--
MW-2	04/25/2001	0.093	680	21	--	--
	07/09/2001	0.44	600	9.3	1.89	16
	10/08/2001	--	683	3.8	1.04	58
	01/13/2002	<0.10	630	7.0	--	--

D.O. = Dissolved Oxygen Concentration; mg/L = milligrams per liter; ORP = Oxygen Reduction Potential; mV = millivolt; -- = not measured

EPA Method SM 3500 Fe for Ferrous Iron, EPA Method 310.1 for Total Alkalinity, EPA Method 300.0 for Sulfate as SO4

In their letter dated September 11, 2008, the ACHCSA directed Chevron Environmental Management, College Square Associates and San Francisco Property Mgmt. to perform additional site characterization and submit a Site Conceptual Model with Preferential Pathway Study by December 30, 2008. The ACHCSA letter also discloses that investigation in September 1999 did not include soil sampling, but grab groundwater sampling detected 190,000 ppb of TPH as gasoline, 3,500 ppb benzene and 1,100 ppb MTBE down-gradient of the source area. According to the ACHCSA, the horizontal extent of contamination beneath the former Chevron service station is undefined. Conestoga-Rovers & Associates submitted their Work Plan for Additional Site Assessment dated December 30, 2008, proposing to drill and sample three additional soil borings to verify that a source area is present.

Unocal / 76 Service Station #0018, 6201 Claremont Avenue

An active gasoline station at 6201 Claremont Avenue is located at the intersection of Claremont Avenue and College Avenue approximately 600 feet north of the Site. The Unocal station is located on the north side of this intersection while a Shell station is located on the south side of the intersection at 6039 College Avenue. An active gas station has operated at this location since before 1956. TRC submitted a *Sensitive Receptor Survey* dated April 24, 2006, for the 76 Service Station (care of ConocoPhillips). TRC concludes that no current or potential receptors are located within one-half mile of the 76 Service Station. Residual petroleum contamination is relatively low and in 2006 a request for case closure was submitted to the ACHCSA.

Delta Consultants, Inc. (Delta) on behalf of Conoco Phillips Company submitted a Site Conceptual Model to the ACHCSA on September 15, 2008. The Site Conceptual Model reveals the following information. Boring logs indicate a layered sequence of silty sand, silt with sand and silty gravel with sand from two feet to 30 feet below grade. Groundwater typically occurs at a depth of about 16 to 23 feet with a seasonal fluctuation of 5 to 7 feet annually between summer and winter. Because the depth to groundwater averages 20 feet bsg and below the depth of utility trenches, Delta concluded that a survey of utility trenches was not necessary. Vertical migration of dissolved contaminants is hindered by generally fine-grained soil types.

The accompanying figure is copied from the Delta Consultants Site Conceptual Model. This rose diagram depicts the southwest groundwater flow direction at the Unocal station. According to the Site Conceptual Model, the groundwater flow direction has consistently been to the southwest (between west and south-southwest) with a gradient of approximately 0.01 feet/foot. Delta estimates the groundwater velocity as a silt/silty sand at approximately 3.4 feet per year. According to Delta, the typical flow rate for dissolved petroleum hydrocarbons is

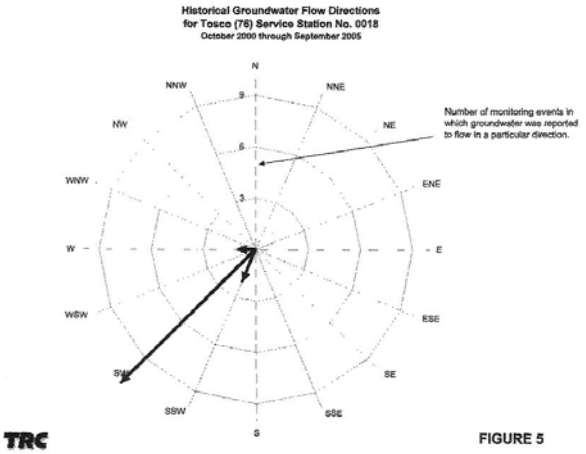


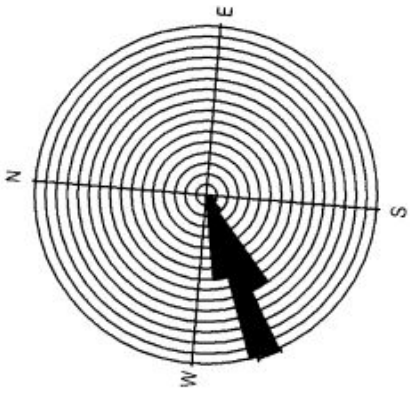
FIGURE 5

significantly slower than the groundwater due to physical and chemical interactions with the soil matrix and biological processes. In their report, Delta identified data gaps concerning the down-gradient distribution of residual petroleum contamination and Delta proposed additional investigation activities.

Shell Service Station, 6039 College Avenue

Shell service station #13-5685 is located at 6039 College Avenue on the south side of the intersection of College Avenue and Claremont Avenue. The station has been in continuous operation since 1940. Investigation and remediation activities have been underway at this property since 1990 and seven monitoring wells were installed. Separate-phase / dissolved phase hydrocarbon removal began in 1999. Cambria performed a potential receptor survey in 1998 that identified three surface water bodies and one potential receptor within the one-half mile of the station. Cambria concluded that due to their distance and up-/cross-gradient locations, the receptors would not be impacted. Cambria in their 2001 Site Conceptual Model concluded there was a potential for contaminant migration in existing horizontal utility trenches.

As reported in the Cambria report titled Subsurface Investigation Report and Second Quarter 2006 Groundwater Monitoring Report dated August 11, 2006, the soils beneath the Shell station consist of clayey gravel, clay, clayey sand and clayey gravel with sand to approximately 30 feet below grade, underlain by clayey gravel with sand and silty clay to 36 feet below grade. The most recently installed well is MW-7 that was installed in May 2006 and screened from 25-35 feet below grade. First encountered groundwater in well MW-7 was at a depth of about 23 feet with subsequent static groundwater level at 10 feet bsg. Groundwater flow direction is consistently to the west-southwest. Groundwater monitoring is ongoing at this site. Conestoga-Rovers & Associates (CRA) / Blaine Tech Services, Inc. performed groundwater sampling and monitoring on August 5, 2008. The groundwater flow direction was southwesterly at 0.016 ft/ft with a depth to water of 13.55 to 16.93 feet below top of casing. Benzene and MTBE were detected at a maximum concentration in well MW-3 at 41 and 71 µg/L respectively. Wells ranged from 63.8 to 64.6 degrees F with a conductivity (µS) of 464 to 536. In well MW-1, depth to water has ranged seasonally from about 12 to 18 feet below grade. The accompanying rose diagram was copied from the Site Plan in the Cambria document showing the consistent groundwater flow direction measured at the Shell station.



Groundwater Flow Direction
(3Q96 through 2Q06)

In their 1996 Corrective Action Plan (CAP), Weiss Associates advocated for natural attenuation as the preferred remedial alternative for the BTEX and MTBE groundwater contamination. In general, this case is described as having decreasing benzene concentrations with time. Weiss Associates concluded that soil vapor extraction and ground water extraction will not remove significant hydrocarbon mass and would not provide significant plume containment. In the CAP, ASTM Tier 2 Site-Specific Target Levels (SSTLs) were provided in Table 2 for benzene as follows: Volatilization

to Outdoor Air – 53.4 mg/L (RBSL); Vapor Intrusion from Ground Water to Buildings – 5.2 mg/L; and Ingestion – 0.029 mg/L (RBSL).

Dreyers Grand Ice Cream, 5929 College Avenue

A gasoline service station was formerly located at 5929 College Avenue on the northwest corner of College Avenue and Chabot Road. A commercial building and parking lot occupied by the headquarters of Dryers Grand Ice Cream is now located at this corner. The gasoline station operated from 1932 to at least 1952. Seven USTs were removed from this property in December 1989 apparently during development of the Dreyer's Grand Ice Cream, Inc. corporate office building and parking lot. The CET Environmental Services report dated August 3, 1999, shows the location of the former waste oil and fuel USTs near the corner of College Avenue and Chabot Road across the street and cross-gradient from the subject property. An obvious petroleum contamination problem was discovered during the UST removal. Following the UST removal, contaminated soil was over-excavated from the former UST cavities. Apparently, excavation also occurred during the site grading activities. The groundwater is impacted and the extent of groundwater contamination is under investigation. Groundwater flow direction is reported as west-southwest.

During June 1999, CET Environmental Services drilled 10 GeoProbe borings and collected grab groundwater samples along Chabot Road. The depth to groundwater in well MW1 along Chabot Road varied from a low of 16.16 feet in December 1991 to a high of 7.85 feet in January 1993. Depth to water in down-gradient well MW5 varied from 5.1 feet in March 1995 to 11.22 feet in January 1994. The CET Environmental Services report shows six groundwater monitoring wells located near the intersection of Chabot Road between College and Claremont Avenues. Three wells were installed in 1991 and three wells installed in 1993. Native alluvial soils consisted of silty to sandy clay from surface to 10 feet and sandy-gravelly clay to clayey sand to 30 feet. Well MW-2 has varied in TPH as gasoline concentrations from 91,000 µg/L in 1994 to 21,000 µg/L in 1999.

Based on the results of the 1999 groundwater sampling, CET proposed in their 1999 work plan to install two additional groundwater monitor wells, collect bioindicator parameters from wells MW1 and MW3 to support natural attenuation, and perform risk assessments for soil vapor intrusion and groundwater. No additional documentation was available following the 1999 work plan. In their letter dated July 3, 2008, the ACHCSA requested the submittal of all analytical data including monitoring well samples be transmitted to the SWRCB GeoTracker system and monitoring wells be surveyed to current standards.

SITE CONCEPTUAL MODEL

The development of a site specific conceptual model is a critical component in risk-informed cleanup. A conceptual model is made up of a series of hypotheses that guide characterization. A conceptual model is the integration of site information and interpretations generally including facets pertaining to the physical, chemical, transport, and receptor characteristics present at a specific site. A well defined conceptual model of a site contains sufficient information to: (1) identify sources of the contamination, (2) determine the nature and extent of the contamination (3) identify the dominant fate and transport characteristics of the site, (4) specify potential exposure pathways, and (5) identify potential receptors that may be impacted by the contamination. Regional and local shared historical

data can be used to develop a conceptual model hypothesis, particularly with regard to the fate and transport characteristics. The conceptual model will also be used to identify the critical decision-making parameters for which data needs to be gathered and the uncertainty associated with these parameters. The certainty with which the conceptual model is validated will guide the determination as to when sufficient characterization has been performed, e.g., when the uncertainty associated with key decision making parameters is tolerable.

Results of Site Characterization

Regional Geologic Conditions

Geologic information for the Site is provided in the "Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California, 2000, by R.W. Graymer, U.S. Geological Survey Misc. Field Studies MF-2342. See Figure 4, *Geologic Map*, for a portion of this geologic map showing the Site and immediate vicinity. Quaternary geologic information for the region of the Site is provided in the document titled *Quaternary Geology of Alameda County and Surrounding Areas: Derived from the Digital Database, Open File 97-97* by the U.S. Geological Survey (USGS). Both maps contain similar information on the Quaternary geology of this area. According to these documents, the Site is located less than one mile west of the Hayward fault zone. The area of the Site is on a broad sloping alluvial plain along the margin of San Francisco Bay. Franciscan Complex bedrock of ancient Cretaceous-Jurassic age (shown as ***KJfs, Kfgm, Kfn*** and ***KJfm*** on the map) is exposed less than one-half mile east of the Site. The bedrock consists of mélange (sheared rock), sandstone, greenstone, serpentenite, and quartz diorite. The depth of the Franciscan Complex bedrock below the site has not been evaluated. However, the map suggests that bedrock may be less than 100 feet deep in this area. The bedrock is not believed to contain significant groundwater resources.

Figure 4 indicates the Site is located near the eastern margin of Holocene-age alluvial fan and fluvial deposits shown as ***Qhaf*** on the map. The alluvial fan deposits are described on the map as brown or tan, medium dense to dense, gravely sand or sandy gravel that generally grades upward to sandy or silty clay. Near the distal fan edges, the fluvial deposits are typically brown, never reddish, medium dense sand that fines upward to sandy or silty clay. Underlying the most recent alluvial fan and basin deposits are older materials called Pleistocene alluvial fan and fluvial deposits (shown as ***Qpaf*** on the map). The older Pleistocene alluvial fan deposits are described on the map as brown dense gravely and clayey sand or clayey gravel that fines upward to sandy clay. All Pleistocene alluvial fan deposits can be related to modern stream courses. They are distinguished from younger alluvial fans and fluvial deposits by higher topographic position, greater degree of dissection, and stronger soil profile development. They are less permeable than Holocene deposits. They are overlain by Holocene deposits on lower parts of the alluvial plain, and incised by channels that are partly filled with Holocene alluvium on higher parts of the alluvial plain. Subsurface investigations at the nearby Unocal and Shell service stations report weakly consolidated, poorly sorted, irregularly inter-bedded clay, silt, sand and gravel to a depth of 36 feet below grade.

Local Site Conditions

Native subsurface soil encountered at the Site consists of clayey silt, silty clay and fine-grained sand with lenses of coarser-grained sand with gravel. Soil in the direct vicinity of the former UST cavity, as described in B21 to B23, was moderate to dark yellowish brown intermixed lenses of silty clay and

clayey silt with sand to a total explored sample depth of 25 fbg. Boring B15 in the southeastern corner of the Site encountered silty fine-grained sand to a depth of 10 feet. As described in the previously reported Particle Size Distribution and Moisture-Density-porosity Reports, soil in boring B8 at 17 fbg was described as a olive gray clay w/ sand containing 57.9 % silt, 27.3% clay & 14.8% sand with a porosity of 38.6%, moisture content of 22.8%, and density of 106 pounds per cubic foot (pcf). Soil in boring B9 at 7 fbg was described as brown clayey sand w/ trace gravel containing 47.3% sand with trace gravel, 39.5% porosity, 19% moisture, and approximately density of 102 pounds per cubic foot. The soil sample collected in B11 at the north side of site at 19 fbg was described as a brown clayey sand w/gravel containing 25.5% silt, 22.9% clay, and 34.8% sand with 43% porosity, 21.9% moisture content, and an approximate density of 97 pounds per cubic foot. These materials appear consistent with young Pleistocene/Holocene-age alluvial fan-fluvial deposits as described on the geologic map.

Regional Groundwater Setting

The regional groundwater flow in the vicinity of the Site is assumed to be towards the west-southwest in the direction of the San Francisco Bay and following the natural topographic relief of the area. The regional groundwater flow direction of west-southwest is consistently observed at the nearby Shell and Unocal gasoline stations at the corner of Claremont and College Avenues. The Site is in the East Bay Plain Groundwater Basin and groundwater in this basin is designated beneficial for municipal and domestic water supply and industrial process, service water, and agricultural water supply. No municipal water supply wells are known within one-half mile of the Site. The nearest surface water body is Harwood Branch (aka Claremont Creek) that is the northernmost tributary of Temescal Creek and Temescal Creek Watershed. Reportedly, Harwood Branch historically flowed in a stream channel now occupied by Chabot Road south of the Site.

As shown on Figure 5, *Regional Map of Creeks and Conduits*, Harwood Branch flows via underground culvert and an open surface channel in the vicinity of the Site. Harwood creek flows in an overall westerly direction. Harwood Branch joins Temescal Creek about ½ mile south of the Site then flows to an outfall on San Francisco Bay at the Emeryville crescent. From the Site to Emeryville, the creek is now contained with an underground conduit. Harwood creek is briefly exposed in residential backyards to the southeast and uphill of the Site. Figure 6, *Local Map of Storm Conduits*, shows a detail map of the Harwood Branch drainage system. To the east of the Site, Harwood Branch briefly flows within an open stream channel through residential backyards. To the south along Chabot Avenue, Harwood Branch goes underground within a large box culvert. In winter, storm water flow from Harwood Branch is diverted into the Alameda County Flood Control District 90" RCP cutoff conduit within College Avenue. The two drainage systems join at the intersection of College and Chabot Avenues to the south of the Site. Flow lines in conduits at this intersection are listed on the map with elevations of about 180 feet or 15 feet below the general elevation of the Site.

Berkeley Groundwater Management Zone

The Site lies within the East Bay Plain Groundwater Basin according to the Water Quality Control Plan prepared by the California Regional Water Quality Control Board (CRWQCB, 1995). The main regional water bearing unit consists of Pleistocene alluvial deposits. The Site is within the proposed Zone B - Berkeley/Albany Groundwater Management Zone and/or Emeryville Brownfields Groundwater Management Zone where groundwater is unlikely to be used as a drinking water

resource and the basin depth is less than 300 feet. Groundwater extraction for municipal drinking water supply is unlikely due to the relatively thin aquifer (ranging from 10 to 300 feet thick and averaging 100-200 feet thick) and limited groundwater recharge. No historic municipal groundwater well fields (circa 1890-1930) are known for the Berkeley sub-area. No historical evidence indicates that groundwater supplies are sufficient for municipal use. The CRWQCB indicates the aquifer is suitable for limited single-family/individual users and historical backyard wells may have been common in Berkeley prior to 1930 (CRWQCB, 1999). Inspection of historic Sanborn fire insurance maps indicates that the Site was a vacant lot until 1952.

Beneficial uses of groundwater in this zone are considered to be limited due to low yield and high probability of low levels of non-point source contamination from the area's long industrial use history. Shallow groundwater contamination is pervasive due to a multiplicity of commercial properties located along College Avenue and there are known chemicals and pathogens in the shallow groundwater in this area. In this area of Zone B, groundwater is unlikely to be used as a drinking water resource and groundwater is not a recharge zone where deeper aquifers are fed by percolation.

In 1999, the CRWQCB proposed risk based corrective action in establishing groundwater cleanup standards in Zone B and using passive remediation to restore beneficial uses as a long-term goal. Zone B is where other, non-drinking water, exposure pathways are more likely to "drive" remediation. Groundwater pollutant sites would be regulated pursuant to SWRCB Resolution 92-49 and need to demonstrate 1) that reasonably adequate source removal has occurred, 2) the plume has been reasonably defined both laterally and vertically, and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health (e.g., from volatilization into trenches and buildings). Remedial strategies should be focused on actively protecting existing domestic irrigation and industrial uses and potential aquatic receptors rather than as a municipal drinking water supply. Achievement of drinking water objectives within a reasonable time period is an appropriate long-term goal (CRWQCB, 1999).

Local Groundwater Conditions

Groundwater at the Site is generally characterized by dissolved oxygen concentrations between about 2.3% in well MW1 and 4.6% in well MW3. Historical groundwater flow directions and gradients have shown large variability at this Site. GGTR re-calculated groundwater flow direction and gradient for historical monitoring events from 2005 through 2008 using data for three monitoring points: MW-1, MW-3 and PW-1. The groundwater elevation data for each monitoring event was entered into the EPA On-Line Tools for Site Assessment Calculation – Hydraulic Gradient. This tool calculates gradient by a least-squares fitting of the data to a plane. The resulting flow direction and gradient values are summarized on Figure 10 – *Map of TPH Gasoline in Groundwater 2008*. As shown on the rose diagram of Figure 10, many of the groundwater flow directions show a westerly flow in the direction of the regional topography similar to flow directions reported at the nearby Shell, Unocal, Chevron and Dreyers Grand Ice Cream properties. Other measurements, particularly during winter months, show a southerly flow. As discussed further below, the monitor well MW-3 appears to have erroneous monitoring data due to its close proximity to the utility conduits in College Avenue and the southward flow directions are believed to result from the skewed data during winter months.

Groundwater elevations at the Site show large seasonal variations. In well MW-1, the depth to water has historically varied from a maximum of 3.08 feet in wet weather conditions (April 2006) to a minimum of 11.63 feet in dry weather conditions (October 2008). The lowest groundwater elevations measured at the Site are approximately 184 feet (12 feet bsg) near the invert elevation of storm conduits in College Avenue. We surmise that groundwater flow at the Site is significantly influenced by the subsurface utility corridors along College Avenue with inverts of at least 12 feet below grade (see Figure 7, *Subsurface Utility Map*). Reportedly, the 90-inch storm water cutoff conduit was constructed circa 1995 to alleviate seasonal flooding of the Site's neighborhood. The 90-inch conduit trench was backfilled with cement slurry and compacted fill creating a groundwater hydraulic barrier along the centerline of College Avenue.

The chart titled *Groundwater Elevation in Monitoring Wells* depicts groundwater elevation plotted by date for the four monitor points at the Site from 2001 through 2008. The data shows a seasonal variation in groundwater elevation with highest elevations around March-April (rainy season). The variable water table indicates the shallow aquifer is unconfined. The charts titled *Seasonal Groundwater Elevation by Distance from Well MW-3 in College Avenue* for years 2006 and 2008 show a greater range in seasonal groundwater elevation with distance from College Avenue. Well MW-3 along College Avenue also shows the least variation in seasonal groundwater elevation at about two feet seasonal rise. While PW-1 located about 120 feet from College Avenue shows a seasonal rise of about four feet. Mounding of water is suggested by the higher water elevations shown in the vicinity of wells MW-1 and MW-2 where exfiltration of leaking water-sanitary lines is likely. This chart also illustrates the significant difference in gradient between summer and winter conditions mainly attributed to the lower rise in groundwater elevation at well MW-3. During winter months, the data at well MW-3 suggest a rise in water level within the utility corridor (from storm water) and drainage of the local water table into the utility corridor along College Avenue.

The chart titled *Groundwater Flow Direction vs. Elevation in Piezometer PW-1* shows historic groundwater elevations for piezometer PW-1 compared to historic groundwater flow direction (in degrees). The chart shows a correlation between flow direction and groundwater elevation. The invert of utility lines along College Avenue is estimated at least 12 feet below surface grade or at 183 feet in elevation. During summer months when groundwater elevations are lowest, the groundwater flow direction is mainly towards the west in the regional flow direction. In winter months when groundwater elevations are the highest, the groundwater flow direction is mainly towards the south. In general, we believe that during summer months when the groundwater elevation is low, the flow direction is westerly in the direction of regional topography. During winter months when groundwater elevations are high, well MW-3 is most influenced by drainage along the College Avenue utility corridor. In well MW-3, the rise in groundwater elevation during the winter months is suppressed by drainage into the utility corridor skewing the groundwater direction calculations towards the south. Based on a comparison with the nearby Shell, Unocal, Chevron and Dreyer's Grand Ice Cream studies, a west-southwest flow direction is most appropriate as a flow direction for the Site.

Sensitive Receptor Survey

The results of the sensitive receptor survey are summarized on Figure 1, Site Location Map. Only two irrigation wells and three monitoring wells were located as result of the well survey at the Department of Water Resources (DWR). The two irrigation wells exist at the Claremont Resort and

Tennis Club located approximately 0.75 mile northeast of the subject property, at the intersection of Claremont and Ashby Avenues in Oakland, California. One of the three monitoring wells exists at the Chevron Service Station at 3048 Ashby Avenue (southwest corner of intersection of Ashby & Domingo Avenues), approximately 0.75 mile northeast of the Site. It appears that three additional monitor wells currently exist on this property, although no well driller reports were provided. The two other monitor wells exist at the Arco Service Station at 6407 Telegraph Avenue, located approximately 0.5 mile west-northwest of the Site at the intersection of Alcatraz and Telegraph Avenues. The three above reported monitor wells are located regionally up- and lateral gradient of the Site. Because of their distance from the subject property impacted groundwater, the reported irrigation and monitor wells will not act as potential receptors or vertical conduits for continued contaminant migration.

GGTR also researched the GeoTracker and ACEH databases to further survey the location of groundwater wells within a 0.25-mile radius of the Site. The databases indicate that four active LUST cases with groundwater monitor wells exist within the search radius as shown on Figure 1. Six groundwater monitoring wells are located at the Dreyer's Ice Cream location about ½ block south of the Site. Multiple groundwater monitor wells are located one block north of the Site at the intersection of College and Claremont Avenues associated with Shell and Unocal 76 gasoline stations with LUST cases. The groundwater plume from the Site does not appear to impacting the Dreyer's Grand Ice Cream, Shell or Unocal properties. Two groundwater monitor wells are located in the sidewalk of College Avenue associated with the former Chevron station adjacent to the Site on the north. The closest wells are located adjacent to the Site at the former Chevron station. Available data suggests that a residual groundwater plume from the former Chevron station may be comingling with the subject groundwater plume along College Avenue.

Topographic maps show the nearest school to be the Claremont Junior High School located about 600 feet south of the site. Although he school is seasonally down-gradient of the Site, the school is located across Harwood Creek and it is unlikely that contaminants from the Site's groundwater plume could impact the school location. The nearest surface water is backyard exposures of Harwood Creek located about 200 feet southeast of the site near Chabot Avenue. Harwood Creek is contained within an underground conduit about 200 feet south of the Site. Because of the distance from the site and up-gradient location, it is unlikely that the open channel of Harwood Creek has been impacted by conditions at the subject property.

Underground Conduit Study

The approximate locations of the pertinent subsurface utilities are shown in Figure 7, *Subsurface Utility Map*. The utility survey indicates the following subsurface utility features exist along College Avenue flowing southward and extending between and beyond Harwood and Chabot Avenues: 1) an 18-inch-diameter utility storm water line with invert flow depth of approximately 12 fbg located 12 to 14 feet west of the former UST cavity; 2) an 8 to 12 inch-diameter sanitary sewer line with invert flow depth of approximately 12 fbg located 15 feet west of the former UST cavity; 3) a 90-inch-diameter storm water cutoff RCP conduit (Alameda County Flood Control) with invert depth of approximately 12 fbg (possibly deeper) located approximately 22 to 23 feet west of the former UST cavity, and 4) an 8-inch diameter sanitary sewer line with invert depth approximately 10 fbg and located approximately 38 to 40 feet west of the former UST cavity. Although not shown on the City map, a sanitary sewer lateral, located at the southwest corner of the property, flows west and connects

to the associated sanitary main closest to the Site. The 90-inch RCP conduit was installed CIRCA 1995

The EBMUD map confirms that the following subsurface water utility corridors exist along College Avenue, flowing southward and extending between and beyond Harwood and Chabot Avenues, in Oakland California: 1) a 16-inch-diameter, steel and mortar water utility main located approximately 5 feet west of the former UST cavity and 2) a 16.5-inch-diameter, steel and mortar water utility main located approximately 35 feet west of the former UST cavity. The invert depth for both utility mains were not provided but are approximated to be between 4 and 6 fbg. The map also indicates that a lateral utility pipeline extends westward from the southwest corner of the property (restroom location) to the closest utility main. The diameter, invert depth, and construction material of the lateral pipeline are not provided on the map; however, the invert depth at both ends are most likely between 1.5 and 5 fbg The pipe does appear to extend adjacent to the southern portion of the former UST cavity. Information provided by the Sanborn Insurance Maps for the subject and vicinity properties, suggests that historical public utility mains (16-inch diameter) have been located beneath the College Avenue frontage of the property since at least 1911. The more recent available maps dated between 1950 and 1967 show that these utility mains are most likely those that are existing today, although upgrading or replacement of the utility lines may have occurred since. Utility corridor gradient and fluid flow is presumed to be towards the south-southwest.

Based on the information provided by the subsurface utility corridor survey and on the historical fluctuation of the shallow water table at the Site (about 2 to 12 fbg), it appears that the sanitary, storm water, and water utilities located west of the subject property along College Avenue occur at the approximate lower vertical limit of the historical water table fluctuation and potentially act as a pathway for on- and/or off-site migration of groundwater and contaminant hydrocarbons.

Nature & Extent of Contamination

Contaminants of Potential Concern

The contaminants of potential concern at this Site consist of TPH as gasoline and other associated gasoline constituents that remain in groundwater at the former UST location. Tables in Appendix C show the historical results for the laboratory analyses of soil and groundwater samples. The chart in Appendix D titled *Historical TPH Gasoline in Groundwater* shows historical concentrations of TPH as gasoline plotted by date from June 1998 through October 2008. The chart titled *Historical Benzene in Groundwater* shows historical concentrations of benzene plotted by time from June 1998 through October 2008 for all four monitoring points. Trend lines through the data for each monitoring point have been added to the data on these charts. The trend lines indicate that gasoline and benzene (as well as other gasoline constituents) are decreasing in concentration. For well MW-1, the data indicate that overall TPH as gasoline concentrations have decreased substantially from a high of 290,000 µg/l in September 1998 to a low of 15,000 µg/l in October 2008.

A secondary contaminant of potential concern at this Site is PCE in groundwater at the location of well PW-1. Fluctuating and relatively low concentrations of Gasoline constituents as well as Tetrachloroethene (PCE) occur in the groundwater in the vicinity of piezometer PW-1. Groundwater sampling of PW-1 from April 2005 through October 2008 revealed PCE concentrations ranging from

25 to 95 µg/l. TCE and cis-1,2-DCE concentration have also been detected suggesting that degradation of PCE may be occurring. TCE concentrations during the sampling period have ranged from non-detect to 6.2 µg/l. Concentrations of cis-1,2-DCE have ranged from 2.8 to 58 µg/l and appear to have increased while PCE has decreased with time. A trace of Vinyl Chloride was detected in the October 2008 sampling at 0.6 µg/l. Monitoring wells down-gradient of PW-1 including MW-2 and MW-1 did not detect PCE, TCE or cis-1,2-DCE between February 2004 and April 2008.

Origin of Contamination

The main source of gasoline contamination is the former onsite underground storage tanks (UST). Soil sampling results indicate that significant residual petroleum mass remains in the groundwater interface zone (smear zone) surrounding the former location of the USTs adjacent to utility lines and the building foundation. The extent of this residual soil contamination was removed to the extent feasible during over-excavation activities in 1996. Based on the findings of the dispenser-subsurface product pipeline removal / sampling activities, shallow surface soil directly beneath the piping run and associated fuel dispenser has not been affected by gasoline-range hydrocarbons. The product piping to the dispenser was found in good condition and subsequently removed and does not appear to be a potential or contributing source of the elevated gasoline hydrocarbons present in the groundwater at the Site.

Shallow groundwater is unconfined at the Site and elevations vary for example in well MW-1 from 184.27 feet (11.63 feet bsg) to 192.82 feet (3.08 feet bsg) depending on seasonal rainfall. The invert elevation of the utility corridor is estimated at about 183 feet or lower. The groundwater elevation fluctuates over a known interval of 8.55 feet at the Site producing a smear zone of petroleum soil contamination within the groundwater interface zone. Entrapped petroleum contamination (TPH gasoline at 100-2800 mg/Kg) is located in the vicinity of the former USTs at depths of 9-17 feet below grade based on the laboratory analysis of soil samples. The lower limit of the smear zone is represented by the soil sample at 17 feet in boring B23 with 910 ppm TPH as gasoline while the deeper 19.5 foot sample had an insignificant concentration of TPH as gasoline. We postulate that historic groundwater elevations prior to 2001 (when monitoring began) may have dropped to as low as 17 feet below grade in past summer months.

Monitoring wells located uphill on College Avenue contain petroleum contamination and an additional contribution of residual petroleum groundwater contamination may be impacting the Site from the adjacent former Chevron station and/or utility corridors in College Avenue. At this time, the source of PCE contamination in the groundwater of PW-1 is unknown but unrelated to the former USTs. Potential sources of PCE contamination of groundwater include the storm drain within the rear courtyard of the Site, the former parts cleaner-sink at the rear southwest corner of the building, and the suspected former location of the used oil UST at the former adjacent Chevron service station (see Figure 3, Site Plan).

Extent of Soil Contamination

Based on the laboratory analytical results of soil samples collected in the soil borings and beneath the product piping / dispenser; only low concentrations of residual gasoline-range hydrocarbons are present in the soil within the vadose zone (upper 3 feet) or upper interface zone (3-8 feet deep). No additional investigation or remedial action appears needed to address Site soils less than 8 feet below

grade. Figure 12, Cross Section A-A', shows the estimated distribution of residual petroleum mass within the groundwater saturated-interface (smear) zone in the vicinity of the former USTs.

One soil sample (B21-8.5) analysis for total chromium was reported at a concentration of 74 ppm above the ESL screening level but within the range of Bay Area background chromium concentrations. A total of six soil samples have been analyzed at the Site for total chromium with concentrations of 49, 34, 38, 74, 43 and 47 ppm. The mean total chromium concentration for these six samples is 47.5 ppm below the ESL of 58 ppm.

At this time no documented soil contamination by PCE is known at the Site above regulatory screening levels. Additional soil sampling is proposed in the document to address the potential sources of PCE contamination within the rear courtyard at the Site.

Extent of Groundwater Contamination

The idealized conceptual model of a dissolved fuel hydrocarbon groundwater plume consists of two essential elements. The first element is the residual hydrocarbon material that provides mass to the dissolved hydrocarbon plume. The residual hydrocarbons can be characterized by light non-aqueous phase liquids (LNAPL) either as small free-product lenses floating on the capillary fringe, or as discrete ganglia entrapped within the vadose zone and/or below the seasonal fluctuation of the water table in a smear zone. The second element is the dissolved plume extending down-gradient of the residual hydrocarbon area which is affected by advective and dispersive transport, retardation, and passive biodegradation. Natural attenuation processes, particularly passive biodegradation, may limit the down-gradient migration of the dissolved plume. The interplay of the two elements leads to the concept of a steady-state plume existing under dynamic equilibrium conditions, where the mass influx of dissolved contaminants from residual entrapped product is balanced by mass loss via passive biodegradation.

While sheen is observed in purge water during groundwater sampling, no free floating product has been observed at the Site. Elevated concentrations of gasoline-range hydrocarbons were detected in the groundwater within the western half of the subject property and extending into the utility corridor beneath College Avenue. TPH as gasoline concentrations in groundwater to the south of the former USTs is constrained by exploratory boring HB-6 with a grab water sample concentration of 45 ug/L. Historical TPH as gasoline is plotted versus sampling date in the chart titled *Historical TPH Gasoline in Groundwater* (see chart in Appendix D). Historical benzene concentrations are plotted versus sampling date in the chart titled *Historical Benzene in Groundwater* (charts in Appendix D). The charts indicate that petroleum hydrocarbon concentrations are steadily decreasing reflecting the stable / declining groundwater plume at the Site. The decline in concentrations can be attributed to the significant source removal actions undertaken at the Site and ongoing natural attenuation processes.

Based on our understanding of the direction of groundwater flow (west-southwest) and invert depth of the utility conduits along College Avenue (12-15' bsg), the leading edge of the groundwater plume has been captured since at least 1995 by the utility corridor along College Avenue where a hydraulic barrier was created by construction of the 90-inch RCP cutoff conduit. Groundwater elevation data indicate the utility corridor is draining the water table during winter months. During summer months the utility corridor may be forming an artificial base level to the water table. We believe that

petroleum contamination is significantly entrapped against the east side of the utility corridor and during winter months groundwater from the Site mixes within a zone of storm water exfiltration in the utility corridor. Because the 90-inch RCP cutoff conduit is encased in cement slurry with compacted fill above, it is unlikely that groundwater from the Site's vicinity enters the cutoff conduit directly. The gradual decreasing trend lines shown on charts of gasoline concentrations versus time do not indicate a rapid removal of residual petroleum from the Site's subsurface that would pollute conduits or downstream resources. Instead a gradual attenuation similar to natural degradation is suggested by the charts. We believe it is unlikely that sheen or significant concentrations of gasoline from the Site could be detected in storm water or effluent within the conduits along College Avenue.

The chart titled *Groundwater Elevation versus Gasoline in Well MW-1* shows historic TPH as gasoline concentrations compared to groundwater elevation in well MW-1. In general, there is a correlation shown between higher gasoline concentrations and higher groundwater elevations on a seasonal basis. This is commonly explained by groundwater encountering entrapped contaminant within a smear zone during seasonal episodes of rising groundwater. Note that both groundwater elevation and gasoline concentrations show decreasing trend lines from 2001 through 2008. While the decrease in gasoline concentrations may be explained by lower groundwater elevations, the trend line for gasoline is decreasing at a steeper rate suggesting that natural degradation of the gasoline plume is also occurring at well MW-1.

The chart titled *Conductivity / Temperature in Wells April 14, 2006* shows conductivity and temperature measurements for all four monitoring points plotted as distance from College Avenue (MW-3). This chart shows winter-spring or wet weather conditions with the coldest groundwater temperatures and lowest conductivity in piezometer PW-1 about 120 feet from College Avenue (suggesting native groundwater conditions). Groundwater temperature significantly increases underneath the subject building at well MW-2 indicating a zone of water exfiltration from leaking sewer laterals and/or water pipes. Groundwater temperatures decrease at well MW-3 in winter months adjacent to the utility conduits in College Avenue suggesting exfiltration of cold surface storm water from the utility corridor. The chart titled *Conductivity / Temperature in Wells October 21, 2008* shows conductivity and temperature measurements for all four monitoring points plotted as distance from College Avenue (MW-3). This chart shows summer-fall or dry weather conditions with the coldest groundwater temperatures and lowest conductivity in piezometer PW-1 about 120 feet from College Avenue (again suggesting native groundwater conditions). Groundwater temperature significantly increases underneath the subject building at well MW-2 and sidewalk at MW-1 indicating a zone of water exfiltration from leaking sewer laterals and/or water pipes. In summer months, groundwater temperatures do not significantly decrease at well MW-3 adjacent to the utility corridor suggesting little exfiltration of surface storm water from the utility corridor during summer months.

Tetrachloroethene (PCE) occurs in the groundwater in the vicinity of piezometer PW-1. Based on the west-southwesterly groundwater flow across the Site and the location of PW-1 situated up-gradient of the other monitoring wells, PCE and its associated daughter products appear to be naturally degrading before reaching monitoring wells MW-1, MW-2 and MW-3 where no PCE or daughter products have historically been detected.

Natural Attenuation of TPH and PCE

As shown on the charts in Appendix D, source area wells MW-3 and MW-1 display decreasing trend lines of TPH as gasoline and Benzene concentrations attributed to natural degradation processes. Wells closest to the source area display the highest decrease in concentrations with up-gradient wells MW-2 and PW-1 showing lower fluctuating concentrations with time. It appears that source area removal has reduced TPH concentrations significantly within the source area of the groundwater plume. The Site appears to have favorable conditions for the degradation-attenuation of a groundwater plume. The regional groundwater is known to be anoxic with high iron and manganese conducive to reductive dechlorination of PCE. Low permeability underlying soil conditions reduce contaminant migration below ten feet. Exfiltration from sewer laterals along College Avenue with aerobic conditions facilitates the removal of petroleum hydrocarbons through natural degradation. The leading edge of the plume apparently infiltrates into the mainline storm conduit corridor along College Avenue. The combination of these factors appears to create a compact (<150 feet) remediation system for attenuation of the existing groundwater plume. Figure 14, Conceptual Site Model – Plume Assessment Diagram illustrates the concept of plume attenuation beneath the Site with aerobic degradation of PCE daughter products and petroleum hydrocarbons occurring along College Avenue.

The rate of natural attenuation for TPH as gasoline can be estimated from the data tables and charts in the appendices. Well MW-1 has the highest concentration of residual TPH as gasoline with starting 1998 concentrations of 160,000 to 290,000 µg/L. Concentrations of TPH as gasoline in 2008 varied from 15,000 to 60,000 µg/L. A significant decrease in TPH as gasoline concentration is evident with the last October 2008 concentration of 15,000 µg/L at about 10% of the starting concentration in 1998. It appears reasonable to surmise that the ESL value of 5,000 µg/L for TPH as gasoline could be reached within 10 years from the present date. A Similar analysis of benzene shows a significant decrease from 28,000 µg/L in 1998 to 4,900 µg/L in October 2008. It also appears reasonable to surmise that the ESL value of 540 µg/L for benzene could be reached within 10 years as could other gasoline constituents.

RISK EVALUATION

The risk assessment evaluates the potential for human health impacts from chemicals released due to past activities at the Site. Potential human health risks associated with current and future exposures to contaminated environmental media are considered. The results of this evaluation along with an assessment of the potential for the contaminated environmental media to impact environmental receptors were used to provide a basis for requiring further investigation at the Site.

Screening Level Comparison

The following maximum PCE and gasoline contaminant concentrations are from previous investigations discussed above that represent current conditions beneath the Site:

Soil: Vadose Zone: 5.51 mg/Kg of TPH as Gasoline (Soil sample 7335-EX1[3.5] at depth of 3.5 feet bsg, benzene <0.005 mg/Kg, MTBE <0.005 mg/Kg, toluene = 0.006, ethylbenzene <0.005 mg/Kg

Groundwater: 15000 µg/L for TPH as gasoline, 110 µg/L for MTBE, 4900 µg/L for benzene, 430 µg/L for Toluene, 1900 µg/L for ethylbenzene & 2260 µg/L for xylenes (Well MW-1 for October 2008)

44 µg/L for PCE, 6.2 µg/L for TCE, 56 µg/L for cis-1,2-DCE & 0.6 µg/L for vinyl chloride (piezometer PW-1 for October 2008)

Potential Vapor Intrusion: 700 µg/L for benzene (Well MW-2 beneath building October 2008)

These current concentrations are compared to published risk-based screening levels in order to determine if additional site-specific risk evaluation and/or remedial action is warranted. The RWQCB provides screening-based guidance for evaluating sites with contaminated soil and groundwater in Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (CRWQCB, Interim Final November 2007). In that guidance, the RWQCB provides environmental screening levels (ESLs) for use in a tiered screening approach. The RWQCB tiered approach utilizes a conservative screening step in that chemical concentrations are directly compared to published ESLs selected for the Site. Environmental screening levels have been selected based on the shallow soil conditions and groundwater that is not a current or potential source of drinking water (Zone B).

The following table shows the applicable environmental screening levels:

TABLE OF ENVIRONMENTAL SCREENING LEVELS

Medium	Contaminant	Concentration	Environmental Screening Level Shallow Soils / Groundwater is NOT a Potential Drinking Water Supply
Soil	TPH as gasoline	5.51 mg/Kg	Residential Direct Exposure = 110 mg/kg Commercial Direct Exposure = 450 mg/kg Construction Worker Direct Exposure =4200 mg/kg ESL Shallow Soil Residential = 100 mg/kg ESL Shallow Soil Commercial = 450 mg/kg
Groundwater	TPH as gasoline	15000 µg/L	ESL = 5000 µg/L
Groundwater	Benzene	4900 µg/L	ESL = 540 µg/L
Groundwater	Toluene, Ethylbenzene Xylenes	439 µg/L 1900 µg/L 2260 µg/L	ESL = 400 µg/L ESL = 300 µg/L ESA = 5300 µg/L
Groundwater	MTBE	110 µg/L	ESL = 1800 µg/L
Groundwater	PCE TCE cis-1,2-DCE Vinyl Chloride	44 µg/L 6.2 µg/L 56 µg/L 0.6 µg/L	ESL = 120 µg/L ESL = 530 µg/L ESL = 6200 µg/L ESL = 3.8 µg/L
Groundwater	Benzene	700 µg/L	Potential Vapor Intrusion Residential = 540 µg/L Potential Vapor Intrusion Commercial = 1800 µg/L
Groundwater	PCE	44 µg/L	Potential Vapor Intrusion Residential = 120 µg/L Potential Vapor Intrusion Commercial = 420 µg/L

TABLE NOTES: PCE-Tetrachloroethene; TPH = Total Petroleum Hydrocarbons; mg/kg = milligrams per kilogram (ppm); µg /L = micrograms per Liter (ppb); TCE-Trichloroethene, DCE-Dichloroethene

Concentrations of contaminants that exceed ESL values are shown highlighted as red in the table above. ESLs are considered very conservative (i.e., stringent) and are not enforceable regulatory cleanup standards. Exceeding an ESL does not imply the presence of environmental threats but suggests a need for additional evaluation. The presence of a chemical at concentrations below ESLs can be assumed not to pose a significant environmental threat. Results of this comparison are used to base decisions regarding the need for a more detailed risk assessment, additional site investigation, or remedial action. In a later step, the ESLs can be modified with respect to site-specific data or considerations or site-specific screening levels or clean-up levels are developed using alternate models and modeling assumptions.

Identification of Contaminants of Concern

Based on the comparison of contaminants of potential concern to applicable regulatory screening levels the following constituents have been retained as contaminants of concern (COC) at the Site. No soil concentrations are known to exceed ESL values for the vadose zone or groundwater interface zone to a depth of 8 feet bsg. For TPH as gasoline the ESL is 5000 ug/L for groundwater. The October 2008 groundwater concentration for TPH as gasoline was 15,000 ug/L in well MW-1. Similarly, benzene, toluene and ethylbenzene also exceed the ESL groundwater screening levels. The recently measured concentrations of xylenes, MTBE, PCE, TCE and cis-1,2-DCE do not exceed the ESL values. For vapor intrusion concerns, the measured benzene concentration of 700 µg/L in well MW-2 (inside the existing commercial building) does not exceed the commercial ESL value of 1800 µg/L. The Benzene ESL value for future residential land use is exceeded at 540 µg/L. The PCE concentration of 44 µg/L does not exceed either residential or commercial ESL values. Based on the comparison, TPH as gasoline, benzene, toluene and ethylbenzene are retained as contaminants of concern with benzene retained as a vapor intrusion concern for future residential land use.

In 1999, the CRWQCB recommended that groundwater pollutant sites in Zone B (Berkeley sub-area) would be regulated pursuant to SWRCB Resolution 92-49 and need to demonstrate: 1) that reasonably adequate source removal has occurred, 2) the plume has been reasonably defined both laterally and vertically, and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health (e.g., from volatilization into trenches and buildings) (CRWQCB, 1999). This policy does not require the use of numeric cleanup objectives. As a site remediation goal, the three CRWQCB objectives listed above need to have been adequately satisfied at the Site. To demonstrate the site remediation goals have been achieved, sufficient investigation and groundwater monitoring is needed to document that adequate source removal has occurred, the plume is defined, and the plume is stable-decreasing with minimal impact to the ecology and occupants of the site and adjoining buildings.

Health Effects of Contaminants

Gasoline range organics (C4 to C12 Carbon Range) consist of aliphatic and aromatic compounds (BTEX), as well as fuel additives (oxygenates, including MTBE) used to produce higher octane levels and reduce vehicular carbon monoxide omissions. In general, the gasoline range organics have potentially high volatility, moderate to high water solubility, and poor to moderate sorption to soil particles. Each has moderate to high mobility in soil and thus has potential to leach directly to groundwater. Hydrocarbons are subject to degradation by indigenous bacteria. Gasoline and benzene vapors can cause central nervous system depression. Absorption of pure gasoline through the skin can occur, but is normally not significant. Gasoline is moderately toxic if ingested. Central nervous system depression, such as unconsciousness and coma, can occur. Gasoline and benzene are considered a possible human carcinogen. In general, blood and immune system effects have not been documented in humans following short-term exposures to gasoline and benzene. Long term exposure to benzene causes detrimental changes to blood circulation and the immune system.

Assessment of Exposure Pathways

The exposure pathways considered for this assessment are (1) incidental ingestion of contaminated soil, (2) dermal contact with contaminated soil, (3) ingestion of contaminated food products, (4) incidental ingestion or contact with contaminated groundwater, (5) vapor intrusion into overlying and adjacent buildings. This assessment also considers the impact of potential contaminated groundwater intrusion into the 90-inch underground conduit containing Harwood Creek. Figure 13, Conceptual Site Model – Risk Assessment Diagram, illustrates the risk assessment model utilized in the following discussion.

Incidental Soil Ingestion & Dermal contact Pathways

Incidental soil ingestion for site trespassers, children or onsite workers is considered unlikely because the Site is completely covered with asphalt / concrete and used for commercial auto repair purposes. Therefore, the soil ingestion and dermal contact exposure pathway is not considered relevant at this time.

Incidental Groundwater Ingestion & Dermal contact Pathways

Incidental groundwater ingestion for site trespassers or onsite mechanics is considered unlikely because the site is completely covered with asphalt / concrete. Groundwater directly beneath the Site is not currently used as a drinking water resource and no onsite water production or irrigation wells are present. Regulatory agency records do not reveal municipal water wells within 1,000 feet of the site. Future development and use of the aquifer is not planned for municipal water supply use. Therefore, the groundwater ingestion exposure pathway is not considered relevant at this time.

Incidental Food Product Ingestion Pathway

Incidental ingestion of food products for site trespassers, children or onsite workers is considered unlikely because the Site is completely covered with asphalt / concrete and used for commercial auto repair purposes. No landscaping, gardening or plant cultivation is present at the Site. Therefore, the food product ingestion exposure pathway is not considered relevant at this time.

Pathways for Construction Workers

The possibility of vapor and direct contact with chemicals in groundwater or soil is considered for construction workers. To address the possibility of future short-term but intensive exposures to chemicals in subsurface soil, a construction worker is assumed to have skin or vapor contact with chemicals in soil ranging from the surface to about eight feet bsg. Below about eight feet at the site, the ground contains gasoline contaminated groundwater that could be encountered during de-watering activities. Construction workers engaged in utility installation or future site construction activities could be exposed to petroleum contamination or vapor related to residual soil and groundwater contamination at the site. The duration of exposure would be a one-time event and relatively brief. In general, brief exposure to petroleum vapor is not considered a significant risk hazard.

Vapor Intrusion Pathway

According to DTSC vapor intrusion guidance (DTSC 2004), soil vapor intrusion is a significant pathway for volatile organic chemicals (VOC) such as gasoline, benzene, PCE and TCE. The risk assessment for volatile organic chemicals includes the evaluation of the following potential exposure pathways: 1) Inhalation of vapors that have intruded to indoor air, 2) Inhalation of vapors outdoors coming from the subsurface, 3) Inhalation of vapors coming from groundwater during showering or household use, and 4) Ingestion of groundwater used as tap water. A long-term goal is unrestricted land use and the residential home dweller is the default and most conservative exposure scenario.

Inhalation of Vapors That Have Intruded To Indoor Air:

The vapor exposure pathway considered for this assessment is migration of benzene and PCE vapor from shallow groundwater into the existing commercial building and future residential buildings. The phrase “soil vapor intrusion” refers to the process by which volatile chemicals migrate from a subsurface source into the indoor air of buildings. Humans can be exposed to contaminated soil gas when the vapor is drawn in the building due to pressure differences and mixed with the indoor air. Inhalation is the primary route of exposure, or the manner in which the volatile chemicals, once in the indoor air, actually enter the body. Both current and potential exposures are considered when evaluating soil vapor intrusion.

The existing single-story building is built on a concrete slab and does not have a basement. Since 1952, the use of the building has been for an automotive repair shop. GGTR’s observations of the facility for several years indicates that roll-up doors at the front and rear of the building are normally open during work hours for ventilation. One groundwater monitoring well is located within the shop interior. The October 2008 groundwater sample from well MW-2 reveals a benzene concentration of 700 µg/L below the ESL value for potential vapor intrusion into commercial buildings at 1800 µg/L. The vapor exposure pathway for future commercial-retail occupants of the existing commercial building is considered an incomplete pathway and further consideration is not appropriate.

A shallow groundwater plume may extend beneath a portion of the adjacent building to the south of the site at 5916-5920 College Avenue. The results of grab groundwater sampling from borings B14 and HB-6 appear to constrain the core of the plume to a small portion of the northwestern corner of the adjacent property. The low concentrations of TPH as gasoline and benzene in boring HB-6 do not indicate a significant impact to the adjacent property above ESL screening values. A premise of the

Conceptual Site Model is that groundwater flow direction is towards the west-southwest and this building would be cross-gradient to the former USTs. The adjacent building contains vehicle parking and a retail store (T-Mobile at 5916 College Ave.) on the ground floor. Residential apartments appear to be located on the second floor and above. It appears at this time that the potential for vapor intrusion, if any, impacting the residential living space in this building is low.

Potential inhalation of benzene vapor in indoor air (soil vapor intrusion) is the most significant exposure pathway under a future re-development scenario involving ground floor residential construction. The October 2008 groundwater sample from well MW-2 contains benzene at a concentration of 700 µg/L that is above the ESL value for potential vapor intrusion into a residential building of 540 µg/L. For protection of future residential building occupants, inhalation is considered to be a potential pathway.

Off-Site Inhalation Pathway:

Down-gradient from the source area of residual groundwater contamination is College Avenue. College Avenue is substantial utility corridor with a 90-inch storm water overflow conduit and other conduits with invert flow lines at 12 feet below surface grade. This conceptual site model indicates the shallow groundwater contamination at the Site is captured and infiltrates the utility corridor in College Avenue. Impact to the commercial-retail building located down-gradient on the north side of College Avenue is believed to be negligible based on prior Hydropunch boring HB-5 that did not demonstrate groundwater infiltration in clay soils.

Inhalation of Vapors Outdoors Coming From the Subsurface:

The Site and surrounding area is completely covered with building foundation slabs or asphalt pavement and the outdoor inhalation pathway is not considered significant for outdoor areas.

Inhalation of Vapors from Groundwater during Showering or Household Use:

To our knowledge, no current / future domestic or irrigation use of the Site's groundwater is proposed. Existing usage and future development uses municipal water supply. Groundwater is not considered a potential drinking water resource. No onsite or nearby water production wells are reported in previous investigation documents within 1,000 feet of the Site. It is reasonable to expect that groundwater exposure is not a relevant pathway.

Harwood Creek Pathway

Figure 5, Regional Map of Creeks & Conduits, shows that Harwood Creek is exposed for a short distance in residential backyards about one block south of the Site. Because the exposed stream is up-hill/up-gradient from the Site there appears to potential for impact from the Site's groundwater plume to the exposed creek. A 90-inch RCP storm water cutoff conduit for Harwood Creek is present down-gradient of the Site in College Avenue. The groundwater plume appears to intersect the cutoff conduit. Downstream from the Site, the cutoff conduit rejoins the Harwood Creek box conduit at Chabot Road. Harwood Creek is underground from here to the outfall in Emeryville, except for one 'fake' creek segment near Claremont and Telegraph Avenues where a small part of the underground stream flow is diverted aboveground for a few blocks in a small landscaped greenbelt that includes Frog Park, a community recreation facility. The fake creek segment appears to be part of the Rockridge-Temescal Greenbelt created in 2001 and the fake stream surfaces in a small pond at Hardy

Street and exits at a catch basin on Clark Street. The fake creek is located west of Freeway 24 about one mile west of the Site. Because of the distance from the Site, it appears unlikely that the groundwater plume from the Site would impact the fake creek. Because the creek is primarily contained with an underground conduit, biological receptors such as fish and fowl in Harwood Creek do not appear to be a significant consideration. It is unlikely that the known petroleum contamination at the Site would significantly impact Harwood Creek in its current degraded and confined configuration.

The most prominent conduit is the 90-inch storm water cutoff conduit that is directly in the path of the groundwater plume with invert depths of at least 12-15 feet bsg. An 8-inch sanitary sewer line also occurs between the 90-inch RCP and the former UST locations. The ACEH database contains drawings of the 90-inch conduit installation under the case for Dreyer's Grand Ice Cream. The drawings are portions of plans from the County of Alameda Public Works Agency called "Zone No. 12 Project Line A-1 Typical Sections" dated June 1992. The flow line at Chabot Road appears to be about 179.2 feet above msl and a flow line of 180.5 in the vicinity of the Site. Of particular interest, are drawings that indicate the 90-inch RCP in this section of College Avenue was incased in slurry cement from the conduit "springline" or center to the invert or bottom of the conduit. From the cement slurry to the surface, the conduit trench was filled with import / native materials and machine compacted to at least 90-95% compaction. The compacted utility trench may form a barrier to the westward flow of groundwater. Infiltration of the groundwater plume into the 90-inch conduit appears unlikely considering the cement slurry structural fill and compacted fill surrounding the 90-inch RCP cutoff conduit. Because of the relatively recent construction of the 90-inch RCP cutoff conduit (1995) and cement slurry / compacted fill encasement, it appears unlikely that significant groundwater would be infiltrating the 90-inch RCP cutoff conduit. While the groundwater plume may not be infiltrating the Harwood Creek cutoff conduit, it appears the groundwater plume may be blocked by the utility corridor with a southward flow within the utility corridor towards Chabot Avenue.

Free floating petroleum product has not been observed at the Site. Dissolved petroleum constituents are highest in winter months when likely to rapidly attenuate within the utility corridor environment. Dilution and volatilization would be particularly effective during winter months when storm water volumes are large within the utility conduit corridor. Colder groundwater temperatures observed in well MW-3 within the utility corridor indicate the exfiltration of cold storm water into the groundwater within College Avenue. Gasoline, benzene and other volatile constituents should rapidly volatize in a short distance within the utility corridor. Previous grab groundwater sampling at boring location HB-6 along the east margin of the utility corridor detected relatively low concentrations of TPH as gasoline at 45 µg/L. Background up-stream contamination of the utility corridor is also present as upstream Gettler-Ryan monitor wells (MW-1 & MW-2) and previous grab groundwater sampling (HB-3 & HB-4) revealed petroleum contamination of groundwater within the utility corridor north / up-hill of the subject property.

Data Gaps & Proposed Action

Significant historical research, source removal and investigation activities have been performed at the Site. Our analysis and review of documentation reveals the following potential data gaps. Following each identified data gap, we propose further action to address the outstanding issue or explain why no

further action is required. The identified actions will be further discussed in the following work plan section of this document. GGTR recommends the following additional actions.

Data Gap: Groundwater concentrations exceed screening levels and the continued monitoring of the wells is needed to confirm that the groundwater plume is decreasing in concentration due to natural attenuation processes.

Action: Groundwater monitoring and sampling of all site monitor wells / piezometer should be continued on a quarterly basis for the existing suite of laboratory analysis chemicals consisting of TPH as gasoline, BTEX, MTBE, ETBE & TBA. Historical analysis indicates that the maximum contaminant concentrations are observed in April during wet weather conditions and highest groundwater elevations. Future semi-annual monitoring is requested for March-April and October-November to demonstrate continued plume degradation and decreasing contaminant concentrations.

Data Gap: Well survey not to current NAVD88 standard for Geotracker submittal.

Action: The top-of-casing elevation for monitor wells and piezometer PW-1 should be professionally surveyed and/or corrected to current NAVD88 standards.

Data Gap A vertical investigation of groundwater contamination has not been performed at the Site.

Action: GGTR proposes to drill a deep CPT boring in the parking strip adjacent to the location of well MW-3 to a depth of 40 feet bsg to establish that petroleum contamination from the former USTs has not significantly impacted deeper sand-gravel water-bearing layers at the Site. Lithology will be continuously logged during drilling and groundwater samples collected for laboratory analysis at significant zones of apparent water bearing capacity or obvious evidence of petroleum contamination. Using data from the first deep boring, additional Geoprobe borings will collect depth discrete water samples from identified water bearing zones of interest from 20 to 40 feet bsg.

Data Gap Groundwater monitoring has revealed PCE contamination of groundwater at the location of piezometer PW-1. The PCE in groundwater is below ESL values and does not appear to have a significant impact on the Site. However, the PCE appears unrelated to the UST investigation at the site and may be related to unknown onsite or off-site source of PCE contamination.

Action: GGTR recommends two additional hand augured soil borings in the vicinity of the storm drain & storm drain lateral pipe within the concrete-paved rear courtyard of the subject property. One additional boring would be located near the southwest corner of the existing building at the former parts cleaner-sink location for a total of three additional borings. The purpose of the borings is to investigate for PCE contamination of shallow soils as a potential source of residual PCE contamination in groundwater. The soil samples collected from the three borings would be analyzed for VOCs.

Data Gap Groundwater conditions have not been verified by an agency-approved groundwater monitoring well located to the south of the Site along College Avenue.

Action: Previous grab groundwater sampling at location HB-6 revealed TPH as

gasoline concentration in groundwater of 45 µg/L. GGTR recommends an additional monitoring well south of the former location of boring HB-6 to delineate the horizontal extent of the plume. Although the Conceptual Site Model indicates that the direction of groundwater flow is to the west-southwest at the Site, the flow of water within the College Avenue utility corridor is to the south. A hydraulic barrier may exist along the 90-inch RCP cutoff conduit. Contamination may be trapped east of the barrier and flow southward along the utility corridor. The well would determine the impact of the plume along the east side of the utility corridor.

Data Gap Groundwater conditions have not been defined west-southwest of well MW-3 in the down gradient direction.

Action: GGTR recommends the installation of an additional monitor well in the west sidewalk of College Avenue near the location of exploratory boring HB-5. The purpose of the well is to verify groundwater conditions in the down-gradient direction to the west-southwest of the site. GGTR was unable to obtain a grab groundwater sample from boring HB-5 and groundwater conditions are unknown on the west side of College Avenue. The well would verify that the groundwater plume is not significantly extending beyond the utility corridor in College Avenue and that only background contamination is present. Up-hill Gettler-Ryan well MW-1 shows background gasoline contamination of groundwater that may comingle with Site's groundwater plume within the College Avenue utility corridor.

Data Gap The vertical extent of groundwater contamination has not been investigated with groundwater monitoring wells.

Action: Based on the results of CPT investigation, GGTR may optionally install additional deeper depth discrete monitor wells at new well locations MW-4 and MW-5. As many as two additional monitor wells would be added to each location to form a well cluster. The depth discrete wells would have short well screen of 2-3 foot length and target water bearing sand zones from 20-40 feet with positive grab groundwater sampling results from the CPT investigation. A final well construction diagram would be submitted to ACHCSA following receipt of laboratory analysis results from the CPT investigation allowing ACHCSA to review and approve the proposed depth discrete well installation.

A work plan is presented in following sections describing the procedures and protocols for performing the additional proposed investigation action.

ADDITIONAL SITE CHARACTERIZATION

GGTR is proposing additional site investigation in the form of additional soil and groundwater sampling. A vertical profile of the petroleum contamination would be further assessed using a deep CPT boring with continuous lithologic logging. Additional grab groundwater sampling and installation of new wells would be used to further determine the extent of petroleum groundwater contamination at the Site. Additional soil borings would be used to determine if an onsite source of PCE contamination is present at the Site. Further groundwater sampling is needed to assess the sustained impact of source removal on contaminant trends. The proposed sampling locations are

shown on Figure 15, Proposed Work. The following sections describe the procedures for the additional investigation work.

Scope/Sequence of Proposed Work Activities

The general scope of work and sequence of activities described and recommended in this work plan is outlined as follows:

- Obtain soil boring and groundwater monitoring well permits from the Alameda County Public Works Agency
- Obtain street excavation and/or minor encroachment permits for boring/wells installed in the sidewalk along College Avenue from the City of Oakland Department of Public Works Engineering Division
- Outline the proposed work area and boring locations in white surface paint and notify Underground Service Alert to clear for exterior subsurface utilities. Provide for a private utility locator to survey and mark probable location of interior sanitary sewer and drain lines
- Revise the existing Site Health & Safety Plan for all newly-proposed field work
- Using hand auguring drilling equipment, drill and recover soil samples to a depth of four feet below grade from three (3) locations labeled as borings B-25, B-26 and B-27 in the rear courtyard-parking lot of the Site. Boring B-25 will be located adjacent to the storm drain. Boring B-26 will be located along the storm line lateral. Boring B-27 will be located near the former parts cleaner-sink location at the southwest corner of the building
- Collect up to two (2) discrete soil samples from the proposed boring locations at depths of 2 and 4 feet below grade for laboratory analysis of VOCs
- Drill one deep (40 foot) CPT boring along the east parking lane of College Avenue for vertical definition of petroleum groundwater contamination and continuously log soil lithology. Recover three grab groundwater samples with Hydropunch sampling equipment in three separate borings between 20 and 40 feet.
- Drill two borings to 13 feet deep within the west sidewalk and the east parking lane of College Avenue and construct new 2-inch groundwater monitor wells MW-4 and MW-5.
- Based on the results of the CPT drilling and groundwater sampling, drill up to two additional deeper depth discrete borings at each location and complete as a well cluster at locations of MW-4 and MW-5 with well screens of 2 foot length.
- Install, develop and purge the new wells at locations MW-4 and MW-5
- Provide for the professional survey of new wells and the correction of existing survey data to current GeoTracker requirements
- Sample the new groundwater monitoring wells along with monitoring of the other existing monitoring wells MW-1, MW-2, MW-3 and piezometer PW-1.
- Submit all soil and groundwater samples to a State-certified environmental laboratory for chemical analysis
- Upload all investigative analytical data and the professional well survey to the State GeoTracker Database System
- Profile and transport all solid (auger soil cuttings) and liquid waste to respective State-licensed disposal facilities

- Interpret all data and prepare a report summarizing the activities, findings, and conclusions of the additional site characterization activities.
- Propose modifying the existing groundwater monitoring schedule to semi-annual for all subject monitor wells.
- Based upon results of the investigation, propose a feasibility study to address potential remedial action at the Site.

The following sections provide additional discussion of the proposed investigation activities listed above.

Pre-Field Activities

GGTR will obtain a drilling permit from of the Alameda County Public Works Agency, an excavation/minor encroachment permit from the City of Oakland Office of Planning & Building, and if warranted, a parking permit from the Oakland Traffic Control Department. GGTR will notify all property owners and tenants as well as the ACEH of all scheduled work activities. At least 72 hours before commencing field activities, GGTR will visit the site and outline the proposed work areas in white surface paint and subsequently notify Underground Service Alert (USA) to locate and mark any subsurface utilities extending through the designated work areas. GGTR will contract a private utility locator to survey and mark onsite sanitary sewer laterals, and confirm location of subsurface drain line (rear courtyard), and locate their junctions with the utility mains along College Avenue. Also, GGTR will prepare a traffic control plan should partial or complete closure of the parking lane and/or sidewalk along the College Avenue frontage be warranted.

General Field Activities

GGTR will revise the existing Community Site Health & Safety Plan to reflect the additionally proposed activities. GGTR will notify the property owners, tenants, and regulatory agency representatives of all scheduled fieldwork and arrange and schedule all drilling and laboratory subcontractor services.

The following table presents a summary of the proposed borings and sampling activities:

Boring Label	*Depth of Boring Feet*	*Boring & Well Location*	*Sample Data*	*Laboratory Analyses*
B-25	4	Soil samples at storm water floor drain location in rear parking lot	Soil samples at 2 & 4 feet using hand sampling equipment	VOC
B-26	4	Soil samples at storm water service lateral alignment	Soil samples at 2 & 4 feet using hand sampling equipment	VOC
B-27	4	Soil samples at southwest corner of building where former parts washer-sink was located and sanitary	Soil samples at 2 & 4 feet using hand sampling equipment	VOC

		lateral connects		
CPT-1	40	Near UST source area in parking lane	Continuous lithology, three grab groundwater samples between 25-40 feet from three separate Hydropunch borings	TPH as gasoline, BTEX, MTBE, ETBE, TBA
MW-4 & MW-5	13	New monitoring well in west sidewalk and east parking lane of College Avenue	Soil / Groundwater: two soil samples at 5 & 10 feet; groundwater sample from completed well.	TPH as gasoline, BTEX, MTBE, ETBE, TBA
Additional Cluster Wells	20-40	Additional depth discrete monitor wells added to locations MW-4 and MW-5 based on results of CPT boring and grab groundwater sampling	Groundwater samples from target deeper sand-water bearing zones	TPH as gasoline, BTEX, MTBE, ETBE, TBA

Prior to commencing drilling activities, GGTR will conduct a tailgate safety meeting with all site personnel addressing all information provided in the Community Site Health & Safety Plan. GGTR will direct the subcontracted driller to hand auger each proposed boring location to clear for unmarked subsurface utilities.

PCE Source Area Investigation

GGTR recommends drilling three (3) additional investigative soil borings in the Site's rear courtyard-parking lot as shown on Figure 15, Proposed Work. The purpose of the investigation is to determine if obvious onsite potential source areas of PCE contamination have PCE soil contamination above regulatory screening levels. The soils encountered in each boring would be continuously logged for lithology and obvious evidence of contamination (vapor & staining). Two soil samples will be collected from each borehole using hand sampling equipment for laboratory analysis of VOCs. Discrete soil samples would be recovered at depths of 2 and 4 feet below grade and at other depths of obvious contamination for laboratory analysis of VOC. All down-hole drilling and sampling equipment will be cleaned between each boring location using a non-phosphate Alconox® solution and double rinsed using clean, potable water.

One hand augured boring (B25) would be placed adjacent to the existing storm water catch basin to assess shallow soil for VOC analysis of soil samples. One additional hand augured boring (B26) would be placed adjacent to the existing storm water lateral pipe at the cleanout junction to assess soil for VOC constituents. One additional hand augured boring (B27) would be placed adjacent to the southwest corner of the existing building to assess soil for VOC constituents. At this corner of the building, a former parts washer was installed in the corner sink. The storm water lateral pipe from the catch basin also turns and connects to the sanitary sewer line beneath building at the southwest corner.

All soil samples will be sealed with Teflon and plastic end caps, appropriately labeled, and transferred to cooler chilled to approximately 4° Centigrade. Soil boring samples will also be

screened using a organic vapor analyzer (OVA or PID type) and described using the Unified Soil Classification System and Munsell Soil Color Chart. Drilling will be conducted by a California-licensed Water Well Drilling Contractor (C57). Boreholes will be logged under the supervision of a Registered Civil Engineer/Geologist. Hand auger soil cuttings generated during drilling activities will be transferred to a 55-gallon, D.O.T.-approved steel drum. GGTR will collect a four point composite soil sample from the drummed soil cuttings for analysis and waste disposal characterization. All down-hole drilling and sampling equipment will be decontaminated between each boring location using an Alconox® solution and double rinsed with potable water. Equipment wash and rinse water will be transferred directly to a separate 55-gallon drum. All drilling and sampling activities will be conducted under the direction of a representative of the ACHCSA.

Vertical Profile Contamination Characterization

GGTR proposes to drill a deep Cone Penetration Testing (CPT) boring, CPT-1, near the former UST locations to a depth of 40 feet bsg using Gregg Drilling and Testing, Inc. (Gregg). Lithology will be continuously logged during the drilling of the first boring. Significant zones of apparent water bearing capacity will be delineated using the CPT log. Gregg will collect CPT sounding data including pore pressure dissipation tests. No soil samples will be recovered from the CPT boring. A water sample of the deepest water bearing zone of interest will be recovered from the first CPT boring using a Hydropunch groundwater sampler. Using data from the first deeper boring, additional clustered Hydropunch borings will collect depth discrete water samples from the identified water bearing zones of interest. Two additional borings will be used to recover two additional grab groundwater samples for a total of three grab groundwater samples from target zones for laboratory analysis of gasoline constituents. All down-hole drilling and sampling equipment will be cleaned between each boring location using a non-phosphate Alconox® solution and double rinsed using clean, potable water. A copy of the CPT sounding data sheet and pore pressure dissipation test record will be included in the subsequent report.

Grab groundwater samples will be collected from the CPT boring or individual borings drilled to assess the vertical profile of groundwater contamination. At each depth discrete interval, GGTR will collect a grab groundwater sample from the Hydropunch equipment. The grab groundwater sample will be appropriately labeled and transferred to a cooler chilled to approximately 4º Centigrade. Following groundwater sampling activities, GGTR will direct the driller to backfill with neat Portland cement up to approximately 0.5 fbg. The borings containing groundwater will be backfilled by pumping Portland cement (6 gallons water per 94-pound bag of Portland cement) directly through the CPT drill rods and grouting upward from the bottom of the boring. Any water discharging the boring during grouting will be managed as a hazardous waste (contained and collected with absorbent for placement in 55-gallon drums). The balance of each borehole will be backfilled with appropriate surface material (i.e., concrete, asphalt, etc.) to restore original site conditions.

Additional Shallow Groundwater Characterization

One additional boring would be placed in the west sidewalk of College Avenue and converted to a 2-inch-diameter groundwater monitoring well designated as MW-4. The well is located within the sidewalk as shown on Figure 15, Proposed Work. The sidewalk was chosen as a location for the new well because a previous boring HB-5 in the parking lane near this location did not produce groundwater. This well will be used to assess representative groundwater contamination down-

gradient (west-southwest) of the former UST and fuel dispenser area. The additional groundwater monitoring well will be located across the street on the other side of known subsurface utility corridors in College Avenue. A premise of the Conceptual Site Model is that groundwater flow (west-southwest) from beneath the subject property and the former UST location is blocked / captured within the utility corridor in College Avenue with an invert depth of 12-15 feet below grade. Shallow groundwater flow within College Avenue may be directed southward along the flow line of the utility conduit corridor. The new well MW-4 would verify that significant petroleum contamination is not crossing the utility conduit corridor from the subject property in the down-gradient direction.

Previously drilled Hydropunch borings HB-4 and HB-3 located along the west and east parking lanes of College Avenue (see Figure 3, Site Plan) revealed substantial petroleum groundwater contamination at the lateral edges of the subsurface utility corridor. Similarly, Gettler-Ryan monitor wells MW-1 and MW-2 consistently detect residual petroleum groundwater contamination. Presumably the residual contamination originates from uphill LUST cases along College Avenue such as the adjacent Chevron station and nearby Shell / Unocal stations. The groundwater contamination detected in the west and east parking lanes suggests a potential migratory pathway for hydrocarbon-effected groundwater (from offsite sources to the north) following the direction of flow (south) within the utility corridor. Based on the elevated concentrations of TPH-G reported in the grab groundwater samples and off-site wells, potential off-site contamination plume(s) may be comingling within the utility corridor in College Avenue. Therefore, GGTR is anticipating that a background concentration of gasoline will be detected in the new well MW-4 similar to concentrations encountered in the neighboring Gettler-Ryan well number MW-1. TPH as gasoline detected in Gettler-Ryan well MW-1 was 120 µg/L in April 2008 with a recent high of 1,200 µg/L reported in April 2007.

In their letter dated July 25, 2008, the ACHCSA requested additional horizontal definition of the groundwater plume in the vicinity of former Hydropunch boring HB-6. Because groundwater appears to be captured by utility corridors in College Avenue that flow southward, the groundwater plume could extend southward towards HB-6 where 45 µg/L was detected in a grab groundwater sample. One additional boring would be placed in the east parking lane of College Avenue as shown on Figure 15 and converted to a 2-inch-diameter groundwater monitoring well designated as MW-5. This well will be used to assess groundwater contamination in the down-flow direction (southward) of utility conduits. A premise of the Conceptual Site Model is that groundwater flow from the former UST location is captured within the utility conduit corridor in College Avenue with an invert depth of 12-15 feet below grade. The new well MW-5 would verify that significant petroleum contamination is not flowing southward along the utility conduit corridor from the subject property.

Additional Vertical Groundwater Characterization

Based on the results of the CPT drilling and grab groundwater sampling discussed above, GGTR may optionally drill deeper soil borings at the location of new wells MW-4 and MW-5 and install depth discrete wells targeted at potentially contaminated water bearing zones between 20 and 40 feet bsg. If such water bearing zone is identified, additional borings well be drilled to the target depths and completed as two-inch groundwater monitoring wells with 2 feet of screened well casing at the target interval identified during CPT drilling. As many as two additional borings with two different depth discrete sample depths may be employed to verify the vertical extent of the petroleum plume. For

example if CPT should identify semi-confined water bearing sand zones at 28-30 and 35-39 feet and grab groundwater sampling indicates petroleum impact at these zones, then GGTR would install two additional depth discrete monitor wells at each well cluster to sample these two zones with well screen lengths of 2 and 3 feet, respectively. The well cluster would be labeled MW-4a, b & c for example. Both locations MW-4 and MW-5 would be completed as identical well clusters. The initial well MW-4a would be the shallow unconfined zone with a well screen from 3 to 13 feet to capture the seasonal rise in the water table. Should the CPT investigation reveal water bearing sand layers with no evidence of petroleum impact (grab groundwater samples are below screening values), then no additional wells would be constructed for depth discrete sampling. GGTR would submit a letter addendum to the ACEH following the receipt of CPT sounding and grab groundwater sampling data if additional depth-discrete monitor wells are proposed.

Backfilling Activities

Immediately following sampling activities in all soil borings that do not reach groundwater, GGTR will direct the subcontracted driller to extract drill tubes from each borehole and backfill with neat Portland cement up to approximately 0.5 fbg. The balance of each borehole will be backfilled with appropriate surface material (i.e., concrete, asphalt, etc.) to restore original site conditions. The boreholes containing groundwater will be backfilled by pumping Portland cement (6 gallons water per 94-pound bag of Portland cement) through a tremie pipe and grouting upward from the bottom of the boring. Gravity flow of grout through a funnel will not be allowed. Any water discharging the boring during grouting will be managed as a hazardous waste (contained and collected with absorbent for placement in 55-gallon drums). The balance of each borehole will be backfilled with appropriate surface material (i.e., concrete, asphalt, etc.) to restore original site conditions.

Monitoring Well Construction

In their letter dated July 25, 2008, the ACEH directed "to install a monitoring well network capable of collecting depth discrete groundwater samples, such as multi-chamber well or well clusters and ensure that the top of the groundwater is screened and monitored. We request that your sand pack not exceed 3 to 5 feet with a screen length a maximum of 2 to 3 feet." The nearest existing well to the proposed new wells is well MW-3. Depth to water has been measured in well MW-3 since 1999 with 28 measurements. Depth to water has ranged from a historic high at 3.08 feet to a low of 11.63 feet below grade – a difference of 8.55 feet. The chart in Appendix D titled Frequency of Depth to Water in Well MW-3 shows the distribution of water measurements since 1999. Well MW-3 has a well screen from 4 to 20 feet bsg. The chart shows that since 1999 only one monitoring event (3.08 feet bsg in April 2006) has not captured the top of groundwater within the well screen. Since the record high event in April 2006, water level in well MW-3 has not risen above 8 feet bsg during 2007-2008. Because of the large range in seasonal water level, the installation of the wells within the shallow surface water table is proposed using a well screen length of 10 feet (with each well screened from 3 to 13 feet bsg to capture the range of seasonal water table fluctuation).

As discussed above, should additional depth discrete monitoring wells be installed at each location MW-4 and MW-5, then the additional wells will have screen lengths not to exceed 3 feet in each depth discrete well. As many as three wells may be installed in each cluster to sample the shallow surface water and two semi-confined water bearing sand zones between 20 and 40 feet bsg. The decision to install additional depth discrete wells at each location MW-4 and MW-5 will depend on

the results of CPT vertical investigation and the laboratory analysis of grab groundwater samples from the deeper water bearing sand zones.

At each new well location MW-4 and MW-5, GGTR will rotary auger drill one additional, hollow stem auger soil borings and convert each boring to a 2-inch-diameter, groundwater monitoring well. GGTR will direct the subcontracted driller to initially hand auger each proposed new well location up to approximately 5 fbg to confirm clearance of any unmarked subsurface utilities. The proposed total depth of each boring will be approximately 13 fbg. Figure 16 is a Well Construction Diagram showing the anticipated construction details of the additionally proposed groundwater monitoring wells in the vicinity of the subject property.

The monitoring wells will be constructed of standard 2-inch diameter, flush-threaded, Schedule 40 Polyvinyl Chloride (PVC) factory slotted well screen and blank riser casing. Well construction specifications will be generally consistent with that for MW1 through MW3. GGTR proposes using 0.010-inch slotted well screen sections for construction of the MW4 and MW5 due to the appreciable amount of fines observed in the soil samples collected during the previous soil boring activities. The screened casing interval will extend from approximately 3 to 13 feet. Blank riser casing will extend from approximately 0.5 to 3 feet bsg. A locking compression plug and threaded PVC bottom cap will be installed at the top and bottom of each well, respectively. Filter pack, consisting of No. 2/12 silica sand, will be placed within the annular space between the PVC casing and borehole as the auger sections are withdrawn from the borehole. Filter sand will extend approximately 1 foot above the upper limit of the screened well section to the total depth of each well.

Additional depth discrete wells will follow the same general specifications as discussed above for the initial well. However, the screened casing interval will not exceed three feet in each well with the length of blank riser casing and well depth varying with the depth of the target water bearing sand zone. Figure 16, shows the generalized construction diagram for the addition of depth discrete wells at each cluster. Based on the results of CPT investigation, the final proposed construction diagram will be forwarded to the ACHCSA for review and comment prior to installation of the new wells.

Prior to setting the annular well seal, if a sufficient volume of water is present within each borehole, GGTR will surge each well using a 2-inch-diameter surge block to remove any native annular fines and settle the sand filter pack. If required, GGTR will place additional sand within the borehole/well annulus to maintain the proper amount above the well screen. GGTR will than place hydrated bentonite chips above the annular filter pack up to approximately 2 fbg. The remainder of the annular space will be filled with neat Portland cement grout and a traffic-rated monitoring well box will be placed directly over each monitor well casing and secured in place with concrete, flush to surface grade. If actual site conditions vary significantly from that anticipated, GGTR personnel may vary the well construction specifications accordingly.

Monitoring Well Development

At least 48 hours following completion of the additional well installation activities, GGTR will develop each well to improve the groundwater hydraulic conductivity between the newly introduced sand filter pack and the native soil surrounding each well casing. GGTR will initially monitor and record the depth to water in each well and subsequently surge each well along the entire water column interval for approximately 20 minutes, using a 2-inch-diameter surge block. Well

development will continue by purging up to approximately 10 casing volumes of groundwater from each well using a diaphragm pump and polyethylene tubing, and continuing until the well water is relatively free of turbidity and suspended fines (generally only until slightly cloudy). GGTR will transfer the well purge water to 55-gallon, DOT-approved, steel drums and temporarily store them onsite pending transport and disposal to a licensed facility.

Elevation/Coordinate Survey

A Civil Engineer or Land Surveyor licensed in the State of California will survey the grade elevation and the elevation of the top of casing (TOC; north side) of each newly-installed monitor well relative to Mean Sea Level (NAVD88). In addition, the latitude, longitude, and coordinates of each well location will be surveyed relative to the California Coordinate System, Zone III (NAVD88). Existing data previously surveyed to NAVD29/NAVD83 will be re-surveyed or corrected to the NAVD88 standard. GGTR will subsequently upload all NAVD88 survey data to the State Water Resources Control Board's GeoTracker Database System.

Groundwater Sampling Activities: Monitor Wells

Approximately 48 hours following development activities in each newly-installed well, GGTR will revisit the site to conduct groundwater well monitoring and sampling activities. GGTR will initially remove the well cover and locking compression cap from each well and allow the groundwater in each well column to stabilize for approximately 20 minutes. GGTR will then measure and record the depth to product/groundwater using an electronic water/oil interface meter, obtaining all measurements relative to the approximate north side of the top of casing (TOC), with an accuracy of 0.01 foot. Prior to purging, GGTR will also measure the dissolved oxygen concentration in each well (insitu) using a YSI®55 Dissolved Oxygen Meter and measure the oxidation-reduction potential.

GGTR will purge approximately three to four casing volumes of groundwater from each well and simultaneously monitor the pH, temperature and conductivity of the purge water to evaluate groundwater stabilization. GGTR will purge each well using a peristaltic pump and dedicated polyethylene tubing. Following low-flow sampling protocol, GGTR may elect to terminate well purging after three successive readings of each parameter have varied by less than 0.1, 10%, and 3%, respectively. If floating product is present in any well, GTTR will remove the product using a disposable bailer and reduce it to sheen prior to purging and sampling.

GGTR will transfer the purge water directly to a 55-gallon, D.O.T.-approved steel drum. After the groundwater in each well has recharged to approximately 80% of its original level, GGTR will collect a groundwater sample using a peristaltic pump with dedicated tubing. The sample will be immediately removed from the well and the groundwater carefully decanted from the end of the tubing into pre-cleaned, laboratory-provided sample containers. The volatile water samples will be poured directly into laboratory cleaned 40-milliliter volatile organic analysis (VOA) vials to prevent loss of any volatile constituents. The vials will be filled slowly and in such a manner that the meniscus extends above the top of the VOA vial. After the vials are filled and capped, they will be inverted to insure there is no headspace or entrapped air bubbles. The samples will be sealed with Teflon caps, properly labeled, and stored in a cooler chilled to approximately 4ºC. Report appendices will include copies of the Fluid-Level Monitoring Data Form and Well Purging/Sampling Data Sheets. Each drum will be sealed with a steel lid and appropriately labeled as non-hazardous waste.

SAMPLING & ANALYSIS PLAN

General Sampling Procedures

All sampling equipment will be cleaned between each location using a non-phosphate Alconox® solution and double rinsed using clean, potable water. Equipment wash and rinse water will be transferred to a separate D.O.T-approved storage container. All containers will be sealed and appropriately labeled as non-hazardous waste and securely stored onsite pending future disposal at respective licensed-disposal facilities. Soil samples retained for laboratory analysis will be immediately sealed with Teflon tape and plastic caps, appropriately labeled, and placed in a cooler chilled to approximately 4º Centigrade. Equipment wash and rinse water generated from the decontamination of soil boring and sampling equipment or other derived liquid waste generated during the proposed sampling activities will be transferred to 55-gallon, D.O.T.-approved liquid steel drum(s), properly labeled and stored onsite in a secure area. The liquid waste will be profiled for disposal/recycling under uniform waste manifest. Drill cuttings will not be returned to the hole and boreholes will be sealed with neat cement. Drill cuttings will be added to the soil stockpile for off-site disposal and/or recycling. A Chain-of-Custody form will be initiated by GGTR personnel at the time of sampling and will accompany the soil and groundwater samples to a State-certified environmental laboratory using California Department of Health Services approved analytical methods.

Soil Sample Analysis

New Monitoring Wells: GGTR will submit the soil samples from new borings MW-4 and MW-5 under formal chain of custody command to Torrent Laboratory Inc., which is a State-certified analytical laboratory (CA ELAP #1991) in Milpitas, California for laboratory analysis of the following fuel constituents:

- Total Petroleum Hydrocarbons (TPH) as Gasoline (TPH-G; EPA 8260B)
- Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX; EPA 8260B)
- Methyl Tertiary-Butyl Ether (MTBE; EPA 8260B)
- Ethylene Dibromide and Ethylene Dichloride (EDB & EDC; EPA 8260B)

Potential PCE Source Area: Selected soil samples collected from hand augured borings B25, B26 and B27 will be analyzed for:

- VOCs (EPA Method 8260)

Torrent will complete all volatile organic analyses within the 14-day required time limit for analysis.

Groundwater Sample Analysis

New Monitoring Wells: GGTR will submit the groundwater samples under formal chain of custody command to Torrent Laboratory, Inc. for laboratory analysis of the following fuel constituents:

- TPH-G (EPA 8260B)
- BTEX (EPA 8260B)
- MTBE, ETBE, and TBA (EPA 8260B)

Torrent Laboratory, Inc. will complete all volatile organic analyses within the 14-day required time limit for analysis. A sample trip blank will accompany all groundwater samples to the laboratory and be analyzed for TPH-G & BTEX. Tables in the technical report will present a summary of the analytical results for this event as well as previous monitoring events at the Site. Report appendices will include a copy of the Laboratory Certificate of Analysis and associated Chain of Custody Record.

Groundwater Monitoring Schedule

In their July 25, 2008 letter, the ACEH approved the modification of the groundwater monitoring schedule to reduce the analysis for volatile organic compounds to semi-annually. ACEH directed quarterly monitoring be continued for analyses of TPH as gasoline, benzene, toluene, ethylbenzene, xylenes, MTBE, ETBE, and TBA. Based on our examination of the historical data as illustrated in the charts of Appendix D, contaminant trends appear favorable at this time and GGTR proposes to modify the groundwater monitoring schedule to semi-annual monitoring for all constituents with groundwater sampling during the seasonally high concentrations in the spring (March-April) and follow up sampling in the fall (October-November) when concentrations are at their lowest. GGTR will continue quarterly monitoring as directed until approval of semi-annual sampling by the ACEH.

WASTE MANAGEMENT

Hydrocarbon-affected soil generated during the remedial source excavation and additional soil boring/well installation activities will be either drummed and/or stockpiled and covered with plastic sheeting and then temporarily stored onsite in a secure area. Pending receipt of the composite stockpile soil sample analysis, GGTR will subsequently profile and transport the waste to an appropriate licensed disposal facility under uniform waste manifest. GGTR will transport the drummed soil cuttings under Non-Hazardous Waste Manifest to Allied Waste's Class II Forward Landfill facility in Manteca, California. A copy of the solid waste manifest and associated weight ticket will be included in the technical report.

The well purge water and equipment wash and rinse water generated during the investigation activities, as well as that generated during previous monitoring/investigation events will be transferred to 55-gallon D.O.T.-approved steel drums and stored onsite in a secure area. All waste water containers will be sealed and appropriately labeled as non-hazardous waste and securely stored onsite pending future disposal at respective licensed-disposal facilities. The liquid waste will be profiled for disposal/recycling under uniform waste manifest following receipt of the laboratory results of groundwater sample analysis. Clearwater Environmental Management, Inc. will be utilized to pump the liquid waste from the drums for transport as Non RCRA Hazardous Waste Liquid under Uniform Waste Manifest to the Alviso Independent Oil Facility in Alviso, California.

GEOTRACKER ELECTRONIC SUBMITTAL

GGTR will direct Torrent to submit all analytical data in electronic deliverable format (EDF) via the Internet. All soil/groundwater sample analytical data and survey data will be uploaded to the State Water Resources Control Board's GeoTracker Database System. Also, a site plan, geologic boring logs, and construction log of each newly-installed boring/monitoring well, as well as a copy of the report of findings will be uploaded in Portable Data Format (PDF) to the State GeoTracker Database. The appendices of the resulting technical report will include a copy of each associated GeoTracker Upload Confirmation Form.

REPORT PREPARATION

Following the completion of all field work, GGTR will compile all field and analytical data to be used in preparation of a technical report that discusses the activities and findings of the investigation. The report will also present conclusions and recommendations for further action or case closure. The report will be placed on the ACHCSA's FTP Website for regulatory review and comment.

SCHEDULE

GGTR anticipates beginning the additional field activities within two to three weeks of receiving client authorization to proceed, based upon permit acquisition and subcontracted driller availability. The aforementioned report should be available within 45 to 60 days following receipt of all soil and groundwater analytical results.

HEALTH AND SAFETY PLAN

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., tit. 8, section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., tit. 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements.

In addition, California OSHA's Construction Safety Orders (especially Cal. Code Regs., tit. 8, sections 1539 and 1541) will be followed as appropriate. Specific requirements are identified below:

- At least 72 hours prior to initiating field work, GGTR will surface mark all proposed work area(s) in white marking paint and notify Underground Service Alert (USA). All subsurface utility agencies must mark out all underground utility locations extending through general work area(s), and if high priority subsurface utilities are present within 10 feet of proposed excavation(s), GGTR will meet with specific utility agencies to identify exact locations (Title 8, Section 1541).
- Worksite traffic controls and warning sign placement must conform to the requirements of the State Department of Transportation's California Manual on Uniform Traffic Control Devices for Streets and Highways, September 26, 2006 (Title 8, Sections 1598 & 1599).

GGTR has previously prepared a site-specific Health & Safety Plan (HASP) for the Site in accordance with current health and safety standards as specified by the federal and California OSHAs and has been submitted as part of previous work plans. The HASP will be reviewed and updated if needed for the current work.

The provisions of the HASP are mandatory for all personnel of the proposed project and its contractors who are at the Site. The contractor and its subcontractors doing fieldwork in association with this work plan will either adopt and abide by the HASP or shall develop their own safety plans which, at a minimum, meet the requirements of this HASP. All onsite personnel shall read the HASP and sign the "Plan Acceptance Form" before starting daily Site activities.

LIMITATIONS

It should be understood that all environmental assessments are inherently limited in that conclusions are drawn and recommendations developed from information obtained from limited research and visual observations. Subsurface conditions change significantly with distance and time and therefore may differ from the conditions implied by subsurface investigation. It must be noted that no investigation can absolutely rule out the existence of any hazardous or petroleum substances at a given site. Existing hazardous materials and contaminants can escape detection using these methods. The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and location given. GGTR professional services have been performed, with findings obtained and recommendations prepared in accordance with customary principles and practices in the field of environmental science, at the time of the assessment. This warranty is in lieu of all other warranties either expressed or implied. GGTR is not responsible for the accuracy of information reported by others or the independent conclusions, opinions or recommendations made by others based on the field exploration presented in this report. The findings contained in this report are based upon information contained in previous reports of corrective action activities performed at the subject property and based upon site conditions as they existed at the time of the investigation, and are subject to change. The scope of services conducted in execution of this phase of investigation may not be appropriate to satisfy the needs of other users and any use or reuse of this document and any of its information presented herein is at the sole risk of said user. The figures, drawings and plates presented in this document are only for the purposes of environmental assessment and no other use is recommended. No other third party may rely on this report, figures or plates for any other purpose.

REPORT DISTRIBUTION

All reports that are prepared during the continuing work on this project will be submitted to:

Alameda County Health Care Services Agency
Environmental Health Services, Environmental Protection (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
Attention: Ms. Barbara Jakub — (1 Electronic Copy via ACHCSA FTP)
(1 Electronic Copy via GeoTracker)

William G Sheaff Trust
c/o Dr. Brian R. Sheaff, D.D.S.
1945 Parkside Drive
Concord, California 94519 — *(1 Copy, Bound)*

CERTIFICATION

This work plan has been prepared in accordance with generally accepted environmental practices exercised by professional geologists, scientists, and engineers. No warranty, either expressed or implied, is made as to the professional advice presented herein. The findings conclusions, and recommendations contained in this document are based upon information contained in previous reports of corrective action activities performed at the subject property and based upon site conditions as they existed at the time of the investigation, and are subject to change.

The conclusions presented in this document are professional opinions based solely upon visual observations of the subject property and vicinity, and interpretation of available information as described in this report. The scope of services conducted in execution of this investigation may not be appropriate to satisfy the needs of other users and any use or reuse of this document and any of its information presented herein is at sole risk of said user.

Golden Gate Tank Removal, Inc.

Authored By:

Mark Youngkin
Registered Geologist, CEG No.1380

REGISTERED GEOLOGIST
MARK YOUNGKIN
No. 1380
CERTIFIED ENGINEERING GEOLOGIST
Exp: 4-30-11
STATE OF CALIFORNIA

Brent A. Wheeler
Project Engineer

REFERENCES

Alameda County Environmental Health (ACEC), January 3, 2002, Work Plan Approval Letter

Alameda County Environmental Health (ACEC), September 8, 2003, comment and directive letter

Alameda County Environmental Health (ACEC), June 3, 2004, comment and directive letter

Alameda County Environmental Health (ACEC), February 22, 2005, comment and directive letter

Alameda County Environmental Health (ACEC), June 25, 2008, comment and directive letter

ATT, February 19, 1992, Groundwater Investigation, 5929 College Avenue, Oakland, California, prepared for Dreyers Grand Ice Cream

California Regional Water Quality Control Board, San Francisco Bay Region. Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater; Interim Final – November 2007.

Cambria, August 11, 2006, Subsurface Investigation Report and Second Quarter 2006 Groundwater Monitoring Report, Shell-branded Service Station, 6039 College Avenue, Oakland, California, submitted on behalf of Shell Oil Products US

CET Environmental Services, Inc., November 17, 1999, Groundwater Monitoring, Geoprobe Investigation Results and Work Plan for Bioindicator Sampling, Dreyer's Grand Ice Cream, 5929 College Avenue, Oakland, California, submitted to Alameda County Environmental Health

CET Environmental Services, Inc., August 3, 1999, Results of GeoProbe Investigation, Dreyer's Grand Ice Cream, 5929 College Avenue, Oakland, California, submitted to Alameda County Environmental Health

Conestoga-Rovers & Associates, December 30, 2008, Work Plan for Additional Site Assessment, Former Chevron Service Station 20-9339, 5940 College Avenue, Oakland, California, submitted to ACHCSA

Delta Consultants, Inc., September 12, 2008, Site Conceptual Model, 76 Service Station No. 0018, 6201 Claremont Street, Oakland, California, Prepared for ConocoPhillips Company

Delta Environmental Consultants, Inc./Gettler-Ryan Inc., February 20, 2001, Well Installation Report at Former Chevron Service Station #20-9339, 5940 College Avenue, Oakland, California, prepared for Chevron Products Company

Geological Society of America, 1991, Munsell Rock Color Chart

Gettler-Ryan Inc., March 1, 2000, Work Plan for Well Installation at Former Chevron Service Station #20-9339, 5940 College Avenue, Oakland, California, prepared for Chevron Products Company

GGTR, December 19, 2001. Work Plan for Additional Soil and Groundwater Investigation, 5930 College Avenue, Oakland, California. GGTR Project No. 7335

GGTR, June 10, 2003, Report of Additional Soil and Groundwater Investigation, 5930 College Avenue, Oakland, California. GGTR Project No. 7335

GGTR, December 29, 2003, Work Plan for Additional Site Characterization, 5930 College Avenue, Oakland, California. GGTR Project No. 7335

GGTR, September 20, 2004, Work Plan for Additional Site Characterization Addendum, 5930 College Avenue, Oakland, California. GGTR Project No. 7335

GGTR, August 29, 2006, Report of Additional Site Characterization & Groundwater Monitoring, 5930 College Avenue, Oakland, California, GGTR Project No. 7335

Piers Environmental Services, September 27, 1999, Report of Findings, Groundwater Investigation at 5940 College Ave., Oakland, CA, submitted to ACHCSA

U.S. Geological Survey (USGS), Misc. Field Studies MF-2342, 2000, Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California, by R.W. Graymer

U.S. Geological Survey (USGS), Quaternary Geology of Alameda County and Surrounding Areas: Derived from the Digital Database, Open File 97-97

Weiss Associates, November 26, 1996, Corrective Action Plan and Risk-Based Corrective Action Evaluation Addendum, Shell Service Station, 6039 College Avenue, Oakland, California, prepared for ACHCSA

SOIL AND WATER INVESTIGATION WORK PLAN

&

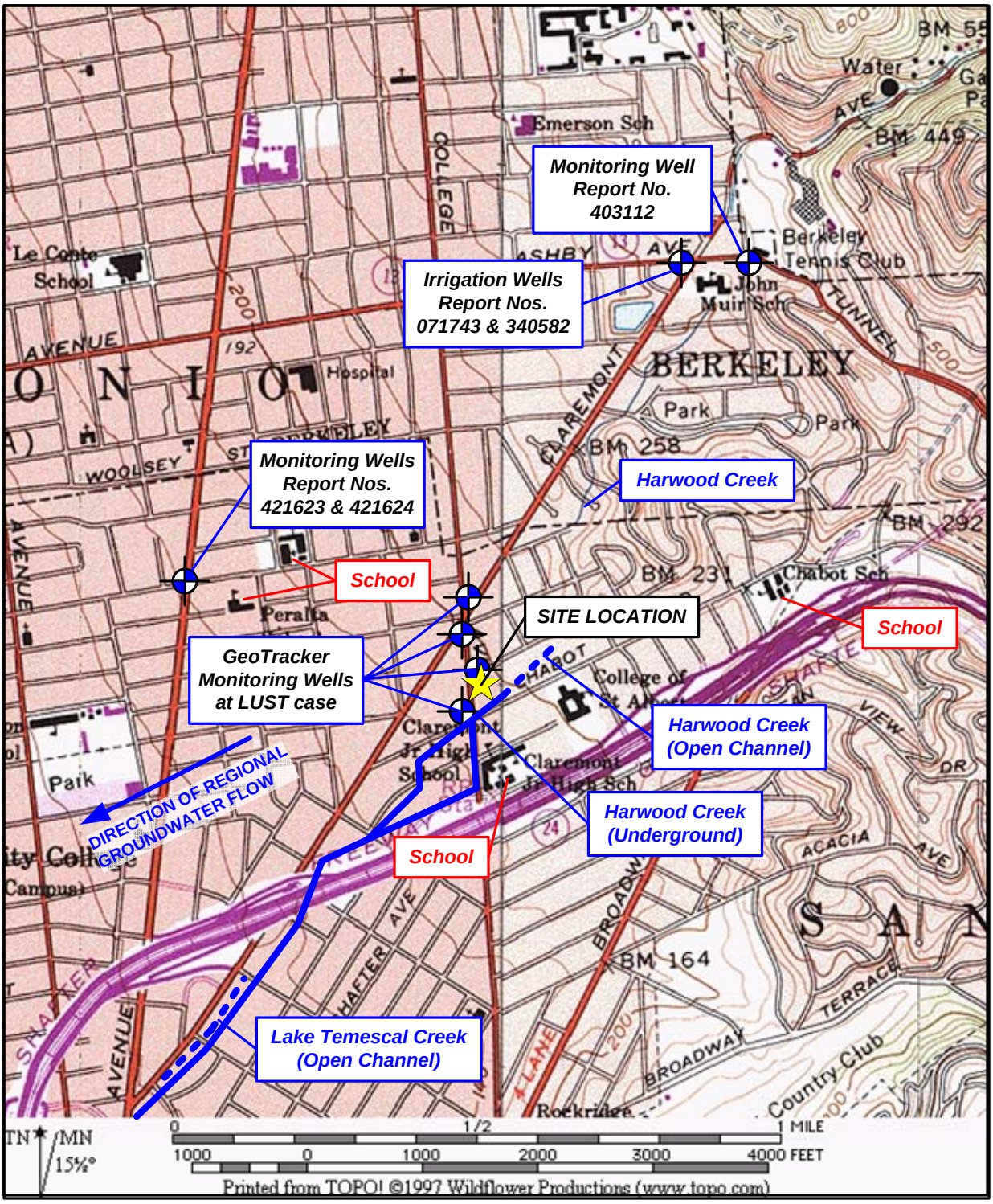
SITE CONCEPTUAL MODEL

APPENDIX A

FIGURES

GGTR Project No. 7335

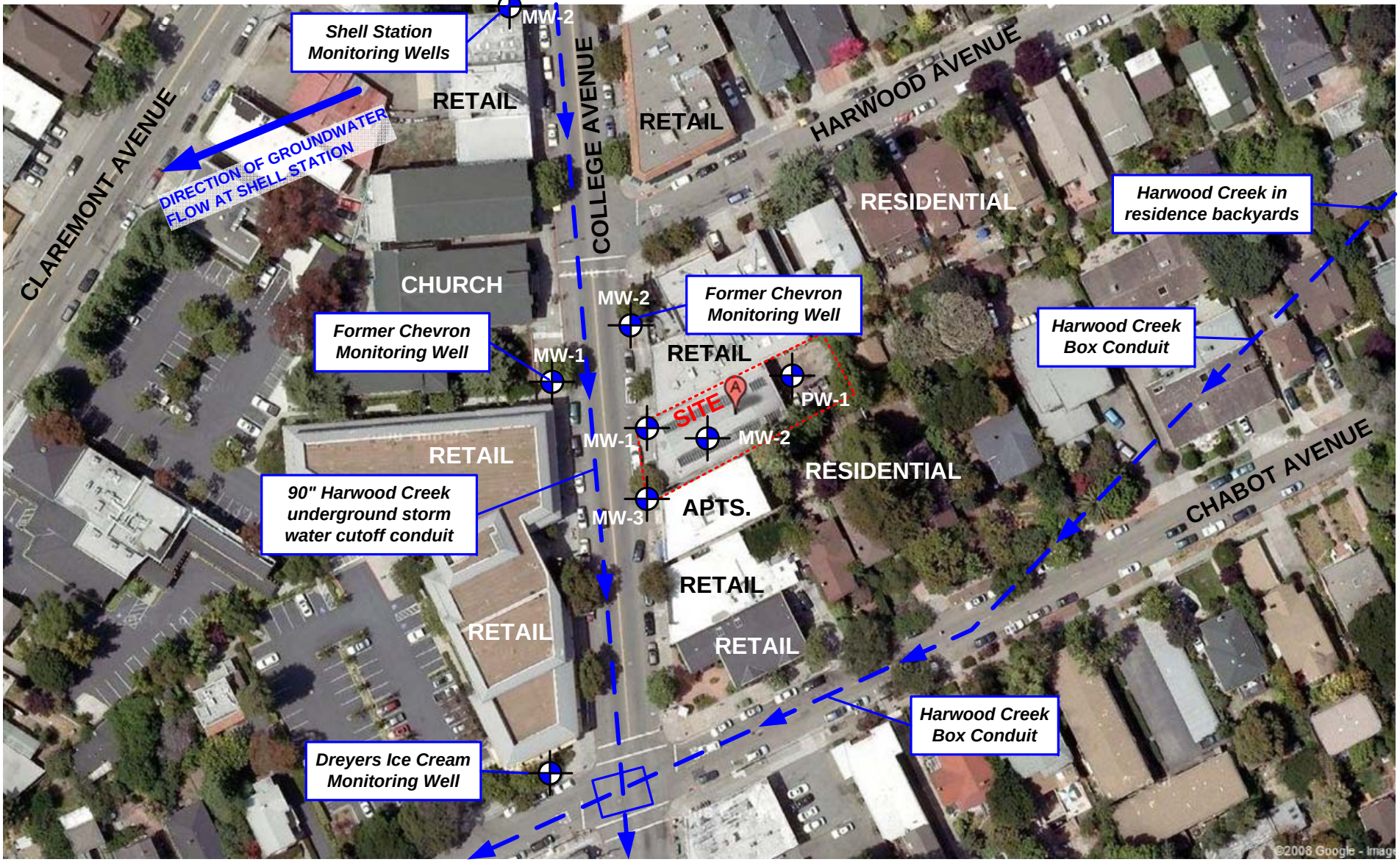
Golden Gate Tank Removal, Inc.
3730 Mission Street, San Francisco, California 94110
Phone (415) 512-1555 • Fax (415) 512-0964
General Engineering Contractors License No. 616521



GOLDEN GATE TANK REMOVAL, INC.
3730 Mission, San Francisco, California 94110
Phone (415) 512-1555 Fax (415) 512-0964

SITE LOCATION MAP
Showing Potential Sensitive Receptors
5930 College Avenue, Oakland, California

GGTR Project No. 7335	October 2008	**Figure 1**



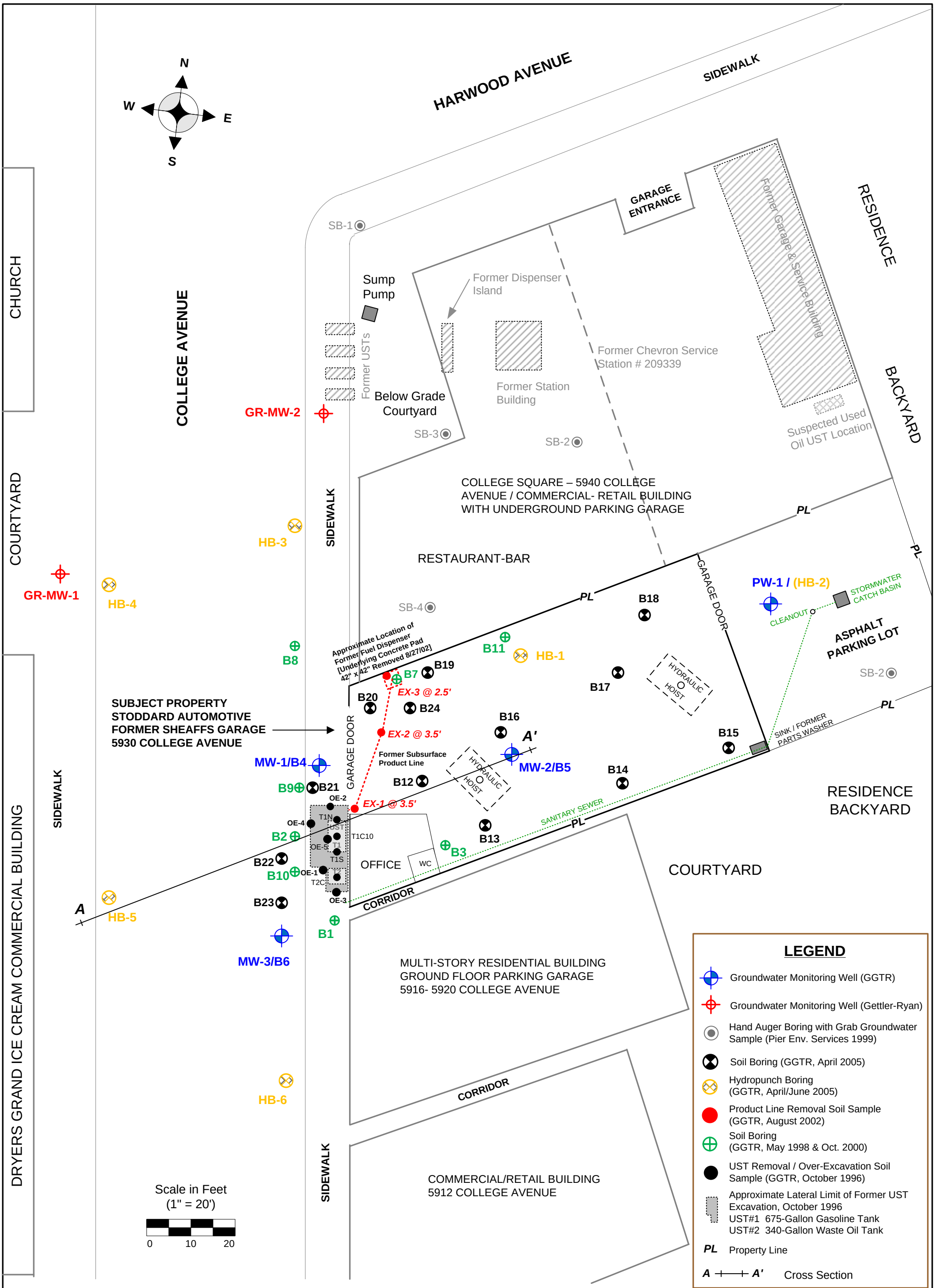
Base Map from Google Maps, 2008, at a scale of about 1"=100 feet with North to top of map.

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

SITE VICINITY MAP

Sheaffs Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335	October 2008	**FIGURE 2**

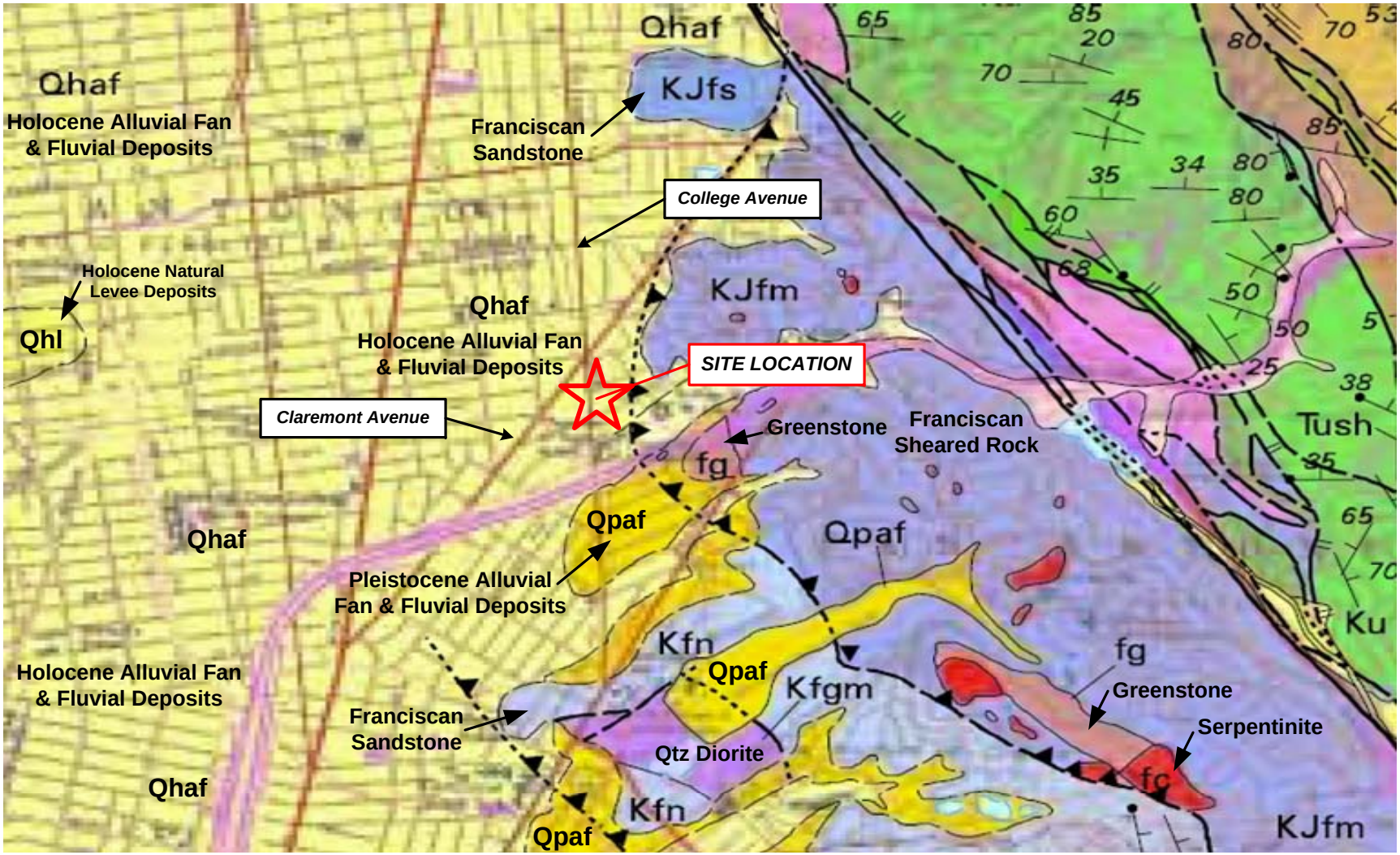


GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

SITE PLAN

Sheaffs Service Garage
5930 College Avenue, Oakland, CA 94618

GGTR Project No. 7335	Figure By: ed (07/08); revised my 01/09	October 2008	**Figure 3**

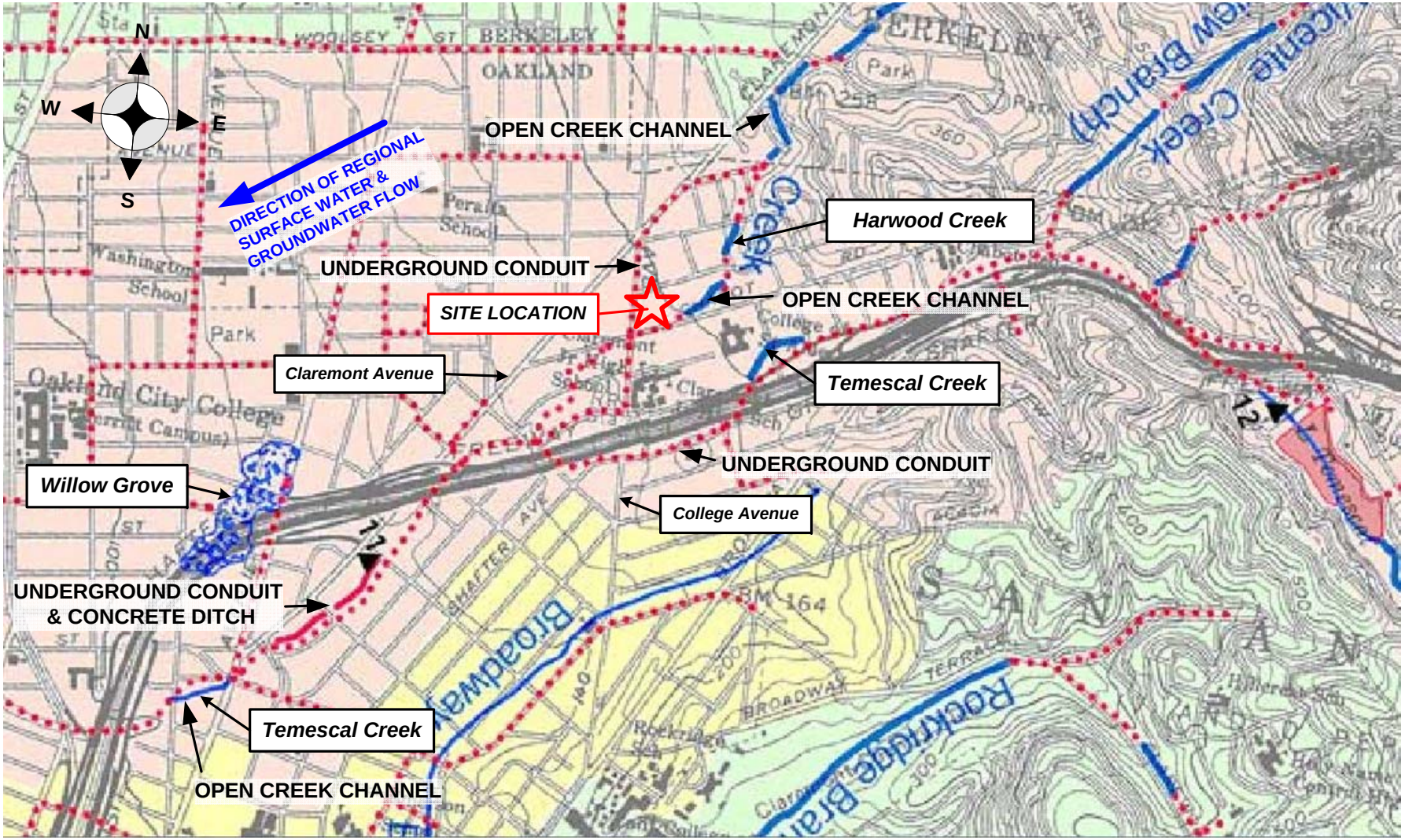


A portion of Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California, 2000, by R.W. Graymer, U.S. Geological Survey Miscellaneous Field Studies MF-2342; North to top; See report text for explanation of geologic units shown on map; Scale about 3 inches per mile.

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

GEOLOGIC MAP
Sheaff's Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335	Fn: 7335_Figure 4_ Geologic Map_Oct 08.vsd	October 2008	**Figure 4**

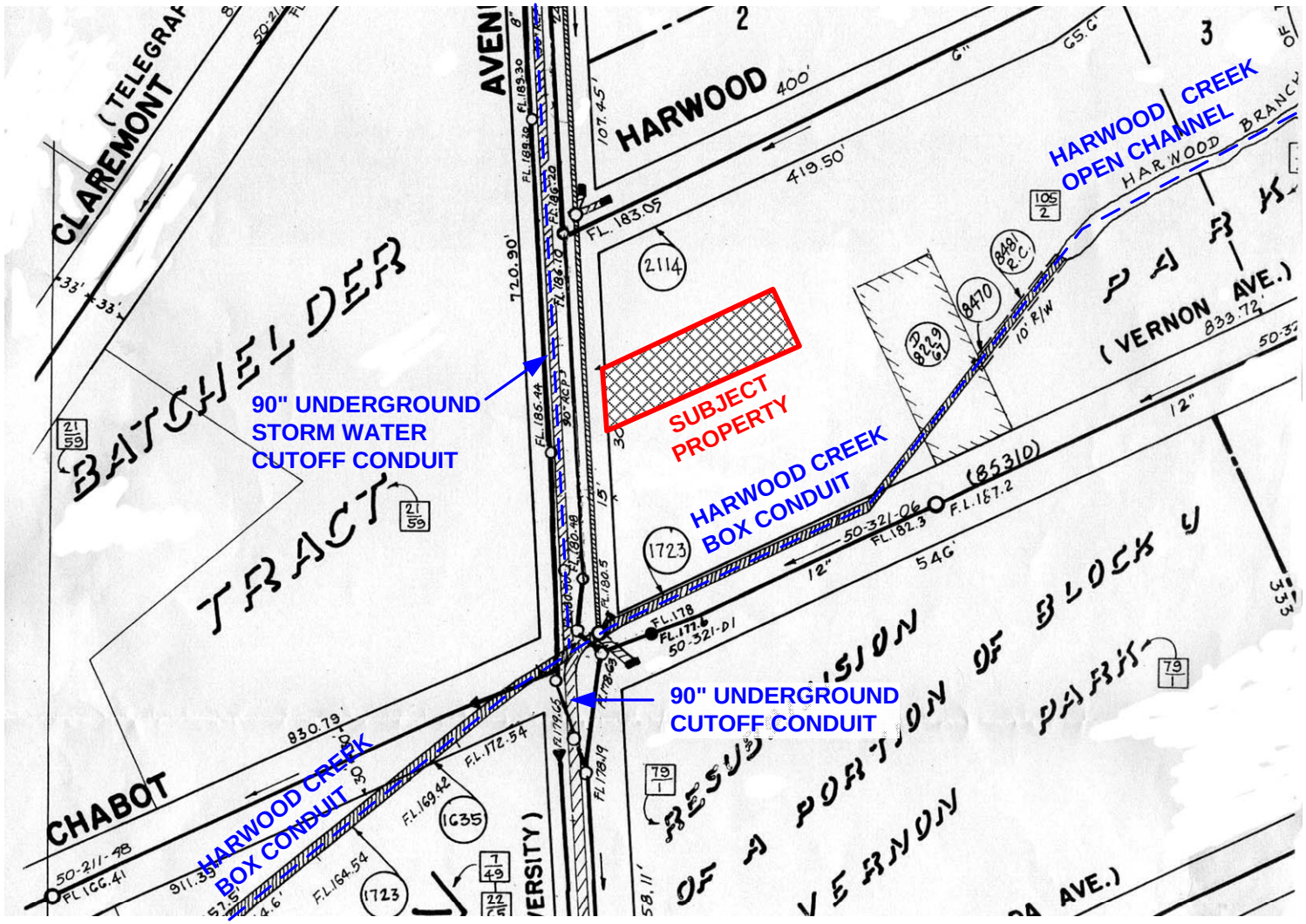


Portion of Guide to San Francisco Bay Area Creeks, Creek and Watershed Map of Oakland and Berkeley, rev. 2000, Janet M. Sowers, The Oakland Museum of Califonria; North to top of map; Scale about 3 inches per mile.

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94107
Phone (415) 512-1555 Fax (415) 512-0964

REGIONAL MAP OF CREEKS & CONDUITS
Sheaffs Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335 | *October 2008* | ***Figure 5***

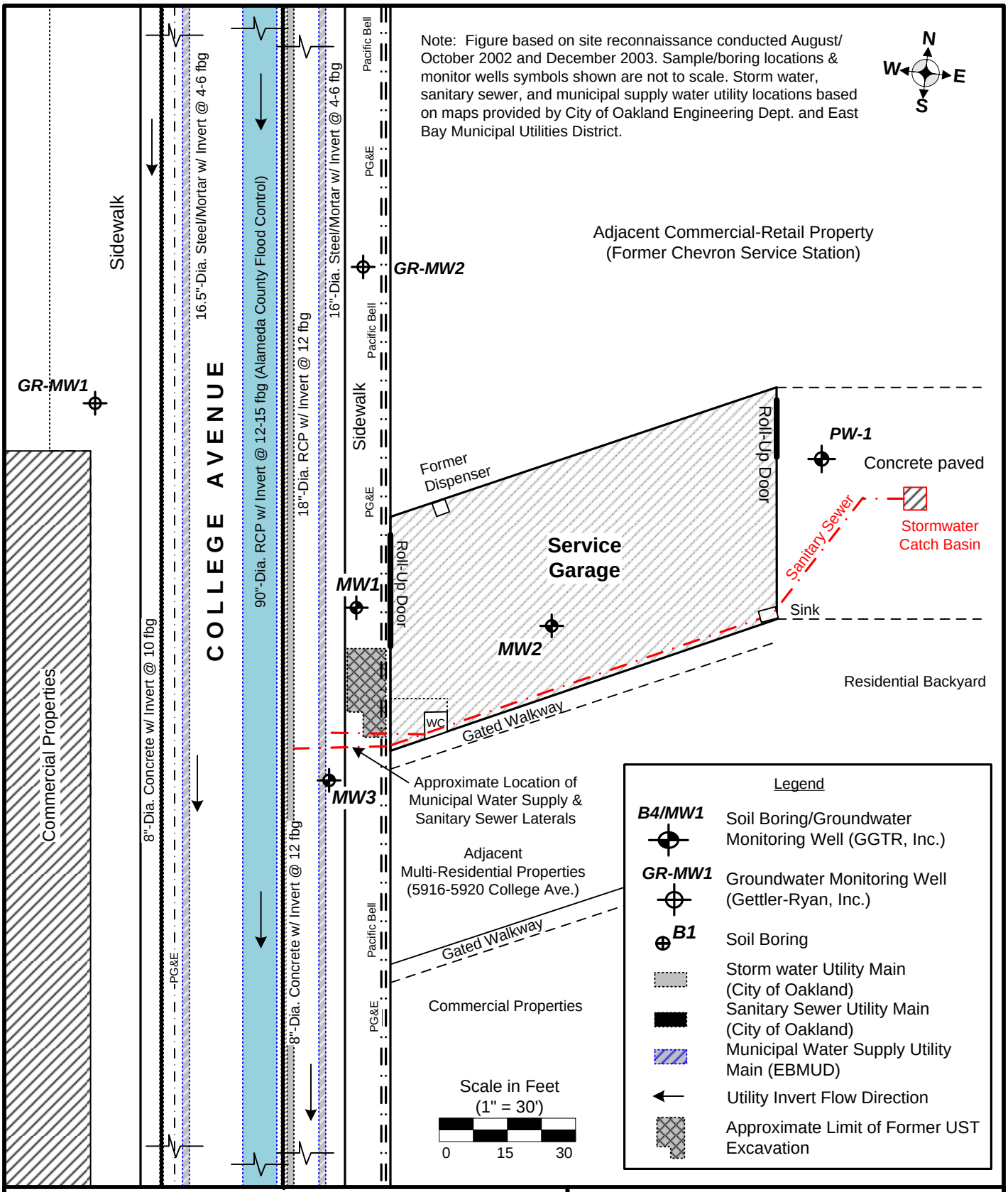


Portion of Alameda County plat maps showing location of subject property in relation to Harwood Branch and associated Harwood Creek storm conduits located both west and east of the site; North to top; Scale about 1" = 100 feet.

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

MAP OF LOCAL STORM WATER CONDUITS
Sheaff's Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335 | *October 2008* | ***Figure 6***



GOLDEN GATE TANK REMOVAL
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-1555

SUBSURFACE UTILITY MAP
Sheaffs Service Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335 | *October 2008* | ***Figure 7***

N
W
E
S

HARWOOD AVENUE

COLLEGE AVENUE

CHURCH

SIDEWALK

Former USTs

SB-1

Former Dispenser Island

Parking Garage Entrance

Former Garage & Service Building

RESIDENCE

Former Chevron Service Station # 209339

Former Station Building

SB-3

SB-2

Suspected Used Oil UST Location

COLLEGE SQUARE
RESTAURANTS AND OFFICES
5940 COLLEGE AVENUE

SB-4

FORMER DISPENSER

FORMER PRODUCT PIPING

GARAGE DOOR

OFFICE

WC

CORRIDOR

RESIDENCE BACKYARDS

STORM WATER CATCH BASIN

HB-2/PW-1

Paved Parking Lot

SINK & FORMER PARTS WASHER

B1 B2 B3 B4/MW1 B5/MW2 B6/MW3 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24

OE-1 OE-2 OE-3 OE-4 OE-5

T1N T1S T1C10 T2C T1 UST

B24 4/30//2005
TPH-G 1.29
Benzene 0.006
MTBE 0.07

B11 10/30//2002
TPH-G ND
Benzene ND<0.005
MTBE ND<0.005

B19 4/30//2005
TPH-G 0.99
Benzene ND<0.005
MTBE 0.02

B7 10/30//2002
TPH-G 1.71
Benzene ND<0.005
MTBE ND<0.005

B8 10/30//2002
TPH-G 0.61
Benzene ND<0.005
MTBE ND<0.005

B18 4/30/2005
No Sample Recovery

PW-1 4/5//2005
TPH-G ND<0.5
Benzene ND<0.005
MTBE ND<0.005

B4 5/6/1998
TPH-G 280
Benzene 4
MTBE 1.0

B20 10/30//2002
TPH-G 0.52
Benzene 0.022
MTBE ND<0.005

B17 4/30/2005
No Sample Recovery
No odor / staining to 9.5 feet

B21 6/22//2005
TPH-G 170
Benzene ND<5
MTBE ND<5

B16 4/30//2005
TPH-G ND<0.5
Benzene ND<0.005
MTBE ND<0.005

OE-2 10/2/1996
TPH-G 8401
Benzene 3.3
MTBE NA

B5 Oct 1999
TPH-G ND
Benzene ND<0.005
MTBE ND<0.005

B9 10/30//2002
TPH-G 27.40
Benzene 0.097
MTBE ND<0.005

B15 4/30/2005
No Sample Recovery
No odor / staining to 10 feet

OE-4 10/2/1996
TPH-G 4301
Benzene 0.93
MTBE NA

T1-N 8/6/1996
TPH-G 6000
Benzene 19
MTBE NA

B12 4/30//2005
TPH-G 0.62
Benzene ND<0.005
MTBE ND<0.005

B14 4/30/2005
No Sample Recovery
No odor / staining to 5 feet

B2 5/6/1998
TPH-G 2800
Benzene 13
MTBE ND<0.005

OE-5 10/2/1996
TPH-G 14001
Benzene 2.2
MTBE NA

B13 4/30/2005
No Sample Recovery
No odor / staining to 5 feet

B3 5/6/1998
TPH-G 48
Benzene 0.5
MTBE ND<0.005

T1-C 8/6/1996
TPH-G 1200
Benzene 9.1
MTBE NA

B22 6/22//2005
TPH-G 100
Benzene ND<0.5
MTBE ND<0.5

T1-S 8/6/1996
TPH-G 8100
Benzene 16
MTBE NA

B10 10/30//2002
TPH-G 81.80
Benzene 0.444
MTBE 0.18

T2-C 8/6/1996
TPH-G 560
Benzene 2.7
MTBE NA

B23 6/22//2005
TPH-G 420
Benzene ND<5
MTBE ND<5

B6 Oct 1999
TPH-G 1.50
Benzene ND<0.005
MTBE ND<0.005

B1 5/6/1998
TPH-G 75
Benzene 0.07
MTBE 0.06

OE-3 10/2/1996
TPH-G ND
Benzene ND
MTBE NA

OE-1 10/2/1996
TPH-G 14001
Benzene 9.8
MTBE NA

100

1000

APARTMENT BUILDING
GROUND FLOOR PARKING
5916- 5920 COLLEGE AVENUE

COMMERCIAL/RETAIL
PROPERTY
5912 COLLEGE AVENUE

COMMERCIAL/ RETAIL

SIDEWALK

Isoconcentration lines show known extent of soil at 7-12 feet below grade with concentrations above 100 and 1000 mg/Kg TPH as gasoline using soil sampling data from 1996,1998, 2002 & 2005

Scale in Feet
(1" = 20')

LEGEND

All Laboratory Soil Analysis Concentrations in mg/Kg

- Existing Groundwater Monitoring Wells (GGTR, Inc.)
- Groundwater Monitoring Wells (Gettler Ryan, Inc.)
- Soil Boring (GGTR, April 2005)
- Hydropunch Boring (GGTR, April/June 2005)
- Soil Boring (GGTR,May 1998 & Oct. 2002)
- UST Removal Soil Sample (GGTR, August & October 1996)
- Approximate Limit of Former UST Excavation
  UST1 - 675 Gallon Gasoline Tank
  UST2 - 340 Gallon Waste Oil Tank

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

TPH as Gasoline in Soil at Depth of 7-12 Feet

Sheaffs Service Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335 | *January 2009* | ***Figure 8***

N
W
E
S

HARWOOD AVENUE

COLLEGE AVENUE

CHURCH

SIDEWALK

Parking Garage Entrance

Former Garage & Service Building

RESIDENCE

SB-1

Former Dispenser Island

Former USTs

Former Station Building

Former Chevron Service Station # 209339

SB-3

SB-2

Suspected Used Oil UST Location

COLLEGE SQUARE
RESTAURANTS AND OFFICES
5940 COLLEGE AVENUE

B24 4/30/2005
TPH-G 31.10
Benzene 0.341
MTBE 0.08

B11 10/30/2002
TPH-G ND
Benzene ND<0.005
MTBE ND<0.005

PW-1 4/5//2005
TPH-G 0.8
Benzene ND<0.005
MTBE ND<0.005

STORM WATER CATCH BASIN

B19 4/30/2005
TPH-G 139 @15'
Benzene 0.841
MTBE ND<0.020

B7 10/30/2002
TPH-G 61.80
Benzene 0.762
MTBE ND<0.02

B8 10/30/2002
TPH-G 14.0
Benzene 0.184
MTBE ND<0.005

SB-4

B18

HB-2/PW-1

B11

Paved Parking Lot

FORMER DISPENSER

?

B19

B7

100

B17

B20 10/30/2002
TPH-G 63.60
Benzene 0.395
MTBE ND<0.020

B21 6/22/2005
TPH-G 970 @ 14.5'
Benzene ND<25
MTBE ND<25

B20

B24

GARAGE DOOR

FORMER PRODUCT PIPING

B16 4/30/2005
TPH-G 5.27
Benzene 0.061
MTBE ND<0.005

B16

B5 Oct 1999
TPH-G 2.80
Benzene 0.69
MTBE ND<0.005

B5/MW2

B15

SINK & FORMER PARTS WASHER

B4/MW1

B9 10/30/2002
TPH-G 47.50
Benzene 1.12
MTBE ND<0.005

B12

B12 4/30/2005
TPH-G 79.5
Benzene 0.537
MTBE 0.12

B14

B9

B21

OE-2

T1N

OE-4

UST

T1C10

OE-5

T1

T1S

100

100

B2

B22

OE-1

UST

T2C

OE-3

OFFICE

WC

B3

B13

CORRIDOR

RESIDENCE
BACKYARDS

B10

B23

B1

B6/MW3

B22 6/22/2005
TPH-G 0.25
Benzene ND<0.005
MTBE ND<0.005

B10 10/30/2002
TPH-G 479 @ 15'
Benzene 4.16
MTBE ND<0.25

B23 6/22/2005
TPH-G 910 @ 17'
Benzene ND<5
MTBE ND<5

B6 Oct 1999
TPH-G ND
Benzene ND<0.005
MTBE 0.04

APARTMENT BUILDING
GROUND FLOOR PARKING
5916- 5920 COLLEGE AVENUE

COMMERCIAL/RETAIL
PROPERTY
5912 COLLEGE AVENUE

COMMERCIAL/ RETAIL

SIDEWALK

Isoconcentration lines show known extent of soil at 13-20 feet below grade with concentrations above 100 mg/Kg TPH as gasoline using soil sampling data from 1996,1998, 2002 & 2005

Scale in Feet
(1" = 20')

LEGEND

All Laboratory Soil Analysis Concentrations in mg/Kg

- Existing Groundwater Monitoring Wells (GGTR, Inc.)
- Groundwater Monitoring Wells (Gettler Ryan, Inc.)
- Soil Boring (GGTR, April 2005)
- Hydropunch Boring (GGTR, April/June 2005)
- Soil Boring (GGTR,May 1998 & Oct. 2002)
- UST Removal Soil Sample (GGTR, August & October 1996)
- Approximate Limit of Former UST Excavation
  UST1 - 675 Gallon Gasoline Tank
  UST2 - 340 Gallon Waste Oil Tank

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

TPH as Gasoline in Soil at Depth of 13-20 Feet

Sheaffs Service Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335 | *January 2009* | ***Figure 9***

N
W
E
S

HARWOOD AVENUE

Parking Garage Entrance

RESIDENCE

Former Garage & Service Building

SB-1

Former Dispenser Island

Former Chevron Service Station # 209339

Former Station Building

Former USTs

COLLEGE AVENUE

90 Inch Storm Water Cutoff Conduit

GR-MW-2

(860)

SB-3

SB-2

?

?

?

Reported Used Oil UST Location

COLLEGE SQUARE
RESTAURANTS AND OFFICES
5940 COLLEGE AVENUE

PL

GR-MW-1

(120)

1000 µg/L

SIDEWALK

Estimated extent of TPH as gasoline in groundwater based on October 2008 groundwater sampling.

SB-4

PW-1

(1500)

STORM WATER CATCH BASIN

FORMER DISPENSER

AUTOMOTIVE REPAIR GARAGE
5930 COLLEGE AVENUE

ASPHALT PARKING LOT

5000 µg/L

GARAGE DOOR

FORMER PRODUCT PIPING

MW-2

(4900)

SINK & FORMER PARTS WASHER

MW-1

(15000)

Estimated Direction of Groundwater Flow

10000 µg/L

UST T1

UST T2

OFFICE

WC

CORRIDOR

APARTMENT BUILDING
WITH GROUND FLOOR PARKING
5916- 5920 COLLEGE AVENUE

RESIDENCE BACKYARDS

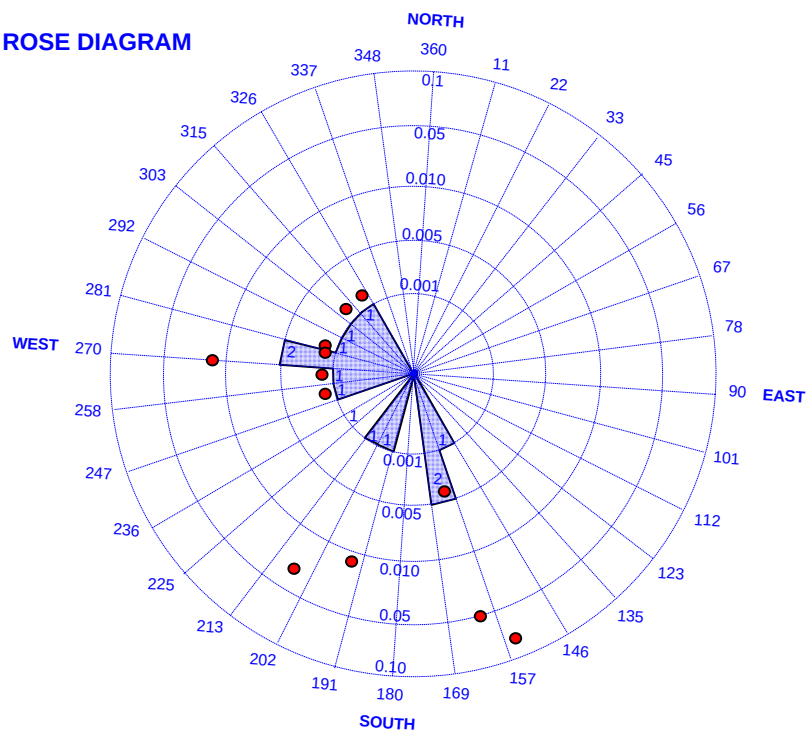
MW-3

(2900)

MAP LEGEND

MW- 3 (2900)	Groundwater Monitoring Well and TPH-G Concentration in ug/L (GGTR; 10/21/08)
6000	Approximate Isoconcentration Contour Line (10/21/08)
	Former Chevron Station - Groundwater Monitoring Well and TPH-G Concentration in ug/l (GR, 10/15/08)
TPH-G	Total Petroleum Hydrocarbons as Gasoline
ug/L	Micrograms per liter
	Approx. Limit of Former UST Excavation
PL	Property Line
	October 21, 2008, Flow direction & gradient = 159.5° at 0.004 ft/ft

ROSE DIAGRAM



Date	Groundwater Flow Direction / Hydraulic Gradient (ft/ft)
Wells MW-1, MW-3 & PW-1:	
4/14/05	161.3@0.05
7/26/05	282.5@0.002
10/14/05	309.9@0.002
1/13/06	194.8@0.016
04/14/06	208.5@0.026
10/26/06	249.9@0.002
01/30/07	325@0.002
04/13/07	265.9@0.002
07/24/07	281.8@0.002
4/21/08	155.2@0.072
7/22/08	270.4@0.012
10/21/08	159.5@ 0.004

Rose diagram showing historic flow direction & gradient. Circles show recent data from three wells MW-1, MW-3 & PW-1 since April 14, 2005. Note non-linear scale for gradient to accommodate large variation in data. Bar graph shows number of values within each interval of flow direction for recent 2005-2008 data.

Scale in Feet
(1" = 20')

0 10 20

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Ph (415) 512-1555 Fx (415) 512-0964

TPH GASOLINE IN GROUNDWATER 2008

Sheaffs Service Garage
5930 College Avenue, Oakland, CA 94618

GGTR Project No. 7335 | *October 2008* | ***Figure 10***

N
W
E
S

HARWOOD AVENUE

CHURCH

COLLEGE AVENUE

SIDEWALK

Parking Garage Entrance

Former Garage & Service Building

RESIDENCE

SB-1

SB-1 1999
TPH-G 5100
Benzene 43
MTBE 110

Former Dispenser Island

Former USTs

Former Chevron Service Station # 209339

Former Station Building

SB-2 1999
TPH-G ND
Benzene ND
MTBE ND

SB-2

COLLEGE SQUARE
RESTAURANTS AND OFFICES
5940 COLLEGE AVENUE

Reported Used Oil UST Location

MW-2 04/14/06
TPH-G 180 ppb
Benzene ND<0.5 ppb
MTBE NA

GR-MW-2

SB-3

SB-3 1999
TPH-G 59,000 ppb
Benzene 3500 ppb
MTBE 650

1,000 µg/L

10,000 µg/L

100,000 µg/L

HB-3 07/11/05
TPH-G 13,000 ppb
Benzene 690 ppb
MTBE ND<2000

HB-3

?

?

B19 05/02/05
TPH-G 4,600,000 ppb
Benzene 31,100 ppb
MTBE ND<250

B17 05/19//05
TPH-G ND<50 ppb
Benzene ND<0.5ppb
MTBE ND<50

B18 05/14//05
TPH-G 51ppb
Benzene ND<0.5ppb
MTBE ND<50

MW-1 04/14/06
TPH-G ND<50 ppb
Benzene ND<0.5 ppb
MTBE NA

GR-MW-1

HB-4 07/11/05
TPH-G 14,000 ppb
Benzene 13 ppb
MTBE ND<2000

HB-4

SB-4 1999
TPH-G 190,000 ppb
Benzene 890 ppb
MTBE 1100

HB-1 05/19//05
TPH-G 173 ppb
Benzene 0.8 ppb
MTBE 0.9 ppb

HB-2/PW-1 04/14//06
TPH-G 120 ppb
Benzene 2.3 ppb
MTBE ND <2 ppb

HB-2/PW-1

STORM WATER CATCH BASIN

Paved Parking Lot

B8 10/30/02
TPH-G 1,480 ppb
Benzene 386 ppb
MTBE 35

B8

B7 10/30/02
TPH-G 296,000 ppb
Benzene 18,400 ppb
MTBE 1,360

No GW Sample

B11

B18

HB-1

B17

FORMER DISPENSER

B7

B19

B20 05/19/05
TPH-G 60,700 ppb
Benzene 6,800 ppb
MTBE 394 ppb

B24 05/02/05
TPH-G 3,830,000 ppb
Benzene 33,200 ppb
MTBE ND<50

B16 05/02/05
TPH-G 154,000 ppb
Benzene 2,510 ppb
MTBE 197 ppb

STODDARD AUTOMOTIVE
FORMER SHEAFFS GARAGE
5930 COLLEGE AVENUE

B4/MW-1 04/14/06
TPH-G 51,000 ppb
Benzene 14,000 ppb
MTBE 270

B20

B24

B16

B5/MW2

B5/MW2 04/14//06
TPH-G 21,000 ppb
Benzene 4,000 ppb
MTBE ND <100 ppb

B15

SINK & FORMER PARTS WASHER

B15 05/19//05
TPH-G 53 ppb
Benzene 8.4 ppbb
MTBE ND<50

B21 - 06/22/05
TPH-G 130,000 ppb
B 21,000 ppb
MTBE ND<10,000 ppb

B4/MW1

B21

B9 11/02/02
TPH-G 16100 ppb
Benzene 1250 ppb
MTBE 879 ppb

B9

GARAGE DOOR

FORMER PRODUCT PIPING

B12

B12 05/02/05
TPH-G 934,000 ppb
Benzene 13,900 ppb
MTBE ND<500,000

B14

B14 05/19//05
TPH-G ND<50 ppb
Benzene ND<0.5 ppb
MTBE 1.2 ppb

SIDEWALK

B2

B2 05/06/98
TPH-G 200,000 ppb
Benzene 30,000 ppb
MTBE 2,500 ppb

UST T1

OFFICE

B3

No GW Sample

B13

CORRIDOR

No GW Sample

B22

UST T2

WC

HB-5

No GW Sample

B10 11/01/02
TPH-G 49,400 ppb
Benzene 6,600 ppb
MTBE 2,680 ppb

B10

B23

B1

B3 05/06//98
TPH-G 1,000,000 ppb
Benzene 17,000 ppb
MTBE 18,000 ppb

RESIDENCE BACKYARDS

B23 07/11//05
TPH-G 21,000 ppb
Benzene 2,200 ppb
MTBE 880 ppb

B6/MW3

B6/MW-3 04/14/06
TPH-G 5,000 ppb
Benzene 760 ppb
MTBE 69

B1 05/06/98
TPH-G 31,000 ppb
Benzene 2,600 ppb
MTBE ND

APARTMENT BUILDING
GROUND FLOOR PARKING
5916- 5920 COLLEGE AVENUE

HB-6

HB-6 07/11/05
TPH-G 45 ppb
Benzene ND<0.5 ppb
MTBE ND<100

Extent of ground water above 1000 µg/L TPH as gasoline using grab Hydropunch groundwater sampling data from 1998, 2002 & 2005

COMMERCIAL/RETAIL
PROPERTY
5912 COLLEGE AVENUE

COMMERCIAL/ RETAIL

Scale in Feet
(1" = 20')

LEGEND

- Existing Groundwater Monitoring Wells (GGTR, INc.)
- Groundwater Monitoring Wells (Gettler Ryan, Inc.)
- Soil Boring (GGTR, April 2005)
- Hydropunch Boring (GGTR, April/June 2005)
- Soil Boring (GGTR,May 1998 & Oct. 2002)
- Approximate Limit of Former UST Excavation
  UST1 - 675 Gallon Gasoline Tank
  UST2 - 340 Gallon Waste Oil Tank

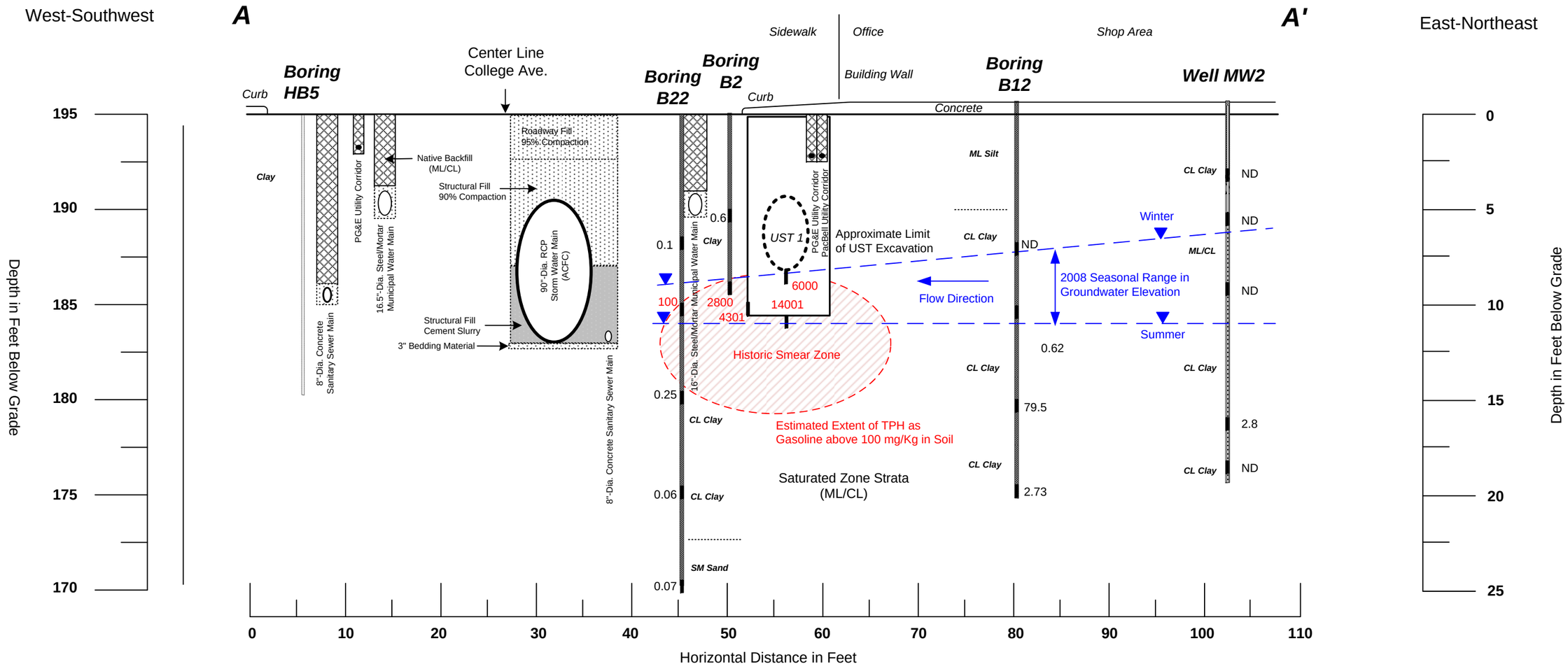
GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

TPH as Gasoline in Groundwater 2006

Sheaff's Service Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335 | *October 2008* | ***Figure 11***

Cross Section A-A'



LEGEND

Scale in Feet

0 10 20

Hor, : Vert. Exaggeration = 1:2

MW3 Existing Groundwater Monitor Well

Maximum Historical Seasonal Fluctuation in Groundwater Elevation

B1 Soil Boring (Portland Cement Backfill)

Subsurface Utility Corridor (Backfill: Native overlying utility grade sand)

SM/ML	Clayey, Silty SAND/Sandy SILT
ML/CL	Silty CLAY/Clayey SILT
ML	Clayey, Sandy SILT
CL	Silty CLAY

Notes: Location of Cross Section C-C' referenced in Figure 3; RCP = reinforced concrete pipe; ACFC = Alameda County Flood Control; MSL = Mean Sea Level; Trench backfill and utility invert depths are approximate and based on information provided by associated utility agencies; All utility invert gradient and flow is south along parallel to College Avenue.

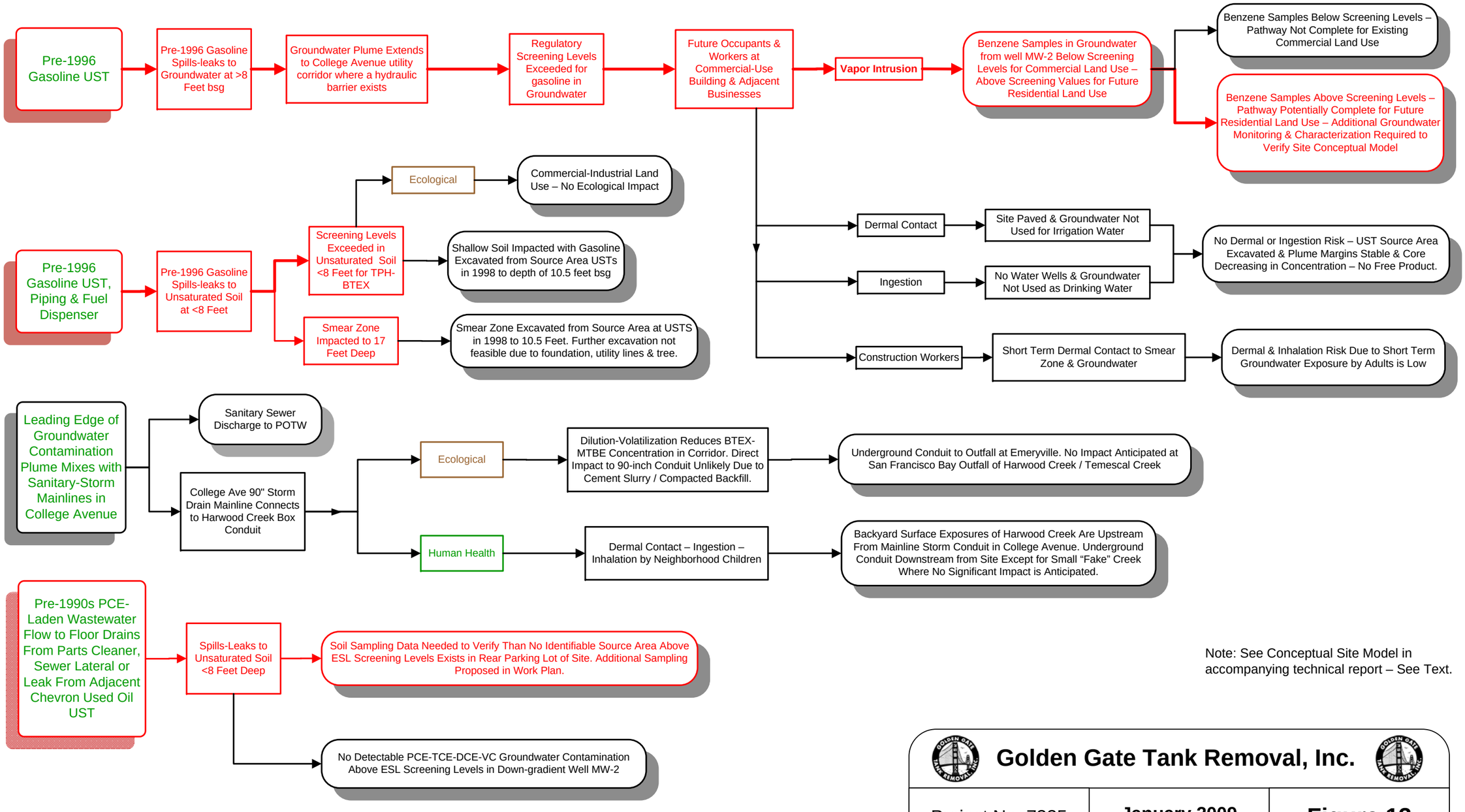
GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, California 94110
Phone (415) 512-1555 Fax (415) 512-0964

CROSS SECTION A-A'
Sheaffs Service Garage
5930 College Avenue, Oakland, California

GGTR Project No. 7335	*Fine name: 7335_Figure 12_Cross Section A-A Jan 09.vsd*	*Figure By: baw/12.03 revised my/1.09*	***FIGURE 12***

Conceptual Site Model – Risk Assessment Diagram

Sheaffs Service Garage at 5930 College Avenue in Oakland, California



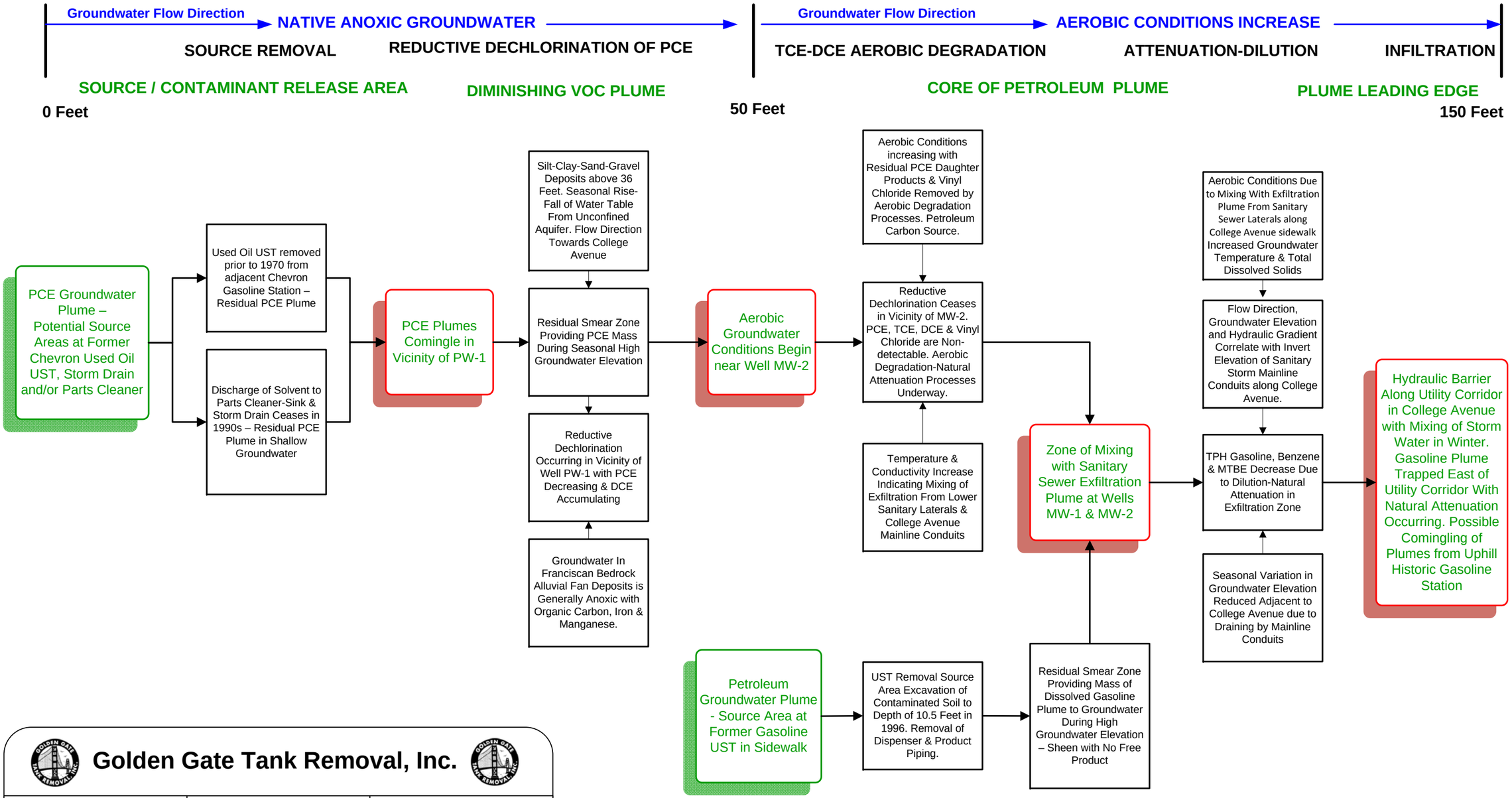
Note: See Conceptual Site Model in accompanying technical report – See Text.

Golden Gate Tank Removal, Inc.

Project No. 7335	**January 2009**	**Figure 13**

CONCEPTUAL SITE MODEL – PLUME ASSESSMENT DIAGRAM

Sheaffs Service Garage at 5930 College Avenue in Oakland, California



Golden Gate Tank Removal, Inc.

Project No. 7335	**January 2009**	**Figure 14**

Note: See Conceptual Site Model in accompanying technical report – See report text for details.

N
W
E
S

HARWOOD AVENUE
SIDEWALK
RESIDENCE
BACKYARD
GARAGE ENTRANCE
TWO-STORY COMMERCIAL BUILDING
WITH UNDERGROUND PARKING GARAGE
5940 COLLEGE AVENUE
TWO-STORY COMMERCIAL BUILDING
RESTAURANTS, RETAIL AND OFFICES
FORMER CHEVRON SERVICE STATION
5940 COLLEGE AVENUE
COLLEGE SQUARE
RESTAURANT-BAR
CHURCH
COURTYARD
COLLEGE AVENUE
SIDEWALK
Sump
Pump
Below Grade
Courtyard
GR-MW-1
GR-MW-2
HB-3
HB-4
HB-5
HB-6
MW-4
MW-5
CPT-1
MW-3/B6
B8
B1
B2
B3
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21
B22
B23
B24
MW-1/B4
MW-2/B5
B25
B26
B27
PW-1 / (HB-2)
STORMWATER
CATCH BASIN
CLEANOUT
Approximate Location of
Former Fuel Dispenser
[Underlying Concrete Pad
42" x 42" Removed 8/27/02]
EX-1 @ 3.5'
EX-2 @ 3.5'
EX-3 @ 2.5'
Former Subsurface
Product Line
SUBJECT PROPERTY
STODDARD AUTOMOTIVE
FORMER SHEAFFS GARAGE
5930 COLLEGE AVENUE
GARAGE DOOR
GARAGE DOOR
HYDRAULIC
HOIST
HYDRAULIC
HOIST
OE-1
OE-2
OE-3
OE-4
OE-5
T1N
T1
T1S
T1C10
T2
T2C
UST
OFFICE
WC
CORRIDOR
CORRIDOR
SANITARY SEWER
SINK / FORMER
PARTS WASHER
ASPHALT
PARKING LOT
RESIDENCE
BACKYARD
COURTYARD
MULTI-STORY RESIDENTIAL BUILDING
GROUND FLOOR PARKING GARAGE
5916- 5920 COLLEGE AVENUE
COMMERCIAL/RETAIL BUILDING
5912 COLLEGE AVENUE
MULTI-TENANT COMMERCIAL/ RETAIL BUILDING
SIDEWALK
SIDEWALK

Scale in Feet
(1" = 20')
0 10 20

LEGEND

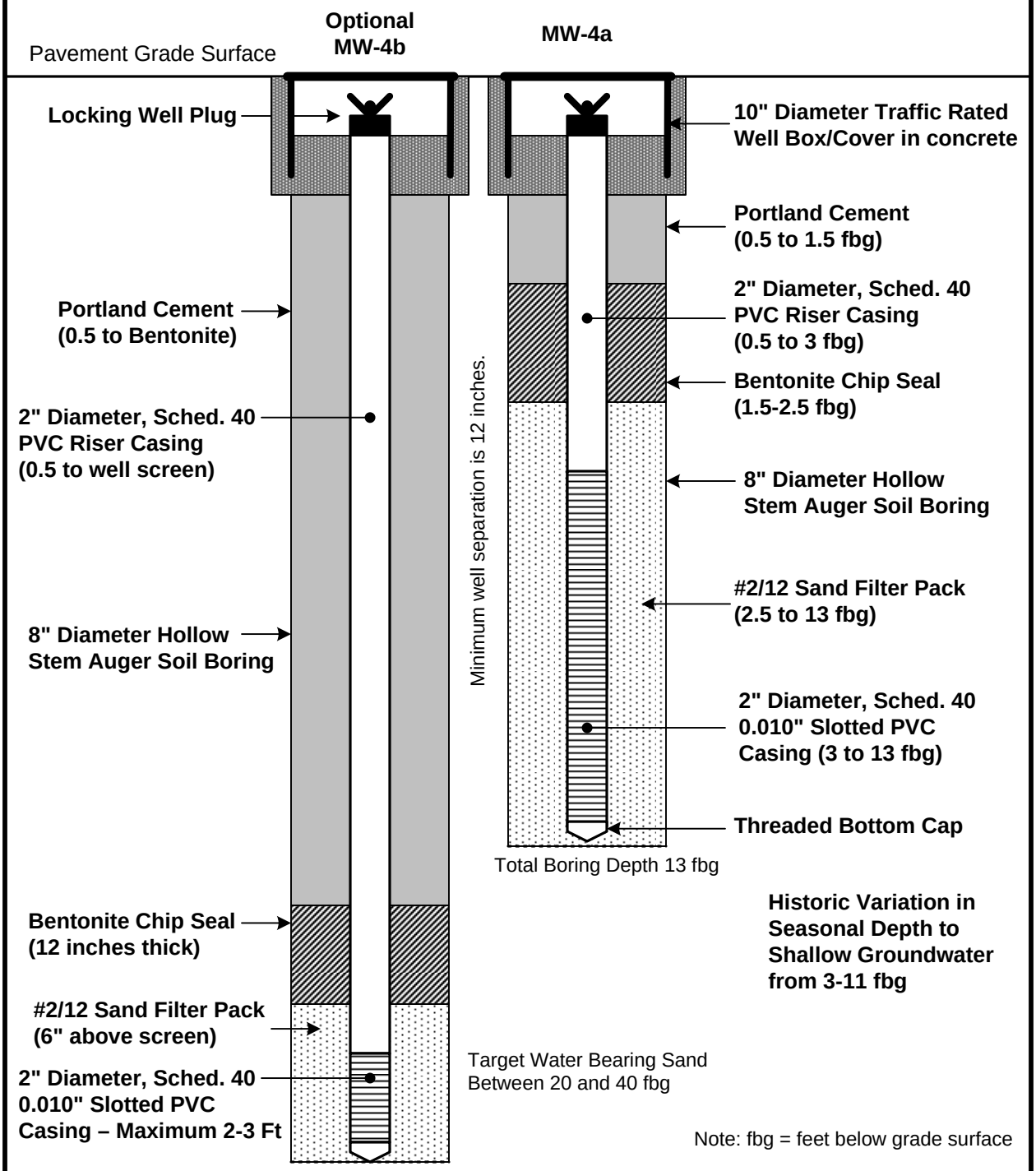
- Proposed CPT Boring
- Proposed Groundwater Monitoring Well
- Proposed Soil Boring
- Groundwater Monitoring Well (GGTR)
- Groundwater Monitoring Well (GR)
- Soil Boring (GGTR, April 2005)
- Hydropunch Boring (GGTR, April/June 2005)
- Product Line Removal Soil Sample (GGTR, August 2002)
- Soil Boring (GGTR, May 1998 & Oct. 2000)
- UST Removal / Over-Excavation Soil Sample (GGTR, October 1996)

GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

PROPOSED WORK
Sheaffs Service Garage
5930 College Avenue, Oakland, CA 94618

GGTR Project No. 7335	Figure By: ed (07/08); revised my 01/09	January 2009	***Figure 15***

Groundwater Monitoring Well Cluster Construction Diagram



GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

WELL CONSTRUCTION DIAGRAM
Sheaffs Service Garage
5930 College Ave., Oakland, CA

GGTR Project 7335	*Rev: my/01.09*	*Not To Scale*	***Figure 16***

SOIL AND WATER INVESTIGATION WORK PLAN

&

SITE CONCEPTUAL MODEL

APPENDIX B

PHOTOGRAPHS

GGTR Project No. 7335

Golden Gate Tank Removal, Inc.
3730 Mission Street, San Francisco, California 94110
Phone (415) 512-1555 • Fax (415) 512-0964
General Engineering Contractors License No. 616521

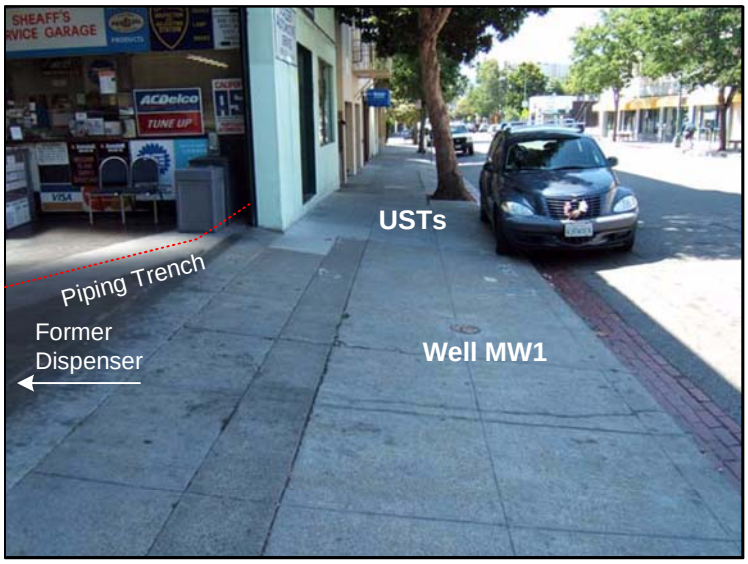
PHOTOGRAPHS OF SITE AND VICINITY

Photograph No. 1 - Street scene looking northward uphill on College Avenue showing subject building (green building with large rollup door & tree) on right. Newer commercial development across street on left. Storm drain - 96" diameter - flows down middle of street with uphill to left. USTs formerly located in sidewalk under tree.

Photograph No. 2 - View of subject building at 5930 College Avenue occupied by Stauder Automotive Service. Former USTs located in sidewalk under tree with former dispenser to left inside rollup door. Monitoring well MW1 located in sidewalk in driveway at sidewalk.

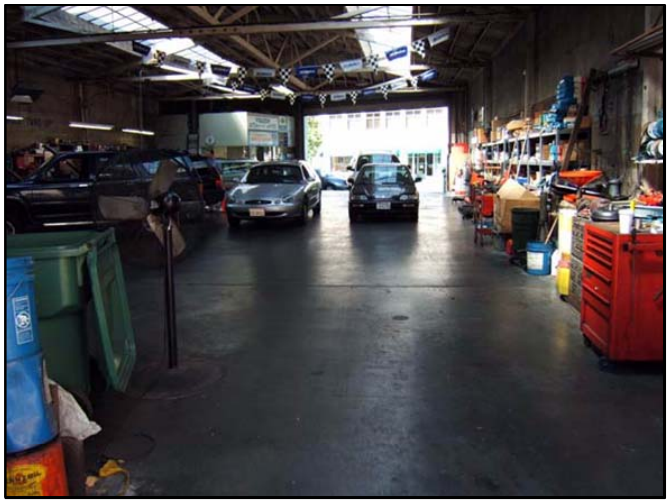
Photograph No. 3 - View northward of College Avenue and subject property to right behind tree. Adjacent property at 5920 College Ave. to right with first floor parking-retail (T-Mobile store) and multi-family above. USTs in sidewalk behind tree and monitoring well MW3 in street.

PHOTOGRAPHS OF SITE AND VICINITY



Photograph No. 4 – View of College Avenue to right & subject property (green building with large rollup door). USTs formerly located in sidewalk near tree. Monitoring well MW1 in driveway/sidewalk. Former product piping trench to former dispenser inside of rollup door to left.

Photograph No. 5 - Interior view of subject building at 5930 College Avenue occupied by Stauder Automotive Service. Monitoring well MW2 located in concrete floor at center of photograph.



Photograph No. 6 - Interior view of subject building at 5930 College Avenue occupied by Stauder Automotive Service. College Avenue beyond rollup doorway. View from doorway to rear storage yard.

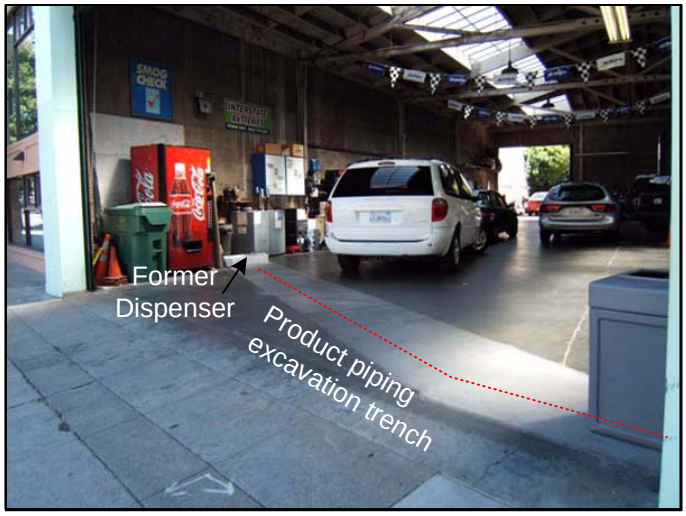
GOLDEN GATE TANK REMOVAL, INC.
3730 Mission Street, San Francisco, CA 94110
Phone (415) 512-1555 Fax (415) 512-0964

PHOTOGRAPHS
Sheaff's Garage
5930 College Avenue, Oakland, California

PHOTOGRAPHS OF SITE AND VICINITY

Photograph No. 7 - Subject property at 5930 College Avenue. View of rear paved storage yard-parking lot. Piezometer PW-1 visible at center of photo. Adjacent commercial building at 5940 College Avenue in background. Single-family residential neighborhood to right beyond wall and/or fence.

Photograph No. 8 - Interior view of subject building at 5930 College Avenue with rear storage yard beyond open doorway at rear of photograph. Concrete patch of product line excavation in foreground with former dispenser location at concrete pad on left wall of building.



Photograph No. 9 - View of adjacent commercial building at 5940 College Avenue occupied by Barclays Restaurant & Pub and commercial businesses. Former Chevron service station. Development is 3 feet below grade with sump pump pit located at left of picture beneath stairway. Gettler-Ryan well GR-MW1 in sidewalk near sump pump pit.

SOIL AND WATER INVESTIGATION WORK PLAN

&

SITE CONCEPTUAL MODEL

APPENDIX C

TABLES

GGTR Project No. 7335

Golden Gate Tank Removal, Inc.
3730 Mission Street, San Francisco, California 94110
Phone (415) 512-1555 • Fax (415) 512-0964
General Engineering Contractors License No. 616521

TABLE 1A

Results of Soil Sample Analysis for Petroleum

Hydrocarbon Constituents

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (mg/Kg)	TRPH (mg/Kg)	TPH-D (mg/Kg)	TEPH (mg/kg)	MTBE (mg/Kg)	B/T/E/X (mg/Kg)
north end of T1 excavation	7189-T1-N	8	8/6/1996	6000.00	--	--	--	--	19/240/76/470
south end of T2 excavation	7189-T1-S	8		8100.00	--	--	--	--	16/240/72/530
center of T1 excavation	7189-T1-C-10	10		1200.00	--	--	--	--	9.1/68/10/79
center of T2 excavation	7189-T2-C	8		560.00	16000.00	ND	--	--	2.7/16/3.3/33
T1 Soil Stockpile	7189-SP1	--		ND	--	ND	--	--	ND/ND/ND/ND
T2 Soil Stockpile	7189-SP2	--		1.30	14000.00	ND	--	--	ND/ND/ND/0.020
over-excavated pit of T1 & T2	7189-OE-1	10.5	10/2/1996	14001.00	1700.00	ND	--	--	9.8/81/14/110[1]
over-excavated pit of T1 & T2	7189-OE-2	10.5		8401.00	320.00	ND	--	--	3.3/51/12/91[1]
over-excavated pit of T1 & T2	7189-OE-3	10.5		ND	21.00	ND	--	--	ND/0.01/ND/0.027
over-excavated pit of T1 & T2	7189-OE-4	10.5		4301.00	240.00	ND	--	--	0.93/18/4.6/41[1]
over-excavated pit of T1 & T2	7189-OE-5	10.5		14001.00	1100.00	ND	--	--	2.2/40/14/120[1]
CRWQCB November 2007 ESL - Shallow Soil				83	410	83	NC	0.023	0.044/2.9/3.3/2.3
CRWQCB November 2007 ESL - Deep Soil				83	500	83	NC	0.023	0.044/2.9/3.3/2.3

Table Notes Following

TABLE 1A

Results of Soil Sample Analysis for Petroleum

Hydrocarbon Constituents

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (mg/Kg)	TRPH (mg/Kg)	TPH-D (mg/Kg)	TEPH (mg/kg)	MTBE (mg/Kg)	B/T/E/X (mg/Kg)
B1	7335-B1-5	5	5/6/1998	ND	--	--	ND	ND<0.005	ND/ND/ND/ND
	7335-B1-9	9		75.00	--	--	53.00	0.06	0.07/0.04/0.53/1
B2	7335-B2-5	5		0.60	--	--	60.00	0.03	ND/ND/ND/ND
	7335-B2-9	9		**2800.00**	--	--	ND	ND<0.005	13/78/38/160
B3	7335-B3-6	6		ND	--	--	ND	ND<0.005	ND/ND/ND/ND
	7335-B3-10	10		48.00	--	--	ND	ND<0.005	0.5/0.6/0.5/2
B4 (MW1)	7335-B4-5	5		ND	--	--	ND	ND<0.005	ND/ND/ND/0.02
	7335-B4-9	9		**280.00**	--	--	ND	1.00	4/8/6/27
B5 (MW2)	7335-B5-3.0	3	Oct-99	ND	--	--	ND	ND<0.005	ND/ND/ND/ND
	7335-B5-5.0	5		ND	--	--	ND	ND<0.005	ND/ND/ND/ND
	7335-B5-9.0	9		ND	--	--	ND	ND<0.005	ND/ND/ND/ND
	7335-B5-15.5	15.5		2.80	--	--	ND	ND<0.005	0.69/0.092/0.066/0.22
	7335-B5-20.0	20		ND	--	--	ND	ND<0.005	0.028/0.021/0.007/0.029
B6 (MW3)	7335-B6-5.0	5		ND	--	--	200.00	ND<0.005	ND/ND/ND/ND
	7335-B6-10.0	10		1.50	--	--	ND	ND<0.005	ND/ND/0.005/0.013
	7335-B6-15.0	15		ND	--	--	ND	0.03	ND/ND/ND/ND
	7335-B6-19.0	19		ND	--	--	ND	0.04	ND/ND/ND/ND
CRWQCB November 2007 ESL - Shallow Soil				83	410	83	NC	0.023	0.044/2.9/3.3/2.3
CRWQCB November 2007 ESL - Deep Soil				83	500	83	NC	0.023	0.044/2.9/3.3/2.3

Table Notes Following

TABLE 1A

Results of Soil Sample Analysis for Petroleum

Hydrocarbon Constituents

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (mg/Kg)	TRPH (mg/Kg)	TPH-D (mg/Kg)	TEPH (mg/Kg)	MTBE (mg/Kg)	B/T/E/X (mg/Kg)
B7	7335-B7-8	8	10/30/2002	1.71	--	--	--	ND<0.005	0.005/ND<0.005/ND<0.005/ND<0.01
	7335-B7-13	13		20.10	--	--	--	ND<0.005	0.720/0.162/0.803/2.5
	7335-B7-16	16		61.80	--	--	--	ND<0.02	0.762/2.37/1.4/6.34
	7335-B7-20	20		1.97	--	--	--	ND<0.005	0.020/0.034/0.032/0.140
B8	7335-B8-12	12		0.61	--	--	--	ND<0.005	ND<0.005/ND<0.005/ND<0.005/ND<0.005
	7335-B8-16	16		14.00	--	--	--	ND<0.005	0.184/0.019/0.495/0.628
	7335-B8-20	20		5.66	--	--	--	ND<0.005	0.037/0.136/0.105/0.461
B9	7335-B9-12	12		27.40	--	--	--	ND<0.005	0.097/0.027/0.171/0.161
	7335-B9-15	15		47.50	--	--	--	ND<0.005	1.12/1.96/2.09/9.46
	7335-B9-20	20		0.86	--	--	--	ND<0.005	ND<0.005/0.007/0.010/0.049
B10	7335-B10-11 [2,3]	11		81.80	--	--	ND	0.18	0.444/2.26/1.65/8.84
	7335-B10-15	15		**479.00**	--	--	ND	ND<0.250	4.16/15.9/9.21
	7335-B10-17	17		7.44	--	--	ND	ND<0.005	0.036/0.075/0.079/0.442
B11	7335-B11-8	8		ND	--	--	--	ND<0.005	ND<0.005/ND<0.005/ND<0.005/0.014
	7335-B11-13	13		ND	--	--	--	ND<0.005	ND<0.005/ND<0.005/ND<0.005/ND<0.01
CRWQCB November 2007 ESL - Shallow Soil				83	410	83	NC	0.023	0.044/2.9/3.3/2.3
CRWQCB November 2007 ESL - Deep Soil				83	500	83	NC	0.023	0.044/2.9/3.3/2.3

Table Notes Following

TABLE 1A

Results of Soil Sample Analysis for Petroleum

Hydrocarbon Constituents

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (mg/Kg)	TRPH (mg/Kg)	TPH-D (mg/Kg)	TEPH (mg/Kg)	MTBE (mg/Kg)	B/T/E/X (mg/Kg)
B12	B12-7	7	4/30/2005	ND<0.5	--	--	--	ND<0.005	<0.005/0.006/<0.005/0.021
	B12-10	10		0.62	ND<10	--	ND<50	ND<0.005	<0.005/<0.005/<0.005/0.011
	B12-15	15		79.50	ND<10	--	ND<50	0.03	0.537/0.394/0.826/2.740
	B12-20	20		2.73	--	--	--	0.12	0.016/0.035/0.045/0.280
B16	B16-7.5	7.5		1.90	--	--	--	ND<0.005	<0.005/0.013/0.027/0.113
	B16-9.5	9.5		ND<0.5	--	--	--	ND<0.005	<0.005/<0.005/0.009/0.037
	B16-15	15		5.27	--	--	--	ND<0.005	0.061/0.014/0.061/0.190
	B16-25	25		ND<0.5	--	--	--	0.06	<0.005/0.007/0.010/0.042
B19	B19-7	7		ND<0.5	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	B19-10	10		0.99	--	--	--	0.02	<0.005/<0.005/<0.005/<0.010
	B19-15	15		**139.00**	--	--	--	ND<0.020	0.841/0.995/4.290/12.00
	B19-20	20		10.00	--	--	--	ND<0.005	0.039/0.163/0.091/0.341
	B19-24	24		8.15	--	--	--	ND<0.005	0.094/0.163/0.091/0.341
CRWQCB November 2007 ESL - Shallow Soil				83	410	83	NC	0.023	0.044/2.9/3.3/2.3
CRWQCB November 2007 ESL - Deep Soil				83	500	83	NC	0.023	0.044/2.9/3.3/2.3

Table Notes Following

TABLE 1A

Results of Soil Sample Analysis for Petroleum

Hydrocarbon Constituents

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (mg/Kg)	TRPH (mg/Kg)	TPH-D (mg/Kg)	TEPH (mg/Kg)	MTBE (mg/Kg)	B/T/E/X (mg/Kg)
B20	B20-7	7		0.52	--	--	--	ND<0.005	0.022/<0.005/0.014/0.023
	B20-15	15		63.60	--	--	--	ND<0.020	0.395/0.491/0.961/2.750
	B20-20	20		3.97	--	--	--	0.09	0.013/0.019/0.069/0.271
B21	B21-6.5	6.5	6/22/2005	ND<0.05	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	B21-8.5	9.5		14.00	--	ND<25	--	ND<0.250	<0.250/<0.250/<0.250/<0.500
	B21-11.5	11.5		**170.00**	--	--	--	ND<5	<5/<5/<5/13
	B21-14.5	14.5		**970.00**	--	--	--	ND<25	<25/28/<25/100
	B21-19.5	19.5		6.90	--	--	--	ND<0.250	<0.250/<0.250/<0.250/<0.500
	B21-24.5	24.5		73.00	--	--	--	ND<0.250	0.280/1.30/1.30/7.0
B22	B22-6.5	6.5		0.10	--	--	--	ND<0.005	<0.005/0.052/<0.005/0.011
	B22-10	10		**100.00**	--	ND<25	--	ND<0.50	<0.5/<0.680/<0.5/3.0
	B22-14.5	14.5		0.25	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	B22-19.5	19.5		0.06	--	--	--	0.07	<0.005/<0.005/<0.005/<0.010
	B22-24.5	24.5		0.07	--	--	--	0.09	<0.005/<0.005/<0.005/<0.010
CRWQCB November 2007 ESL - Shallow Soil				83	410	83	NC	0.023	0.044/2.9/3.3/2.3
CRWQCB November 2007 ESL - Deep Soil				83	500	83	NC	0.023	0.044/2.9/3.3/2.3

Table Notes Following

TABLE 1A

Results of Soil Sample Analysis for Petroleum

Hydrocarbon Constituents

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (mg/Kg)	TRPH (mg/Kg)	TPH-D (mg/Kg)	TEPH (mg/Kg)	MTBE (mg/Kg)	B/T/E/X (mg/Kg)
B23	B23-6	6	6/22/2005	ND<0.05	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	B23-10	10		**300.00**	--	**230.00**	--	ND<2.50	<2.5/<2.5/5.1/29
	B23-11.5	11.5		**420.00**	--	--	--	ND<5	<5.0/16.0/9.2/53
	B23-15	15		**870.00**	--	--	--	ND<2.50	<2.5/<2.5/19/76
	B23-17	17		**910.00**	--	--	--	ND<5	<5.0/28/20/110
	B23-19.5	19.5		0.06	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	B23-24.5	24.5		0.06	--	--	--	0.05	<0.005/<0.005/<0.005/<0.010
B24	B24-7	7	4/30/2005	3.75	--	--	--	ND<0.005	0.006/0.009/0.048/0.203
	B24-10	10		1.29	--	--	--	0.07	0.006/<0.005/0.015/0.066
	B24-15	15		31.10	--	--	--	ND<0.020	0.341/0.112/0.490/0.789
	B24-22	22		27.30	--	--	--	0.08	0.260/0.272/0.747/2.140
PW-1	PW1-4.5	4.5	4/5/2005	ND<0.5	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	PW1-6	6		ND<0.5	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	PW1-9	9		ND<0.5	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	PW1-11.5	11.5		ND<0.5	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
	PW1-20	20		0.80	--	--	--	ND<0.005	<0.005/<0.005/<0.005/<0.010
CRWQCB November 2007 ESL - Shallow Soil				83	410	83	NC	0.023	0.044/2.9/3.3/2.3
CRWQCB November 2007 ESL - Deep Soil				83	500	83	NC	0.023	0.044/2.9/3.3/2.3

TABLE NOTES:

7335-B1-5 through 7335-B4-9 = soil boring samples collected during preliminary soil and groundwater investigation (May 1998)

7335-B5-3.0 through 7335-B6-19.0 = soil boring samples collected during additio--l soil and groundwater investigation (October 1999)

TPH-G = total petroleum hydrocarbons (TPH) as gasoline (EPA Method 8015M)

TEPH = total extractable petroleum hydrocarbons [SM 5520 E&F + EPA 1664 (Silica Gel Treated Hexane; B10 only)]

B/T/E/X = benzene, toluene, ethylbenzene, total xylenes (EPA Method 8020)

MTBE = methyl tertiary-butyl ether (EPA Method 8020)

Total Lead by EPA Method 7420/AA Spectroscopy

fbg = feet below grade

mg/kg = milligrams per kilogram (parts per million)

-- = not analyzed for this constituent; ND = concentration below associated laboratory reporting limit

1 = confirmed by EPA Method 8260

2 = sample also analyzed (EPA 6010B ICAP) for cadmium (ND<2.0 mg/kg), chromium (38.2 mg/kg), nickel (51.5 mg/kg), and zinc (47.7 mg/kg); respective Tier 1 RBSLs, in mg/kg = 33/33 (Cd), 1.8/18 (Cr), 750/750 (Pb), 1,000/1,000 (Ni), 2,500/2,500 (Zn)

3 = sample also a--lyzed for VOCs (EPA 8260) in mg/kg: MTBE (0.599), benzene (0.397), toluene (1.81), ethylbenzene (1.05), total xylenes (5.37), isopropylbenzene (0.100), n-propylbenzene (0.453), 1,3,5-trimethylbenzene (2.63), 1,2,4-trimethylbenzene (0.832), n-butylbenzene (0.313), and naphthalene (0.715; Tier 1 RBSL = 4.3/4.9 mg/kg for silty clay soil)

4 = sample also a--lyzed for HVOCs (EPA 8010): All concentrations ND

CRWQCB/RBSL = California Regional Water Quality Control Board's Interim Final - December 2001, Tier 1 Risk-Based Screening Level for soil at a residential land use permitted site with groundwater that **is** a potential source of drinking water

TABLE 1B

Results of Soil Sample Analysis for Volatile Organic Compounds

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	IPB (mg/Kg)	n-PB (mg/Kg)	1,3,5-TMB (mg/Kg)	1,2,4-TMB (mg/Kg)	Sec-BB (mg/Kg)	n-BB (mg/Kg)	Napthalene (mg/Kg)	MIBK (mg/Kg)	TCE (mg/Kg)	MC (mg/Kg)	cis-1,2-DCE (mg/Kg)	Tri-CFM (mg/Kg)	PCE (mg/Kg)
north end of T1 excavation	7189-T1-N	8	8/6/1996	--	--	--	--	--	--	--	--	--	--	--	--	--
south end of T2 excavation	7189-T1-S	8		--	--	--	--	--	--	--	--	--	--	--	--	--
center of T1 excavation	7189-T1-C-10	10		--	--	--	--	--	--	--	--	--	--	--	--	--
center of T2 excavation	7189-T2-C	8		0.14	1.1	2.8	7.5	0.2	--	ND<0.005	0.36	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.024
T1 Soil Stockpile	7189-SP1	NA		--	--	--	--	--	--	--	--	--	--	--	--	--
T2 Soil Stockpile	7189-SP2	NA		ND<5	0.017	0.92	0.037	ND<5	--	ND<0.005	0.042	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.031
over-excavated pit of T1 & T2	7189-OE-1	10.5	10/2/1996	--	--	--	--	--	--	--	--	--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-2	10.5		--	--	--	--	--	--	--	--	--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-3	10.5		--	--	--	--	--	--	--	--	--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-4	10.5		--	--	--	--	--	--	--	--	--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-5	10.5		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				NC	NC	NC	NC	NC	NC	1.3	2.8	0.46	0.077	0.19	NC	0.34
CRWQCB November 2007 ESL - Deep Soil				NC	NC	NC	NC	NC	NC	3.4	2.8	0.46	0.077	0.19	NC	0.7

Table Notes Following

TABLE 1B (Cont.)

Results of Soil Sample Analysis for Volatile Organic Compounds

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	IPB (mg/Kg)	n-PB (mg/Kg)	1,3,5-TMB (mg/Kg)	1,2,4-TMB (mg/Kg)	Sec-BB (mg/Kg)	n-BB (mg/Kg)	Napthalene (mg/Kg)	MIBK (mg/Kg)	TCE (mg/Kg)	MC (mg/Kg)	cis-1,2-DCE (mg/Kg)	Tri-CFM (mg/Kg)	PCE (mg/Kg)
B1	7335-B1-5	5	5/6/1998	--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B1-9	9		--	--	--	--	--	--	--	--	--	--	--	--	--
B2	7335-B2-5	5		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B2-9	9		--	--	--	--	--	--	--	--	--	--	--	--	--
B3	7335-B3-6	6		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B3-10	10		--	--	--	--	--	--	--	--	--	--	--	--	--
B4 (MW1)	7335-B4-5	5		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B4-9	9		--	--	--	--	--	--	--	--	--	--	--	--	--
B5 (MW2)	7335-B5-3.0	3	Oct-99	--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B5-5.0	5		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B5-9.0	9		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B5-15.5	15.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B5-20.0	20		--	--	--	--	--	--	--	--	--	--	--	--	--
B6 (MW3)	7335-B6-5.0	5		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B6-10.0	10		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B6-15.0	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B6-19.0	19		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				NC	NC	NC	NC	NC	NC	1.3	2.8	0.46	0.077	0.19	NC	0.34
CRWQCB November 2007 ESL - Deep Soil				NC	NC	NC	NC	NC	NC	3.4	2.8	0.46	0.077	0.19	NC	0.7

Table Notes Following

TABLE 1B (Cont.)

Results of Soil Sample Analysis for Volatile Organic Compounds

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	IPB (mg/Kg)	n-PB (mg/Kg)	1,3,5-TMB (mg/Kg)	1,2,4-TMB (mg/Kg)	Sec-BB (mg/Kg)	n-BB (mg/Kg)	Napthalene (mg/Kg)	MIBK (mg/Kg)	TCE (mg/Kg)	MC (mg/Kg)	cis-1,2-DCE (mg/Kg)	Tri-CFM (mg/Kg)	PCE (mg/Kg)
B7	7335-B7-8	8	10/30/2002	--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B7-13	13		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B7-16	16		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B7-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
B8	7335-B8-12	12		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B8-16	16		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B8-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
B9	7335-B9-12	12		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B9-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B9-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
B10	7335-B10-11 [2,3]	11		0.1	0.453	2.63	0.832	ND<0.020	0.313	715	ND<0.20	ND<0.020	ND<1.0	ND<0.020	ND<0.10	ND<0.020
	7335-B10-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B10-17	17		--	--	--	--	--	--	--	--	--	--	--	--	--
B11	7335-B11-8	8		--	--	--	--	--	--	--	--	--	--	--	--	--
	7335-B11-13	13		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				NC	NC	NC	NC	NC	NC	1.3	2.8	0.46	0.077	0.19	NC	0.34
CRWQCB November 2007 ESL - Deep Soil				NC	NC	NC	NC	NC	NC	3.4	2.8	0.46	0.077	0.19	NC	0.7

Table Notes Following

TABLE 1B (Cont.)

Results of Soil Sample Analysis for Volatile Organic Compounds

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	IPB (mg/Kg)	n-PB (mg/Kg)	1,3,5-TMB (mg/Kg)	1,2,4-TMB (mg/Kg)	Sec-BB (mg/Kg)	n-BB (mg/Kg)	Napthalene (mg/Kg)	MIBK (mg/Kg)	TCE (mg/Kg)	MC (mg/Kg)	cis-1,2-DCE (mg/Kg)	Tri-CFM (mg/Kg)	PCE (mg/Kg)
B12	B12-7	7	4/30/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
	B12-10	10		ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<10	ND<50	ND<5	ND<50	ND<5	ND<25	ND<5
	B12-15	15		134	416	788	617	78	331	819	ND<50	ND<5	ND<50	ND<5	ND<25	ND<5
	B12-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
B16	B16-7.5	7.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B16-9.5	9.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B16-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	B16-25	25		--	--	--	--	--	--	--	--	--	--	--	--	--
B19	B19-7	7		--	--	--	--	--	--	--	--	--	--	--	--	--
	B19-10	10		--	--	--	--	--	--	--	--	--	--	--	--	--
	B19-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	B19-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
	B19-24	24		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				NC	NC	NC	NC	NC	NC	1.3	2.8	0.46	0.077	0.19	NC	0.34
CRWQCB November 2007 ESL - Deep Soil				NC	NC	NC	NC	NC	NC	3.4	2.8	0.46	0.077	0.19	NC	0.7

Table Notes Following

TABLE 1B (Cont.)

Results of Soil Sample Analysis for Volatile Organic Compounds

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	IPB (mg/Kg)	n-PB (mg/Kg)	1,3,5-TMB (mg/Kg)	1,2,4-TMB (mg/Kg)	Sec-BB (mg/Kg)	n-BB (mg/Kg)	Napthalene (mg/Kg)	MIBK (mg/Kg)	TCE (mg/Kg)	MC (mg/Kg)	cis-1,2-DCE (mg/Kg)	Tri-CFM (mg/Kg)	PCE (mg/Kg)
B20	B20-7	7		--	--	--	--	--	--	--	--	--	--	--	--	--
	B20-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	B20-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
B21	B21-6.5	6.5	6/22/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
	B21-8.5	9.5		ND<250	ND<250	1100	870	ND<250	ND<250	ND<250	ND<2000	ND<250	ND<1200	ND<250	ND<250	ND<250
	B21-11.5	11.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B21-14.5	14.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B21-19.5	19.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B21-24.5	24.5		--	--	--	--	--	--	--	--	--	--	--	--	--
B22	B22-6.5	6.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B22-10	10		ND<500	830	5100	4000	ND<500	720	640	ND<4000	ND<500	ND<4000	ND<500	ND<500	ND<500
	B22-14.5	14.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B22-19.5	19.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B22-24.5	24.5		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				NC	NC	NC	NC	NC	NC	1.3	2.8	0.46	0.077	0.19	NC	0.34
CRWQCB November 2007 ESL - Deep Soil				NC	NC	NC	NC	NC	NC	3.4	2.8	0.46	0.077	0.19	NC	0.7

Table Notes Following

TABLE 1B (Cont.)

Results of Soil Sample Analysis for Volatile Organic Compounds

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	IPB (mg/Kg)	n-PB (mg/Kg)	1,3,5-TMB (mg/Kg)	1,2,4-TMB (mg/Kg)	Sec-BB (mg/Kg)	n-BB (mg/Kg)	Napthalene (mg/Kg)	MIBK (mg/Kg)	TCE (mg/Kg)	MC (mg/Kg)	cis-1,2-DCE (mg/Kg)	Tri-CFM (mg/Kg)	PCE (mg/Kg)
B23	B23-6	6	6/22/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
	B23-10	10		--	--	--	--	--	--	--	--	--	--	--	--	--
	B23-11.5	11.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B23-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	B23-17	17		--	--	--	--	--	--	--	--	--	--	--	--	--
	B23-19.5	19.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	B23-24.5	24.5		--	--	--	--	--	--	--	--	--	--	--	--	--
B24	B24-7	7	4/30/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
	B24-10	10		--	--	--	--	--	--	--	--	--	--	--	--	--
	B24-15	15		--	--	--	--	--	--	--	--	--	--	--	--	--
	B24-22	22		--	--	--	--	--	--	--	--	--	--	--	--	--
PW-1	PW1-4.5	4.5	4/5/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
	PW1-6	6		--	--	--	--	--	--	--	--	--	--	--	--	--
	PW1-9	9		--	--	--	--	--	--	--	--	--	--	--	--	--
	PW1-11.5	11.5		--	--	--	--	--	--	--	--	--	--	--	--	--
	PW1-20	20		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				NC	NC	NC	NC	NC	NC	1.3	2.8	0.46	0.077	0.19	NC	0.34
CRWQCB November 2007 ESL - Deep Soil				NC	NC	NC	NC	NC	NC	3.4	2.8	0.46	0.077	0.19	NC	0.7

Table Notes Following

TABLE NOTES:

mg/kg = milligrams per kilogram

NC - no criteria established for this chemical constituent

-- - not analyzed for this constituent

fbg - feet below grade surface

IPB- Isopropylbenzene

n-PB - n-Propylbenzene

1,3,5-TMB - 135 Trimethylbenzene

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

Sec-BB - Sec-Butylbenzene

n-BB - n-Butylbenzene

MIBK - Methyl Isobutal Ketone

TCE - Trichloroethene

MC - Methylene Chloride

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

Tri-CFM - Trichlorofluoromethane

PCE - Tetrachloroethene

TABLE 1C
Results of Soil Sample Analysis for LUFT-5 Metals
5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	Cd (mg/kg)	Cr (mg/kg)	Pb (mg/kg)	Ni (mg/kg)	Zn (mg/kg)
north end of T1 excavation	7189-T1-N	8	8/6/1996	--	--	--	--	--
south end of T2 excavation	7189-T1-S	8		--	--	--	--	--
center of T1 excavation	7189-T1-C-10	10		--	--	--	--	--
center of T2 excavation	7189-T2-C	8		ND<2.0	49	48	68	210
T1 Soil Stockpile	7189-SP1	NA		--	--	--	--	--
T2 Soil Stockpile	7189-SP2	NA		ND<2.0	34	79	32	130
over-excavated pit of T1 & T2	7189-OE-1	10.5		--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-2	10.5		--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-3	10.5		--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-4	10.5		--	--	--	--	--
over-excavated pit of T1 & T2	7189-OE-5	10.5		--	--	--	--	--
B1	7335-B1-5	5	5/6/1998	--	--	--	--	--
	7335-B1-9	9		--	--	--	--	--
B2	7335-B2-5	5		--	--	--	--	--
	7335-B2-9	9		--	--	--	--	--
B3	7335-B3-6	6		--	--	--	--	--
	7335-B3-10	10		--	--	--	--	--
B4 (MW1)	7335-B4-5	5		--	--	--	--	--
	7335-B4-9	9		--	--	--	--	--
B5 (MW2)	7335-B5-3.0	3	Oct-99	--	--	--	--	--
	7335-B5-5.0	5		--	--	--	--	--
	7335-B5-9.0	9		--	--	--	--	--
	7335-B5-15.5	15.5		--	--	--	--	--
	7335-B5-20.0	20		--	--	--	--	--
B6 (MW3)	7335-B6-5.0	5		--	--	--	--	--
	7335-B6-10.0	10		--	--	--	--	--
	7335-B6-15.0	15		--	--	--	--	--
	7335-B6-19.0	19		--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				1.7	0.000006	200	150	600
CRWQCB November 2007 ESL - Deep Soil				39	2500	750	260	2500

Table Notes Following

TABLE 1C (Cont.)
Results of Soil Sample Analysis for LUFT-5 Metals
5930 College Avenue, Oakland, CA

Sample Location	Sample Depth (fbg)	Sample Depth	Sample Date	Cd (mg/kg)	Cr (mg/kg)	Pb (mg/kg)	Ni (mg/kg)	Zn (mg/kg)
B7	7335-B7-8	8	10/30/2002	--	--	--	--	--
	7335-B7-13	13		--	--	--	--	--
	7335-B7-16	16		--	--	--	--	--
	7335-B7-20	20		--	--	--	--	--
B8	7335-B8-12	12		--	--	--	--	--
	7335-B8-16	16		--	--	--	--	--
	7335-B8-20	20		--	--	--	--	--
B9	7335-B9-12	12		--	--	--	--	--
	7335-B9-15	15		--	--	--	--	--
	7335-B9-20	20		--	--	--	--	--
B10	7335-B10-11	11		--	--	--	--	--
	7335-B10-15	15		ND<2.0	38.2	19.6	51.5	47.7
	7335-B10-17	17		--	--	--	--	--
B11	7335-B11-8	8		--	--	--	--	--
	7335-B11-13	13		--	--	--	--	--
B12	B12-7	7	4/30/2005	--	--	--	--	--
	B12-10	10		--	--	--	--	--
	B12-15	15		--	--	--	--	--
	B12-20	20		--	--	--	--	--
B16	B16-7.5	7.5		--	--	--	--	--
	B16-9.5	9.5		--	--	--	--	--
	B16-15	15		--	--	--	--	--
	B16-25	25		--	--	--	--	--
B19	B19-7	7		--	--	--	--	--
	B19-10	10		--	--	--	--	--
	B19-15	15		--	--	--	--	--
	B19-20	20		--	--	--	--	--
	B19-24	24		--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				1.7	0.000006	200	150	600
CRWQCB November 2007 ESL - Deep Soil				39	2500	750	260	2500

Table Notes Following

TABLE 1C (Cont.)
Results of Soil Sample Analysis for LUFT-5 Metals
5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	Cd (mg/kg)	Cr (mg/kg)	Pb (mg/kg)	Ni (mg/kg)	Zn (mg/kg)
B20	B20-7	7	6/22/2005	--	--	--	--	--
	B20-15	15		--	--	--	--	--
	B20-20	20		--	--	--	--	--
B21	B21-6.5	6.5		--	--	--	--	--
	B21-8.5	8.5		ND<1.0	74	4.6	78	36
	B21-11.5	11.5		--	--	--	--	--
	B21-14.5	14.5		--	--	--	--	--
	B21-19.5	19.5		--	--	--	--	--
	B21-24.5	24.5		--	--	--	--	--
B22	B22-6.5	6.5		--	--	--	--	--
	B22-10	10		ND<1.0	43	5.3	53	41
	B22-14.5	14.5		--	--	--	--	--
	B22-19.5	19.5		--	--	--	--	--
	B22-24.5	24.5		--	--	--	--	--
B23	B23-6	6	6/22/2005	--	--	--	--	--
	B23-10	10		ND<1.0	47	7.2	63	50
	B23-11.5	11.5		--	--	--	--	--
	B23-15	15		--	--	--	--	--
	B23-17	17		--	--	--	--	--
	B23-19.5	19.5		--	--	--	--	--
	B23-24.5	24.5		--	--	--	--	--
B24	B24-7	7	4/30/2005	--	--	--	--	--
	B24-10	10		--	--	--	--	--
	B24-15	15		--	--	--	--	--
	B24-22	22		--	--	--	--	--
PW-1	PW1-4.5	4.5	4/5/2005	--	--	--	--	--
	PW1-6	6		--	--	--	--	--
	PW1-9	9		--	--	--	--	--
	PW1-11.5	11.5		--	--	--	--	--
	PW1-20	20		--	--	--	--	--
CRWQCB November 2007 ESL - Shallow Soil				1.7	0.000006	200	150	600
CRWQCB November 2007 ESL - Deep Soil				39	2500	750	260	2500

TABLE NOTES:

Cd - Cadmium

Cr - Chromium

Pb - Lead

Ni - Nickel

Zn - Zinc

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

fbg - feet below grade

TABLE 2A

Historical Results of Grab Groundwater Hydrocarbon Sample Analysis

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	TPH-G (ug/L)	TEPH (ug/L)	TPH-D (ug/L)	O&G (ug/L)	MTBE (ug/L)	B/T/E/X (ug/L)
B1	B1-GW	8.5	5/6/1998	31000	6000	--	--	ND<5	2600 / 390 / 1600 / 4200
B2	B2-GW	6.5		200000	ND<5000	--	--	2500	30000 / 49000 / 45000 /
B3	B3-GW	6.5		$1x10^6$	7000	--	--	18000	17000 / 24000 / 20000 /
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	2040	6600 / 9940 / 1610 / 7600
B12	B12-W	NM	5/2/2005	934000	--	--	92000*	ND<5000	13900 / 22300 / 20800 /
B14	B14-W	NM	5/19/2005	ND<50	--	--	--	2.2	ND<0.5 / 1.2 / 0.6 / 3.5
B15	B15-W	NM		53	--	--	--	ND<0.5	8.4 / ND<0.5 / ND<0.5 / ND<1.0
B16	B16-W	NM	5/2/2005	154000	--	--	--	ND<500	2510 / 3020 / 4300 / 20400
B17	B17-W		5/19/2005	ND<50	--	--	--	--	ND<0.5 / ND<0.5 / ND<0.5 / ND<1.0
B18	B18-W	6.4	4/14/2005	51	--	--	--	ND<0.5	ND<0.5 / ND<0.5 / ND<0.5 / 1.8
B19	B19-W	NM	5/2/2005	4600000	--	--	--	ND<250	31100 / 70500 / 75600 / 228000
B20	B20-W		5/19/2005	60700	--	--	--	--	6800 / 2600 / 1550 / 6520
B21	B21-W	15	6/22/2005	130000	--	--	5800000	--	21000 / 24000 / 4500 / 23000
B23	B23-W	6.9	7/11/2005	21000	1800	--	9200	880	2200 / 2600 / 450 / 3000
B24	B24-W	NM	5/2/2005	3830000	--	--	--	ND<50	33200 / 46300 / 65500 / 175000
HB-1	HB-1-W	7.52	4/14/2005	173	--	--	--	0.9	0.8 / ND<0.5 / 0.9 / 3.9
HB-3	HB-3-W	8.05	7/11/2005	13000	--	--	--	ND<20	690 / 21 / 1200 / 190
HB-4	HB-4-W	8.43		14000	--	--	--	ND<20	13 / ND<10 / 10 / ND<10
HB-6	HB-6-W	6.45		45	--	--	--	ND<1	ND<0.5
CRWQCB November 2007 ESL				100	100	100	100	5	1.0 / 40 / 30 / 20

Table Notes Following

TABLE NOTES:

TPH-G = total petroleum hydrocarbons (TPH) as gasoline (EPA Method 8015M)

TEPH = total extractable petroleum hydrocarbons [SM 5520 E&F + EPA 1664 (Silica Gel Treated Hexane; B10 only)]

B/T/E/X = benzene, toluene, ethylbenzene, total xylenes (EPA Method 8020)

MTBE = methyl tertiary-butyl ether (EPA Method 8020)

fbg = feet below grade

ug/L = micrograms per liter (parts per million)

NM = not measured

-- = not analyzed for this constituent; ND = concentration below associated laboratory reporting limit

CRWQCB MSWQO (Primary MCL) = California Regional Water Quality Control Board, Municipal Supply Water Quality Objective;

CRWQCB/RBSL = California Regional Water Quality Control Board's Tier 1Risk-Based Screening Level; Levels shown are

TABLE 2B

Historical Results of Grab Groundwater Volatile Organic Compound Analysis

5930 College Avenue, Oakland, CA

Sample Location	Sample ID	Sample Depth (fbg)	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)	Napthalene (ug/L)	MIBK (ug/L)	TCE (ug/L)	MC (ug/L)	cis-1,2-DCE (ug/L)	Tri-CFM (ug/L)	PCE (ug/L)
B1	B1-GW	8.5	5/6/1998	--	--	--	--	--	--	--	--	--	--	--	--	--
B2	B2-GW	6.5		--	--	--	--	--	--	--	--	--	--	--	--	--
B3	B3-GW	6.5		--	--	--	--	--	--	--	--	--	--	--	--	--
B7	B7-W	16.4	10/30/2002	--	--	--	--	--	--	--	--	--	--	--	--	--
B8	B8-W	11.5		--	--	--	--	--	--	--	--	--	--	--	--	--
B9	B9-W	16.95	11/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--
B10	B10-W	13.85		74	230	1610	441	ND<50	ND<50	765	ND<500	ND<100	ND<5000	ND<50	ND<250	ND<50
B12	B12-W	NM	5/2/2005	61200	236000	430000	1270000	28600	ND<10000	305000	ND<10000	ND<5000	ND<250000	ND<10000	ND<10000	ND<5000
B14	B14-W	NM	5/19/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
B15	B15-W	NM		--	--	--	--	--	--	--	--	--	--	--	--	--
B16	B16-W	NM	5/2/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
B17	B17-W	NM	5/19/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
B18	B18-W	6.4	4/14/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
B19	B19-W	NM	5/2/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
B20	B20-W	NM	5/19/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
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
B24	B24-W	NM	5/2/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
HB-1	HB-1-W	7.52	4/14/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
HB-3	HB-3-W	8.05	7/11/2005	--	--	--	--	--	--	--	--	--	--	--	--	--
HB-4	HB-4-W	8.43		--	--	--	--	--	--	--	--	--	--	--	--	--
HB-6	HB-6-W	6.45		--	--	--	--	--	--	--	--	--	--	--	--	--
CRWQCB November 2007 ESL				NC	NC	NC	NC	NC	NC	17	120	5	5	6	NC	5

TABLE NOTES:

ug/L = micrograms per liter

NC - no criteria established for this chemical constituent

-- - not analyzed for this constituent

fbg - feet below grade surface

NM = not measured

IPB- Isopropylbenzene

n-PB - n-Propylbenzene

1,3,5-TMB - 135 Trimethylbenzene

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

Sec-BB - Sec-Butylbenzene

n-BB - n-Butylbenzene

MIBK - Methyl Isobutal Ketone

TCE - Trichloroethene

MC - Methylene Chloride

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

Tri-CFM - Trichlorofluoromethane

PCE - Tetrachloroethene

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

Sample Location	Sample ID	Sample Depth (fbg)	Sample Date	Cd (ug/L)	Cr (ug/L)	Pb (ug/L)	Ni (ug/L)	Zn (ug/L)
B1	B1-GW	8.5	5/6/1998	--	--	--	--	--
B2	B2-GW	6.5		--	--	--	--	--
B3	B3-GW	6.5		--	--	--	--	--
B7	B7-W	16.4	10/30/2002	--	--	--	--	--
B8	B8-W	11.5		--	--	--	--	--
B9	B9-W	16.95	11/1/2002	--	--	--	--	--
B10	B10-W	13.85		ND<0.5	0.28	0.26	0.33	0.41
B12	B12-W	NM	5/2/2005	17.4	9.51	106	30.7	100
B14	B14-W	NM	5/19/2005	--	--	--	--	--
B15	B15-W	NM		--	--	--	--	--
B16	B16-W	NM	5/2/2005	--	--	--	--	--
B17	B17-W	NM	5/19/2005	--	--	--	--	--
B18	B18-W	6.4	4/14/2005	--	--	--	--	--
B19	B19-W	NM	5/2/2005	--	--	--	--	--
B20	B20-W	NM	5/19/2005	--	--	--	--	--
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
B24	B24-W	NM	5/2/2005	--	--	--	--	--
HB-1	HB-1-W	7.52	4/14/2005	--	--	--	--	--
HB-3	HB-3-W	8.05	7/11/2005	--	--	--	--	--
HB-4	HB-4-W	8.43		--	--	--	--	--
HB-6	HB-6-W	6.45		--	--	--	--	--
CRWQCB November 2007 ESL				5	50	15	100	5000

TABLE NOTES:

Cd - Cadmium
Cr - Chromium
Pb - Lead
Ni - Nickel
Zn - Zinc
ug/L - micrograms per liter
fbg - feet below grade
NM = not measured
** Results from filtered field sample

TABLE 3A

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	ND	46000	240	10000 / 1200 / 3500 / 6200
	4/21/08		7.24	188.66	ND	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/sheen	15000	110	4900 / 430 / 1900 / 2260
	1/19/09		10.91	184.99	Odor/sheen	33000	143	8830 / 837 / 2160 / 3880
CRWQCB November 2007 ESL						100	5	1.0 / 40 / 30 / 20

Table Notes Following

TABLE 3A (Cont.)

Historical Groundwater Levels & Hydrocarbons 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	ND	10000	84	1300 / 41 / 710 / 270
	4/21/08		8.01	189.27	ND	17000	48	1800 / 100 / 1400 / 1300
	7/22/08		11.12	186.16	ND	16000	100 [1]	1900 / 98 / 1600 / 741
	10/21/08		13.11	184.17	Odor	4900	65	700/20/370/52
	1/19/09		12.31	184.97	Odor	2500	90	167 / 8.5 / 114 / 50
CRWQCB November 2007 ESL						100	5	1.0 / 40 / 30 / 20

Table Notes Following

TABLE 3A (Cont.)

Historical Groundwater Levels & Hydrocarbons 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	ND	4800	ND<5	140 / 8.3 / 66 / 22
	4/21/08		9.3	185.92	ND	4300	ND<5	200 / 11 / 30 / 14
	7/22/08		9.05	186.17	ND	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	Slight odor	3600	ND<2.2	148 / 6.7 / 24.5 / 95.2
CRWQCB November 2007 ESL						100	5	1.0 / 40 / 30 / 20

Table Notes Following

TABLE 3A (Cont.)

Historical Groundwater Levels & Hydrocarbons 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	ND	3400	ND<5	63 / ND<2.5 / 180 / 5.6
	4/21/08		9.08	188.09	ND	300	ND<1	3 / ND<0.5 / 16 / 26
	7/22/08		9.83	187.34	ND	710	3.1 [1]	9.3 / 1.2 [1] / 49 / 67.86
	10/21/08		12.9	184.27	ND	1500 #	1	20/ND<0.5/57/20
	1/19/09		12.11	185.06	Odor	1100	ND<2.2	12.3 / ND<2.2 / 30.8 / 9.2
CRWQCB November 2007 ESL						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%

[#] = Sample exhibit chromatographic pattern that does not resemble standarc

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

** = Concentration confirmed by EPA Method 8260

TABLE 3B
Historical Groundwater VOC Analytical Results
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)
MW-1	2/2/04	116	342	701	2690	ND<10	66	992	ND<5	ND<50	ND<10	ND<5	ND<5
	4/23/04	ND<100	180	417	1560	ND<100	ND<100	559	ND<10	1210	ND<100	ND<50	ND<50
	7/19/04	89	239	507	1890	ND<20	ND<20	801	ND<10	ND<100	ND<20	ND<10	ND<10
	10/22/04	ND<100	264	520	1990	ND<100	ND<100	700	ND<50	ND<500	ND<100	ND<50	ND<50
	1/21/05	ND<200	271	525	2080	ND<200	ND<200	662	ND<100	ND<5000	ND<200	ND<100	ND<100
	4/14/05	141	437	882	3450	ND	ND	1220	ND<50	ND<2500	ND<100	ND<50	ND<50
	7/26/05	ND<500	ND<2500	ND<2500	ND<2500	ND<2500	ND<2500	ND<2500	ND<250	ND<2500	ND<250	ND<250	ND<250
	10/14//05	ND<250	ND<1200	ND<1200	2700	ND<1200	ND<1200	ND<1200	ND<120	ND<5000	ND<120	ND<120	ND<120
	1/13/06	ND<250	ND<1200	ND<1200	2100	ND<1200	ND<1200	ND<1200	ND<120	ND<5000	ND<120	ND<120	ND<120
	4/14/06	ND<250	ND<1200	ND<1200	2400	ND<1200	ND<1200	ND<1200	ND<120	ND<5000	ND<120	ND<120	ND<120
	10/26/06	ND<250	ND<1200	ND<1200	2000	ND<1200	ND<1200	ND<1200	ND<120	ND<5000	ND<120	ND<120	ND<120
	1/30/07	ND<200	ND<1000	ND<1000	1700	ND<1000	ND<1000	ND<1000	ND<100	ND<4000	ND<100	ND<100	ND<100
	4/13/07	ND<100	ND<500	ND<500	1800	ND<500	ND<500	730	ND<50	ND<2000	ND<50	ND<50	ND<50
	7/24/07	1000	ND<500	ND<500	2200	ND<500	ND<500	790	ND<50	ND<2000	ND<50	ND<50	ND<50
	4/21/08	ND<100	ND<500	ND<500	2100	ND<500	ND<500	810	ND<50	ND<2000	ND<50	ND<50	ND<50
CRWQCB November 2007 ESL		NC	NC	NC	NC	NC	NC	17	5	5	6	0.5	5

Table Notes Following

TABLE 3B (Continued)
Historical Groundwater VOC Analytical Results
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)
MW-2	2/2/04	73	186	306	1090	ND<10	66	413	ND<5	ND<50	ND<10	ND<5	ND<5
	4/23/04	ND<100	215	469	1570	ND<100	ND<100	568	ND<5	ND<50	ND<100	ND<50	ND<50
	7/19/04	73	173	316	1070	ND<10	74	475	ND<5	ND<50	ND<10	ND<5	ND<5
	10/22/04	49	132	80	257	ND<10	44	227	ND<50	ND<50	ND<10	ND<5	ND<5
	1/21/05	ND<100	239	371	1500	ND<100	ND<100	697	ND<50	ND<2500	ND<100	ND<50	ND<50
	4/14/05	139	293	445	2390	ND	71	1490	ND<5	ND<250	ND<10	ND<5	ND<5
	7/26/05	ND<500	ND<2500	ND<2500	ND<2500	ND<2500	ND<2500	ND<2500	ND<250	ND<2500	ND<250	ND<250	ND<250
	10/14//05	ND<100	ND<500	ND<500	770	ND<500	ND<500	ND<500	ND<50	ND<2000	ND<50	ND<50	ND<50
	1/13/06	ND<100	ND<500	ND<500	1200	ND<500	ND<500	ND<500	ND<50	ND<2000	ND<50	ND<50	ND<50
	4/14/06	ND<100	ND<500	ND<500	1200	ND<500	ND<500	680	ND<50	ND<2000	ND<50	ND<50	ND<50
	10/26/06	ND<25	180	ND<120	320	ND<120	ND<120	210	ND<12	ND<500	ND<12	ND<12	ND<12
	1/30/07	ND<50	360	250	1100	ND<250	ND<250	500	ND<25	ND<1000	ND<25	ND<25	ND<25
	4/13/07	73	180	140	680	ND<100	ND<100	450	ND<10	ND<400	ND<10	ND<10	ND<10
	7/24/07	110	130	ND<100	140	ND<100	ND<100	200	ND<10	ND<400	ND<10	ND<10	ND<10
	4/21/08	78	230	ND<100	440	ND<100	ND<100	450	ND<10	ND<400	ND<10	ND<10	ND<10
CRWQCB November 2007 ESL		NC	NC	NC	NC	NC	NC	17	5	5	6	0.5	5

Table Notes Following

TABLE 3B (Continued)
Historical Groundwater VOC Analytical Results
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)
MW-3	2/2/04	23	83	22	68	ND<1	38	33	ND<0.5	ND<5	ND<1	ND<0.5	ND<0.5
	4/23/04	29	82	60	337	ND<1	24	160	ND<0.5	ND<5	ND<1	ND<0.5	ND<0.5
	7/19/04	27	105	48	204	ND<1	34	16	ND<0.5	ND<5	ND<1	ND<0.5	ND<0.5
	10/22/04	55	182	192	574	ND<10	42	76	ND<5	ND<50	ND<10	ND<5	ND<5
	1/21/05	25	88	23	96	ND<1	15	43	ND<0.5	ND<25	ND<1	ND<0.5	ND<0.5
	4/14/05	45	28	85	302	ND<10	28	121	ND<0.5	ND25	ND<1	ND<0.5	ND<0.5
	7/26/05	ND<10	ND<50	120	250	ND<50	ND<50	60	ND<5	ND<50	ND<5	ND<5	ND<5
	10/14//05	ND<20	ND<100	ND<100	210	ND<100	ND<100	ND<100	ND<10	ND<400	ND<10	ND<10	ND<10
	1/13/06	ND<10	120	ND<50	120	ND<50	ND<50	ND<50	ND<5	ND<200	ND<5	ND<5	ND<5
	4/14/06	ND<20	170	ND<100	120	ND<100	ND<100	100	ND<10	ND<400	ND<10	ND<10	ND<10
	10/26/06	ND<10	82	ND<50	62	ND<50	ND<50	ND<50	ND<5.0	ND<200	ND<5.0	ND<5	ND<5.0
	1/30/07	ND<10	94	ND<50	63	ND<50	ND<50	ND<50	ND<5.0	ND<200	ND<5.0	ND<5	ND<5.0
	4/13/07	25	68	ND<25	ND<25	ND<25	ND<25	ND<25	ND<2.5	ND<100	ND<2.5	ND<2.5	ND<2.5
	7/27/07	12	36	ND<25	ND<25	ND<25	ND<25	ND<25	ND<2.5	ND<100	ND<2.5	ND<2.5	ND<2.5
	4/21/08	25	73	ND<25	ND<25	ND<25	ND<25	ND<25	ND<2.5	ND<100	ND<2.5	ND<2.5	ND<2.5
CRWQCB November 2007 ESL		NC	NC	NC	NC	NC	NC	17	5	5	6	0.5	5

Table Notes Following

TABLE 3B (Continued)
Historical Groundwater VOC Analytical Results
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
CRWQCB November 2007 ESL		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

SOIL AND WATER INVESTIGATION WORK PLAN

&

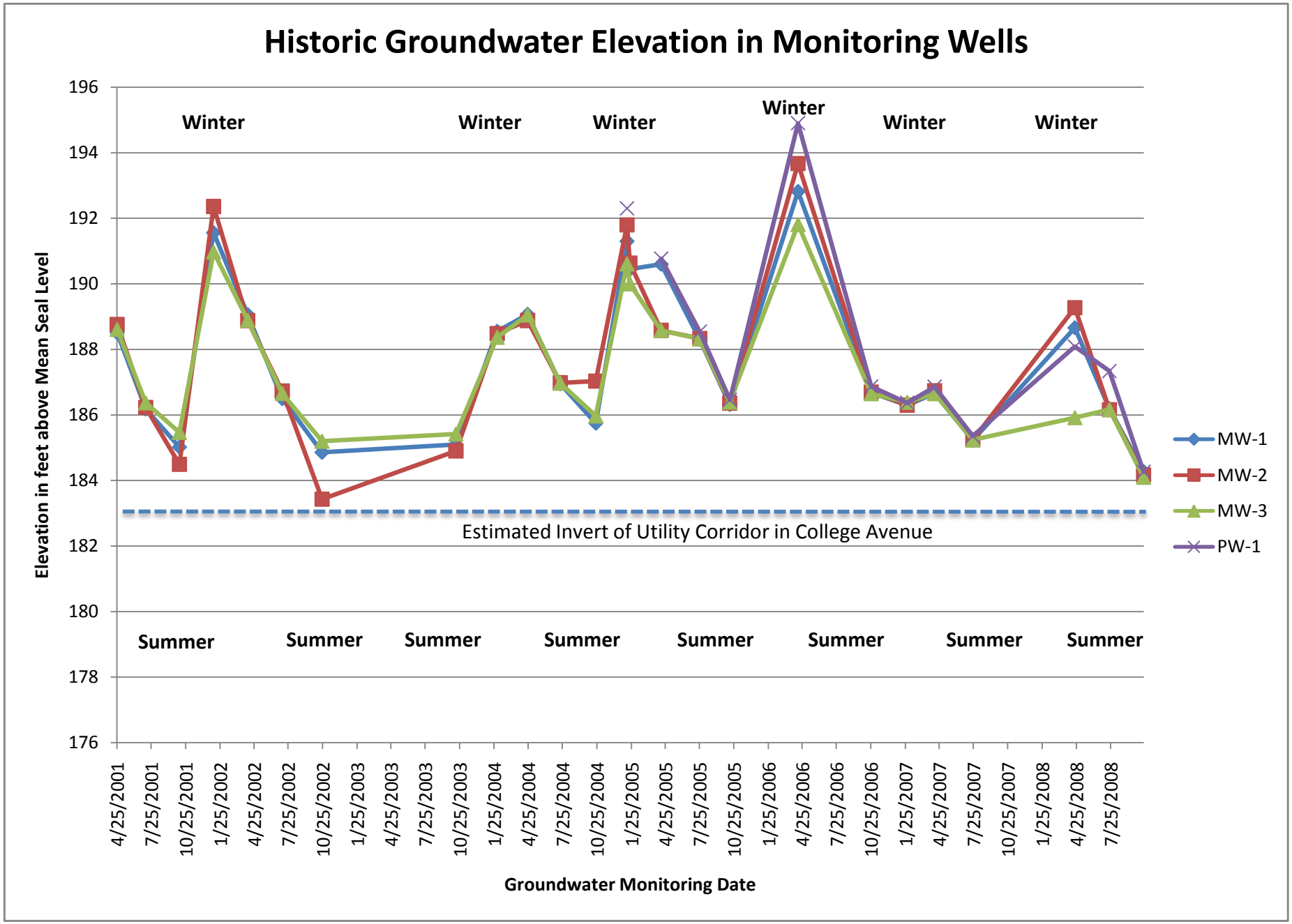
SITE CONCEPTUAL MODEL

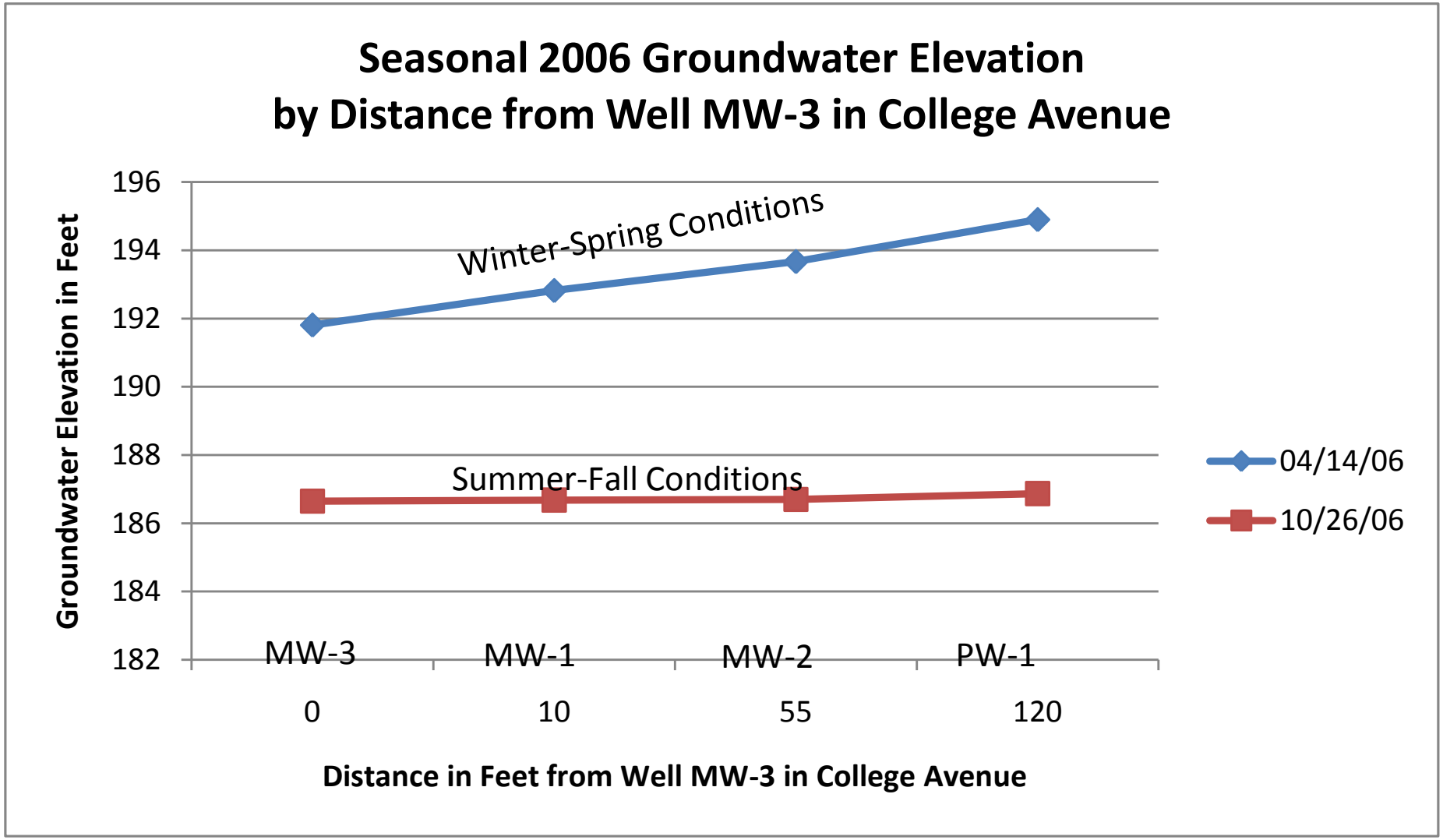
APPENDIX D

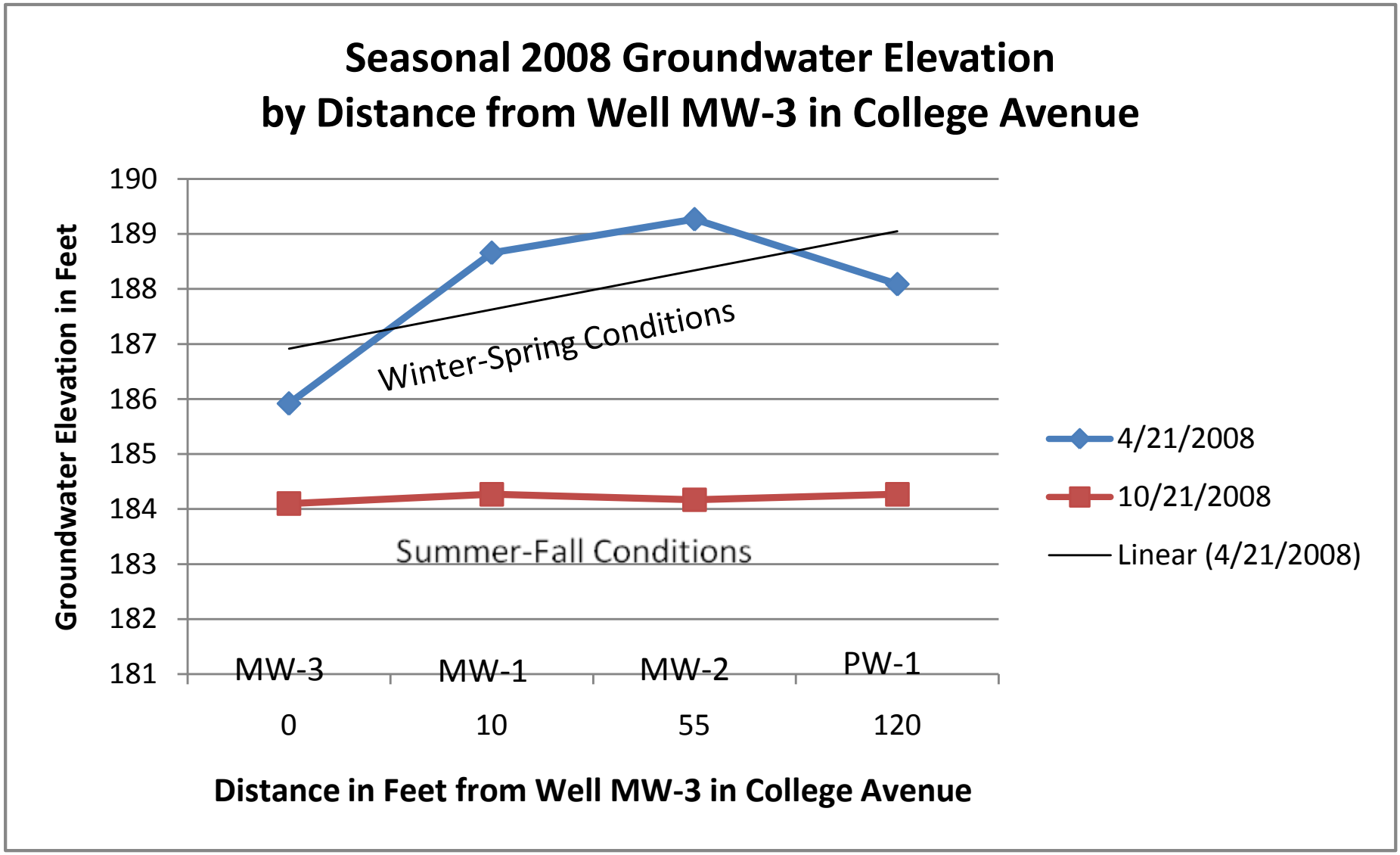
CHARTS

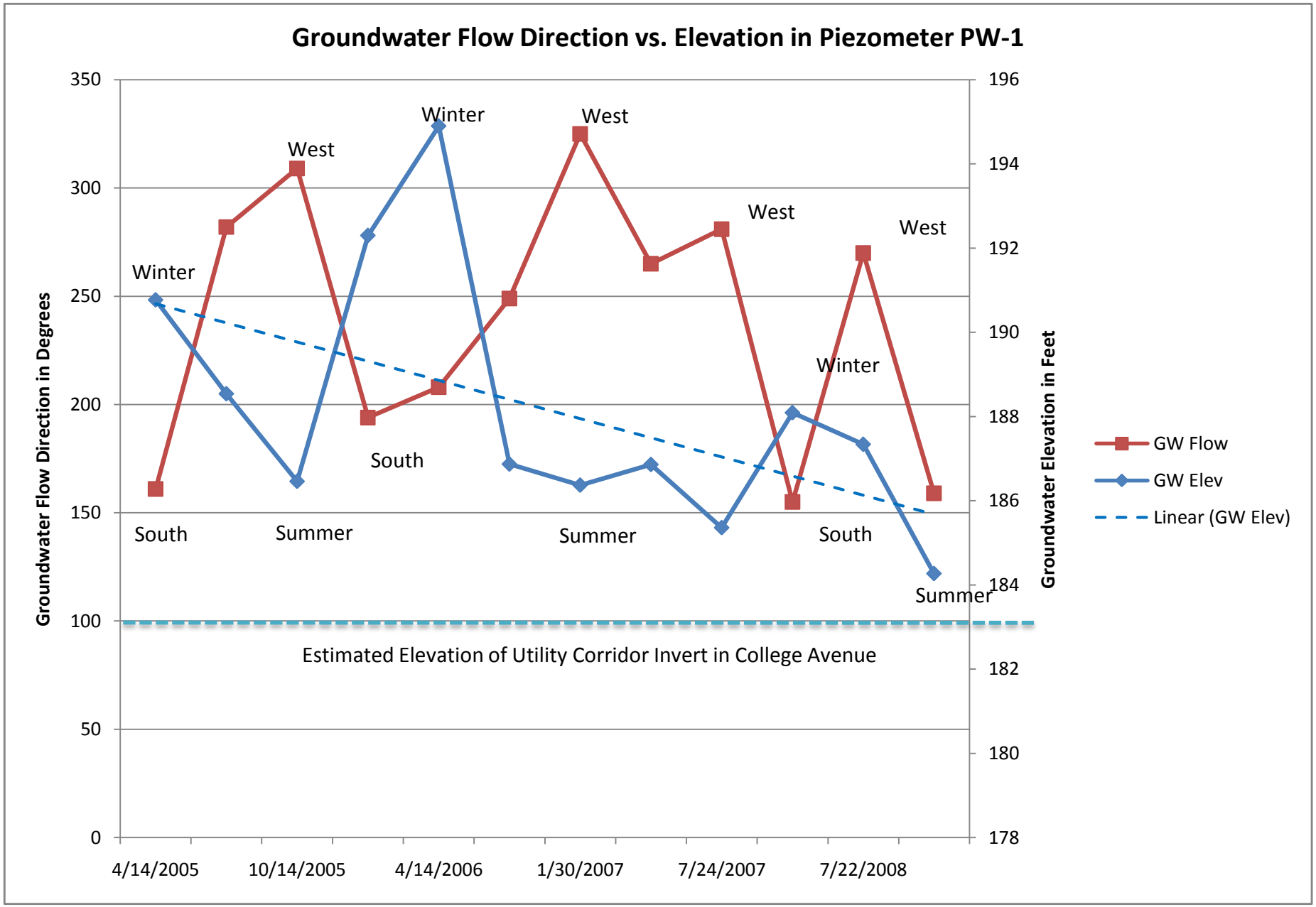
GGTR Project No. 7335

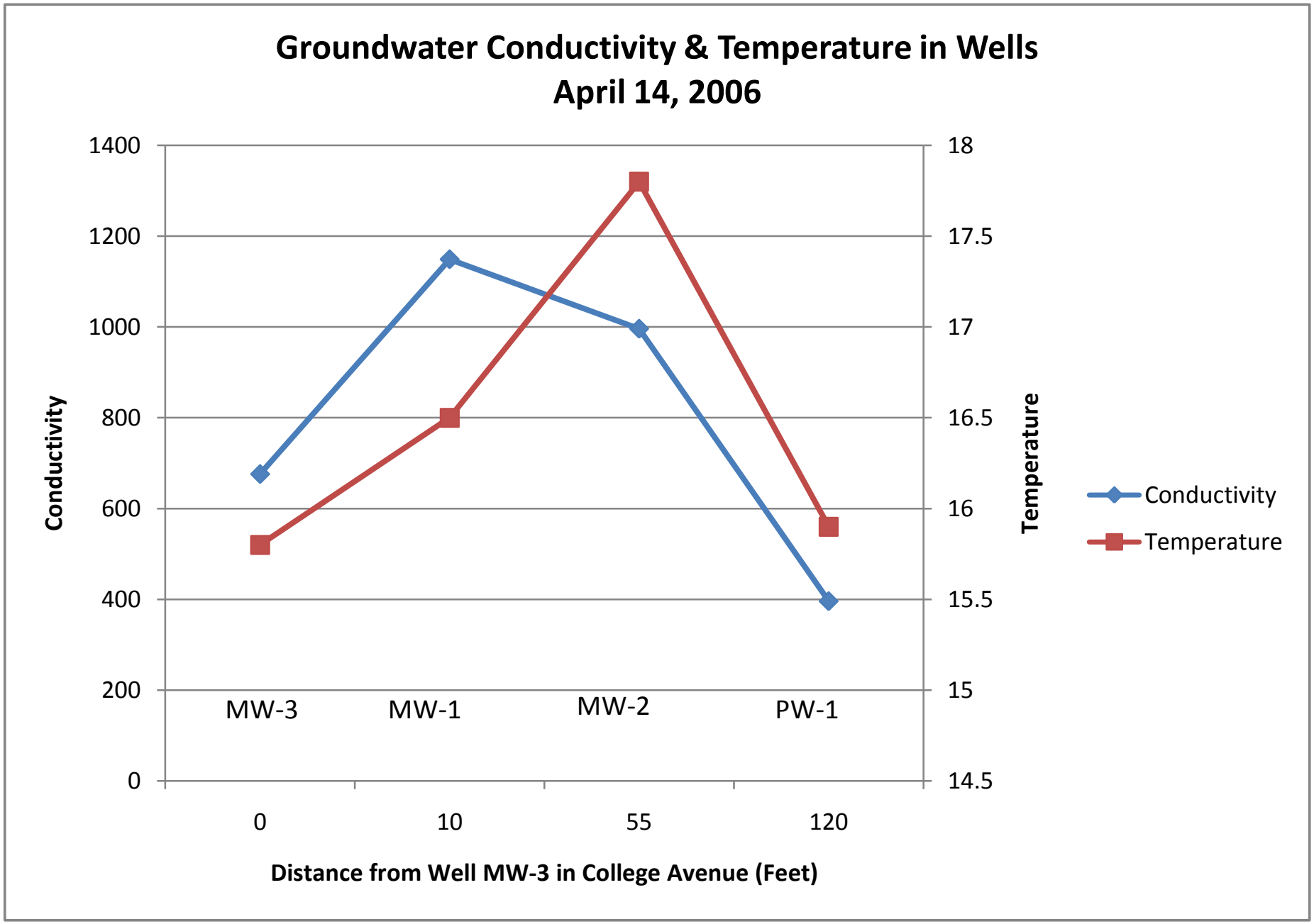
Golden Gate Tank Removal, Inc.
3730 Mission Street, San Francisco, California 94110
Phone (415) 512-1555 • Fax (415) 512-0964
General Engineering Contractors License No. 616521

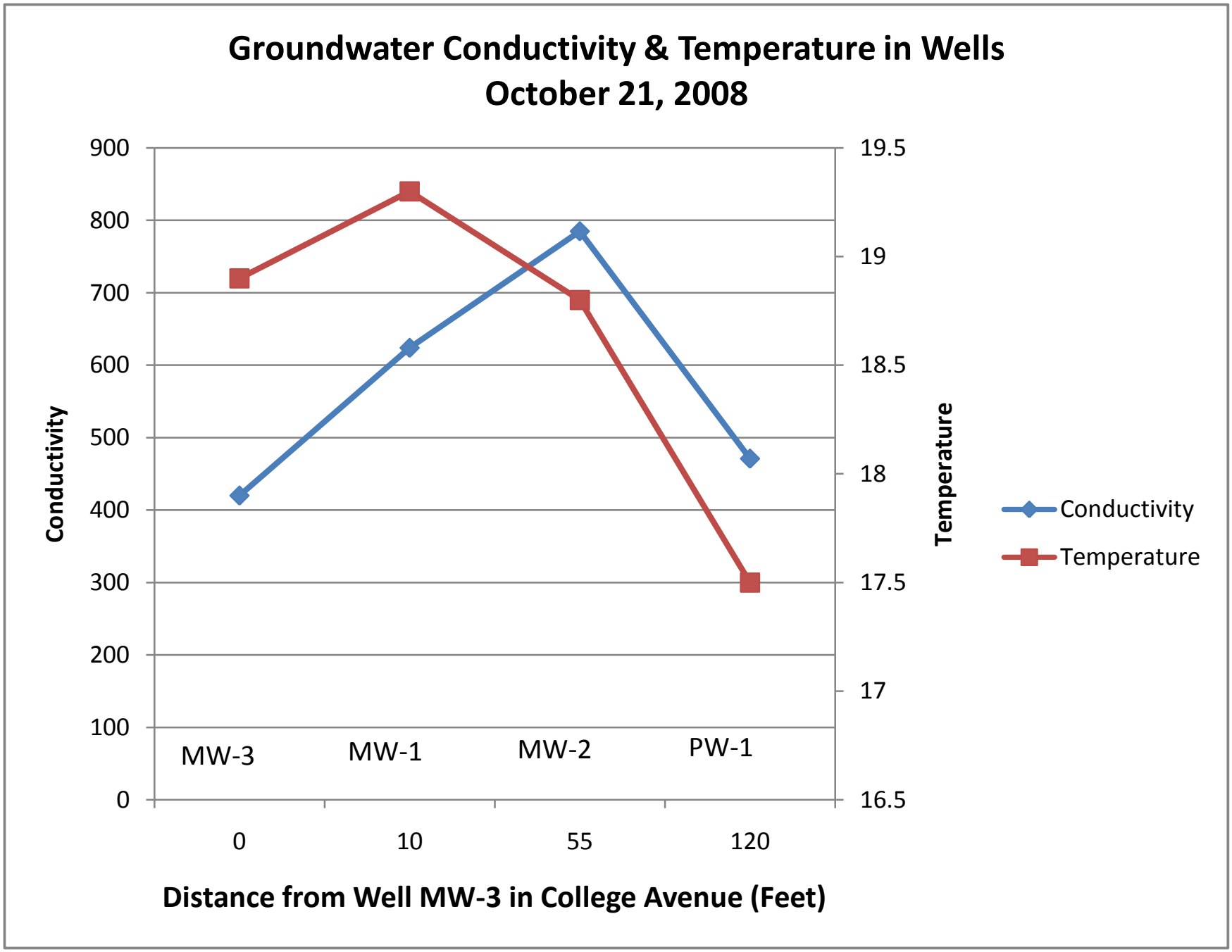

Historic Groundwater Elevation in Monitoring Wells
Elevation in feet above Mean Seal Level
196
194
192
190
188
186
184
182
180
178
176
Winter
Winter
Winter
Winter
Winter
Winter
Summer
Summer
Summer
Summer
Summer
Summer
Summer
Summer
Estimated Invert of Utility Corridor in College Avenue
MW-1
MW-2
MW-3
PW-1
4/25/2001
7/25/2001
10/25/2001
1/25/2002
4/25/2002
7/25/2002
10/25/2002
1/25/2003
4/25/2003
7/25/2003
10/25/2003
1/25/2004
4/25/2004
7/25/2004
10/25/2004
1/25/2005
4/25/2005
7/25/2005
10/25/2005
1/25/2006
4/25/2006
7/25/2006
10/25/2006
1/25/2007
4/25/2007
7/25/2007
10/25/2007
1/25/2008
4/25/2008
7/25/2008
Groundwater Monitoring Date

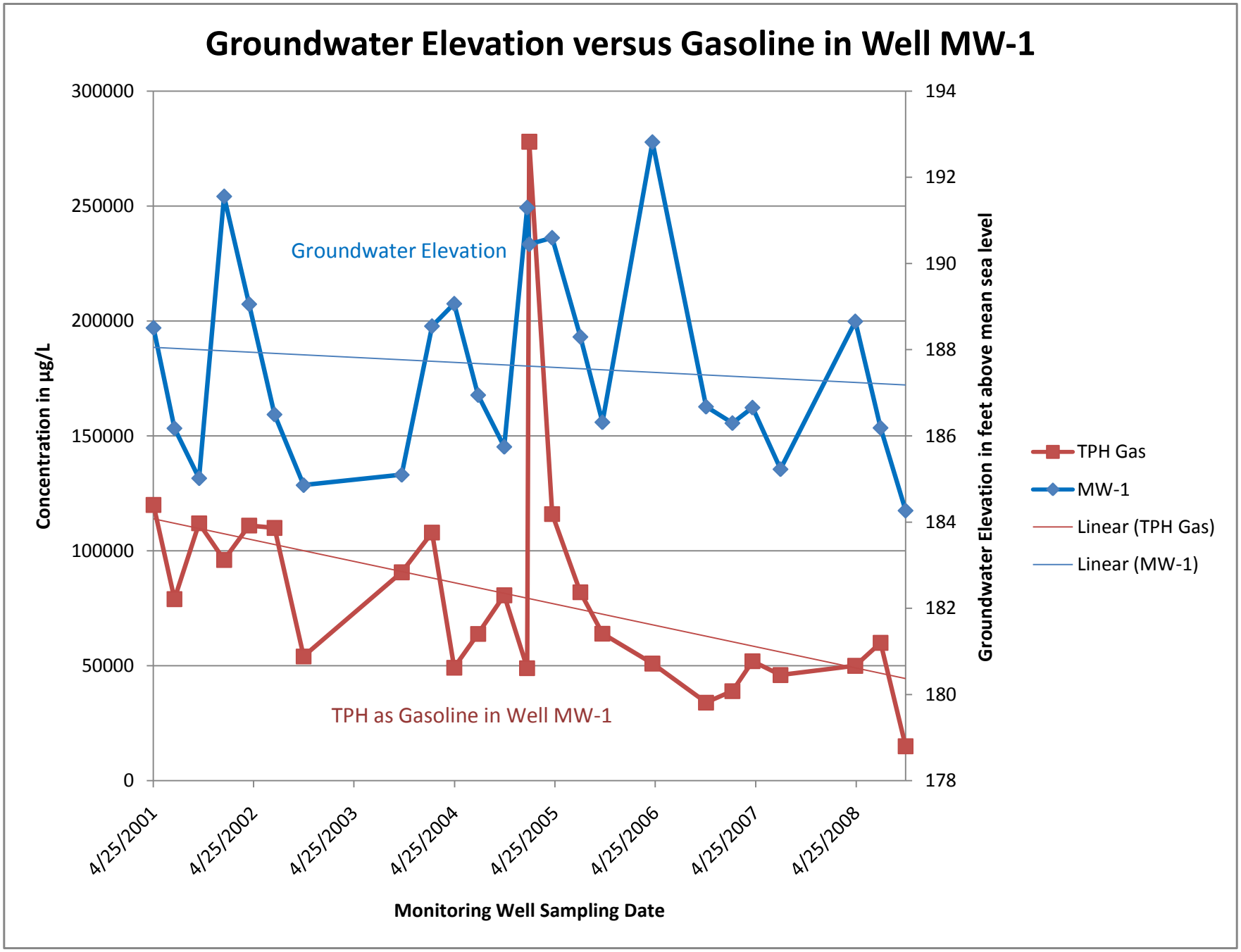

Seasonal 2006 Groundwater Elevation
by Distance from Well MW-3 in College Avenue
Groundwater Elevation in Feet
196
194
192
190
188
186
184
182
Winter-Spring Conditions
Summer-Fall Conditions
MW-3
MW-1
MW-2
PW-1
0
10
55
120
Distance in Feet from Well MW-3 in College Avenue
04/14/06
10/26/06

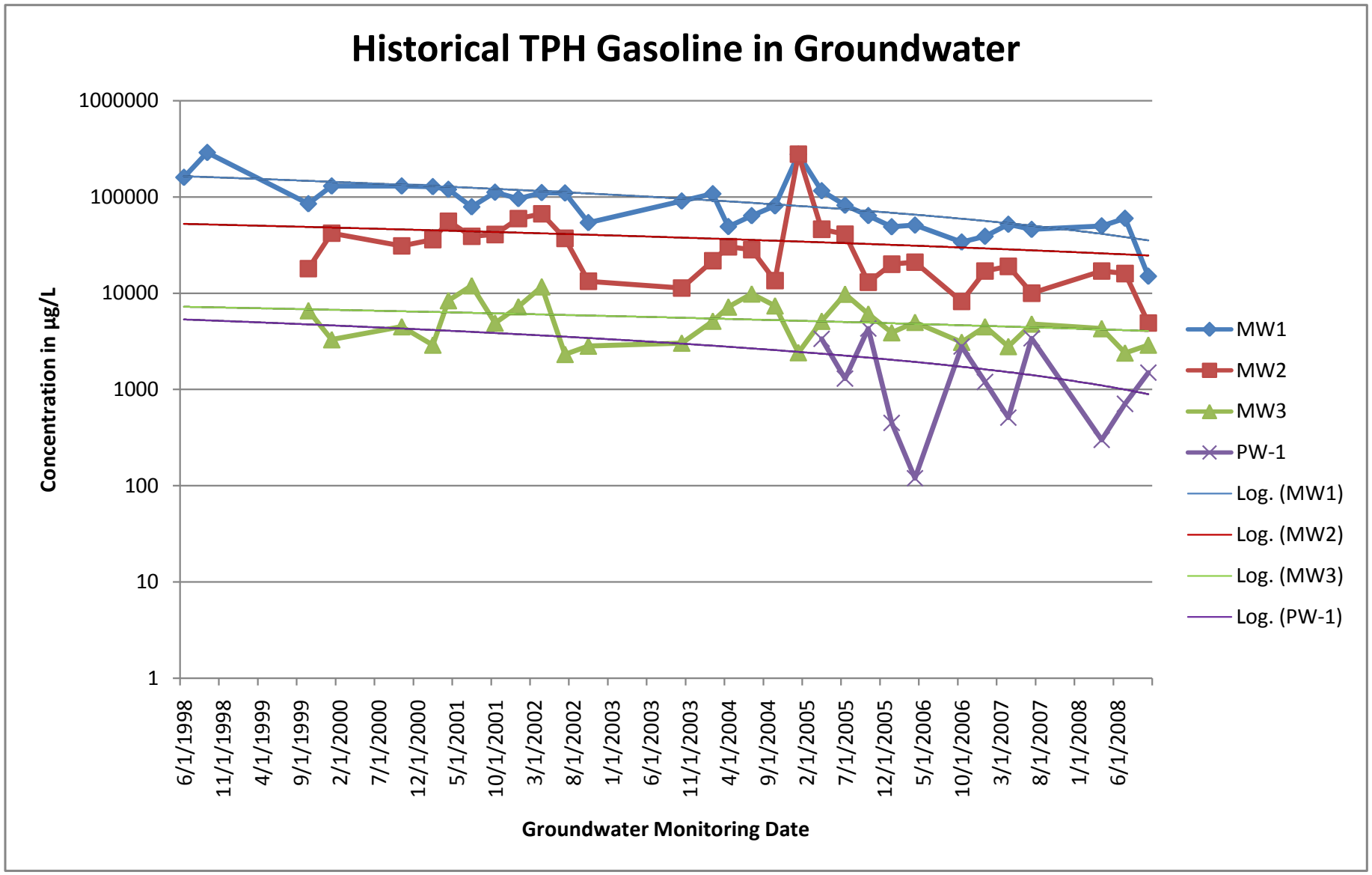

Seasonal 2008 Groundwater Elevation
by Distance from Well MW-3 in College Avenue
Groundwater Elevation in Feet
190
189
188
187
186
185
184
183
182
181
Winter-Spring Conditions
Summer-Fall Conditions
MW-3
MW-1
MW-2
PW-1
0
10
55
120
Distance in Feet from Well MW-3 in College Avenue
4/21/2008
10/21/2008
Linear (4/21/2008)

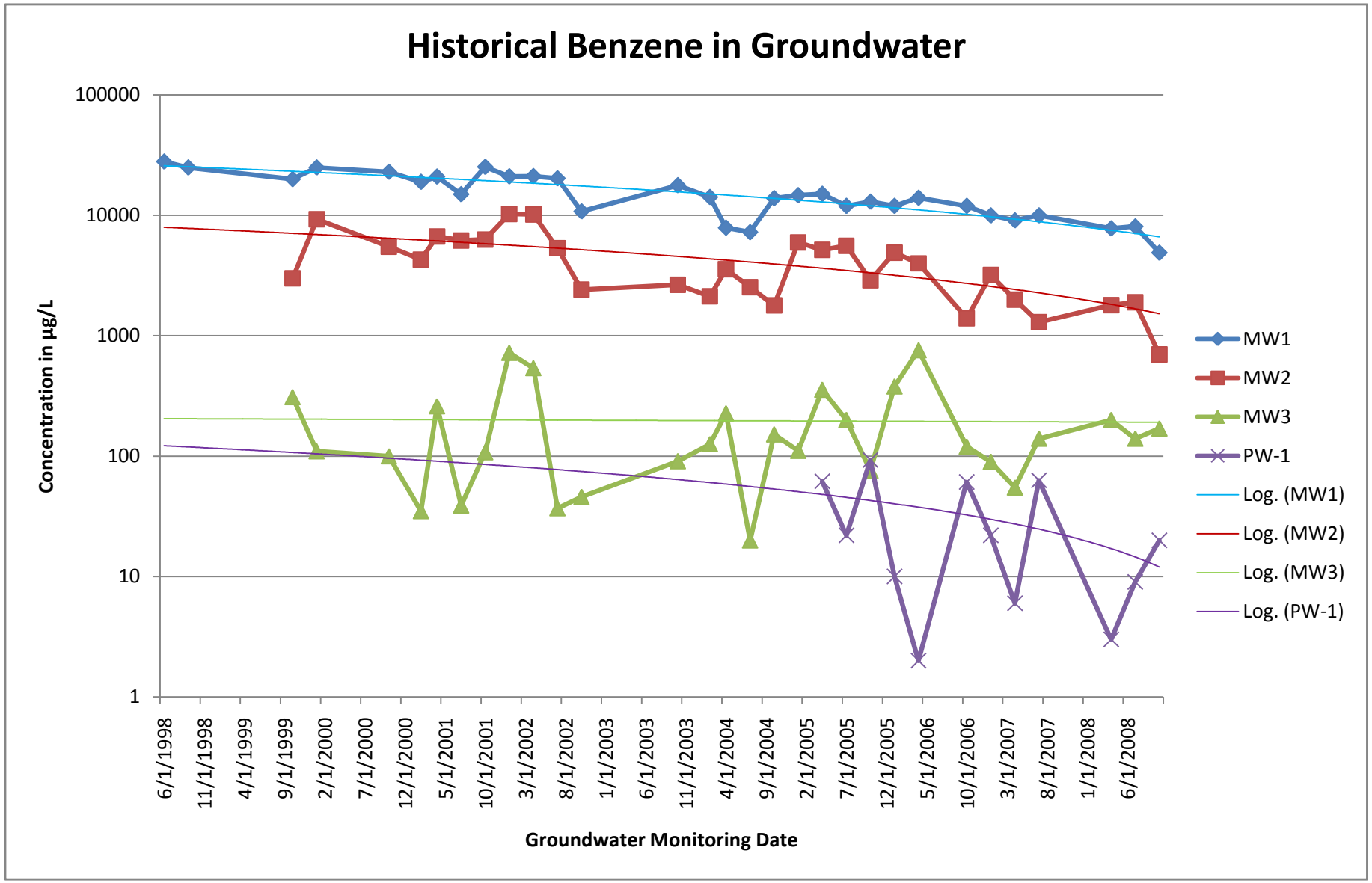

Groundwater Flow Direction vs. Elevation in Piezometer PW-1
Groundwater Flow Direction in Degrees
Groundwater Elevation in Feet
350
300
250
200
150
100
50
0
196
194
192
190
188
186
184
182
180
178
4/14/2005
10/14/2005
4/14/2006
1/30/2007
7/24/2007
7/22/2008
Winter
West
Winter
West
South
West
Winter
West
South
Summer
Summer
South
Summer
Estimated Elevation of Utility Corridor Invert in College Avenue
GW Flow
GW Elev
Linear (GW Elev)

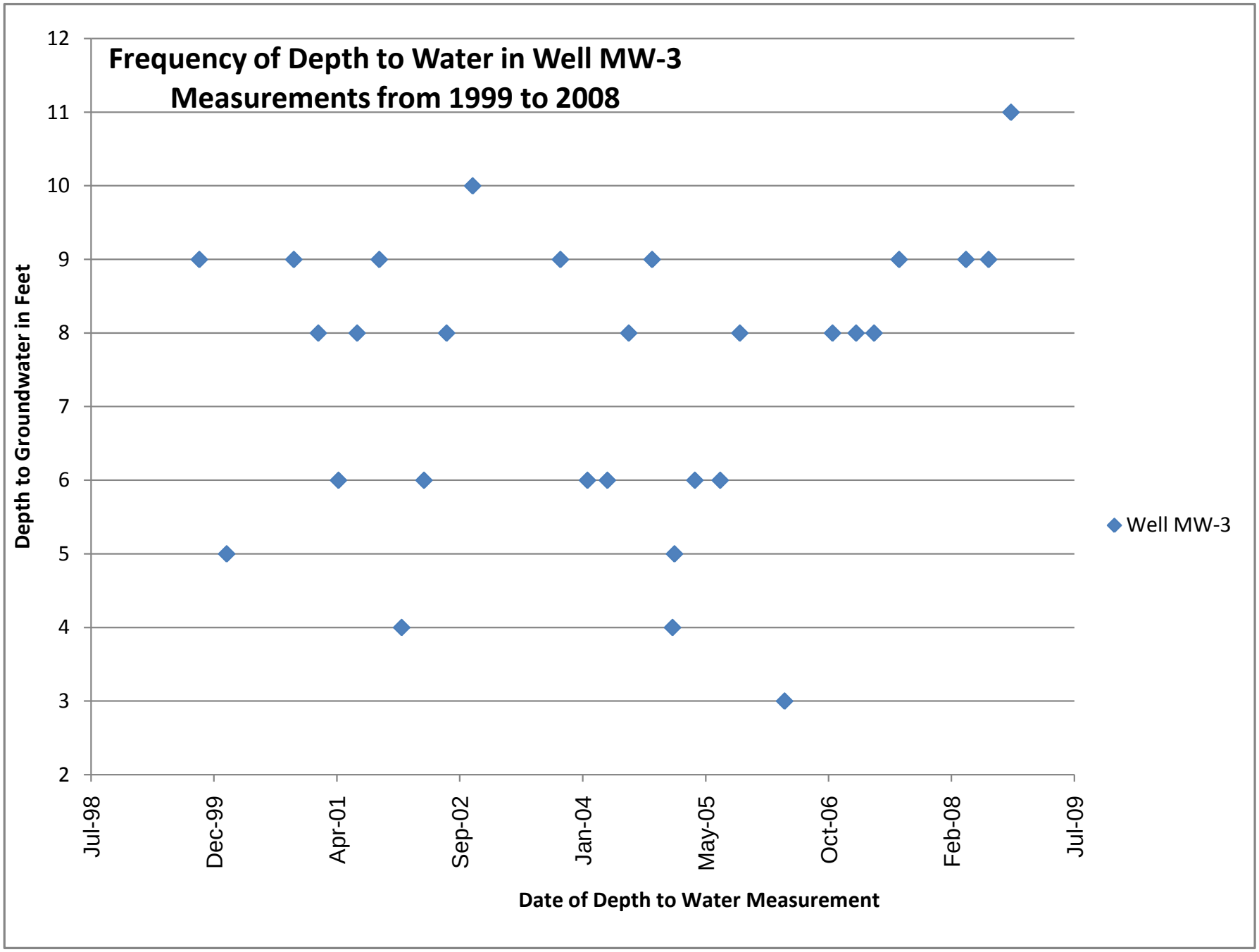

Groundwater Conductivity & Temperature in Wells
April 14, 2006
Conductivity
Temperature
1400
1200
1000
800
600
400
200
0
18
17.5
17
16.5
16
15.5
15
14.5
MW-3
MW-1
MW-2
PW-1
0
10
55
120
Distance from Well MW-3 in College Avenue (Feet)
Conductivity
Temperature


Groundwater Conductivity & Temperature in Wells
October 21, 2008
900
800
700
600
500
400
300
200
100
0
Conductivity
19.5
19
18.5
18
17.5
17
16.5
Temperature
MW-3
MW-1
MW-2
PW-1
0
10
55
120
Distance from Well MW-3 in College Avenue (Feet)
Conductivity
Temperature


Groundwater Elevation versus Gasoline in Well MW-1
300000
250000
200000
150000
100000
50000
0
194
192
190
188
186
184
182
180
178
Concentration in µg/L
Groundwater Elevation in feet above mean sea level
Groundwater Elevation
TPH as Gasoline in Well MW-1
4/25/2001
4/25/2002
4/25/2003
4/25/2004
4/25/2005
4/25/2006
4/25/2007
4/25/2008
Monitoring Well Sampling Date
TPH Gas
MW-1
Linear (TPH Gas)
Linear (MW-1)


Historical TPH Gasoline in Groundwater
Concentration in µg/L
1000000
100000
10000
1000
100
10
1
6/1/1998
11/1/1998
4/1/1999
9/1/1999
2/1/2000
7/1/2000
12/1/2000
5/1/2001
10/1/2001
3/1/2002
8/1/2002
1/1/2003
6/1/2003
11/1/2003
4/1/2004
9/1/2004
2/1/2005
7/1/2005
12/1/2005
5/1/2006
10/1/2006
3/1/2007
8/1/2007
1/1/2008
6/1/2008
Groundwater Monitoring Date
MW1
MW2
MW3
PW-1
Log. (MW1)
Log. (MW2)
Log. (MW3)
Log. (PW-1)


Historical Benzene in Groundwater
Concentration in µg/L
100000
10000
1000
100
10
1
6/1/1998
11/1/1998
4/1/1999
9/1/1999
2/1/2000
7/1/2000
12/1/2000
5/1/2001
10/1/2001
3/1/2002
8/1/2002
1/1/2003
6/1/2003
11/1/2003
4/1/2004
9/1/2004
2/1/2005
7/1/2005
12/1/2005
5/1/2006
10/1/2006
3/1/2007
8/1/2007
1/1/2008
6/1/2008
Groundwater Monitoring Date
MW1
MW2
MW3
PW-1
Log. (MW1)
Log. (MW2)
Log. (MW3)
Log. (PW-1)


Frequency of Depth to Water in Well MW-3
Measurements from 1999 to 2008
Depth to Groundwater in Feet
12
11
10
9
8
7
6
5
4
3
2
Jul-98
Dec-99
Apr-01
Sep-02
Jan-04
May-05
Oct-06
Feb-08
Jul-09
Date of Depth to Water Measurement
Well MW-3

SOIL AND WATER INVESTIGATION WORK PLAN

&

SITE CONCEPTUAL MODEL

APPENDIX E

MISCELLANEOUS DOCUMENTATION

Letter dated July 25, 2008, from Barbara Jakub, P.G., Hazardous Materials Specialist, Alameda County Health Care Services Agency

Gettler-Ryan Inc., May 30, 2008, First Semi-Annual Event of April 21, 2008, Former Chevron Service Station #209339, 5940 College Avenue, Oakland, California

GGTR Project No. 7335

Golden Gate Tank Removal, Inc.
3730 Mission Street, San Francisco, California 94110
Phone (415) 512-1555 • Fax (415) 512-0964
General Engineering Contractors License No. 616521

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

July 25, 2008

Dr. Brian Sheaff
William J Sheaf TTE Trust
1945 Parkside Drive
Concord, CA 94519

Subject: Fuel Leak Case No. RO0000377 and Geotracker Global ID T0600102112, Sheaf's Garage, 5930 College Avenue, Oakland, CA 94618

Dear Dr. Brian Sheaff:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the recently submitted documents entitled, *Report of Additional Site Characterization and Groundwater Monitoring*, dated August 29, 2006 and *Quarterly Groundwater Monitoring Report* dated May 30, 2008 which were prepared by Golden Gate Tank Removal, Inc. The investigation report and groundwater monitoring reports indicate that petroleum hydrocarbon contamination is present at the site and is undefined in the predominant downgradient direction. The investigation report also recommends additional investigation work before preparing a corrective action plan, if needed.

ACEH requests that you perform additional investigation at the site including addressing the following technical comments, performing the requested work, and sending us the technical reports requested below.

TECHNICAL COMMENTS

1. **Vertical and Horizontal Delineation of Dissolved Contaminant Plumes.** Up to 50,000 µg/L total petroleum hydrocarbons as gasoline (TPHg) and 7,800 µg/l benzene were detected in groundwater well MW-1 in December 2007. The vertical extent of contamination has not been defined at the site. Also, downgradient soil boring HB-6 contained 45 µg/L TPHg. The horizontal extent of petroleum hydrocarbon contamination is also not defined. Please submit a work plan to evaluate the vertical extent of contamination and to install a monitoring well network capable of collecting depth discrete groundwater samples, such as multi-chamber wells or well clusters and ensure that the top of the groundwater is screened and monitored. We request that your sand pack not exceed 3 to 5 feet with a screen length a maximum of 2 to 4 feet.

2. **New Well Survey.** Please resurvey the top of casing elevations for all wells and piezometer to NAVD88 as per Geotracker regulations to ensure accuracy in elevations and contour intervals. The previous vertical survey was to NAVD29.

3. **Preferential Pathway Evaluation.** The results of your preferential pathway evaluation indicate that petroleum hydrocarbons could be migrating along the 90 inch diameter underground conduit which contains the creek. Please investigate this conduit for Harwood Creek further in the downgradient direction. Determine if this creek becomes an open channel and if there are any hydrocarbons migrating along this line to open water. Please evaluate this potential receptor and provide this information in the work plan requested below. Should additional borings be necessary to determine if contamination is migrating along this conduit, please propose the locations in the work plan requested below.

4. **Extent of PCE Contamination.** Your consultant recommended advancing two additional hand auger borings near PW-1 to define the extent of the PCE contamination. Please propose locations in the work plan requested below. Also, ACEH approves your consultant's recommendation to reduce analysis for volatile organic compounds to semi-annually. Please continue to analyze quarterly for TPHg by EPA Method 8015M, benzene, toluene, ethylbenzene, toluene, xylenes, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether and tert butyl alcohol (TBA) by EPA Method 8260.

5. **Site Conceptual Model.** We anticipate that characterization and remediation work, in addition to what is requested in this letter, will be necessary at and down-gradient from your site. Considerable cost savings can be realized if your consultant focuses on developing and refining a viable Site Conceptual Model (SCM) for the project. An SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors. The SCM is used to identify data gaps that are subsequently filled as the investigation proceeds. As the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened. Subsurface investigations continue until the SCM no longer changes as new data are collected. At this point, the SCM is said to be 'validated.' The validated SCM then forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

   When performed properly, the process of developing, refining and ultimately validating the SCM effectively guides the scope of the entire site investigation. We have identified, based on our review of existing data, some initial key data gaps in this letter and have described several tasks that we believe will provide important new data to refine the SCM. We request that your consultant incorporate the results of the new work requested in this letter into their SCM, identify new and/or remaining data gaps, and propose supplemental tasks for future investigations. There may need to be additional phases of investigations, each building on the results of prior work, to validate the SCM. Characterizing the site in this manner will focus the scope of work to address the identified data gaps, which improves the efficiency of the work, and limits the overall costs.

   Both industry and the regulatory community endorse the SCM approach. Technical guidance for developing an SCM is presented in Strategies for Characterizing Subsurface Releases of Gasoline Containing MTBE, American Petroleum Institute Publication No. 4699 dated February 2000; 'Expedited Site Assessment Tools for Underground Storage Tank Sites: A Guide for Regulators' (EPA 510-B-97-001), prepared by the U.S. Environmental Protection Agency (EPA), dated March 1997; and 'Guidelines for Investigation and Cleanup

of MTBE and Other Ether-Based Oxygenates, Appendix C,' prepared the State Water Resources Control Board, dated March 27, 2000.

The SCM for this project is to incorporate, but is not limited to, the following:

a. A concise narrative discussion of the regional geologic and hydrogeologic setting. Include a list of technical references you reviewed, and copies (photocopies are sufficient) of regional geologic maps, groundwater contours, cross-sections, etc.

b. A concise discussion of the on-site and off-site geology, hydrogeology, release history, source zone, plume development and migration, attenuation mechanisms, preferential pathways, and potential threat to down-gradient and above-ground receptors (e.g. contaminant fate and transport). Please include the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e. vapor pathway) in the analysis. Maximize the use of large-scaled graphics (e.g. maps, cross-sections, contour maps, etc.) and conceptual diagrams to illustrate key points. Include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s).

c. Identification and listing of specific data gaps that require further investigation during subsequent phases of work.

d. Proposed activities to investigate and fill data gaps identified above.

e. The SCM shall include an analysis of the hydraulic flow system down-gradient from the site. Continue to update rose diagrams for depicting groundwater gradients and include contours on these maps. Include an analysis of vertical hydraulic gradients. Please note that these likely change due to seasonal precipitation and groundwater pumping. To evaluate the potential interconnection between shallow and deep aquifers, include hydrographs of hydraulic head in shallow aquifer versus pumping rates from nearby water supply wells.

f. Temporal changes in the plume location and concentrations are also a key element of the SCM. In addition to providing a measure of the magnitude of the problem, these data are often useful to confirm details of the flow system inferred from the hydraulic head measurements. Please include plots of the contaminant plumes on your maps, cross-sections, and diagrams.

g. Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor), including well logs, well completion details, boring logs, etc. Also update the cross-sections with new data.

h. Several other contaminant release sites exist in the vicinity of your site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for your SCM. Include a summary of work and technical findings from nearby release sites, in particular the site located cross-gradient.

At this juncture, prepare a site conceptual model (SCM) as described above, including developing and/or identifying site cleanup goals, and include the results of the SCM in the decision-making process. If data gaps (i.e. potential contaminant volatilization to indoor air

or contaminant migration along preferential pathways, etc.) are identified in the SCM, please address those data gaps in the work plan requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Barbara Jakub), according to the following schedule:

- **October 25, 2008** – Soil and Water Investigation (SWI) Work Plan and SCM.

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

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

If you have any questions, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara Jakub

Barbara Jakub, P.G.
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Brent Wheeler, GGTR, Inc., 3730 Mission St., San Francisco, CA 94110
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032
Donna Drogos, ACEH,
Barbara Jakub, ACEH
File

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

Effective **January 31, 2006**, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

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

Additional Recommendations

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

Submission Instructions

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

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

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name at acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload)

GETTLER-RYAN INC.

TRANSMITTAL

May 30, 2008
G-R #386521

TO: Ms. Charlotte Evans
Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608

CC: Mr. Ian Robb
Chevron Environmental
Management Company
P.O. Box 6012, Room K2196
San Ramon, California 94583

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

RE: Former Chevron Service Station
#209339
5940 College Avenue
Oakland, California
RO 0000466

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	May 28, 2008	Groundwater Monitoring and Sampling Report **First Semi-Annual Event of April 21, 2008**

COMMENTS:

Pursuant to your request, we are providing you with a copy of the above referenced report for **your use and distribution to the following (via PDF):**

Mr. Steven Plunkett, Alameda County Health Care Services, Dept. of Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577 **(Distributed by Cambria via PDF)**

Please provide any comments/changes and propose any groundwater monitoring modifications for the next event prior to ***June 13, 2008,*** at which time this final report will be distributed to the following:

cc: Mr. Donald Sweet, San Francisco Property Management Co., 155 Jefferson Street, #4, San Francisco, CA 94133-1224

Enclosures

trans/209339-IR

Ian Robb
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-9496
Fax (925) 842-8370
ianrobb@chevron.com

May 30, 2008

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

RE: Chevron Service Station #209339

Address 5940 College Ave.,Oakland, California

I have reviewed the attached routine groundwater monitoring report dated May 30, 2008.

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 Gettler-Ryan Inc., 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,

Ian Robb

Attachment: Report

WELL CONDITION STATUS SHEET

Client/Facility #: Chevron #209339
Site Address: 5940 College Avenue
City: Oakland, CA

Job # 386521
Event Date: 4-21-08
Sampler: Joe

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	O.K	O.K	O.K	O.K	O.K	O.K	O.K	N	N	8" Boart-Longy.	No
MW-2	O.K	O.K	O.K	O.K	O.K	O.K	O.K	N	N	8" Boart-Longy.	No

Comments

GETTLER-RYAN INC.

May 28, 2008
G-R Job #386521

Mr. Ian Robb
Chevron Environmental Management Company
P.O. Box 6012, Room K2196
San Ramon, CA 94583

RE: First Semi Annual Event of April 21, 2008
Groundwater Monitoring & Sampling Report
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

Dear Mr. Robb:

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). A joint monitoring event was conducted with Sheaff's Garage located at 5930 College Avenue, Oakland, California, however data was not received.

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 Groundwater Elevation 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.

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

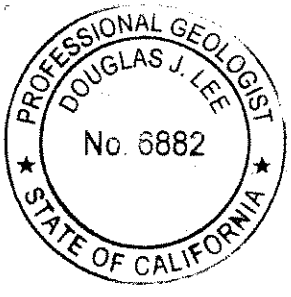
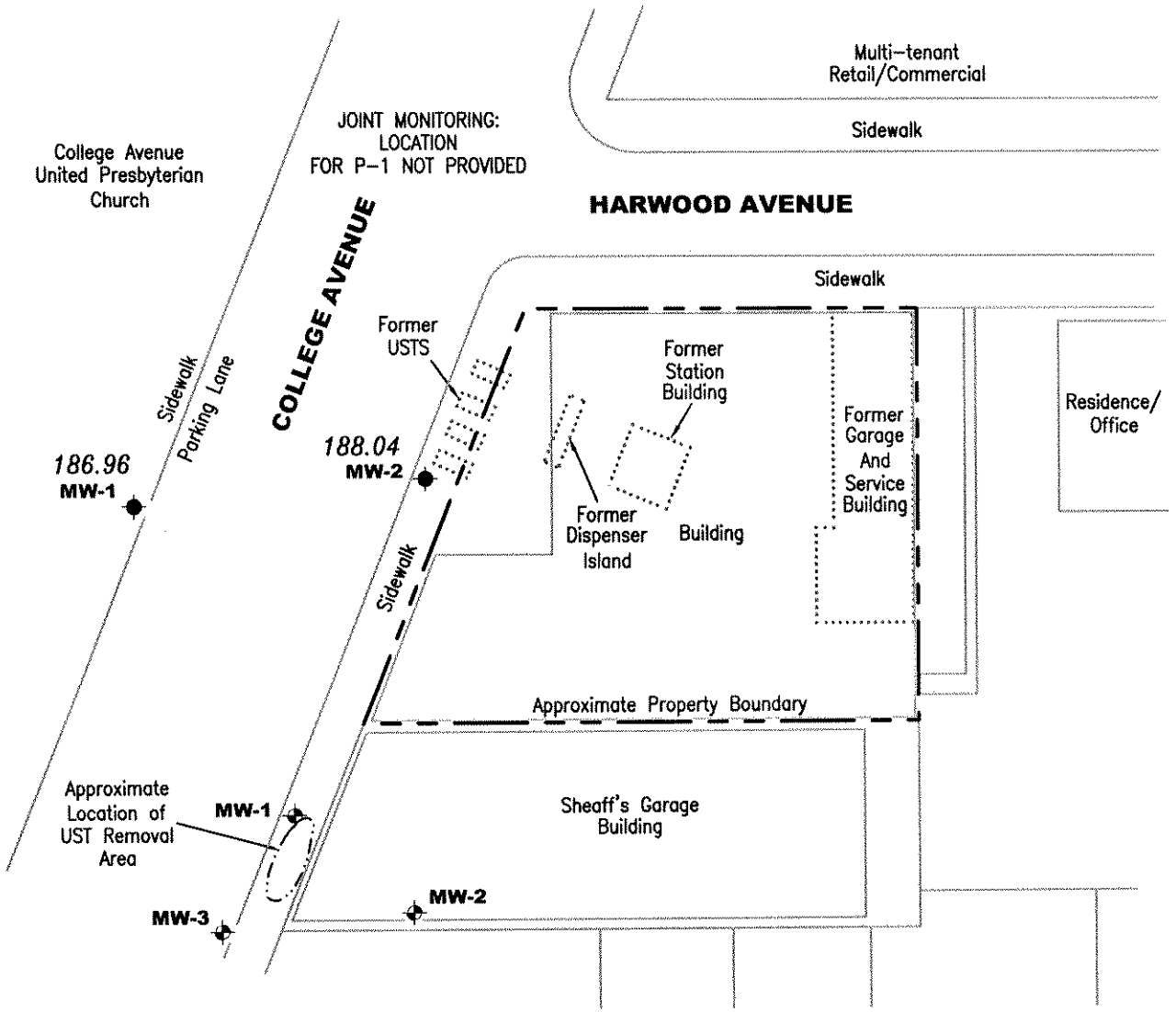


Figure 1: Groundwater Elevation Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results - Oxygenate Compounds
Table 3: Groundwater Analytical Results
Table 4: Field Measurements
Table 5: Joint Groundwater Monitoring Data and Analytical Results - Sheaff's Garage
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

6747 Sierra Court, Suite J • **Dublin**, CA 94568 • (925) 551-7555 • Fax (925) 551-7888
3140 Gold Camp Drive, Suite 170 • **Rancho Cordova**, CA 95670 • (916) 631-1300 • Fax (916) 631-1317
1364 N. McDowell Blvd., Suite B2 • **Petaluma**, CA 94954 • (707) 789-3255 • Fax (707) 789-3218



EXPLANATION

- Groundwater monitoring well (Former Chevron)
- Groundwater monitoring well (Sheaff's Garage)
- *99.99* Groundwater elevation in feet referenced to Mean Sea Level

N

0 40

Scale in Feet

Source: Figure modified from drawing provided by Piers Environmental Services, Inc. and County Assessors map and Golden Gate Tank Removal.

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

GROUNDWATER ELEVATION MAP
Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

FIGURE
1

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
386521		April 21, 2008	

FILE NAME: P:\Enviro\Chevron\209339\Q08-209339.DWG | Layout Tab: Pot2

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-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
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**	--
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	--
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	--

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-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-2 (cont)									
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]**	--
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	--
10/22/07	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/21/08	--	--	--	**<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-G = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl Tertiary Butyl Ether

(ppb) = Parts per billion

-- = 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.

Table 2

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #209339
5940 College Avenue
Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)
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 = Tertiary butyl alcohol
MTBE = Methyl tertiary butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
(ppb) = Parts per billion
-- = 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 *(ppm)*	TOTAL ALKALINITY *(ppm)*	SULFATE AS SO_4 *(ppm)*
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:

(ppm) = Parts per million
-- = Not Analyzed

[1] Analysis was not performed by the Laboratory as requested on the Chain of Custody.

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

ANALYTICAL METHODS:

EPA Method SM 3500 Fe for Ferrous Iron
EPA Method 310.1 for Total Alkalinity
EPA Method 300.0 for Sulfate as SO_4

Table 4

Field Measurements

Former Chevron Service Station #209339

5940 College Avenue

Oakland, California

WELL ID	DATE	D.O. Before Purging *(mg/L)*	ORP 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.

Table 5

Joint Groundwater Monitoring Data and Analytical Results

Sheaff's Garage
5930 College Avenue
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-1									
04/25/01[1]	195.90	7.39	188.51	--	--	--	--	--	--
07/09/01	195.90	9.72	186.18	79,000	15,000	7,800	3,000	15,000	660
10/08/01	195.90	10.88	185.02	112,000	25,300	11,800	4,280	20,600	374
01/07/02[3]	195.90	4.34	191.56	96,100	21,100	13,500	4,160	21,900	596/330[2]
04/08/02	195.90	6.84	189.06	111,000	21,200	13,400	4,230	21,000	814
10/23/02[3,4]	195.90	--	--	--	--	--	--	--	--
04/15/03[5]	195.90	--	--	--	--	--	--	--	--
10/31/03[5]	195.90	--	--	--	--	--	--	--	--
04/23/04[4]	195.90	--	--	--	--	--	--	--	--
10/22/04	195.90	10.15	185.75	80,700	13,900	1,670	3,550	15,200	493
04/14/05[1]	195.90	5.30	190.60	--	--	--	--	--	--
10/14/05[6]	195.90	9.58	186.32	64,000	13,000	5,700	3,400	16,000	<250
04/14/06[6]	195.90	3.08	192.82	--	14,000	5,300	3,500	17,000	270
10/26/06[6]	195.90	9.22	186.68	34,000	12,000	1,600	3,100	8,600	<250
04/13/07	195.90	9.24	186.66	52,000	9,100	2,600	3,100	11,000	150
10/22/07[5]	195.90	--	--	--	--	--	--	--	--
04/21/08[4]	**195.90**	--	--	--	--	--	--	--	--
MW-2									
04/25/01[1]	197.28	8.52	188.76	--	--	--	--	--	--
07/09/01	197.28	11.05	186.23	39,000	6,200	730	2,300	6,100	180
10/08/01	197.28	12.79	184.49	40,700	6,310	399	2,100	5,320	6,460
01/07/02[3]	197.28	4.92	192.36	59,600	10,300	3,250	4,180	14,400	366/170[2]
04/08/02	197.28	8.40	188.88	66,700	10,200	2,670	3,840	13,200	583
10/23/02[3,4]	197.28	--	--	--	--	--	--	--	--
04/15/03[5]	197.28	--	--	--	--	--	--	--	--
10/31/03[5]	197.28	--	--	--	--	--	--	--	--
04/23/04[4]	197.28	--	--	--	--	--	--	--	--
10/22/04	197.28	10.25	187.03	13,500	1,790	54	892	915	273
04/14/05[1]	197.28	8.70	188.58	--	--	--	--	--	--
10/14/05[6]	197.28	10.92	186.36	13,000	2,900	100	1,300	1,200	130
04/14/06[6]	197.28	3.61	193.67	--	4,000	740	2,300	5,100	<100

Table 5

Joint Groundwater Monitoring Data and Analytical Results

Sheaff's Garage
5930 College Avenue
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-2 (cont)									
10/26/06[6]	197.28	10.58	186.70	8,200	1,400	51	840	500	68
04/13/07	197.28	10.54	186.74	19,000	2,000	85	1,300	1,100	57
10/22/07[5]	197.28	--	--	--	--	--	--	--	--
04/21/08[4]	**197.28**	--	--	--	--	--	--	--	--
MW-3									
04/25/01[1]	195.22	6.61	188.61	--	--	--	--	--	--
07/09/01	195.22	8.85	186.37	12,000	39	10	690	1,600	35
10/08/01	195.22	9.75	185.47	4,912.5	107.7	3.9	99.0	132.5	52.2
01/07/02[3]	195.22	4.25	190.97	7,260	723	138	492	887	81.7/16.7[2]
04/08/02	195.22	6.33	188.89	11,700	540	108	706	1,710	<0.5
10/23/02[3,4]	195.22	--	--	--	--	--	--	--	--
04/15/03[5]	195.22	--	--	--	--	--	--	--	--
10/31/03[5]	195.22	--	--	--	--	--	--	--	--
04/23/04[4]	195.22	--	--	--	--	--	--	--	--
10/22/04	195.22	9.25	185.97	7,420	152	12.8	267	480	96
04/14/05[1]	195.22	5.10	190.12	--	--	--	--	--	--
10/14/05[6]	195.22	8.83	186.39	6,100	76	19	170	350	<20
04/14/06[6]	195.22	3.41	191.81	--	760	44	230	190	69
10/26/06[6]	195.22	8.57	186.65	3,100	120	9.8	55	54	17
04/13/07	195.22	8.57	186.65	2,800	55	4.9	19	6.1	<5
10/22/07[5]	195.22	--	--	--	--	--	--	--	--
04/21/08[4]	**195.22**	--	--	--	--	--	--	--	--
PW-1									
04/14/05[1]	--	6.40	--	--	--	--	--	--	--
10/14/05[6]	--	10.71	--	4,300	93	1.2	100	140	<2.0
04/14/06[6]	--	2.27	--	--	2.3	<1.0	3.5	9.3	<2.0
10/26/06[6]	--	10.30	--	2,800	61	<10	130	34	<10
04/13/07	197.17	10.31	--	510	6	<0.5	30	56	<1
10/22/07[5]	197.17	--	--	--	--	--	--	--	--
04/21/08[4]	**197.17**	--	--	--	--	--	--	--	--

Table 5

Joint Groundwater Monitoring Data and Analytical Results

Sheaff's Garage

5930 College Avenue

Oakland, California

EXPLANATIONS:

Joint groundwater monitoring data and laboratory analytical results were provided by Golden Gate Tank Removal, Inc.

TOC = Top of Casing

(ft.) = Feet

DTW = Depth to Water

GWE = Groundwater Elevation

(msl) = Mean sea level

TPH-G = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl tertiary butyl ether

(ppb) = Parts per billion

-- = Not Measured/Not Analyzed

* TOC elevations were surveyed on April 26, 2001, by Virgil Chavez Land Surveying. The benchmark 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 Elevation = 179.075 feet, msl).

[1] Joint monitoring laboratory analytical results were not provided.

[2] MTBE by EPA Method 8260

[3] Joint monitoring was conducted on different day than Chevron.

[4] Joint monitoring data was not provided.

[5] Joint monitoring and sampling was scheduled but not conducted.

[6] BTEX and MTBE by EPA Method 8260.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

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, suction, Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. 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 possible. 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. 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.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

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 #209339 Job Number: 386521
Site Address: 5940 College Avenue Event Date: 4-21-08 (inclusive)
City: Oakland, CA Sampler: Joe

Well ID MW- 1 Date Monitored: 4-21-08
Well Diameter 2 in.
Total Depth 20.15 ft.
Depth to Water 9.95 ft.

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 then 0.50 ft.

10.20 xVF 0.17 = 1.73 x3 case volume = Estimated Purge Volume: 5.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.99

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): 0608 Weather Conditions: clear/cold
Sample Time/Date: 0645 / 4-21-08 Water Color: clear Odor: Y / N N
Approx. Flow Rate: ~2 gpm. Sediment Description:
Did well de-water? _____ If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 10.67

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm (µS))	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0616	1.5	6.49	1011	13.6		
0621	3	6.51	1042	13.5		
0628	5.5	6.58	1036	13.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 1	3 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX(8021)

COMMENTS:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #209339 Job Number: 386521
Site Address: 5940 College Avenue Event Date: 4-21-08 (inclusive)
City: Oakland, CA Sampler: Joe

Well ID MW-2 Date Monitored: 4-21-08
Well Diameter 2 in.
Total Depth 20.09 ft.
Depth to Water 9.31 ft.

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 then 0.50 ft.

10.78 xVF 0.17 = 1.83 x3 case volume = Estimated Purge Volume: 5.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.46

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: 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): 0700 Weather Conditions: Clear
Sample Time/Date: 0730 / 4-21-08 Water Color: Clear Odor: Y / N N
Approx. Flow Rate: ~7 gpm. Sediment Description:
Did well de-water? _____ If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 10.68

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0708	1.5	7.11	1258	13.2		
0714	3	7.16	1241	13.3		
0720	5.5	7.12	1246	13.8		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	3 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX(8021)

COMMENTS:

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

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories

Acct. #: 10904 | For Lancaster Laboratories use only | Sample # 5338499-501 | Group #: 004848

Ø42108-Ø1

1087501

Facility #: SS#209339-QML G-R#386521 Global ID#T06019752694

Site Address: 5940 COLLEGE AVENUE, OAKLAND, CA

Chevron PM: IR | Lead Consultant: CRACE

Consultant/Office: G-R, Inc., 6747 Sierra Court, Suite J, Dublin, Ca. 94568

Consultant Prj. Mgr.: Deanna L. Harding (deanna@grinc.com)

Consultant Phone #: 925-551-7555 | Fax #: 925-551-7899

Sampler: JOE A-JEMIAN

Preservative Codes
H = HCl | T = Thiosulfate
N = HNO_3 | B = NaOH
S = H_2SO_4 | O = Other

- ☐ J value reporting needed
- ☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run ____ oxy's on highest hit
- ☐ Run ____ oxy's on all hits

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Oil ☐ Air	Total Number of Containers	Analyses Requested — Preservation Codes: H	H	BTEX ☐ 8021 ☒	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates ____	Total Lead Method ____	Dissolved Lead Method ____
QA	—	—	✓			✓		2			✓	✓					
MW-1	4-21-08	0645	"			"		3			✓	✓					
MW-2	"	0730	"			"		3			✓	✓					

Comments / Remarks

Turnaround Time Requested (TAT) (please circle)
STD. TAT | 72 hour | 48 hour | 24 hour | 4 day | 5 day

Data Package Options (please circle if required)
QC Summary | Type I - Full | Type VI (Raw Data) | ☐ Coelt Deliverable not need | EDF/EDD | WIP (RWQCB) | Disk

	Date	Time		Date	Time
Relinquished by:	4-21-08	0910	Received by:	21 APR 08	0910
Relinquished by:	21 APR 08	1630	Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	4/22/08	0810
Temperature Upon Receipt 0.8-3.2 C°			Custody Seals Intact? Yes No		

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

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

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

925-842-8582

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1087501. Samples arrived at the laboratory on Tuesday, April 22, 2008. The PO# for this group is 0015024486 and the release number is ROBB.

Client Description	Lancaster Labs Number
QA-T-080421 NA Water	5338499
MW-1-W-080421 Grab Water	5338500
MW-2-W-080421 Grab Water	5338501

ELECTRONIC COPY TO CRA c/o Gettler-Ryan Attn: Cheryl Hansen

Questions? Contact your Client Services Representative
Angela M Miller at (717) 656-2300

Respectfully Submitted,

Martha L. Seidel
Martha L. Seidel
Senior Chemist

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW5338499 Group No. 1087501

QA-T-080421 NA Water
Facility# 209339 Job# 386521 GRD
5940 College Ave-Oakland T06019752694 QA
Collected:04/21/2008

Account Number: 10904

Submitted: 04/22/2008 10:10
Reported: 04/30/2008 at 07:24
Discard: 05/31/2008

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

9339Q

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05879	BTEX					
02161	Benzene	71-43-2	N.D.	0.5	ug/l	1
02164	Toluene	108-88-3	N.D.	0.5	ug/l	1
02166	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
02171	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01729	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	04/24/2008 13:44	Patrick N Evans	1
05879	BTEX	SW-846 8021B	1	04/24/2008 13:44	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/24/2008 13:44	Patrick N Evans	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW5338500 Group No. 1087501

MW-1-W-080421 Grab Water
Facility# 209339 Job# 386521 GRD
5940 College Ave-Oakland T06019752694 MW-1
Collected:04/21/2008 06:45 by JA

Account Number: 10904

Submitted: 04/22/2008 10:10
Reported: 04/30/2008 at 07:24
Discard: 05/31/2008

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

93391

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	120.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05879	BTEX					
02161	Benzene	71-43-2	N.D.	0.5	ug/l	1
02164	Toluene	108-88-3	N.D.	0.5	ug/l	1
02166	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
02171	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01729	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	04/25/2008 13:04	Patrick N Evans	1
05879	BTEX	SW-846 8021B	1	04/25/2008 13:04	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/25/2008 13:04	Patrick N Evans	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW5338501 Group No. 1087501

MW-2-W-080421 Grab Water
Facility# 209339 Job# 386521 GRD
5940 College Ave-Oakland T06019752694 MW-2
Collected:04/21/2008 07:30 by JA

Account Number: 10904

Submitted: 04/22/2008 10:10
Reported: 04/30/2008 at 07:24
Discard: 05/31/2008

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

93392

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	860.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05879	BTEX					
02161	Benzene	71-43-2	1.0	0.5	ug/l	1
02164	Toluene	108-88-3	N.D.	2.0	ug/l	1
02166	Ethylbenzene	100-41-4	N.D.	2.0	ug/l	1
02171	Total Xylenes	1330-20-7	N.D.	10.	ug/l	1
	Due to the presence of interferents 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.					

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01729	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	04/25/2008 13:25	Patrick N Evans	1
05879	BTEX	SW-846 8021B	1	04/25/2008 13:25	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/25/2008 13:25	Patrick N Evans	1

Lancaster Laboratories

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

Analysis Report

Quality Control Summary

Client Name: Chevron
Group Number: 1087501
Reported: 04/30/08 at 07:24 AM

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: 08114B54A	Sample number(s): 5338499							
TPH-GRO - Waters	N.D.	50.	ug/l	113	111	75-135	1	30
Benzene	N.D.	0.5	ug/l	94	94	86-119	0	30
Toluene	N.D.	0.5	ug/l	99	100	82-119	1	30
Ethylbenzene	N.D.	0.5	ug/l	99	99	81-119	0	30
Total Xylenes	N.D.	1.5	ug/l	101	102	82-120	1	30
Batch number: 08114B54B	Sample number(s): 5338500-5338501							
TPH-GRO - Waters	N.D.	50.	ug/l	113	111	75-135	1	30
Benzene	N.D.	0.5	ug/l	94	94	86-119	0	30
Toluene	N.D.	0.5	ug/l	99	100	82-119	1	30
Ethylbenzene	N.D.	0.5	ug/l	99	99	81-119	0	30
Total Xylenes	N.D.	1.5	ug/l	101	102	82-120	1	30

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: 08114B54A	Sample number(s): 5338499 UNSPK: P337319, P337320								
TPH-GRO - Waters	101		63-154						
Benzene	99		78-131						
Toluene	101		78-129						
Ethylbenzene	102		75-133						
Total Xylenes	102		84-131						
Batch number: 08114B54B	Sample number(s): 5338500-5338501 UNSPK: P337319, P337320								
TPH-GRO - Waters	101		63-154						
Benzene	99		78-131						
Toluene	101		78-129						
Ethylbenzene	102		75-133						
Total Xylenes	102		84-131						

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: TPH-GRO - Waters
Batch number: 08114B54A

*- 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
Reported: 04/30/08 at 07:24 AM

Group Number: 1087501

Surrogate Quality Control

	Trifluorotoluene-F	Trifluorotoluene-P
5338499	81	77
Blank	85	79
LCS	93	78
LCSD	91	77
MS	92	79
Limits:	63-135	69-129

Analysis Name: TPH-GRO - Waters
Batch number: 08114B54B

	Trifluorotoluene-F	Trifluorotoluene-P
5338500	90	77
5338501	97	71
Blank	87	77
LCS	93	78
LCSD	91	77
MS	92	79
Limits:	63-135	69-129

*- 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.

Lancaster Laboratories
Explanation of Symbols and Abbreviations

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

N.D.	none detected
TNTC	Too Numerous To Count
IU	International Units
umhos/cm	micromhos/cm
C	degrees Celsius
Cal	(diet) calories
meq	milliequivalents
g	gram(s)
ug	microgram(s)
ml	milliliter(s)
m3	cubic meter(s)

BMQL	Below Minimum Quantitation Level
MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units
NTU	nephelometric turbidity units
F	degrees Fahrenheit
lb.	pound(s)
kg	kilogram(s)
mg	milligram(s)
l	liter(s)
ul	microliter(s)
fib >5 um/ml	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

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.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.