



Sustaining  
Environments  
Worldwide

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✓ 20396

February 2, 2005

Alameda County Environmental Health Department  
Amir Gholami  
1131 Harbor Bay Parkway  
Alameda, CA  
94502-6577

Alameda County  
FEB 7 2005  
Environmental Health

RE: 2547 East 27th Street, Oakland, California (Property), Site # 1848

Mr. Gholami-

Good day. Enclosed you will find a copy of the most recent assessment report for the above mentioned Property. It is here for your review as part of the ongoing assessment and clean-up (if necessary) of the Property.

Ceres Associates attempted, on multiple occasions, to contact both you and your immediate supervisor regarding this project prior to conducting field activities. Unfortunately phone messages were not returned and the front desk informed our staff that the oversight of the Property was under the Alameda County Public Works Agency. After much run-around, this does not appear to be true.

Ceres Associates in coordination with the Property owner are attempting to assess the contamination at the Property. As the report recommends, further investigations are warranted for off-site sampling and monitoring. We want to work closely with the Environmental Health Department and coordinate our efforts along with the agency's desires for the site.

We are preparing for the next phase of sampling at the Property and would like your input. Please call us at (916) 485-2110 or email at [ryanmeyer@ceresassociates.com](mailto:ryanmeyer@ceresassociates.com).

Sincerely,  
Ceres Associates

Ryan Meyer  
Project Manager



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916 485-2110  
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**Ryan Meyer**  
Project Manager  
[ryanmeyer@ceresassociates.com](mailto:ryanmeyer@ceresassociates.com)

Tomorrow Development Co.

# SOIL AND GROUNDWATER SAMPLING REPORT

Former Gas Station  
2547 East 27th Street  
Oakland, California

Alameda County  
FEB 7 2005  
Environmental Health



*Sustaining  
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424 First Street  
Benicia, California 94510  
(707) 748-3170 / Fax (707) 748-3171

Ceres Associates Project CA1264-1  
January 28, 2005

Prepared for:

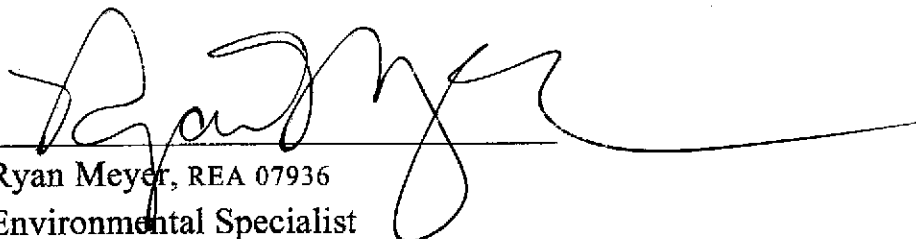
Tomorrow Development Co.  
1939 Harrison Street, #418  
Oakland, California

SOIL AND GROUNDWATER SAMPLING REPORT

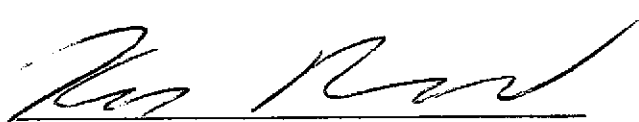
Former Gas Station  
2547 East 27th Street  
Oakland, California

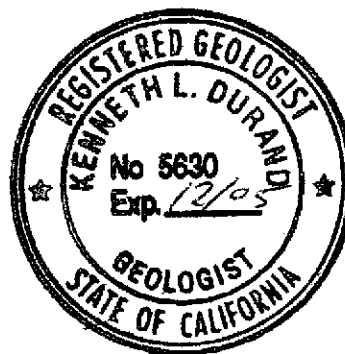
Project CA1264-1

Prepared by:

  
Ryan Meyer, REA 07936  
Environmental Specialist

Reviewed by:

  
Ken Durand, RG, CHG  
Project Manager



Ceres Associates  
555 First Street, Suite 303  
Benicia, California 94510  
(707) 748-3170 / Fax (707) 748-3171



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## 1.0 SUMMARY

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### 1.1 SOIL AND GROUNDWATER SAMPLING AND ANALYSIS

The purpose of this Phase II Environmental Site Assessment (ESA) was to attempt to further delineate soil and groundwater contamination at the former gasoline station at 2547 East 27th Street, Oakland, California (Property).

#### BACKGROUND

The Property has been subject to prior environmental assessments including a Phase I ESA and a Phase II ESA.

##### Phase I ESA

A Phase I ESA report, dated May 10, 2001, was conducted for the Property by ML River Group (ML). ML described the Property as a vacant lot which formerly supported a gasoline station and/or garage from 1927 - 1994. The report indicated that four 500-gallon and one 100-gallon underground storage tanks (USTs) were removed from the Property in 1994. It was reported that soil samples obtained during the UST removal indicated contamination in the soil. It was noted that the case had been forwarded to the Alameda County District Attorney's Office because no additional site work had occurred since 1994. The consultant made the following conclusion: "Soil remediation and subsurface investigation of the Subject Site must be performed before redeveloping the Property."

##### Phase II ESA

A Phase II ESA report, dated August 2, 2002, was conducted for the Property by Kleinfelder. According to report, the Property was formerly developed with a gasoline station and automotive repair facility from at least 1927 until 1994. In 1994, one 100-gallon waste oil UST and four 500-gallon gasoline USTs were removed from the Property. After the tanks were removed, the excavation pits were lined with visqueen plastic and backfilled with the excavated material. It was reported that eight soil samples were collected from below the tanks and two were collected from the stockpiled soil (from the excavation). The soil samples were analyzed for petroleum hydrocarbons including gasoline (TPH-g) and diesel (TPH-d), and benzene, toluene, ethylbenzene, and xylenes (BTEX). Concentrations of TPH-g were reported as high as 930 parts per million (ppm) from the excavation pit samples. Concentrations of benzene, toluene, ethylbenzene, and xylenes were reported as high as 2.2 ppm, 2.2 ppm, 2.7 ppm, and 3.3 ppm, respectively.

Kleinfelder advanced three soil borings on the Property. Monitoring wells were installed in each of the three borings (and remain on-site today). According to the report, reported concentrations TPH-g, TPH-d, and xylenes exceeded regulatory action limits. Kleinfelder recommended conducting further soil and groundwater sampling to determine the extent of soil contamination and to confirm the groundwater results from their initial study.



## 1.2 DISCUSSION

Based upon laboratory analysis, it would appear that concentrations of target analytes in soil samples collected from five and 10 feet bgs fall below the regulatory criteria established by the State of California Regional Water Quality Control Board (RWQCB) and the United States Environmental Protection Agency (US EPA) for residential sites.

Groundwater sampling data indicate high concentrations of TPH-g and TPH-d, along with elevated levels of BTEX compounds. The concentrations reported by the laboratory for the groundwater samples collected by Ceres Associates far exceed the concentrations reported during a previous sampling event by Kleinfelder. Further, concentrations of TPH-g and TPH-d were found at 21,000 ppb and 250,000 ppb, respectively, along the eastern border of the Property adjacent to 26th Avenue; it is likely that contamination has migrated off-site. However, an accurate groundwater flow model has not yet been prepared for the Property. Further off-site work will require extensive sampling to ascertain the predominant groundwater flow direction. It may be necessary to define potential sensitive sites which may be impacted by the contamination flowing from the Property. The groundwater elevations observed and recorded in groundwater monitoring wells already installed on the Property varied by as much as 2.5 feet between wells located within 25 feet of one another. The influences on the disparity of groundwater elevations is unknown at this time.

Additional groundwater monitoring wells are warranted both on-site and off-site to not only help define the limits of contamination but also to assess an accurate groundwater flow direction. Such off-site well installations should be determined at the time of recommended off-site soil and groundwater sampling.

## 1.3 RECOMMENDATIONS

Based upon the results of data accumulated during this assessment, Ceres Associates recommends the following:

- Contamination has likely migrated off-site. Further soil and groundwater sampling activities should be conducted northeast and southwest of the Property to assess the extent of off-site contamination as well as to further assess the dominant groundwater flow direction of the area. Continuous soil logging should be conducted to ascertain the soil types at specific depths in boring locations.
- Ceres Associates recommends installing additional on-site groundwater monitoring wells to better establish groundwater contamination and groundwater flow direction.
- Ceres Associates recommends installing off-site groundwater monitoring wells commensurate with off-site soil and groundwater sampling conducted as part of these recommendations.



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## 2.0 INTRODUCTION

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At the request of Tomorrow Development Co., Ceres Associates conducted a Phase II ESA at the former gas station located at 2547 East 27th Street, Oakland, Alameda County, California (Property) (refer to Figure 1 - Property Location Map).

### 2.1 PURPOSE

The purpose of this ESA was to further delineate on-site contamination as a result of leaking underground storage tanks removed from the Property in 1994. Kleinfelder advanced three borings, collected soil and groundwater samples, and placed three monitoring wells. Results of laboratory analysis revealed both soil and groundwater contamination. Kleinfelder recommended further assessment to ascertain the extent of the contamination.

### PREVIOUS SAMPLING

Kleinfelder conducted soil and groundwater sampling activities at the Property on June 19 and July 10, 2002. Kleinfelder supervised the advance of three soil borings ranging in depth from 11 to 19 feet below ground surface (bgs). Kleinfelder reportedly advanced each boring until approximately two feet below groundwater.

After each boring was completed, a pre-packed well screen with 0.01" annuli was inserted. The screened interval was reported as being from the bottom of the boring to approximately two feet above groundwater. The wells were then topped with one foot of sand and two feet of bentonite chips. A locking well cap was reportedly installed on each well. Finally, Christy boxes were installed in a neat cement cap. The wells were designated EB-1, EB-2, and EB-3 and were determined to have potentiometric surface elevations of 95.45', 91.47', and 96.99', respectively.

According to the report issued by Kleinfelder, dated August 2, 2002:

"TPH-g was detected in the soil samples extracted from borings EB-1 and EB-2 at concentrations of 1,200 mg/kg and 1,800 mg/kg, respectively. TPH-d was detected in these samples, from borings EB-1 and EB-2, at concentrations of 650 mg/kg and 1,500 mg/kg, respectively. TPH-mo was detected in concentrations above laboratory reporting limits only in the sample from boring EB-1 at 14 mg/kg. Further, the laboratory described the detected TPH-g as strongly aged gasoline, and the TPH-d was described as Stoddard solvent."

Total lead was reported as high as 24 ppm in the soil samples collected from the Property.

Groundwater samples were reported to contain concentrations of TPH-g as high as 82 micrograms per liter ( $\mu\text{g/l}$ ) or parts per billion (ppb); TPH-d as high as 360 ppb; motor oil as high as 540 ppb; benzene as high as 0.97 ppb; and toluene and xylenes as high as 1.3 ppb. Ethylbenzene and MTBE were not reported above their laboratory reporting limits. Kleinfelder noted the likely presence of perched groundwater, as evidenced by the potentiometric elevations recorded for the wells.



Kleinfelder recommended further assessment of the soil contamination present at the site. They further recommended collection of additional groundwater samples to confirm their findings. A copy of the Kleinfelder report is included in the appendix of this report.

## 2.2 PHYSICAL SETTING

The Property is currently undeveloped and has a chain-link fence along the perimeter. One gate for walking access is located along the southern edge of the fence; however, the fence had to be partially removed and replaced to allow for truck access during sampling.

According to the previous sampling conducted by Kleinfelder, the soil at the Property is generally sandy gravel fill from 0 to 4 feet bgs. From 4 to 12 feet bgs the soil was reportedly fat and lean silty clays. Below 12 feet the soil is generally gravel and sand some clay.





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## 3.0 SOIL AND GROUNDWATER SAMPLING

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### 3.1 SOIL AND GROUNDWATER SAMPLING

Prior to sampling, individual boring locations were cleared using USA notification processes as well as a private utility locating service. Underground pipelines and conduits which were identified within the boring area were marked on the surface.

A Health and Safety Plan, prepared by Ceres Associates, was used to facilitate a pre-drilling safety meeting prior to conducting work. Signatures of attendees were collected at the meeting indicating an understanding of the risks and hazards involved in the drilling process. A copy of this document was kept on site during the drilling process.

#### PURPOSE OF BORING LOCATIONS

The area of focus for this assessment was the grouping of former excavation areas related to former USTs (refer to *Figure 2 - Soil Boring Location Map*). Groundwater only samples (labeled GW) were placed along the exterior of and throughout the grouping of former excavations. These borings were intended to provide additional information related to the on-site extent of groundwater contamination. Soil and groundwater samples (labeled SB) were placed throughout the grouping of former excavations. These borings were intended to provide additional information related to the extent of soil contamination in the area of these former excavations.

#### SAMPLE METHODOLOGY

Soil and groundwater samples were collected on January 7, 2005 using Geoprobe® sampling equipment provided by Vironex of San Leandro, California. The Geoprobe® sampler utilizes direct-push technology to collect soil and groundwater samples from specific subsurface depths without generating soil cuttings. The Geoprobe® sampling system consists of a series of 1.5-inch diameter hollow stainless steel rods which are hydraulically driven into the ground using a pneumatic hammer attached to the Geoprobe® assembly.

#### Soil Sampling

Soil samples were collected by driving a four-foot long stainless steel sample sleeve attached to the end of the steel rods into soil at a specified sample depth. Soil samples were then collected in acetate sample tubes installed inside the sample sleeve. After the rod assembly was hydraulically extended to the target sample depth, the sample sleeve was retrieved to ground surface and the acetate sample tube containing soil from the appropriate sample interval was capped with Teflon®-lined plastic end caps, labeled, placed in a Ziplock® bag, and stored in a chest cooled with crushed ice.



### Groundwater Sampling

Groundwater samples were collected with the Geoprobe® sampler by hydraulically driving a temporary PVC well screen into the water bearing zone, and allowing the groundwater to collect in the bottom of the PVC pipe. Groundwater samples collected from borings labeled GW were advanced using a hydro-punch device. The device was driven to approximately 12 feet bgs, then retracted to approximately 8 feet bgs, exposing a metal screen from which groundwater was collected. Groundwater samples were collected using polyethylene tubing with a check-valve and transferred directly into containers preserved with HCL (for VOC analysis) and laboratory-clean one liter bottles. Sample containers were then labeled, placed in a Ziplock® bag, and stored in a chest cooled with crushed ice.

Groundwater was generally encountered between eight and 14 feet below ground surface (bgs) during assessment activities. Depth to groundwater was measured using a sounding probe in each of the three previously installed boring wells (installed by Kleinfelder):

Boring	Depth to Water* (feet)
EB-1	3.88
EB-2	5.18
EB-3	3.29

\*as measured from top of inner casing

### Boring Completion

After soil and groundwater samples had been collected, each borehole was tremmie-grouted with Portland Cement. Tremmie-grouting was done according to the regulations and stipulations set forth by the permit issued to Ceres Associates by the Alameda County Public Works Agency (ACPWA). The inspector indicated to Ceres Associates that he would be unable to be present during sampling or grouting activities; these activities were conducted without his presence.

## 3.2 LABORATORY ANALYSIS

Ceres Associates, following chain of custody protocols, released soil and groundwater samples to Mc Campbell Analytical of Pacheco, California, a State of California-certified analytical laboratory, on January 7, 2005.

Ceres Associates analyzed the soil samples collected from approximately five and 10 feet below ground surface (bgs). Soil samples were analyzed for Total Petroleum Hydrocarbons as diesel (TPH-d) using US EPA method 8015d, TPH as gasoline (TPH-g), and benzene, ethylbenzene, toluene, and xylenes (BTEX) using US EPA Methods 8015g using U.S. EPA method 8260b. The groundwater samples were analyzed for Total Petroleum Hydrocarbons as diesel (TPH-d) using US EPA method 8015d, TPH as gasoline (TPH-g), benzene, ethylbenzene, toluene, and xylenes (BTEX), and methyl tertiary-butyl ether (MTBE) using US EPA Methods 8015g; Halogenated Volatile Organic Compounds (HVOCs) using US EPA method 601 [SB1GW & SB2GW only] Laboratory Data Reports are included in the Appendix of this document.



## RESULTS

Tables 1 & 2 report concentrations of target analytes above laboratory reporting limits. HVOC analysis was conducted on two samples (SB1GW and SB2GW- near the former waste oil tank), however concentrations of these target analytes were not reported above method reporting limits.

### Results of soil sampling

Generally, soil samples collected from five feet bgs were not reported by the laboratory to contain concentrations of target analytes above their respective method reporting limits. The exceptions were SB-6 and SB-9. Concentrations of target analytes above method reporting limits in the five foot sample from SB-6 included: benzene at 0.024 ppm and ethylbenzene at 0.031 ppm. Concentrations of target analytes above method reporting limits in the five foot sample from SB-9 included: TPH-g at 32 ppm, TPH-d at 52 ppm, ethylbenzene at 0.017 ppm, and xylenes at 0.013 ppm.

The deeper soil samples, collected at 10 feet bgs, tended to contain higher concentrations of target analytes. Soil samples collected at this depth from SB-1, SB-2, and SB-8 were not reported by the laboratory to contain concentrations of target analytes above their respective method reporting limits. For those samples where concentrations of target analytes were reported above the method reporting limits, they were reported to contain as much as 61 ppm of TPH-g, 46 ppm of TPH-d, 0.0070 ppm of benzene, 0.045 ppm of ethylbenzene, and 0.027 ppm of xylenes.

These reported concentrations of soil samples do not exceed regulatory criteria for further action based on Environmental Screening Levels (ESLs) established by the State of California Regional Water Quality Control Board (RWQCB) or Residential Preliminary Remediation Goals (Res PRGs) established by the United States Environmental Protection Agency, Region IX (US EPA).

### Results of groundwater sampling

Target analytes were reported above method reporting limits in all but one groundwater sample collected from the Property. Generally, samples collected after retrieving soil samples (using the continuous sampling macro-core device) were reported as containing higher concentrations of target analytes than from those samples collected using the hydro-punch device.

Concentrations of target analytes were reported by the laboratory as high as 90,000 micrograms per liter ( $\mu\text{g/l}$ ) or parts per billion (ppb) for TPH-g; 750,000 ppb for TPH-d; 140 ppb for benzene; 1.5 ppb for toluene; 77 ppb for ethylbenzene; and 20 ppb for xylenes. Methyl tert butyl ether (MTBE) was not reported above the method reporting limits for any sample.

Concentrations of benzene far exceed the regulatory limit of 1.0 ppb as defined by the State of California Department of Health Services (CDHS) Maximum Contaminant Level (MCL). MCLs are not defined for petroleum hydrocarbons including gasoline and diesel. However, the RWQCB has established an ESL for TPH-g and TPH-d of 100 ppb. The ESL is designed to protect groundwater resources in the area.



**Table 1: Soil Sampling Results**  
(concentrations reported as parts per million, ppm)

<b>Sample</b>	<b>TPH-g</b>	<b>TPH-d</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>Xylenes</b>	<b>MTBE</b>
SB1-5	ND	ND	ND	ND	ND	ND	ND
SB1-10	ND	ND	ND	ND	ND	ND	ND
SB2-5	ND	ND	ND	ND	ND	ND	ND
SB2-10	ND	ND	ND	ND	ND	ND	ND
SB3-5	1.5	ND	ND	ND	ND	ND	ND
SB3-10	3.8	2.3	ND	ND	ND	ND	ND
SB4-5	ND	ND	ND	ND	ND	ND	ND
SB4-8	32	10	ND	ND	0.034	0.011	ND
SB5-5	ND	ND	ND	ND	ND	ND	ND
SB5-10	61	46	0.0070	ND	0.045	0.027	ND
SB6-5	ND	ND	0.024	ND	0.031	ND	ND<0.10
SB6-10	41	35	ND	ND	ND	ND	ND
SB7-5	ND	ND	ND	ND	ND	ND	ND
SB7-10	2.3	1.5	ND	ND	ND	ND	ND
SB8-5	ND	ND	ND	ND	ND	ND	ND
SB8-10	ND	ND	ND	ND	ND	ND	ND
SB9-5	32	52	ND	ND	0.017	0.013	ND
SB9-10	1.5	6.6	ND	ND	ND	ND	ND
SB10-5	ND	ND	ND	ND	ND	ND	ND
SB10-10	ND	ND	ND	ND	ND	ND	ND
<b>ESLs</b>	<b>100</b>	<b>100</b>	<b>0.044</b>	<b>2.9</b>	<b>3.3</b>	<b>1.5</b>	<b>0.023</b>
<b>Res PRGs</b>	<b>-</b>	<b>-</b>	<b>0.64</b>	<b>520</b>	<b>400</b>	<b>270</b>	<b>17</b>

ND = Not detected above laboratory method reporting limits

Concentrations reported as milligrams per kilogram (mg/kg) or parts per million (ppm)

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

MTBE = methyl-tert-butyl-ether

ESL = Environmental Screening Level established by the State of California Regional Water Quality Control Board for residential sites where shallow groundwater may be used for drinking water purposes

Res PRG = Residential Preliminary Remediation Goal established by the United States Environmental Protection Agency, Region IX



**Table 2: Groundwater Sampling Results**

(concentrations reported as parts per billion, ppb)

Sample	TPH-g	TPH-d	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
SB1 GW	ND	ND	1.3	1.5	ND	0.69	ND
SB2 GW	ND	ND	ND	ND	ND	ND	ND
SB3 GW	<b>11,000</b>	<b>42,000</b>	ND<5.0	ND<5.0	8.2	ND<5.0	ND<50
SB4 GW	<b>4,600</b>	<b>24,000</b>	ND<2.5	ND<2.5	4.1	3.8	ND<25
SB5 GW	<b>6,000</b>	<b>12,000</b>	<b>6.8</b>	ND<2.5	4.2	5.8	ND<25
SB6 GW	<b>35,000</b>	<b>560,000</b>	<b>83</b>	ND<10	<b>34</b>	<b>20</b>	ND<100
SB7 GW	<b>21,000</b>	<b>250,000</b>	<b>21</b>	ND<10	19	ND<10	ND<100
SB8 GW	<b>1,000</b>	<b>3,900</b>	ND	ND	ND	1.1	ND
SB9 GW	<b>90,000</b>	<b>750,000</b>	<b>140</b>	ND<50	<b>77</b>	ND<50	ND<500
SB10 GW	<b>600</b>	<b>1,300</b>	ND	ND	ND	0.70	ND
GW1	<b>1,600</b>	<b>2,500</b>	ND	ND	0.95	0.81	ND
GW2	<b>830</b>	<b>620</b>	ND	ND	0.72	ND	ND
GW3	ND	NA	<b>1.0</b>	0.51	ND	ND	ND
GW4	ND	ND	0.66	ND	ND	ND	ND
GW5	<b>1,900</b>	<b>2,300</b>	<b>4.3</b>	ND	1.7	1.3	ND
GW6	<b>3,900</b>	<b>7,600</b>	<b>1.2</b>	ND	2.3	2.6	ND
<b>MCL</b>	-	-	<b>1.0</b>	<b>150</b>	<b>300</b>	<b>1,750</b>	<b>13</b>
<b>ESL</b>	<b>100</b>	<b>100</b>	<b>1.0</b>	<b>41</b>	<b>31</b>	<b>13</b>	<b>5.0</b>

ND = Not detected above laboratory method reporting limits

NS = Not Analyzed (insufficient groundwater for analysis)

Concentrations are reported in micrograms per liter (µg/l) or parts per billion (ppb)

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

MTBE = methyl-tert-butyl-ether

MCL = Maximum Contaminant Level established by the State of California Department of Health Services

Bold values represent concentrations which meet or exceed the MCL and/or ESL

ESL = Environmental Screening Level established by the State of California Regional Water Quality Control Board for residential sites where shallow groundwater may be used for drinking water purposes



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#### 4.0 LIMITATIONS

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This Environmental Site Assessment (ESA) was conducted according to accepted industry standards and guidelines for similar assessments conducted in this geographic region at this time.

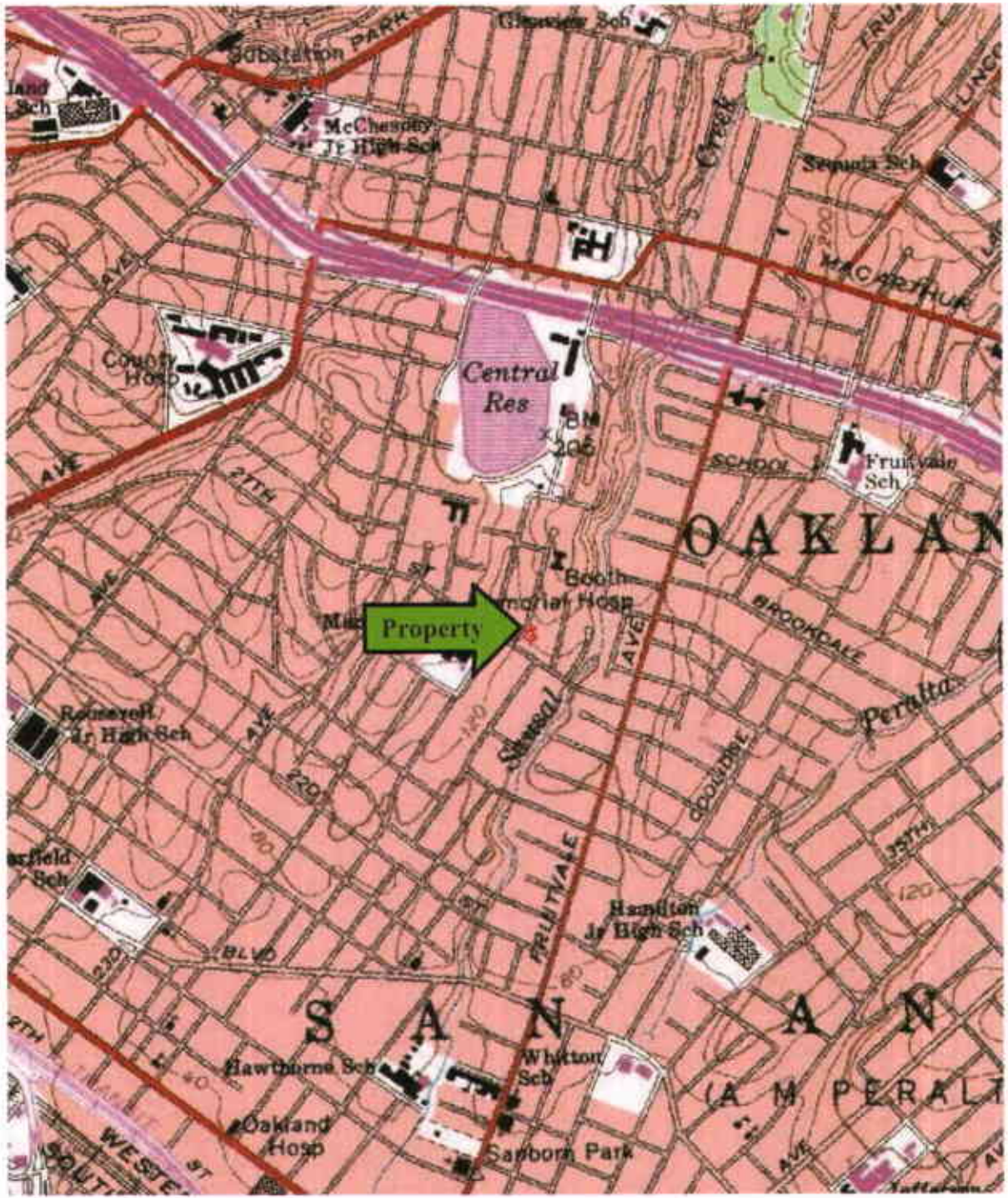
This assessment cannot fully eliminate the possibility of the Property having environmental impairments. In today's technology, no amount of assessment can certify that the Property is completely free of environmental concern. It is possible undocumented or concealed conditions of the Property could exist beyond what was found during this ESA. This report does not cover any Property conditions beyond the date the Property survey was conducted.

Physical setting information provided in this report is for drawing conclusions, by Ceres Associates, within the context and timing of this report only. This information is preliminary and should not be used for any subsequent purposes.

Much of the information upon which the conclusions and recommendations of this Phase I ESA are based, comes from data provided by others. Ceres Associates is not responsible for the accuracy or completeness of this information. Inaccurate data, or information that was not found or made available to Ceres Associates, may result in a modification of the stated conclusions and recommendations.

#### REPORT USE

This report was prepared for the sole use and benefit of Tomorrow Development Co. This report is not a legal opinion and does not offer warranties or guarantees.



1 inch equals 2000 feet

**Map Taken From:**

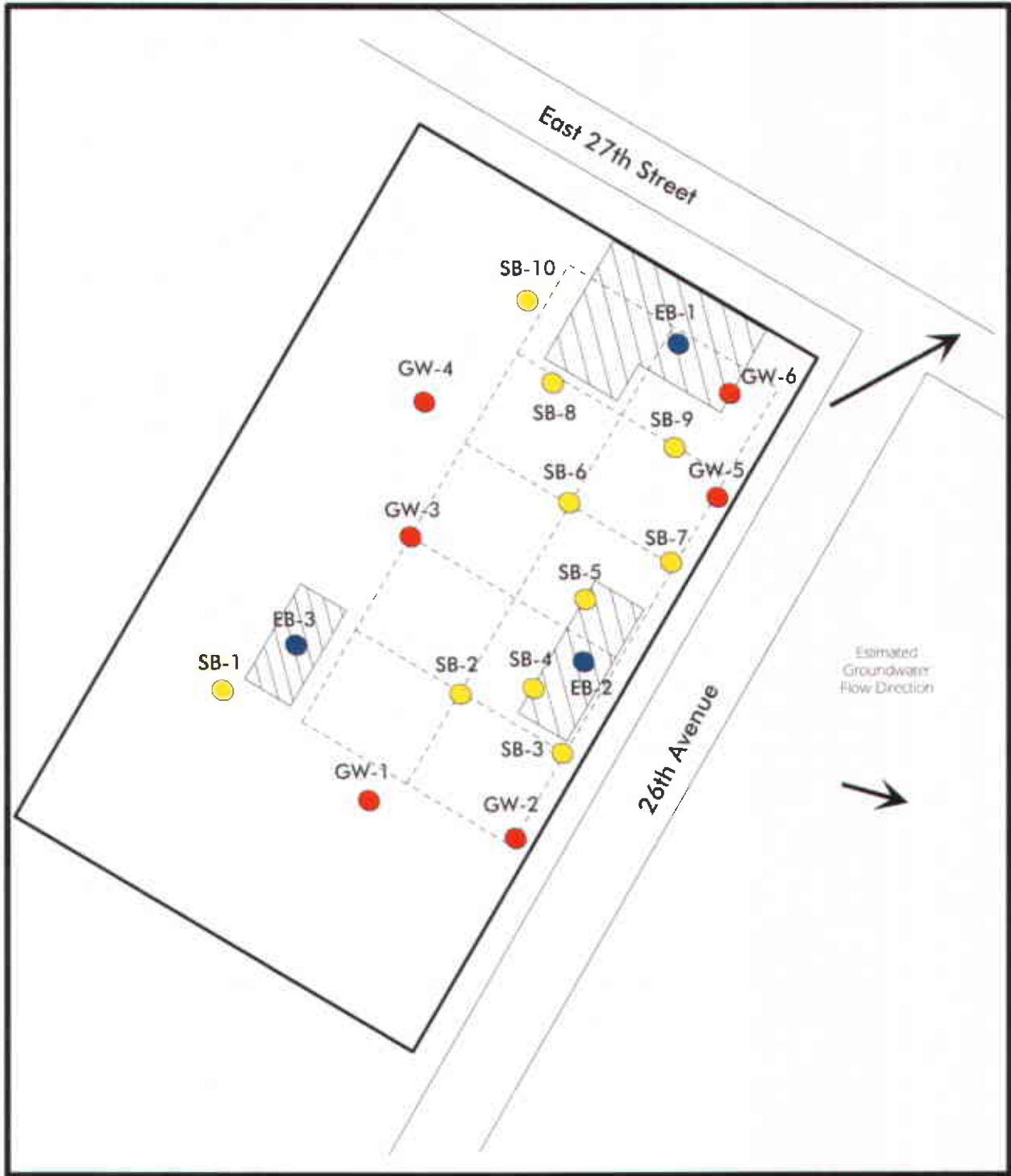
United States Geological Survey  
7.5 Minute Topographic Series  
Oakland East, California Quadrangle

 **Ceres**  
Associates  
Project CA1264-1

Former Gasoline Station  
2547 East 27th Street  
Oakland, California

**PROPERTY  
LOCATION MAP**

**FIGURE  
1**



	Property Boundary
	Former Excavations
	Groundwater Only Samples
	Soil & Groundwater Samples
	Boring/well installed by Kleinfelder



Ceres Associates  
Project CA1264-1

Former Gasoline Station  
2547 East 27th Street  
Oakland, California

**BORING MAP**

**FIGURE 2**



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**FIGURES**

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**APPENDIX A**  
**LABORATORY DATA REPORTS**

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# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Ceres Associates  840 Watt Avenue  Sacramento, CA 95864	Client Project ID: #CA1264-1; T-Dev	Date Sampled: 01/07/05
		Date Received: 01/07/05
	Client Contact: Ryan Meyer	Date Extracted: 01/08/05-01/12/05
	Client P.O.:	Date Analyzed: 01/10/05-01/12/05

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0501088

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
002A	SB1-5	S	ND	ND	ND	ND	ND	ND	1	83
004A	SB1-10	S	ND	ND	ND	ND	ND	ND	1	102
006A	SB2-5	S	ND	ND	ND	ND	ND	ND	1	82
008A	SB2-10	S	ND	ND	ND	ND	ND	ND	1	84
010A	SB3-5	S	1.5,g	ND	ND	ND	ND	ND	1	82
012A	SB3-10	S	3.8,g,m	ND	ND	ND	ND	ND	1	110
014A	SB4-5	S	ND	ND	ND	ND	ND	ND	1	102
015A	SB4-8	S	32,g,m	ND	ND	ND	0.034	0.011	1	92
016A	SB5-5	S	ND	ND	ND	ND	ND	ND	1	82
018A	SB5-10	S	61,g,m	ND	0.0070	ND	0.045	0.027	1	95
020A	SB6-5	S	ND	ND	ND	ND	ND	ND	1	108
022A	SB6-10	S	41,g,m	ND<0.10	0.024	ND	0.031	ND	1	104
024A	SB7-5	S	ND	ND	ND	ND	ND	ND	1	97
026A	SB7-10	S	2.3,g	ND	ND	ND	ND	ND	1	107
028A	SB8-5	S	ND	ND	ND	ND	ND	ND	1	96
030A	SB8-10	S	ND	ND	ND	ND	ND	ND	1	95

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) results are reported by dry weight.



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Ceres Associates 840 Watt Avenue Sacramento, CA 95864	Client Project ID: #CA1264-1; T-Dev	Date Sampled: 01/07/05
		Date Received: 01/07/05
	Client Contact: Ryan Meyer	Date Extracted: 01/08/05-01/12/05
	Client P.O.:	Date Analyzed: 01/10/05-01/12/05

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0501088

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
032A	SB9-5	S	32,g,m	ND	ND	ND	0.017	0.013	1	104
034A	SB9-10	S	1.5,m	ND	ND	ND	ND	ND	1	108
036A	SB10-5	S	ND	ND	ND	ND	ND	ND	1	86
038A	SB10-10	S	ND	ND	ND	ND	ND	ND	1	96
039A	SB1GW	W	ND,i	ND	1.3	1.5	ND	0.69	1	99
040A	SB2GW	W	ND,i	ND	ND	ND	ND	ND	1	99
041A	SB3GW	W	11,000,g,m,h,i	ND<50	ND<5.0	ND<5.0	8.2	ND<5.0	10	95
042A	SB4GW	W	4600,g,m,h,i	ND<25	ND<2.5	ND<2.5	4.1	3.8	5	107
043A	SB5GW	W	6000,g,m,h,i	ND<25	6.8	ND<2.5	4.2	5.8	5	107
044A	SB6GW	W	35,000,g,m,h,i	ND<100	83	ND<10	34	20	20	99
045A	SB7GW	W	21,000,g,m,h,i	ND<100	21	ND<10	19	ND<10	20	90
046A	SB8GW	W	1000,g,m,i	ND	ND	ND	ND	1.1	1	95
047A	SB9GW	W	90,000,g,a,h,i	ND<500	140	ND<50	77	ND<50	100	92
048A	SB10GW	W	600,g,m,i	ND	ND	ND	ND	0.70	1	99
049A	GW1	W	1600,a,i	ND	ND	ND	0.95	0.81	1	113
050A	GW2	W	830,g,m,i	ND	ND	ND	0.72	ND	1	100

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) results are reported by dry weight.

DHS Certification No. 1644

Angela Rydelius, Lab Manager





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Ceres Associates 840 Watt Avenue Sacramento, CA 95864	Client Project ID: #CA1264-1; T-Dev	Date Sampled: 01/07/05
		Date Received: 01/07/05
	Client Contact: Ryan Meyer	Date Extracted: 01/08/05
	Client P.O.:	Date Analyzed: 01/10/05-01/18/05

### Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel\*

Extraction method: SW3510C/SW3550C

Analytical methods: SW8015C

Work Order: 0501088

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0501088-002A	SB1-5	S	ND	1	117
0501088-004A	SB1-10	S	ND	1	108
0501088-006A	SB2-5	S	ND	1	115
0501088-008A	SB2-10	S	ND	1	116
0501088-010A	SB3-5	S	ND	1	99
0501088-012A	SB3-10	S	2.3,n,f	1	116
0501088-014A	SB4-5	S	ND	1	101
0501088-015A	SB4-8	S	10,n	1	117
0501088-016A	SB5-5	S	ND	1	116
0501088-018A	SB5-10	S	46,n	1	115
0501088-020A	SB6-5	S	ND	1	110
0501088-022A	SB6-10	S	35,n	1	113
0501088-024A	SB7-5	S	ND	1	111
0501088-026A	SB7-10	S	1.5,n	1	111
0501088-028A	SB8-5	S	ND	1	108
0501088-030A	SB8-10	S	ND	1	109

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	1.0	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager



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Ceres Associates 840 Watt Avenue Sacramento, CA 95864	Client Project ID: #CA1264-1; T-Dev	Date Sampled: 01/07/05
		Date Received: 01/07/05
	Client Contact: Ryan Meyer	Date Extracted: 01/08/05
	Client P.O.:	Date Analyzed: 01/10/05-01/18/05

### Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel\*

Extraction method: SW3510C/SW3550C

Analytical methods: SW8015C

Work Order: 0501088

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0501088-032A	SB9-5	S	52,n,b,g	1	110
0501088-034A	SB9-10	S	6.6,n	1	111
0501088-036A	SB10-5	S	ND	1	110
0501088-038A	SB10-10	S	ND	1	112
0501088-039B	SB1GW	W	ND,i	1	115
0501088-040B	SB2GW	W	ND,i	1	109
0501088-041B	SB3GW	W	42,000,n,g,h,i	10	96
0501088-042B	SB4GW	W	24,000,n,g,h,i	10	109
0501088-043B	SB5GW	W	12,000,n,h,i	10	110
0501088-044B	SB6GW	W	560,000,n,h,i	200	---#
0501088-045B	SB7GW	W	250,000,n,h,i	100	---#
0501088-046B	SB8GW	W	3900,n,g,i	1	109
0501088-047B	SB9GW	W	750,000,n,b,h,i	50	114
0501088-048B	SB10GW	W	1300,n,g,i	1	113
0501088-049B	GW1	W	2500,n,g,i	1	117
0501088-050B	GW2	W	620,n,i	1	99


Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	1.0	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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Ceres Associates  840 Watt Avenue  Sacramento, CA 95864	Client Project ID: #CA1264-1; T-Dev	Date Sampled: 01/07/05
		Date Received: 01/07/05
	Client Contact: Ryan Meyer	Date Extracted: 01/11/05
	Client P.O.:	Date Analyzed: 01/11/05

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0501088

Lab ID	0501088-039C	0501088-040C			Reporting Limit for DF =1
Client ID	SB1GW	SB2GW			
Matrix	W	W			
DF	1	1			

Compound	Concentration		µg/kg	µg/L
Bromodichloromethane	ND	ND	NA	0.5
Bromoform	ND	ND	NA	0.5
Bromomethane	ND	ND	NA	0.5
Carbon Tetrachloride	ND	ND	NA	0.5
Chlorobenzene	ND	ND	NA	0.5
Chloroethane	ND	ND	NA	0.5
2-Chloroethyl Vinyl Ether	ND	ND	NA	0.5
Chloroform	ND	ND	NA	0.5
Chloromethane	ND	ND	NA	0.5
Dibromochloromethane	ND	ND	NA	0.5
1,2-Dichlorobenzene	ND	ND	NA	0.5
1,3-Dichlorobenzene	ND	ND	NA	0.5
1,4-Dichlorobenzene	ND	ND	NA	0.5
Dichlorodifluoromethane	ND	ND	NA	0.5
1,1-Dichloroethane	ND	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	NA	0.5
1,1-Dichloroethene	ND	ND	NA	0.5
cis-1,2-Dichloroethene	ND	ND	NA	0.5
trans-1,2-Dichloroethene	ND	ND	NA	0.5
1,2-Dichloropropane	ND	ND	NA	0.5
cis-1,3-Dichloropropene	ND	ND	NA	0.5
trans-1,3-Dichloropropene	ND	ND	NA	0.5
Methylene chloride	ND	ND	NA	0.5
1,1,2,2-Tetrachloroethane	ND	ND	NA	0.5
Tetrachloroethene	ND	ND	NA	0.5
1,1,1-Trichloroethane	ND	ND	NA	0.5
1,1,2-Trichloroethane	ND	ND	NA	0.5
Trichloroethene	ND	ND	NA	0.5
Trichlorofluoromethane	ND	ND	NA	0.5
Vinyl Chloride	ND	ND	NA	0.5

#### Surrogate Recoveries (%)


%SS1:	105	105
%SS2:	96	95
%SS3:	105	106
Comments	i	i

\* water and vapor samples in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

  
 Angela Rydelius, Lab Manager



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### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0501088

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 14614			Spiked Sample ID: 0501088-038A			
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	0.60	96.8	99	2.19	96.1	99.1	3.03	70 - 130	70 - 130
MTBE	ND	0.10	92.8	94.6	1.86	104	110	5.10	70 - 130	70 - 130
Benzene	ND	0.10	107	108	0.854	111	117	5.13	70 - 130	70 - 130
Toluene	ND	0.10	86.2	87.4	1.46	85.5	90.2	5.38	70 - 130	70 - 130
Ethylbenzene	ND	0.10	105	108	2.25	103	109	5.37	70 - 130	70 - 130
Xylenes	ND	0.30	95	95.7	0.699	91	95.3	4.65	70 - 130	70 - 130
%SS:	96	0.10	100	109	8.61	103	105	1.92	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0501088

EPA Method: .SW8021B/8015Cm		Extraction: SW5030B		BatchID: 14592		Spiked Sample ID: 0501067-0011				
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	60	98.5	99.4	0.886	100	98.3	1.80	70 - 130	70 - 130
MTBE	ND	10	109	105	3.68	103	102	1.01	70 - 130	70 - 130
Benzene	ND	10	114	117	2.05	111	111	0	70 - 130	70 - 130
Toluene	ND	10	106	108	1.99	105	105	0	70 - 130	70 - 130
Ethylbenzene	ND	10	108	110	1.29	107	107	0	70 - 130	70 - 130
Xylenes	ND	30	95.3	96	0.697	95.3	95	0.350	70 - 130	70 - 130
%SS:	109	10	110	113	2.29	111	111	0	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0501088

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 14616			Spiked Sample ID: 0501102-001A			
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	60	98.8	98.9	0.108	101	95.6	5.07	70 - 130	70 - 130
MTBE	ND	10	96.7	101	4.61	107	109	2.30	70 - 130	70 - 130
Benzene	ND	10	105	106	1.47	111	109	1.76	70 - 130	70 - 130
Toluene	ND	10	104	101	2.61	104	100	3.02	70 - 130	70 - 130
Ethylbenzene	ND	10	106	109	2.74	107	107	0	70 - 130	70 - 130
Xylenes	ND	30	95.3	96.3	1.04	95	95.3	0.350	70 - 130	70 - 130
%SS:	107	10	106	108	1.49	112	111	1.11	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0501088

EPA Method: SW8015C		Extraction: SW3550C		BatchID: 14615		Spiked Sample ID: 0501088-038A				
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	ND	150	92.4	93.1	0.693	95.3	95.5	0.268	70 - 130	70 - 130
%SS:	112	50	102	102	0	100	100	0	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.


% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer



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### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0501088

EPA Method: SW8015C		Extraction: SW3550C			BatchID: 14598		Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	150	N/A	N/A	N/A	94.9	95.7	0.872	N/A	70 - 130
%SS:	N/A	50	N/A	N/A	N/A	100	100	0	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

 QA/QC Officer



**QC SUMMARY REPORT FOR SW8015C**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0501088

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 14611		Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	7500	N/A	N/A	N/A	101	102	1.06	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	105	105	0	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

### QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0501088

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 14610		Spiked Sample ID: 0501088-040C				
Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Chlorobenzene	ND	10	107	108	0.861	101	102	0.490	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	114	116	1.68	112	110	2.40	70 - 130	70 - 130
1,1-Dichloroethene	ND	10	87.8	88.6	0.880	82.6	84	1.75	70 - 130	70 - 130
Trichloroethene	ND	10	93.5	89.5	4.36	84.4	85.2	0.967	70 - 130	70 - 130
%SS1:	105	10	104	102	1.75	102	101	0.997	70 - 130	70 - 130
%SS2:	95	10	96	96	0	98	98	0	70 - 130	70 - 130
%SS3:	106	10	105	108	2.90	107	110	2.99	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).


\* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

 QA/QC Officer









**McC Campbell Analytical, Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0501088

ClientID: CAS

Report to:

Ryan Meyer  
 Ceres Associates  
 840 Watt Avenue  
 Sacramento, CA 95864

TEL: (916) 485-2110  
 FAX: (916) 485-2110  
 ProjectNo: #CA1264-1; T-Dev  
 PO:

Bill to:

Accounts Payable  
 Ceres Associates  
 840 Watt Avenue  
 Sacramento, CA

Requested TAT:

5 days

Date Received: 01/07/2005

Date Printed: 01/08/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0501088-046	SB8GW	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-047	SB9GW	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-048	SB10GW	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-049	GW1	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-050	GW2	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-051	GW3	Water	1/7/05	<input type="checkbox"/>			A												
0501088-052	GW4	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-053	GW5	Water	1/7/05	<input type="checkbox"/>			A	B											
0501088-054	GW6	Water	1/7/05	<input type="checkbox"/>			A	B											

Test Legend:

1	8010BMS_W	2	G-MBTEX_S	3	G-MBTEX_W	4	TPH(D)_S	5	TPH(D)_W
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Elisa Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

CAS

0501088

154

**McCAMPBELL ANALYTICAL, INC.**  
 110 2<sup>ND</sup> AVENUE SOUTH, #D7  
 PACHECO, CA 94583-5560  
 Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
 Telephone: (925) 798-1620 Fax: (925) 798-1622

**CHAIN OF CUSTODY RECORD**  
 TURN AROUND TIME       
 RUSH 24 HR 48 HR 72 HR 5 DAY  
 EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Ryan Meyer Bill To: -  
 Company: Ceres Associates  
840 Watt Ave ryanmeyer@  
Sacramento CA Ceresassociates.com  
 Tele: (916) 485-2110 Fax: (916) 485-2110  
 Project #: CA1264-1 Project Name: T-Dev.  
 Project Location: Oakland  
 Sampler Signature: [Signature]

Analysis Request Other Comments

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED		Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL			
SB1-3		1/7/05				X					X				hold
SB1-5															hold
SB1-8															hold
SB1-10															hold
SB2-3															hold
SB2-5															hold
SB2-8															hold
SB2-10															hold
SB3-3															hold
SB3-5															hold
SB3-8															hold
SB3-10															hold
SB4-3															hold
SB4-5															hold

<input checked="" type="checkbox"/> MTBE / BTEX & TPH as Gas (802 / 8021 + 8015)	<input checked="" type="checkbox"/> MTBE / BTEX ONLY (EPA 602 / 8021)	<input checked="" type="checkbox"/> TPH as Diesel / Motor Oil (8015)	<input type="checkbox"/> Total Petroleum Oil & Grease (1664 / 5520 E/E&F)	<input type="checkbox"/> Total Petroleum Hydrocarbons (418.1)	<input type="checkbox"/> EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	<input type="checkbox"/> EPA 505 608 / 8081 (CI Pesticides)	<input type="checkbox"/> EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	<input type="checkbox"/> EPA 507 / 8141 (NP Pesticides)	<input type="checkbox"/> EPA 515 / 8151 (Acidic CI Herbicides)	<input type="checkbox"/> EPA 524.2 / 624 / 8260 (VOCs)	<input type="checkbox"/> EPA 525.2 / 625 / 8270 (SVOCs)	<input type="checkbox"/> EPA 8270 SEM / 8210 (PAHs / FNAAs)	<input type="checkbox"/> CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	<input type="checkbox"/> LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	<input type="checkbox"/> Lead (200.7 / 200.8 / 6010 / 6020)
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Relinquished By: [Signature] Date: 1/7/05 Time: 7:05 AM  
 Received By: [Signature]  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_

ICE/°   
 GOOD CONDITION   
 HEAD SPACE ABSENT   
 DECHLORINATED IN LAB   
 APPROPRIATE CONTAINERS   
 PRESERVED IN LAB   
 PRESERVATION VOAS O&G METALS OTHER  
 pH-2

2084

**McCAMPBELL ANALYTICAL, INC.**  
 110 2<sup>ND</sup> AVENUE SOUTH, #D7  
 PACHECO, CA 94533-5560  
 Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
 Telephone: (925) 798-1620 Fax: (925) 798-1622

**CHAIN OF CUSTODY RECORD**  
 TURN AROUND TIME       
 RUSH 24 HR 48 HR 72 HR 5 DAY  
 EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Ryan Meyer Bill To: -  
 Company: Ceres Associates  
940 Watt Ave ryanmeyer@  
Sacramento, CA E-Mail: ceresassociates.com  
 Tele: (916) 485-2110 Fax: (916) 485-2110  
 Project #: CA1264-1 Project Name: T. Dev.  
 Project Location: Oakland  
 Sampler Signature: [Signature]

Analysis Request  
 MTBE / BTEX ONLY (EPA 602 / 8021)  
 TPH as Diesel / Motor Oil (8015)  
 Total Petroleum Oil & Grease (1664 / 5520 E/B&F)  
 Total Petroleum Hydrocarbons (418.1)  
 EPA 502.2 / 601 / 8010 / 8021 (HVOCS)  
 EPA 505 / 608 / 8081 (Cl Pesticides)  
 EPA 603 / 8082 PCF's ONLY, Aroclors / Couagens  
 EPA 507 / 8141 (NP Pesticides)  
 EPA 515 / 8151 (Acidic Cl Herbicides)  
 EPA 524.2 / 624 / 8260 (VOCs)  
 EPA 525.2 / 625 / 8270 (SVOCs)  
 EPA 8270 SIM / 8310 (PAHs / PNAs)  
 CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)  
 LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)  
 Lead (200.7 / 200.8 / 6010 / 6020)

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Other	Comments			
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other					
SB 4-8		11/1/05					X					X							
SB 5-5		↓					X					X							
SB 5-8								X				X						hold	
SB 5-10								X				X							hold
SB 6-3								X				X							hold
SB 6-5								X				X							hold
SB 6-8								X				X							hold
SB 6-10								X				X							hold
SB 7-3								X				X							hold
SB 7-5								X				X							hold
SB 7-8								X				X							hold
SB 7-10								X				X							hold
SB 8-3								X				X							hold
SB 8-5							X				X							hold	

Relinquished By: [Signature] Date: 11/05 Time: 7:03pm Received By: [Signature]  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/° \_\_\_\_\_  
 GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PRESERVED IN LAB \_\_\_\_\_  
 COMMENTS:  
 VOAS O&G METALS OTHER  
 PRESERVATION pH<

Missing SB7-5 rec SB7-1 no extra soil sampls rec.







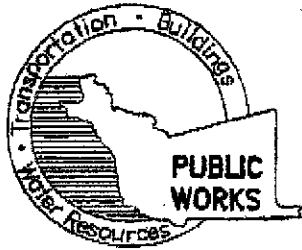
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**APPENDIX B**  
**PERMITS**

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**COUNTY OF ALAMEDA  
PUBLIC WORKS AGENCY  
WATER RESOURCES SECTION**  
399 Elmhurst Street, Hayward, CA 94544-1395  
James Yoo PH: (510) 670-6633 FAX: (510) 782-1939  
FOR GENERAL DRILLING PERMIT INFO:  
[www.acgov.org/pwa/wells](http://www.acgov.org/pwa/wells)

## FAX TRANSMITTAL

TO: *Ceres Associates*

DATE: *1-3-05*

Attn: *Ryan Meyer*

FAX NO.: *(916) 485-2110*  
TRANSMITTING THE FOLLOWING:

SHEETS	DATED	TITLE/DESCRIPTION
<i>2</i>		<i>DPA W05-001 &amp; Conditions</i>

*(3)* TOTAL PAGES INCLUDING THIS SHEET.  
FROM WATER RESOURCES SECTION

NAME: JAMES YOO TEL: (510) 670-6633 FAX: (510) 782-1939  
E-MAIL: jamesy@acpwa.org

IF YOU EXPERIENCE PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL ME.

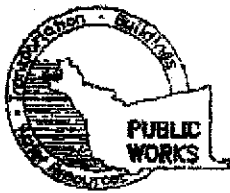
REMARKS: FYI: EFFECTIVE NOVEMBER 1, 2004

SCHEDULING WORK/INSPECTIONS - *See Conditions of Approval.*

Alameda County Public Works Agency (ACPWA), Water Resources Section requires scheduling and inspection of permitted work. All drilling activities must be scheduled in advance. Availability of inspections will vary from week to week and will come on a first come, first served basis. To ensure inspection availability on your desired or driller scheduled date, the following procedures are required:

- Please contact *George Bolton* at 510-670-5594 to schedule the inspection date and time (You must have drilling permit approved prior to scheduling).
- Schedule the work as far in advance as possible (at least 5 days in advance); and confirm the scheduled drilling date(s) at least 24 hours prior to drilling.

Once the work has been scheduled, an ACPWA Inspector will coordinate the inspection requirements as well as how the Inspector can be reached if they are not at the site when inspection is required. Expect for special circumstances given, all work will require the inspection to be conducted during the working hours of 8:30am to 2:30pm, Monday to Friday, excluding holidays.



### ALAMEDA COUNTY PUBLIC WORKS AGENCY

**WATER RESOURCES SECTION**  
399 ELMHURST ST. BAYWARD CA. 94544-1395  
PHONE (510) 670-4633 *Janet Yim*  
FAX (510) 763-1539

www.acfwed.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS  
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 2547 East 27th St.  
Oakland, CA.

PERMIT NUMBER W05-0001  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

CLIENT  
Name Tomorrow Development  
Address 7439 Harrison St. #410  
City Oakland Zip 94612

APPLICANT  
Name Ryan Meyer - Lars Associates  
Address 840 North Ave Fax 916-905-2110  
City Sacramento Phone 916-905-2110  
Zip 95804

TYPE OF PROJECT  
Well Construction  Geotechnical Investigation   
Cathodic Protection  General   
Water Supply  Contamination   
Monitoring  Well Destruction

PROPOSED WATER SUPPLY WELL USE  
New Domestic  Replacement Domestic   
Municipal  Irrigation   
Industrial  Other \_\_\_\_\_

DRILLING METHOD:  
Mud Rotary  Air Rotary  Auger   
Cable  Other  Direct Push

DRILLER'S NAME Vironex  
DRILLER'S LICENSE NO. # 705927

WELL PROJECTS  
Drill Hole Diameter \_\_\_\_\_ in. Maximum \_\_\_\_\_  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
Surface Seal Depth \_\_\_\_\_ ft. Owner's Well Number \_\_\_\_\_

GEOTECHNICAL/CONTAMINATION PROJECTS  
Number of Borings 10 Maximum \_\_\_\_\_  
Hole Diameter 2 in. Depth 10 ft.

STARTING DATE TBA pending appvl - Jan 6, 2005  
COMPLETION DATE TBA pending appvl - Jan 7, 2005

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.  
APPLICANT'S SIGNATURE Ryan Meyer DATE 12/21/04  
PLEASE PRINT NAME Ryan Meyer Rev. 5-11-04

- PERMIT CONDITIONS  
Circled Permit Requirements Apply
- A. GENERAL
    1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
    2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
    3. Permit is void if project not begun within 90 days of approval date.
  - B. WATER SUPPLY WELLS
    1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
    2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
  - C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
    1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
    2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
  - D. GEOTECHNICAL/CONTAMINATION
 

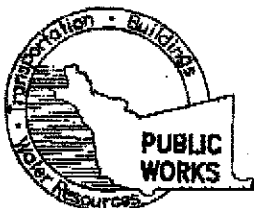
Backfill bore hole by tremie with cement grout or cement grout and mixture. Upper two-three feet replaced in kind with compacted castings.
  - E. CATHODIC
 

Fill hole inside casing with concrete placed by tremie.
  - F. WELL DESTRUCTION
 

Send a map of work site. A separate permit is required for wells deeper than 45 feet.
  - G. SPECIAL CONDITIONS - BAI

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [Signature] DATE 1-3-05



## ALAMEDA COUNTY PUBLIC WORKS AGENCY

### WATER RESOURCES SECTION

399 ELMHURST ST. HAYWARD, CA. 94544-1395  
PHONE (510) 670-6633 James You FAX (510) 782-1939

**PERMIT NO. W05-0001**

### WATER RESOURCES SECTION

### GROUNDWATER PROTECTION ORDINANCE

### B#1-GENERAL CONDITIONS: GEOTECHNICAL & CONTAMINATION BOREHOLES

1. Prior to any drilling activities, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that Federal, State, County or to the City and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained.
2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
3. Permittee, permittee's, contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statues regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on-or off site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
4. Permit is valid only for the purpose specified herein **January 6 to January 7, 2005**. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.
5. Drilling Permit(s) can be voided/ canceled only in writing. It is the applicants responsibilities to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.
6. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.
7. Applicant shall contact ~~George Bolton~~ for a inspection time at 510-670-~~5594~~<sup>6633</sup> at least five (5) working days prior to starting, once the permit has been approved.

→ changed to James You @ 510-670-6633  
Inspector does not have to be present for start  
Inspection, JY.