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Alameda County  
Environmental Health

November 12, 2008

Ms. Barbara Jakub –  
Alameda County Health Care Services Agency  
Environmental Health Services  
Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Subject: Workplan for Site Soil and Groundwater Investigation: Former Bolin's Garage,  
6335 San Pablo Ave, Oakland, CA (Alameda County Fuel Leak Case No.  
RO0000130 and CA Geotracker Global ID No. TO600100198)

Dear Ms. Jakub:

## **INTRODUCTION**

On behalf of the property owner (Mr. Virgil Bolin) Stellar Environmental Solutions, Inc. (SES) is providing to Alameda County Environmental Health Department (ACEH) this workplan for a Site Soil and Groundwater Investigation at the referenced property to address the concerns of ACEH, outlined in their letter, dated October 2, 2008.

## **BACKGROUND**

A summary of the history of previous environmental activity includes:

- An auto repair shop was operated at the site for 30 years by the Bolin family and is currently occupied as an auto smog shop. The site operate two underground fuel storage tanks (USTs) one 1,000-gallon and one 550-gallon gasoline that were used in support of the auto shop operation and not for resale of gasoline. The USTs was removed from the property in 1998 under County permit. Soil samples collected beneath the USTs in April 1988 showed greater than 2,400 mg/kg total petroleum hydrocarbons as gasoline (TPHg) beneath the 1000-gallon UST. Soil and groundwater contamination was detected during UST removal, and limited soil removal and groundwater pumping was conducted.

- In April 1999, ACEH requested follow-up soil and groundwater sampling and analysis for benzene, toluene, ethylbenzene and xylenes (BTEX) and MTBE. In July 1999, nine soil samples were collected beneath the former UST locations and dispenser piping. In addition, a monitoring well was installed approximately 10 feet downgradient of the former 1000-gallon UST excavation that showed contamination in soil greater than 2,400 mg/kg TPHg in April 1988. One groundwater sample was collected and analyzed for TPHg, BTEX and MTBE.
- The analytical results of the July 1999 sampling resulted in excavation and removal of 55 cubic yards of contaminated soil in January 2001. Excavation confirmation samples were collected, the results of which are summarized in the attached Table 1.
- The groundwater monitoring well MW-1 was grouted and closed under permit from Alameda County Public Works after sampling in January 2001.
- ACEH has requested a workplan addressing their concerns as outlined in their letter to Mr. Bolin (owner), dated October 2, 2008.
- In our professional opinion, the appropriate ESLs for the subject site are *commercial/industrial land use* and *groundwater is unlikely to be used as a drinking water resource*. This is based on both the property zoning status (commercial/industrial) and the designation of this area of Oakland as “Zone B – Unlikely Drinking Water Resource (Water Board, 1999).

Attachment A contains a site plan showing the former UST, previous and proposed sampling locations and a summary table of previous excavation confirmation analytical results.

### **TECHNICAL OBJECTIVES AND PROPOSED SCOPE OF WORK**

The objective of the proposed work is to address two of the generally-required regulatory criteria for site closure: 1) removing the contaminant source (in this case residual contaminated soil that will act as a continued impact to groundwater); and 2) characterizing residual soil and/or groundwater contamination.

The proposed scope of work is specifically designed to: 1) evaluate whether residual soil or groundwater contamination warrants corrective action (i.e. excavation); and 2) provide additional data on the extent and magnitude of soil and/or groundwater contamination.

### **Task 1 – Pre-Field Work Planning and Permits**

SES will conduct the following the pre-field work planning and permitting elements for the proposed borehole program, including:

- Obtain workplan concurrence from Alameda County Health, or proceed with the proposed investigation if Alameda County Health does not respond within the 60-day lead agency review period stipulated by California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations.
- Obtain a borehole drilling permit from Alameda County Public Works Agency;
- Obtain from the City of Oakland an “Excavation Permit” which is required for the proposed boreholes drilled in Union Street; and
- Make a site visit to mark drilling locations, then notify Underground Service Alert for underground utility clearance.

### **Task 2 – Borehole Drilling and Sampling**

The drilling and sampling will be completed using a licensed drilling subcontractor under SES’s direction. The boreholes will be advanced with a Geoprobe™ (direct-push) rig that advances approximately 2-inch diameter sampling rods. The boreholes will be continuously cored and soil samples will be geologically logged and samples will be screened with a field photoionization detector (PID) for evidence of contamination Attachment A contains detailed technical specifications for the proposed drilling and sampling.

We propose to advance and sample 4 exploratory boreholes, to supplement the data from the previous investigations, as shown on the attached Figure 1. We expect to collect the following: 7 soil and 2 groundwater samples.

The boreholes will be located and sampled as follows:

- Three boreholes will be located in native soil within 3 feet of the former dispenser and product piping excavation stepped out from the approximate location of samples PT-2, PT-4 and D3-8, where maximum soil contamination was previously detected to evaluate the vertical and lateral extent of potential residual soil contamination in the context of corrective action options. One bore showing the highest detected soil contamination will be advanced deeper for the collection of grab-groundwater. Boreholes will be advanced

to a depth of approximately 15 feet below grade or to the first occurrence of shallow groundwater. Soil will not be collected below groundwater level.

- Soil will be collected from 3 and 6 foot depths in the borehole near the product piping excavation represented by previous sample PT4.
- Soil will be collected from 4 feet deep in the borehole near the product piping excavation represented by previous sample PT2.
- Soil from 8 feet depth in the borehole near the former dispenser excavation represented by previous sample D3-8.
- One borehole will be advanced in a location about 10 feet downgradient of the product piping and dispenser excavation represented by samples PT-2, PT-4 and D3-8 for collection of groundwater only, to investigate potential groundwater contamination migrating from potential residual soil source.

Following sampling, each borehole will be tremie-grouted to surface with a cement slurry. Samples will be securely sealed in appropriate containers, placed in an ice chest with ice at approximately 4 degrees C., and transported to the analytical laboratory under chain-of-custody record the same day they are collected.

Waste soil from the drilling and groundwater from monitoring well sampling will be containerized in a labeled 5-gallon plastic bucket that will be temporarily stored onsite. As a cost-savings measure, we recommend, and this proposal assumes, that sampling and disposal of this soil be postponed until it is known that no further drilling work is required.

### **Task 3 – Laboratory Analyses**

All soil (10) and water (4) samples will be analyzed by a California-certified analytical laboratory. The analytical results will be performed at a standard turnaround (2 weeks). All samples will be analyzed for the following site chemicals of concern:

- Total volatile hydrocarbons –gasoline range (TVH-g) by EPA method 8015M
- Aromatic hydrocarbons benzene, toluene, ethylbenzene and total xylenes (BTEX) and MTBE by EPA Method 8020.

#### **Task 4 – Technical Report Preparation**

We will prepare a comprehensive technical documentation report that will discuss the implementation of the borehole drilling program. Report elements will include:

- Summary of historical UFST removal and sampling activities, site characterization results
- Technical objectives of the borehole program
- Discussion of borehole drilling and sampling protocols and methods
- Tabular summary of analytical results
- Figure(s) showing borehole locations
- Evaluation of site hydrogeologic conditions
- Discussion of analytical results in the context of contaminant distribution and site closure
- Technical appendices (e.g. lab reports, borehole logs, permits, photodocumentation, etc.)

#### **Task 5 – Electronic Data Reporting**

As required and discussed in Technical Comment No. 3 of the ACEH letter, the site is subject to the California Water Board's GeoTracker requirements, for electronic uploads of investigation data and reports. The following GeoTracker electronic uploads will be made:

- Request that the site be assigned to SES (for electronic uploads)
- "GeoMap" – site plan showing all sampling locations
- "Geo Report" – electronic format of previous and proposed borehole drilling.

The site is also subject to the separate Alameda County Environmental Health electronic upload system ("ftp") that requires upload of the previous and proposed borehole sampling reports to their system. We will make those uploads and provide notification to Alameda County Environmental Health when they have been uploaded.

## ESTIMATED SCHEDULE

The property owner would like to proceed with the work as soon as practical. We anticipate conducting the drilling in mid- to late-January 2008. This is predicated on receiving Alameda County Environmental Health's concurrence with this workplan. If Alameda County Environmental Health concurrence is not received within 60 days of workplan receipt, we will proceed with the drilling at the soonest possible time thereafter, and will notify Alameda County Environmental Health of the drilling date as soon as it is determined. Analytical laboratory results will be completed on normal turnaround (10 working days). The documentation report will be submitted within approximately 2 weeks following SES' receipt of analytical results.

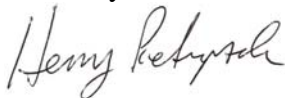
## TEAM QUALIFICATIONS

Stellar Environmental Solutions, Inc. has completed dozens of similar projects, including numerous projects under oversight of Alameda County Environmental Health. Our team will consist of the following:

- Stellar Environmental Solutions, Inc. (owner's consultant responsible for overall project coordination, geologic evaluation, sampling, data evaluation, and report certification by a California Registered Geologist);
- Borehole driller with a current C-57 license; and
- Analytical laboratory with current California Environmental Laboratory Accreditation Program (ELAP) certification.

We trust that this submittal meets your agency's needs. We will contact you in the near future to confirm your receipt of this workplan. In the interim, please contact the undersigned directly if you have any questions.

Sincerely,



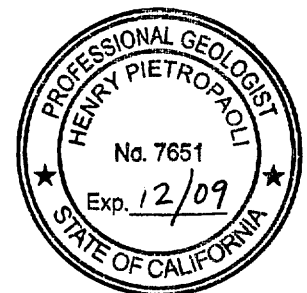
Henry Pietropaoli, R.G., R.E.A.  
Project Manager



Richard S. Makdisi, R.G., R.E.A.  
Principal

Attachments: Figures showing UST layout, previous and proposed sampling locations  
Tables of previous analytical results  
Drilling & sampling methods and protocols

cc: Mr. Virgil Bolin – property owner



*Stellar Environmental Solutions, Inc.*

## **REFERENCES**

SEISCO Engineering and Inspection Services, 1999. Soil Sampling Plan, Results and Analyses, Bolin's Service Garage, 6335 San Pablo Ave, Oakland, CA. September 9.

SEISCO Engineering and Inspection Services, 2001. 1) Removal of Contaminated Soils, former Tank Site #. 2) Resampling under Previous Tank Site #1 & #2 at former Dispenser Tank Site #1 & #2 and at the Groundwater Monitoring Well, 6335 San Pablo Ave, Oakland, CA. February 5.

Regional Water Quality Control Board (Water Board), 1999. East Bay Plains Beneficial Use Study, San Francisco Bay. June 15.

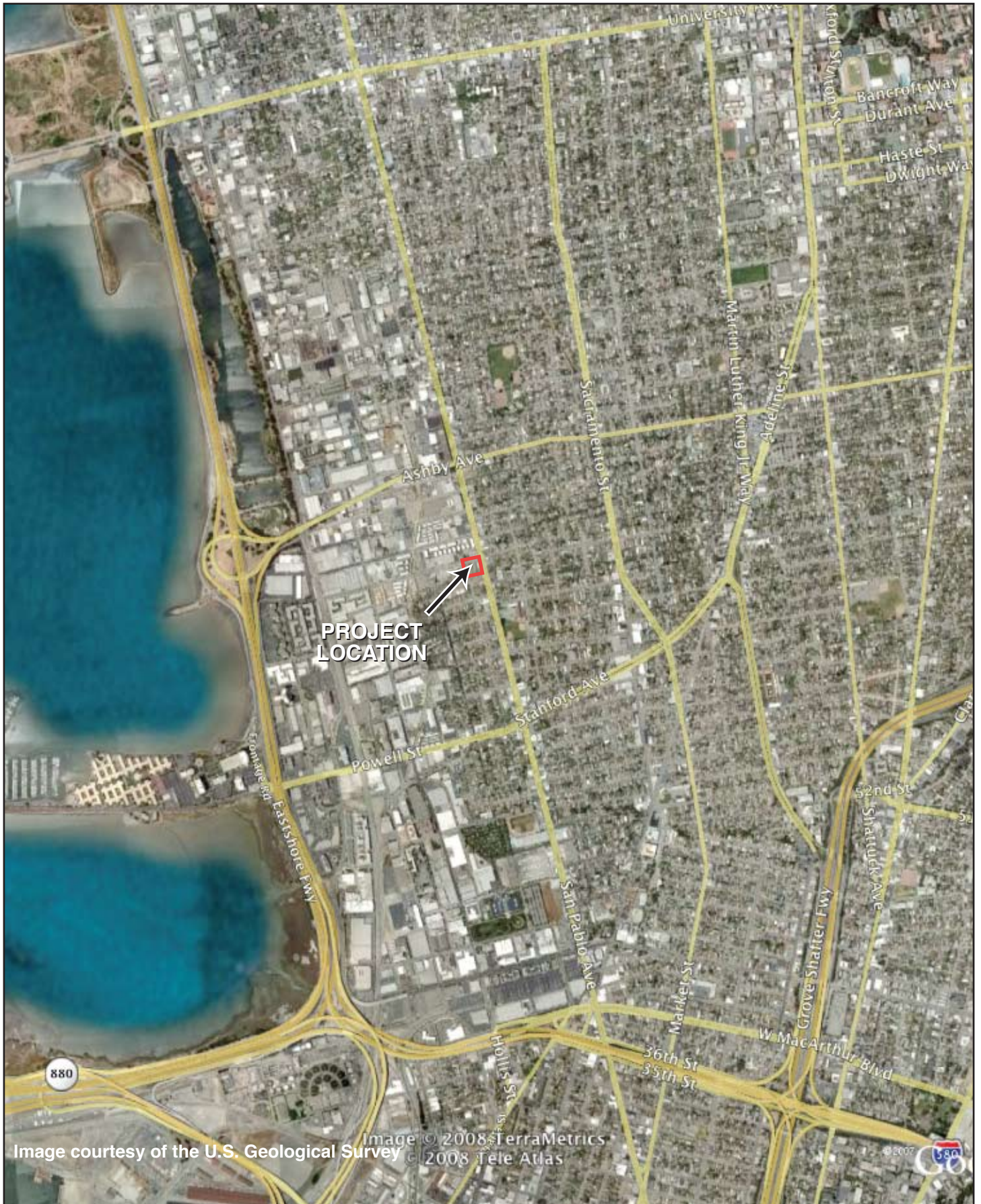
Regional Water Quality Control Board (Water Board), 2007. San Francisco Bay Basin (Region 2) Water Quality Contra Board (Basin Plan). January 18.

Regional Water Quality Control Board (Water Board), 2008. Environmental Screening Levels for commercial/industrial sites where groundwater is and is not a drinking water resource. Revised May 2008.

# **FIGURES AND HISTORICAL ANALYTICAL RESULTS**

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**SITE LOCATION ON AERIAL PHOTO**

**6335 San Pablo Ave.  
Oakland, CA**

By: MJC

NOVEMBER 2008

**Figure 1**



2008-48-01



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**SITE PLAN SHOWING HISTORICAL AND PROPOSED BORING LOCATIONS**

6335 San Pablo Ave.  
Oakland, CA

By: MJC

NOVEMBER 2008

**Figure 2**



2008-48-02

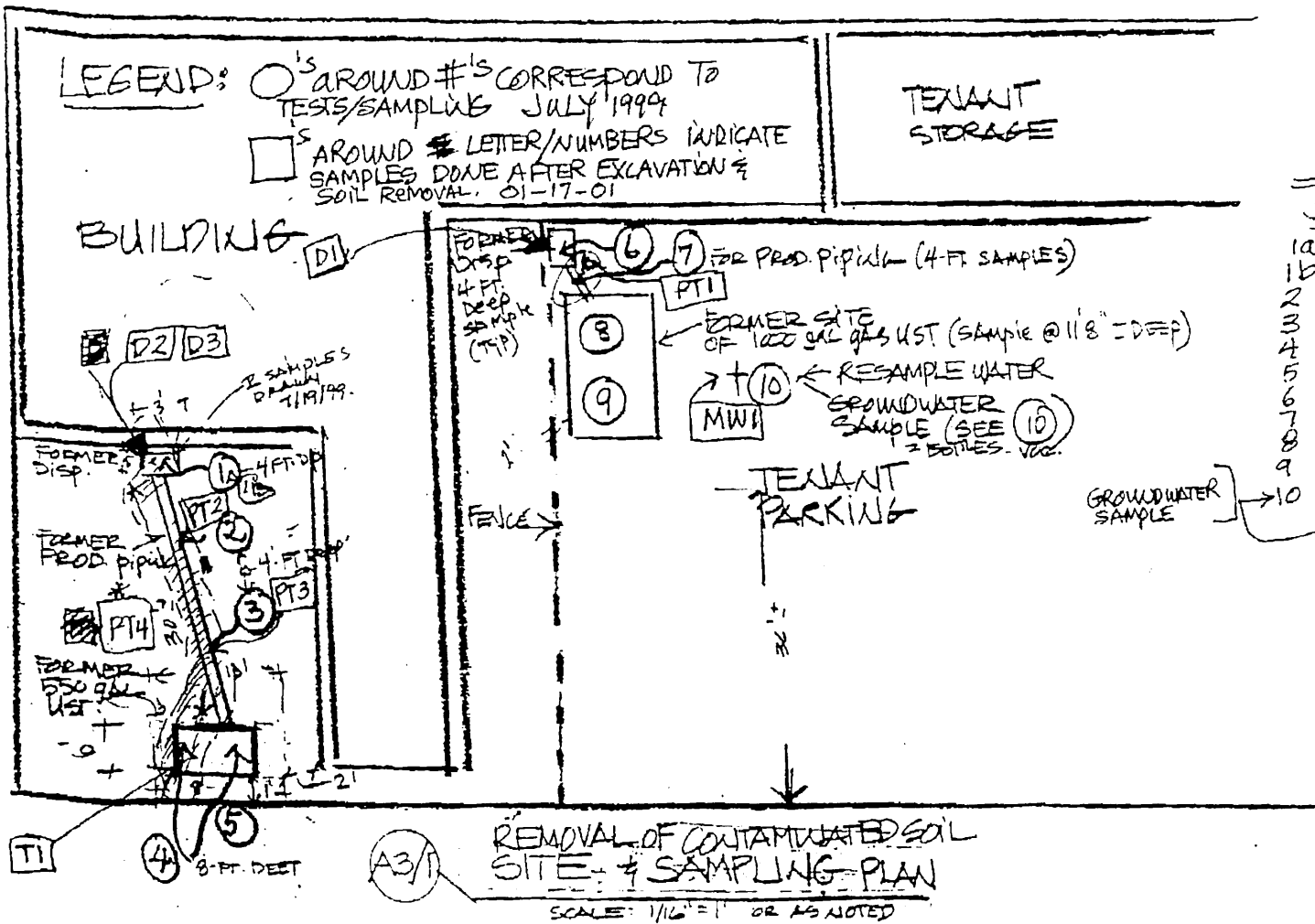
F 644-3859

Jewer Ave  
Monitoring Well

Oct 20 08 03:22P

02-05-01

# SITE & SAMPLING PLAN: 6335 SAN PABLO AVENUE, OAKLAND.



**ID OF SAMPLES**

JULY 1999	JAN. 17, 2001
1	D1
2	D2
3	D3
4	PT1
5	PT2
6	PT3
7	PT4
8	TI
9	MW1
10	COMPOS. A
11	COMP B
12	COMP C

CONTAM SOIL SPOILS PILES

**Table 1**  
**January 2001 Excavation Confirmation Soil Analytical Results**  
**6355 San Pablo Avenue, Oakland, California**

Sample ID	Sample Depth (feet bgs)	TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Total Lead
<b>January 2001 Post Excavation Confirmation Soil Samples (mg/kg)</b>								
D1-5.0	5.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	10
D2-5.0	5.0	120	0.38	0.51	1.4	8.3	<0.005	7.1
D3-8.0	8.0	14	<b>1.0</b>	1.3	0.41	1.9	<0.005	6.5
PT1-5.0	5.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	7.2
PT2-4.0	4.0	20	<b>0.53</b>	0.069	0.39	1.3	<b>12</b>	7.0
PT3-4.5	4.5	<1.0	<0.05	<0.005	<0.005	<0.005	6.1	7.0
PT4-3.0	3.0	<b>210</b>	<b>1.1</b>	0.29	1.2	<b>5.2</b>	<0.005	7.1
T1	6.5	4.3	0.008	0.030	0.0063	0.028	<0.005	20
<b>Soil ESLs</b>		83/180	0.044/0.27	2.9/9.3	3.3/4.7	2.3/11	0.023/8.4	750
<b>January 2001 Post excavation Groundwater Sample (µg/L)</b>								
MW-1	-	63	4.8	<0.5	2.2	2.2	<1.0	<5.0
<b>Groundwater ESLs</b>		100 / 210	1.0 / 46	40 / 130	30 / 43	20 / 100	5 / 1,800	2.5

**Notes:**

ESLs = Water Board Environmental Screening Levels for commercial/industrial sites where groundwater is/is not a potential drinking water resource.

Samples in **bold-face type** exceed the ESL criterion where groundwater is not a drinking water resource.

MTBE = methyl tertiary-butyl ether

TPHg = total petroleum hydrocarbons as gasoline

bgs = below ground surface

Monitoring well MW-1 screened 4-16 feet bgs; destroyed in January 2001

## **ATTACHMENT A**

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### **Drilling & Sampling Methods and Protocols**

## **ATTACHMENT A DRILLING & SAMPLING METHODS AND PROTOCOLS**

The boreholes will be advanced with a Geoprobe™ (direct-push) or equivalent rig that advances approximately 2-inch-diameter sampling rods into undisturbed soil. Soil samples are collected in either acetate or metal sleeves inside the sampling rods. The sleeves selected for off-site laboratory analysis are then capped (with non-reactive plastic caps) and labeled. Depth-specific “grab” groundwater samples will be collected by advancing into undisturbed soil a stainless steel sampling rod with a sacrificial tip and integral well screen. Upon reaching the water table, the sampling string will be raised by approximately 1 foot, dropping the sacrificial tip and exposing the screen interval. The sample will then be collected through new Tygon™ tubing connected to a vacuum pump. The water will then be transferred directly to the appropriate sampling containers. Alternatively, grab-groundwater samples will be collected by inserting temporary PVC casing into the open borehole, then withdrawing groundwater with a clean bailer or plastic tubing connected to a peristaltic pump.

Samples will be securely sealed in appropriate containers, placed in an ice chest with ice at approximately 4 degrees C., and transported to the analytical laboratory under chain-of-custody record.

Waste soil (unused samples) will be temporarily containerized on-site in labeled, 5-gallon plastic pails with sealing tops. This soil will be appropriately profiled and disposed of when it has been determined that no further waste soil will be generated, or will be combined with any future generated waste soil from subsequent investigation phases.