

RECEIVED

1:25 pm, Jul 13, 2007

Alameda County
Environmental Health

July 12, 2007

Mr. Steven Plunkett
Hazardous Material Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Soil Gas and Groundwater Investigation Workplan
1171 Ocean Avenue, Oakland, California (Fuel Leak Case No. RO0002937)

Dear Mr. Plunkett:

INTRODUCTION AND BACKGROUND

On behalf of the property owner (Ms. Felicia Woytak), Stellar Environmental Solutions, Inc. (SES) is providing this workplan to the Alameda County Environmental Health Department (ACEH). The workplan was prepared in response to your June 28, 2007 letter requesting additional assessment to further corroborate the conceptual model presented after three site investigation stages that concluded the TCE in the groundwater appears to originate from offsite source(s).

The ACEH letter summarizes the findings presented in the SES investigations conducted in 2006 but concludes that since there is no obvious offsite source identified in the Phase I ESA or subsequent investigations, an additional burden of proof to demonstrate that the subject site has no potential sources is required. Specifically, ACEH requested a workplan with two areas of focus as needing to be completed to provide more conclusive evidence for an offsite origin. These are:

- Complete an onsite soil gas survey to further corroborate the soil sample data collected showing no detectable vadose zone contamination and
- Perform a focused offsite hydropunch investigation program to explore the presumed upgradient, offsite source of the TCE in the groundwater.
- Provide a Workplan to ACEH delineated the scope of work by July 21, 2007

WORKPLAN SCOPE OF WORK

The scope of work to address the Alameda County-requested workplan is presented in the following tasks: 1) Pre-Field Work Planning; 2) Soil Vapor Investigation; 3) Borehole Drilling and Grab-Groundwater Sampling; 4) Laboratory Analyses; and 5) Report Preparation.

Task 1: Pre-Field Work Planning

This task encompasses the pre-field work elements of the project, including:

- Mark the site for the required Underground Service Alert (USA) utility clearance and make the required notification to USA;
- Schedule and coordinate the drilling and analytical laboratory subcontractors;
- Apply and pay for the requisite borehole drilling permit from Alameda County Public Works Agency, and provide notification of the onsite drilling schedule to that agency;
- Apply for an encroachment permit from the city of Oakland to complete the exploratory bores in the public right of way.
- Complete a Site Health and Safety Plan; and
- Conduct overall program management.

Task 2: Soil Gas Sampling

Figure shows locations of the proposed soil gas sample probes designed to give wide coverage of the assessable site area and focus on the area north of the loading dock where previous bores were installed. Two bore will also be placed along the eastern site boundary, one at the location of B16 that had the high—apparently upgradient—concentration of TCE at a depth of 36 feet bgs. Two additional soil gas samples will be collected within the west side area of the property.

Soil-gas samples will be collected by using a direct-push Geoprobe™ drill rig to advance a probe with sacrificial tip and post-run tubing (PRT) soil-gas sampling adaptor to a target depth of 5 feet bgs. Once the target depth has been achieved, the sacrificial tip will be removed by raising the drilling rods approximately 6 inches, exposing the PRT soil-gas sampling adaptor, and thus allowing for the collection of soil-gas via ¼-inch Tygon® tubing extending through the drill rods to the surface. Hydrated bentonite will then be placed around the drill rod to inhibit surface air migration between the interface of native soil and the rod. Soil-gas samples will be collected in 1.0-liter Summa® canisters provided by Columbia Analytical Services and/or Air Toxics. Prior to the collection of each soil vapor sample, an initial vacuum reading of the sampling Summa® canister will be recorded using a laboratory-provided vacuum gauge. The Tygon® tubing

extending from the drilling rods will then be connected to a flow regulator with internal particulate filter, calibrated by the laboratory to 100 to 200 milliliter per minute (ml/min). A manifold collection system will be used with an in-line Flow Controller (FC) and pressure or vacuum gauge. The purpose of the FC is to verify there is no system leakage. A “T” fitting stopcock valve will then be connected to the flow regulator with hoses—one hose leading to a Summa[®] canister dedicated to purging the void space, and a second hose to a Summa[®] canister dedicated for sampling.

Following assembly of the sampling apparatus, the assembly will be securely closed and the 6-liter purge Summa[®] canister opened, thus creating a vacuum that will be monitored for leaks via a vacuum gauge test. A vacuum will be held for 5 minutes to ensure that all fittings are tight.

After allowing a minimum of 15 minutes for the equilibration of subsurface vapors, the assembly will be connected to the probe in the ground and purged of three volumes of vapor using the purge dedicated Summa[®] canister and flow regulator calibrated at 200 ml/min. The purge volumes are calculated from the boring length and diameter of the Tygon[®] tubing. Following purging, the soil-gas samples will be collected by opening the valve to the dedicated Summa[®] canister and allowing the vacuum within the canister to draw the soil-gas through the assembly at the rate governed by the flow controller (100 to 200 ml/min). The canister will not be allowed to fill completely unless a significant pressure drop results from tight soils. Following sampling, a final canister vacuum will be read and recorded using the provided vacuum gauge.

New probe sacrificial probe tips, Tygon[®] tubing, and Summa[®] canisters will be used for the sampling of each location. The canisters will be shipped via FedEx to Columbia Analytical Services or Air Toxics under chain-of-custody. All samples will be maintained at ambient temperature and out of direct sunlight. The samples will be analyzed by an ELAP-certified laboratory for analysis of volatile organic compounds via EPA Method TO-15.

Task 3: Grab-Groundwater Sampling

The grab-groundwater sampling completed to date on the property suggests that groundwater contamination is highest at a depth of about 36 feet bgs and that the upper water bearing zone of 20 to 25 feet bgs has minimal TCE contamination. This coupled with the distribution of the TCE with the highest concentration shown near the southeast corner of the property suggests an offsite origin. SES will further test this thesis by collecting one more onsite sample near the southern boundary next to the residential property (to the extent accessible) and collecting an additional 4 or more samples offsite to the east and southeast of the property, along Marshall Street and 64th Street, in the presumed upgradient direction. The exact location of the bore will be determined

based on constraints imposed by the utility lines and overhead obstructions within the City of Oakland right-of-way.

SES proposes to drill the five or so grab-groundwater bores to an estimated depth of 35 to 40 feet each, which should take no more than one day of field work. Based on the general surface elevations, groundwater, and the previous bores by a Geoprobe™ (direct-push) rig, it is assumed that the Geoprobe™ rig is capable of achieving the depth and groundwater that will be encountered within the bores. The boreholes will be drilled with a Geoprobe™ rig that advances approximately 2-inch-diameter sampling rods and collects continuous core soil samples. The drilling and sampling will be completed using a licensed drilling subcontractor under SES's direction, overseen by a California Professional Geologist. SES will measure water levels in each borehole following drilling. However, in the interest of time, no soil samples will be collected and only one of the [offsite] bores will be geologically logged, as the numerous bores logged to date have demonstrated a relatively consistent lithology.

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

Task 3: Laboratory Analyses

A California-certified analytical laboratory will complete the laboratory analyses. The analytical results will be performed at a standard turnaround (2 weeks). The samples will be analyzed for the following site chemical of concern:

- Soil Gas samples will be analyzed by an ELAP-certified laboratory for analysis of volatile organic compounds via EPA Method TO-15;
- Groundwater Grab samples will be analyzed by an ELAP-certified laboratory for analysis of volatile organic compounds via EPA Method 8260.

Task 4: Report Preparation

The methodology and findings of the investigation will be incorporated into a comprehensive documentation report that will contain the following elements:

- The responsible party's perjury statement letter and workplan, investigation scope and objectives, site description, summary of previous investigations findings, and discussion of the UST excavation constraints;
- Sampling and analytical protocols used;

Mr. Steven Plunkett

July 12, 2007


Page 5 of 5

- Site map delineating previous and current investigation borehole locations;
- Discussion of analytical results in the context of regulatory agency guidelines/criteria, and the magnitude and extent of contamination and previous site investigation findings;
- An re-examination of the site conceptual model in the light of the new data and the support for an on-site versus off-site origin to the TCE reported in the ‘deeper’ water bearing zone;
- Conclusions and, where appropriate, recommendations; and
- Technical appendices.

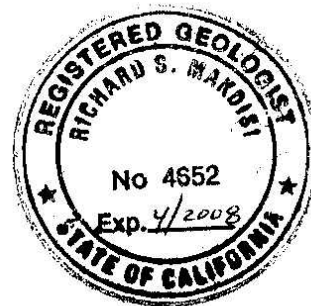
SES will upload an electronic version of the report, with all associated documentation and required signatures and professional certifications, to ACEH’s designated website.

This workplan is submitted on behalf of Ms. Felicia Woytak, a partner in the ownership of the subject property. Ms. Woytak is eager to move the project forward to achieve site closure so as to be able to have the site redeveloped. Please contact me directly if you have any questions.

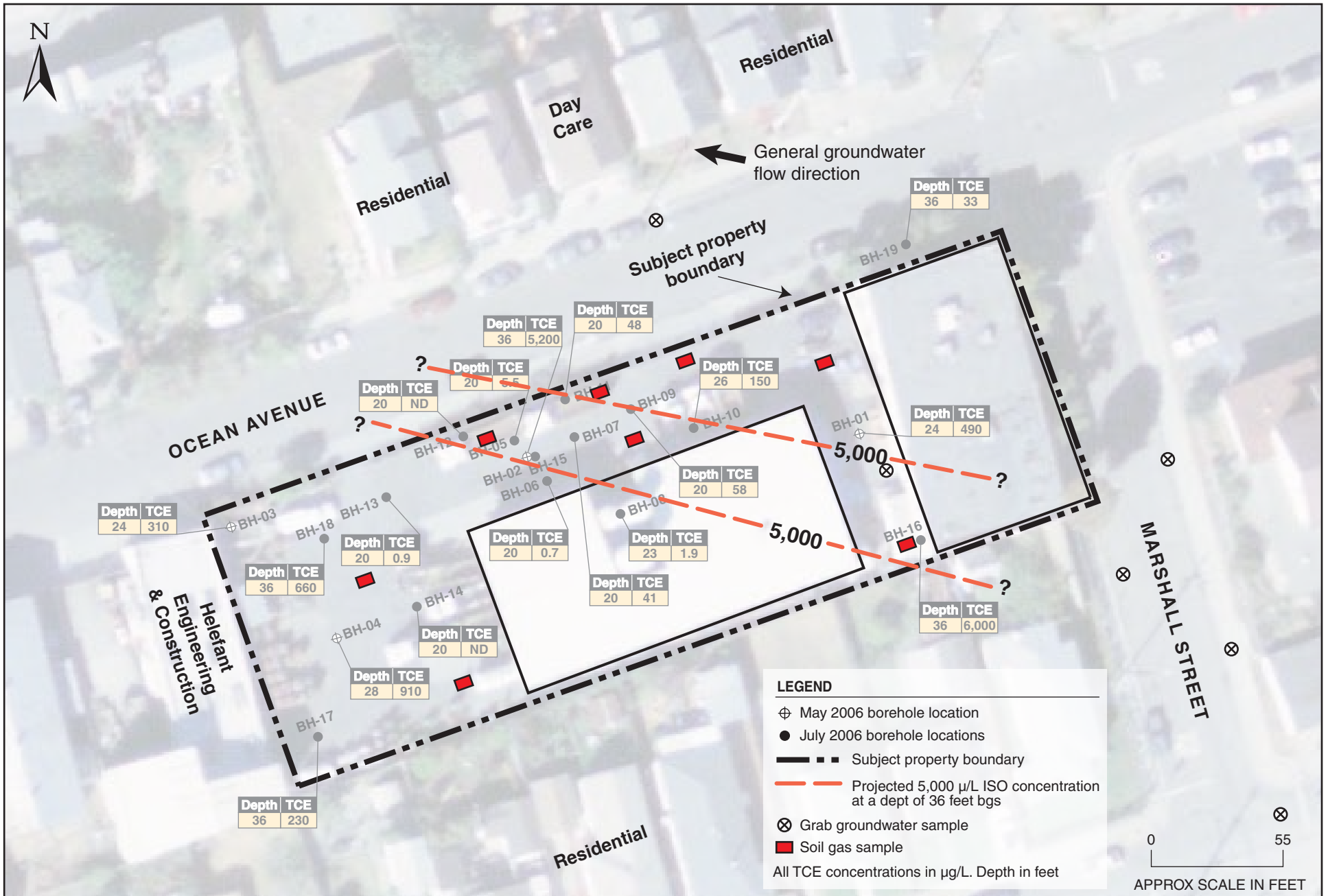
Sincerely,



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



cc: Ms. Felicia Woytak.



PROPOSED SOIL GAS AND GRAB GROUNDWATER SAMPLING
1171 Ocean Avenue, Oakland, CA

Figure 1

by: MJC

JULY 2007