Endpoint
Strategy. Science. Sustainability.

RECEIVED

2:26 pm, Aug 20, 2009

Alameda County
Environmental Health

August 17, 2009

Mr. Paresh Khatri
Hazardous Materials Specialist
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Supplemental Site Investigation Workplan Addendum, RO 02998, Dry Clean Club of America, 2960 Castro Valley Blvd., Castro Valley, CA 94546

Dear Mr. Khatri:

Per the request of the ACHCSA (2009)[1], Endpoint Consulting, Inc. (Endpoint) has prepared this brief *Supplemental Site Investigation Workplan Addendum* (workplan addendum) for the above-referenced site located at 2960 Castro Valley Blvd., Castro Valley, CA. The workplan addendum was required due to the fact that Appendix C and Appendix D of the original Workplan were missing from the electronic copy of the workplan uploaded to the ACHCSA's ftp site. Those appendices are included herein as Appendix A and Appendix B, respectively, containing the field investigation protocols and field data form for collection of four soil vapor samples and one grab groundwater sample at the subject site.

In addition to the missing appendix outlining field procedures, the ACHCSA (2009) required collection of sub-slab soil sampling to supplement the four soil vapor samples proposed in the original workplan. To this end, two sub-slab soil samples are proposed to supplement the four soil vapor sampled originally proposed. The location of the sub-slab samples are included on Figure 1 herein. The field procedures for collection of these samples have been incorporated into Appendix A herein.

CLOSING

Endpoint appreciates your assistance on this project. We will implement the workplan activities upon approval by the ACHCSA. In the meantime, should you have any questions, please feel free to contact Mr. Mehrdad Javaherian at 415-706-8935 or at mehrdad@endpiont-inc.com.

[1] ACHCSA. (2009). Letter from Paresh Khatri to Gabriel Chui, SLIC Leak Case No. RO 00002998 and Geotracker Global ID T10000001068, Dry Clean Club of America, 2960 Castro Valley Blvd., Castro Valley, CA 94546, August 13th.

Endpoint.
Strategy. Science. Sustainability.

Sincerely,

Endpoint Consulting, Inc.

Mehrdad M. Javaherian, Ph.D$_{cand.}$,MPH
Risk Assessor

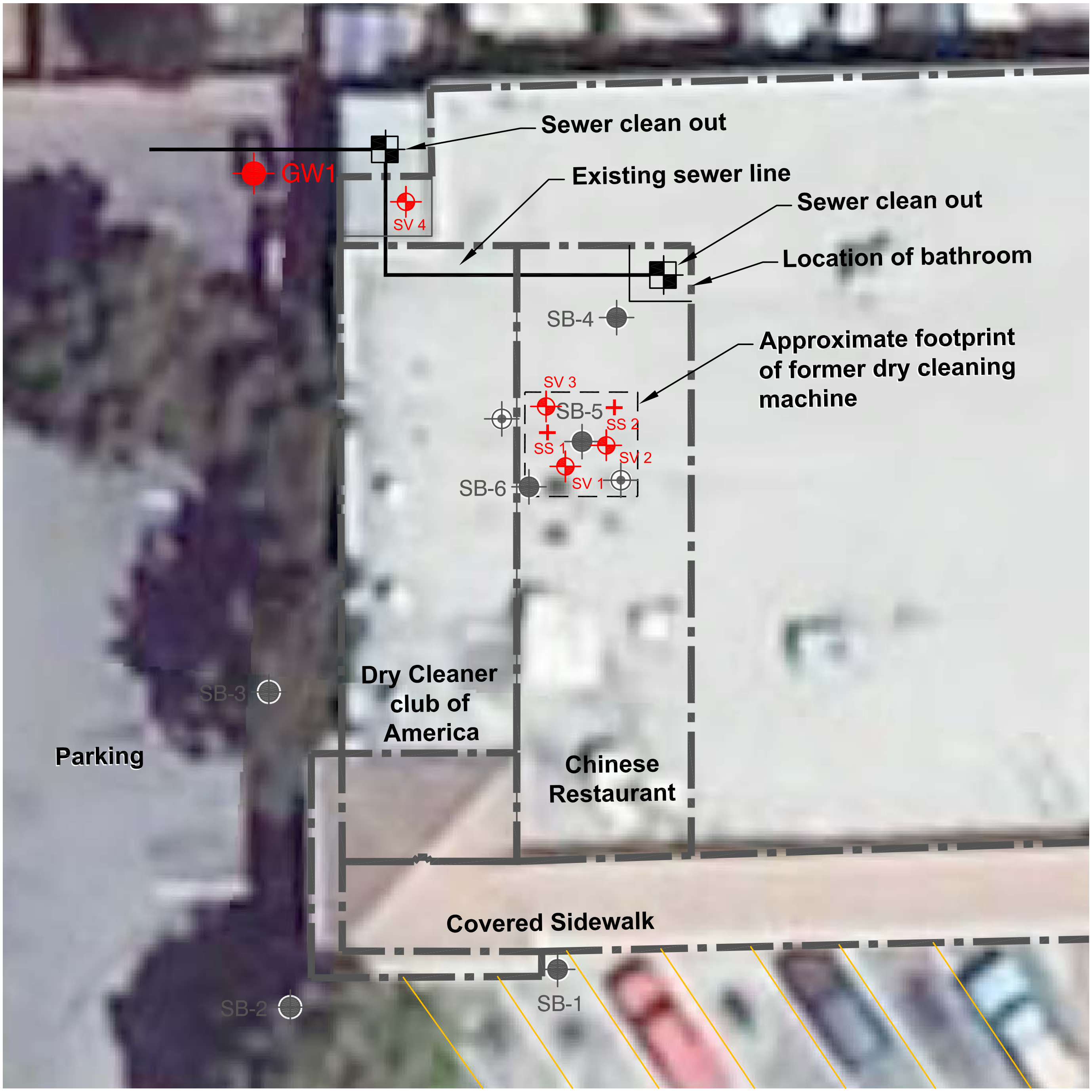
Mitra Javaherian, PE
Senior Engineer

Figure 1: Proposed Boring Locations

Appendix A- Field Investigation Protocols
Appendix B- Field Form for Soil Vapor/Sub-Slab Sampling

Cc: Gabriel Chiu

FIGURE



LEGEND:

- Proposed Soil Vapor Extraction sample location
- Proposed sub-slab vapor sample location
- Sewer clean out
- Floor cuts assumed to be Property Solutions borings
- AEI soil borings
- Proposed Grab Groundwater sample location

Base Map: Google Earth, 2009.

PROPOSED SAMPLE LOCATIONS

2960 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

Endpoint. Strategy. Science. Sustainability.	Date: 8/15/2009	Figure: 1

APPENDIX A

FIELD INVESTIGATION PROTOCOLS

APPENDIX A
FIELD INVESTIGATION PROTOCOLS

Prior to drilling, the proposed boring locations will be marked and Underground Service Alert (USA) will be contacted in accordance with local notification requirements. The proposed boring locations may also be investigated by a geophysical surveying contractor using electromagnetic induction and magnetic surveys, among other methods. The choice of methods depends on shallow soil types and potential interference from surrounding cultural features. The borings are cleared by hand auger, shovel, or posthole digger to the full diameter of downhole equipment to at least 4 feet below ground surface (bgs). An air knife may also be used as necessary in conjunction with the above hand clearing tools.

A drilling permit will be obtained from the Alameda County Public Works Agency. In addition, prior to conducting the planned field activities, a comprehensive site health and safety plan (HSP) will be prepared, and a copy of the HSP will be kept on site during scheduled field activities. Lastly, downhole equipment, including drive casing, sample barrels, surge blocks and tools, will be detergent-washed using Alconox or equivalent, or steam-cleaned prior to and following drilling activities at each boring.

SOIL VAPOR/SUB-SLAB SAMPLING PROCEDURES

Soil Vapor Probe Installation

Borings for soil vapor sample collection will be advanced using a hand-driven slide hammer and geoprobe-type small diameter drilling rods. The protocol to be followed for the in situ soil vapor sampling is presented below.

Temporary Probe/Semi Permanent Probe Installation

Slide hammer advanced drill rods will be used to install temporary or semi-permanent probes in accordance with DTSC's advisory for active soil gas investigations (*DTSC/CRWQCB, 2003 –"Department of Toxic Substances Control/California Regional Water Quality Control Board (DTSC/CRWQCB), Los Angeles Region, 2003. Advisory – Active Soil Gas Investigations, January 28"*). The rods will be removed from the hole prior to the construction of the vapor probe.

The depth of each soil vapor probe will be approximately 5 feet bgs. Each probe location will be sealed at the surface with hydrated bentonite to prevent ambient air intrusion. The probe tip will be placed midway within a minimum one-foot sand pack (to be placed from approximately 4 to 5 feet bgs). Approximately 1 foot of dry granular bentonite will be placed above the sand pack, and hydrated after placement. Hydrated powdered bentonite will be used for the surface seal.

Holes for Sub-Slab Sample Collection

At the two proposed locations (see Figure 1 of main workplan addendum text), sub-slab samples will be collected in accordance with CalEPA's Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (*Cal EPA/DTSC 2004 –" Interim Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, December 15").*

The procedures to be used to install the holes for sub-slab sampling include:

1) Small-diameter holes will be drilled through the concrete of the foundation slab. The holes will be 1.0 to 1.25 inches in diameter. Either an electric hand drill or concrete corer will be used to drill the holes. Sub-slab holes will be advanced 3 to 4 inches into the sub-slab material.
2) The sampling probes will be constructed with the following specifications:

    - Vapor probes will be constructed of 1/8-inch or ¼-inch diameter flexible tubing with a permeable probe tip. A Teflon™ sealing disk should be placed between the probe tip and the blank pipe.
    - Bentonite chips will be used to fill the borehole annular space between the probe pipe and sub-slab gravel from the Teflon sealing disk to the base of the concrete foundation. Sufficient water will be added to hydrate the bentonite to insure proper sealing, and care will be used in placement of the bentonite to prevent post-emplacement expansion which might compromise both the probe and cement seal. If needed, the vapor probe tip can be covered with sand.
    - The probe pipes will be tightly sealed to the foundation slab with quick-setting contaminant-free Portland cement.

Procedures to be used for soil vapor/sub-slab sampling are presented below in the Section "Soil Vapor/Sub-Slab Sample Collection Protocol".

Following completion of sampling, each soil vapor probe will be backfilled with bentonite-cement grout or hydrated bentonite chips. The surface will be patched with rapid set concrete.

Upon completion of sub-slab sampling, the sub-slab sampling probes will be decommissioned by removing the probe tip, probe piping, bentonite, and grout by redrilling. The borehole will be filled with grout and concrete patch material to restore the floor slab to its original condition.

Soil Vapor/Sub-Slab Sample Collection Protocol

To allow subsurface conditions to equilibrate, soil vapor and sub-slab sampling will be conducted at least 30 minutes after probe installation at each soil vapor and sub-slab sample location. In accordance with the DTSC advisory, purging and sampling rates will be limited to 100 to 200 milliliters (mls) per minute and a maximum vacuum of 100 inches of water column to limit stripping and prevent ambient air from diluting the samples.

Shut-in Test: Prior to soil-vapor/sub-slab purging or sampling, a shut-in test will be conducted to check for leaks in the sample train. The shut-in test will consist of assembling the above-ground apparatus (valves, lines, and fittings downstream of the top of the probe), and evacuating the lines to a measured vacuum of about 100 inches of water, then shutting the vacuum in with closed valves on opposite ends of the sample train. The vacuum gauge will then be observed for at least 1 min, and if there is any observable loss of vacuum, the fittings will be adjusted as needed until the vacuum in the above-ground portion of the sample train does not noticeably dissipate.

Leak Testing: Helium tracer testing will be conducted to confirm absence of ambient air intrusion into the sample train at each soil vapor and sub-slab sampling location. A clear plastic container (shroud) will be inverted over the probe and the sample train and filled with about 10% to 30% helium by volume. The shroud shroud will have a pliable weather-stripping along its base to maintain a tracer gas atmosphere. Soil vapor/ sub-slab samples will be collected in a Tedlar bag and will be screened using a portable helium meter (MDG2002 or equivalent) to confirm absence of helium in the collected samples. Leak testing will be conducted during the purge volume testing noted below and also during the collection of the soil vapor/sub-slab samples to be collected following the purge testing.

A brief outline of a purge volume test to be conducted prior to soil vapor sampling to determine the purge volume to be used at each sample location is presented below.

Purge Volume Test: To ensure stagnant or ambient air is removed from the sampling system and to assure samples collected are representative of subsurface conditions, a purge volume versus contaminant concentration test will be conducted as the first soil gas sampling activity at the selected purge test point. The purge volume test is conducted by collecting and analyzing a sample for target compounds after the removal of appropriate purge volumes.

Purge Volume: The purge volume or "dead space volume" can be estimated is based on the internal volume of tubing used, and annular space around the probe tip. Step purge tests of one (1), three (3), and seven (7) purge volumes will be conducted as a means to determine the purge volume to be applied at all sampling points. The testing will be conducted using a tedlar bag in the field and the collected sample will be measured for total VOCs using a photo ionization detector (PID).

The appropriate purge volume will be selected based on the highest concentration for the VOCs detected during the step purge tests. If VOCs are not detected in any of the step purge tests, a default of three (3) purge volumes will be extracted prior to sampling at each soil vapor sample location.

The purge test data (e.g., calculated purge volume, rate and duration of each purge step) will be included in the *Supplemental Field Investigation Report* to support the purge volume selection.

Soil vapor and sub-slab samples will be collected following purging of the probe at the selected purge volume using a 1 liter summa canister. As noted above, sampling rates will be limited to 100 to 200 mL/minute flow rate and 100 inches of water column vacuum.

Field conditions, such as wet soil conditions, fine grained sediments, or barometric pressure changes may affect the ability and/or the quality of the collected soil vapor samples.

Wet Conditions: If no-flow or low-flow conditions are caused by wet soils, the soil vapor or sub-slab sampling will cease and commenced after the soils have sufficiently dried to allow sampling at the flow rates and vacuum noted above. In addition, no soil vapor sampling will be conducted during or immediately after a significant rain event (e.g., 1/2 inch or greater) or onsite watering event.

Low Permeable Soils Sampling: Under conditions where low permeable soils surround the soil vapor or sub-slab sampling probe thereby limiting the flow rate of soil vapor that can be drawn from the surrounding soils into the soil vapor probe, soil vapor will be withdrawn from the probe until such time that steady flow cannot be obtained by applying a vacuum of up to 100 inches water column, The sampling will then be discontinued to allow the vacuum to dissipate as soil vapor slowly enters the sandpack and probe tubing from the surrounding soils. Sampling will then continue until an adequate volume of sample has been collected in the 1 liter canister.

Baromertic Pressure Changes: To the extent practicable, soil vapor and sub-slab sampling will be conducted when the changes in barometric pressure are not significant during the course of the sampling. To this end, records of barometric pressures will be obtained from local sources during the duration of the soil vapor sampling and will be provided in the Data Gap Investigation Report. If changes in barometric pressure are such that its effect on data quality is measurable, such observations will be summarized in the Supplemental Field Investigation Report.

The field form to be used to record data collected in the field is enclosed as Appendix B.

GRAB GROUNDWATER SAMPLING PROCEDURES

Grab groundwater samples are typically collected using a Hydropunch or an open-hole piezometer advanced using a “Geoprobe”type direct push drill rig. The Hydropunch sampler consists of an expendable drive point, a drive head, a protective sheath, a 3 or 4-foot long inner stainless steel screen (or polyvinyl chloride [PVC]) and an O-ring seal. Once the desired depth is achieved, the rods will be retracted to expose the Hydropunch screen to groundwater. Grab sampling with the open-hole piezometer consists of installing a small-diameter PVC well casing with 5 feet of 0.010-inch slotted well screen in the open boring. This method is typically used for shallow (i.e, at water table) grab water samples. Groundwater samples will be collected with a bailer or with an inertial pump.

Water Sampling and Handling

The proposed sample will be decanted into a container with appropriate preservatives. The sample will be collected in a 40-milliliter glass volatile organic analysis (VOA) vial with a Teflon-lined septum cap. The VOA vial will be filled so that there are no air bubbles. The sample container will be labeled with the boring number, date, location, sampler's initials, and preservative used. The sample container will be placed in a cooler with ice for delivery to the laboratory. Standard chain-of-custody procedures are followed.

INVESTIGATION DERIVED WASTE DISPOSAL PROCEDURES

As Investigation Derived Waste (IDW) is generated during field activities, it will be collected, stored in appropriate containers, and properly disposed of. Representative samples will be collected during the IDW collection phase, and characterized using the results of laboratory analyses performed on the samples. IDW parameters of importance include characterization, origin, sample types, sampling protocol, containerization, labeling, and storage. To the extent practicable, field activities will be conducted in a manner that minimizes IDW.

The sources of solid IDW may include drilling cuttings, core from borings, and excess grout from soil grouting activities. Liquid IDW sources include rinsate generated during the decontamination of field equipment and purge water from development and/or sampling of groundwater monitoring wells.

Drilling IDW. Drilling core cuttings generated from drilling activities will be temporarily stored on site. IDW will be characterized in accordance with Title 22 California Code of Regulations (CCR) requirements; the characterized IDW will be classified based on laboratory analytical results. The waste will be stored in 55-gallon Department of Transportation (DOT) approved drums or pails, pending results of the sampling, and disposed of offsite at appropriate landfill facilities.

APPENDIX B

FIELD FORM FOR SOIL VAPOR/SUB-SLAB SAMPLING

APPENDIX B - FIELD FORM FOR SOIL VAPOR/SUB SLAB SAMPLING

Project Name:___________________

Date: ___________________________ Project Number: ______________

Site Location: ____________________

Weather: ________________________

Field Personnel: __________________

Recorded by: ______________________

Soil Vapor Probe No: __________________

Sub Slab Probe No: ____________________

PID Serial No: ________________________ PID Lamp: _______ eV

MDG 2002 Serial No: ___________________

Tracer Gas: ___________________________

Surface Type: Asphalt _______ Concrete _________ Grass ________ Other _______

Surface Thickness (i.e., asphalt or concrete) ___________

<u>1 Casing Volume:</u>

Sub Slab Volume ________ L

Soil Vapor Probe Volume _______ L

Initial Vacuum Prior to Pumping ___________ inches of water

Shut-in Test _________ inches of Water held for ________ seconds

Field Tubing: Blank PID Reading __________ ppmv

Shut in Test Completed Prior to Purging: _______ Yes ________ No

Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	Tracer Gas		Sample (ppmv, %)	VOCs by PID (ppmv)
							Shroud (%)			
							Min	Max		

Helium Concentration in Field Screen Samples is Less than 5% of Minimum Concentration in the Shroud?

_________ **Yes** _________ **No**

Sample Collection

Date	Time	Sample ID		Summa Canister ID	Flow Controller #	Vaccum Gage #	Initial Vacuum (in of Hg)	Final Vacuum (in Hg)