CONESTOGA-ROVERS & ASSOCIATES

5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700 Fax: (510) 420-9170
www.CRAworld.com

TRANSMITTAL

DATE: September 30, 2010

REFERENCE NO.: 521000

PROJECT NAME: 1137-1167 65th Street, Oakland

TO: Ms. Barbara Jakub
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RECEIVED
4:21 pm, Oct 01, 2010
Alameda County
Environmental Health

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QUANTITY	DESCRIPTION
1	Addendum To The Sub-Slab Vapor Probe Installation And Additional Site Assessment Workplan

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
Should you have any questions regarding the content of this document, please contact Bob Foss at (510) 420-3348.

Copy to: Mr. Frederic Schrag *(electronic ~~only~~ also)*
Mr. Dennis Parfitt

Completed by: Bob Foss [Please Print] Signed: Robert Foss

Filing: **Correspondence File**

ADDENDUM TO THE SUB-SLAB VAPOR PROBE INSTALLATION AND ADDITIONAL SITE ASSESSMENT WORKPLAN

1137-1167 65th STREET
OAKLAND, CALIFORNIA

AGENCY CASE NO. RO0000082

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

Office: (510) 420-0700
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web: http:\\www.CRAworld.com

SEPTEMBER 30, 2010
REF. NO. 521000 (10)
This report is printed on recycled paper.

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(Following Text)

LIST OF APPENDICES

1.0 INTRODUCTION

On behalf of Mr. John Nady, Conestoga-Rovers & Associates (CRA) submits this *Addendum to the Sub-slab Vapor Probe and Additional Site Assessment Workplan* (Workplan), dated May 14, 2010, for the site referenced above. This document is in response to comments on the original workplan made in an August 3, 2010 letter. A copy of the August 3, 2010 letter is included as Appendix A. ACEH is the lead agency for this site.

1.1 SITE INFORMATION

Site Address	1137-1167 65th Street, Oakland, CA
Site Use	Commercial
Client and Contact	John Nady, Trustee of the Nady Trust Contact: Frederic Schrag
Consultant and Contact Person	CRA, Robert Foss, P.G.
Lead Agency and Contact Person	ACEH, Ms. Barbara Jakub
Agency Case No.	RO0000082

2.0 RESPONSES TO TECHNICAL COMMENTS

2.1 TECHNICAL COMMENT 1

This comment pertains to a consideration of utility conduits in regards to proposed locations of subslab vapor probes within the onsite buildings, and specifically references the proposed location of a subslab vapor probe adjacent to the floor drain in 1167 65th Street. This location selected because the September 2009 and December 2009 vapor concentrations in VW-3, collected from 4 to 5 feet below grade (fbg), were among the highest reported from the nine vapor probes beneath and adjacent to the site. Other proposed subslab vapor probe locations were based on reported concentrations from the eight additional probes installed in August 2009. The valid concern of potential preferential migration along conduit trenches exists and the original Figure 3 identified only one utility conduit within the buildings. The only utility conduit beneath a building foundation shown on the original figure is that of subsurface piping from the former USTs (along Peabody Lane) to the interior USTs and to stub-ups within 1167 65th Street. To identify additional utility conduits, CRA contracted a private utility location service to perform a comprehensive survey. The utility conduit study occurred

on September 9 and the results are presented below. Based on the findings of this conduit study, a revised Figure 3 is included with this addendum.

Technical Comment 1 continues, questioning the proposed locations of subslab vapor probes along Peabody Lane, rather than placing the probes directly below the foundation of the building occupied by a daycare center. The collection of vapor data from directly below the daycare center building's foundation would be beneficial. However, CRA and Mr. Nady are sensitive to the business operation conducted at the daycare. The proposed locations, directly adjacent to the properties bordering Peabody Lane, were chosen to investigate whether vapors have migrated vertically from the sample depths of VW-6 through VW-9. Previous investigations indicate that native shallow soils beneath Mr. Nady's site, and offsite toward the south, are composed of sediments exhibiting minor gradations from clay to silty clay to clayey silt, with varying percentages of usually fine-grained sand. However, several borings along Peabody Lane have logged sediment assemblages that appear to be artificial fill. While the native sediments vary in nomenclature due to varying estimated grain size percentages, they are all described as exhibiting low estimated permeability. The areas of apparent fill were described as moderately permeable. Borings in the immediate vicinity of the daycare property have all been described as low permeability soils. We anticipate observing that vapors just below the asphalt surface of Peabody Lane adjacent to the daycare center are substantially less than concentrations reported at 3-4.3 fbg in VW-7 and at 4-5 fbg in VW-8 and VW-9. If this proves true, then it is extrapolated that due to the primarily low permeability sediments across the area, vapors that may exist at 3-5 fbg beneath the foundation of the daycare center would be reduced, proportionally, directly below the foundation. If CRA were to conduct an initial investigation within the daycare center building, the stigma associated with this activity could have a negative impact on the business operation. We wish to employ this sequential investigation method to avoid, unnecessarily, alarming the daycare operators, the parents and the property owner. It is for this reason that we have proposed to locate the subslab probes just beneath the asphalt near the previously installed probes at 3-4.3 fbg and at 4-5 fbg. If, however, analysis of subslab vapor samples indicates that vertical migration may allow accumulations of vapors beneath the daycare foundation, CRA will immediately initiate a request for access to install vapor probes through the slab foundation of the daycare site. Borehole clearances conducted prior to drilling for previous investigations conducted along Peabody Lane indicated that no utility conduits were identified. This comprehensive conduit study confirmed these previous findings. In preparing to respond to the agency's expressed concerns, CRA reviewed the workplan and detected a typographical error in the text and an error in sampling interval for vapor probes VW-1 through VWQ-9. The submitted page 8 states the recommendation of three subslab probes along Peabody Lane. The corrected page 8

states the recommendation for installation and sampling of four subslab vapor probes beneath the asphalt along Peabody Lane. The revised Table 1 contains the corrected sampling interval of the nine existing vapor probes. Please replace the incorrect page and Table 1 with the two pages provided in Appendix B.

2.2 TECHNICAL COMMENT 2

The workplan references DTSC guidance regarding time between probe installation and sampling. Technical comment 2 in the August 3, 2010 ACEH letter requested adherence to the 2008 *EPA Standard Operating Procedure for Installation of Sub-Slab Vapor Probes and Sampling Using EPA Method TO-15 to Support Vapor Intrusion Investigations*. This SOP document suggests that sampling of sub-slab vapor probes occur no sooner than 24 hours after their installation. CRA will wait the referenced 24 hours prior to sampling. A copy of these procedures is included in Appendix C.

2.3 TECHNICAL COMMENT 3

Technical comment 3 requests the submittal of a Site Conceptual Model 60 days after soil vapor sampling. The date of vapor sampling will set the due date for the SCM, and the document will be submitted within the 60 day timeframe. The document will include the components listed in the August 3, 2010 letter.

2.4 TECHNICAL COMMENT 4

Technical comment 4 is in reference to the required perjury statement. Each previous submittal has included an apparently acceptable perjury statement. However, for all future submittals, the statement, "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge," will be included.

3.0 COMPREHENSIVE CONDUIT STUDY

3.1 CONDUIT STUDY WITHIN THE ONSITE BUILDINGS

To investigate possible vapor intrusion into the onsite buildings based on the expressed concern of potential preferential vapor migration through utility trench backfill beneath

the slab foundations, CRA conducted a utility conduit study within and between the four buildings located on the site. CRA could locate no records of any previous conduit study within the buildings so this was a valid issue to address. On September 9, California Utility Surveys of San Ramon, California (CUS) conducted a comprehensive conduit study survey of all accessible areas at the site utilizing the techniques described in the Conduit Study Methodology included in Appendix D. It was determined that most shallow utilities, those being electrical, gas, water and communication lines, enter the buildings from above ground. The only subsurface utility conduits identified were a confirmation of the previously defined product piping, a continuation of the storm drain and sanitary sewer lines in the breezeways between the buildings, and the detection of unknown piping and nine former piping stub-ups along the eastern end of the building located in the center of the site. The area historically labeled as a "floor drain" in 1167 65th Street was surveyed and investigated. This structure is located in a depression in the concrete floor but has no grate covering it and was filled with debris. Attempts to remove the debris to facilitate tracing the line's path were unsuccessful. However, the "drain" was sufficiently cleared to observe that it appears not to consist of a pipe, at all. Upon inspection, it appears to consist of only a coring through the concrete not connected to either the storm drain or sanitary sewer, but instead draining directly to the subsurface. Another vertical core through the concrete is adjacent to and within the same depression. Debris also filled this opening and attempts to clear it were unsuccessful as well. If the two are connected, it would seem logical that this "drain" would trace diagonally toward, and tie into, the sanitary sewer/storm drain identified beneath the breezeway between 1145 and 1167 65th Street. However, no traceable responses to the survey equipment were detected to confirm this, lending greater credence to the description above. A one-page document titled, *Underground Conduit Survey Report*, along with the survey methodology is included in Appendix D.

3.2 CONDUIT STUDY ALONG PEABODY LANE

Previous drilling activities required utility clearances each time along Peabody Lane, adjacent to and south of the property. At no time were any subsurface utilities identified. CRA and CUS conducted a comprehensive utility survey along Peabody to confirm the previous findings, and again, no utility conduits were identified beneath the asphalt of Peabody Lane. A drain line, connected to a sump pump, runs beneath the building at 1164 Ocean Avenue. This address is the location of the daycare center. The drain was identified by a standpipe style cleanout directly adjacent to the building and a feed pipe tracing approximately 2 feet back to a vault box containing a sump pump. Based on its apparent construction, this looks to be a French drain. All utilities for the houses between Ocean Avenue and Peabody Lane enter/exit the properties from

Ocean Avenue. Observation of this cleanout shows that the line curves beneath the building and out toward Ocean Avenue.

3.3 MODIFICATION TO PROPOSED VAPOR PROBE LOCATIONS

Based on results of the conduit study conducted September 9, only one subslab vapor probe location was modified. This change is a result of identified piping along the eastern interior wall of the building in, essentially, the center of the property. This new location, along with the identified piping is shown on the revised Figure 3.

4.0 REPORT

As stated in the original workplan, CRA will prepare and submit the *Sub-Slab Vapor Probe and Additional Assessment Report* after receipt of all analytic data. The report will include the following:

- A summary of the site background and history,
- A description of sub-slab vapor probe installation methods,
- A description of soil boring drilling and sampling methods,
- Soil boring logs,
- Tabulated soil, grab-groundwater and vapor analytical results,
- A site map showing the sub-slab vapor probe and boring locations,
- Analytic reports and chain-of-custody documentation,
- A description of hydrocarbon vapor conditions beneath the slab foundation,
- A description of sub-asphalt hydrocarbon vapor conditions along Peabody Lane,
- A discussion of hydrocarbon distribution at the site,
- Our conclusions and recommendations.

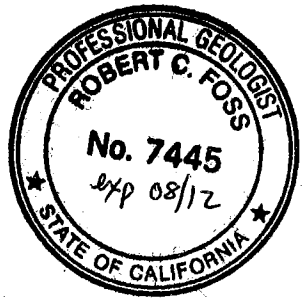
5.0 SCHEDULE

Upon written receipt from ACEH of workplan approval, CRA will proceed to permit the soil borings along Ocean Avenue and on Peabody Lane. Once permitting and logistics are coordinated, CRA will conduct the fieldwork, and then return to the site to collect

subsequent vapor samples. CRA will submit and upload the report to the ACEH website within 8 weeks of the receipt of all laboratory analytical data.

All of Which is Respectfully Submitted
CONESTOGA-ROVERS & ASSOCIATES

Calvin Hee



Robert Foss, P.G,

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Nady Trust U/D/T dated 1/21/1997

John Nady, trustee

FIGURE

EXPLANATION

- Proposed sub-slab vapor probe installation locations
- MW-1A — Monitoring well location
- CPT-MIP-1 — CPT - MIP boring location
- VW-9 — Vapor probe location
- 1 — Former tank location and tank nomenclature
- Product piping
- Product piping stub-ups (unconfirmed due to the presence of flooring and materials storage)
- Electrical line
- Storm drain
- Sanitary sewer line
- Water line
- Gas line
- Communications line
- Undefined piping

65TH STREET

PEABODY LANE

MARSHALL STREET

MW-4A
MW-4B
MW-4C
MW-5B
MW-3B
MW-3A
MW-3C
MW-7A
MW-7B
MW-7C
MW-1A
MW-1B
MW-1C
MW-6A
MW-6B
MW-6C
MW-2A

VW-1
VW-2
VW-3
VW-4
VW-5
VW-6
VW-7
VW-8
VW-9

CPT-MIP-1
CPT-MIP-2
CPT-MIP-3
CPT-MIP-4
CPT-MIP-5
CPT-MIP-6
CPT-MIP-7
CPT-MIP-8
CPT-MIP-9
CPT-MIP-10
CPT-MIP-11
CPT-MIP-12
CPT-MIP-13
CPT-MIP-14
CPT-MIP-15

1145 65TH STREET
1167 65TH STREET

former heating oil tank location
potential historical stub-ups
former gasoline UST and pump location
former tank location
filled in place tank location
core hole
floor drain
product piping
Exterior tank area

parking lot
vacant lot
shed
Day Care
car port
residence

??

N

0 10 30ft

Figure 3

UTILITY CONDUITS AND REVISED PROPOSED SUB-SLAB SOIL VAPOR PROBE LOCATIONS
1137 - 1167 65th STREET
Oakland, California

I:\IR\6-chars\5210--\521000-Nady - Oakland\521000-FIGURES\521000 workplan figures\521000_PROP SUB-SLAB (3).DWG

APPENDIX A

REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

August 3, 2010

Mr. John Nady
Nady Systems
11 Glen Alpine Road
Piedmont, CA 94611

Subject: Work Plan Denial for Fuel Leak Case No. RO0000082 and Geotracker Global ID T0600138389, Nady System Inc., 1137 65th St., Oakland, CA 94608

Dear Mr. Nady:

Thank you for the recently submitted documents entitled*, Additional Site Characterization Report* dated February 25, 2010 and *Sub-Slab Vapor Probe Installation and Additional Site Assessment Workplan*, dated May 14, 2010, which were prepared by Conestoga-Rovers & Associates for the subject site. Alameda County Environmental Health (ACEH) staff has reviewed the case file including the above-mentioned report and work plan for the above-referenced site.

The above-mentioned work plan does not include utility/conduit locations or the rationale for locating sub-slab vapor sampling points in the street rather than within the day care center and adjacent buildings where the risk is unevaluated. The scope of work presented in the work plan has not been adequately justified and cannot be approved at this time. ACEH requests that you address the following technical comments and send us a work plan addendum plan as requested below.

TECHNICAL COMMENTS

1. **Sub-Slab Vapor Sampling Locations –** CRA proposed installing one on-site sub-slab vapor point inside the building immediately adjacent to a floor drain. However, utility conduits are not depicted on the map. Since there is a potential for contaminant vapor migration along preferential pathways (i.e. existing utility corridors) that are present at the site and in the street, we request that the locations of all conduits be depicted on the map and the soil vapor sampling points located accordingly. Please submit a conduit study with the work plan addendum by the due date requested below.

   CRA proposed off-site sub-slab soil vapor samples adjacent to buildings including a daycare. There was no discussion of the daycare building's construction presented in the

work plan (i.e. if the building is slab-on-grade or if a crawl space is present) and no explanation of why sub-slab samples are proposed adjacent to the buildings in what appears to be the street rather than in the buildings themselves to assess the vapor pathway. Once again, the conduits should be fully investigated and plotted on the map to ensure that sampling points are located appropriately.

2. **Sub-Slab Vapor Sampling Procedures –** The work plan states that workers will wait 30 minutes for the cement to cure and for equilibration of subsurface conditions. EPA's *Standard Operating Procedure for Installation of Sub-Slab Vapor Probes and Sampling Using EPA Method TO-15 to Support Vapor Intrusion Investigations* recommends allowing at least 24 hours before sampling. Please adjust your sampling in accordance with the EPA's recommendation.

3. **Site Conceptual Model –** A request for general mineral, BOD, COD, TDS, isotopes, etc. was made at the April 22, 2008 meeting. These analyses were performed in September 2009. The data obtained from these analyses was to be incorporated into a site conceptual model. This has not been submitted. At this juncture, it is appropriate to develop a site conceptual model (SCM), which synthesizes all the analytical data and evaluates all potential exposure pathways and potential receptors that may exist at the site, including identifying or developing site cleanup objectives and goals. At a minimum, the SCM should include the following, (many of which you have already completed separately):
    - Local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.) extent of contamination, direction and rate of groundwater flow, potential preferential pathways, and locations of receptors;
    - Geologic cross section maps that illustrate subsurface features, man-made conduits, and lateral and vertical extent of contamination;
    - Plots of chemical concentrations versus time;
    - Plots of chemical concentrations versus distance from the source;
    - Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor); and
    - Well logs, boring logs, and well survey maps;
    - Discussion of likely contaminant fate and transport.

    Please submit the SCM by the due date requested below.

4. **Perjury Statement –** All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company not by the consultant. Please ensure that all future reports and technical documents submitted for this fuel leak case are signed by Mr. Nady not the consultant.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- **September 30, 2010** – Work Plan Addendum with conduit study
- **Sixty Days After Soil Vapor Sampling** – SCM

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara J. Jakub

Digitally signed by Barbara J. Jakub
DN: cn=Barbara J. Jakub, o, ou, email=barbara.jakub@acgov.org, c=US
Date: 2010.08.03 16:58:02 -07'00'

Barbara J. Jakub, P. G.
Hazardous Materials Specialist

Enclosure: Responsible Party(ies) Legal Requirements/Obligations
ACEH Electronic Report Upload (ftp) Instructions

cc: Bob Foss, Conestoga-Rovers & Associates, 5900 Hollis St, Suite A, Emeryville, CA (via e-mail: bfoss@craworld.com)
Frederick Shrag, 6701 Shellmound Street, Emeryville, CA 94608 (via e-mail: schrag@nady.com)
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (*Sent via E-mail to: lgriffin@oaklandnet.com*)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Barbara Jakub, ACEH (*Sent via E-mail to: paresh.khatri@acgov.org*)
GeoTracker, File

Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** July 20, 2010
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

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

REQUIREMENTS

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

Submission Instructions

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

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

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

REVISED PAGE 8 AND TABLE 1 FOR ORIGINAL WORKPLAN DOCUMENT

Appendix A. In addition to installation and sampling of sub-slab vapor probes, CRA proposes to advance two soil borings along Ocean Avenue in another attempt to collect A-zone groundwater samples, and to determine the extent of dissolved hydrocarbon and VOC plumes in all three water-bearing zones. These proposed soil boring locations are also shown on Figure 3. A detailed description of proposed activities is discussed below.

6.1 SUBSLAB SOIL VAPOR INVESTIGATION

To evaluate the potential for vapor intrusion into buildings present on the site, CRA recommends the installation of sub-slab vapor probes and collection of sub-slab vapor samples from nine locations within the on-site buildings. CRA also recommends installation and sampling of four sub-slab vapor probes along Peabody Lane due to results of previously acquired vapor samples collected from depths of 4 to 5 fbg, 3 to 4.3 fbg and 3 to 4.5 fbg. Analytic results of subsurface soil vapor samples collected previously at approximately 5 fbg are included in Table 1. Soil vapor samples will be analyzed for TPHss, TPHg, BTEX, PCE, TCE, 1,2-DCE and VC. Prior to sampling, the probes will be allowed at least 30 minutes for curing of cement and equilibration of subsurface conditions, per DTSC/Cal - EPA guidelines. CRA will collect samples in 1-liter summa canisters. Samples will be collected after pre-sampling preparations are complete.

The following Table 6-1 presents soil vapor analysis, sampling containers, preservation, detection limit, and holding time.

TABLE 6-1
SOIL GAS ANALYSIS, SAMPLING CONTAINERS, PRESERVATIVES, DETECTION LIMITS, AND HOLDING TIMES

Analysis and Method	*Sampling Containers*	*Preservatives*	*Detection Limit ($\mu g/m^3$)*	*Holding Times*
TPHss and TPHg (Method TO-17)	Summa Canister	None	300, 100	30 days
Benzene, Ethylbenzene, Toluene, Xylenes (Method TO-15)	Summa Canister	None	2, 2, 2, 2	30 days
PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, VC (Method TO-15)	Summa Canister	None	varies	30 days
Oxygen, Methane, Carbon Dioxide (Method ASTM-D1946).	Summa Canister	None	0.22%, 0.000022%, 0.022%	30 days

TABLE 1

SOIL VAPOR ANALYTICAL DATA
JOHN NADY
1137-1167 65TH STREET
OAKLAND, CALIFORNIA

Sample ID	*Date Sampled*	*Sample Interval (fbg)*	*PCE (ug/m^3)*	*TCE (ug/m^3)*	*TPHss (ug/m^3)*	*TPHg (ug/m^3)*	*Benzene (ug/m^3)*	*Toluene (ug/m^3)*	*Ethylbenzene (ug/m^3)*	*m,p-Xylene (ug/m^3)*	*o-Xylene (ug/m^3)*	*cis-1,2-DCE (ug/m3)*	*trans-1,2-DCE (ug/m3)*	*Vinyl Chloride (ug/m3)*	*Oxygen (%)*	*Methane (%)*	*Carbon Dioxide (%)*	*Helium (%)*
VW-1	9/17/2009	4-5	<8,100	<6,400	>730,000	14,000,000	<3,800	<4,500	<5,200	<5,200	<5,200	<4,700	<4,700	<3,000	1.3	0.39	16	<0.12
	12/9/2009	**4-5**	**<970**	**<770**	**>1,900,000**	**6,500,000**	**<460**	**<540**	**<620**	**<620**	**<620**	**<570**	**<570**	**<360**	**1.3**	**0.1**	**15**	**<0.022**
VW-2	9/17/2009	4-5	620	<84	650,000	460,000	<50	<58	<68	<68	<68	<62	<62	<40	11	0.089	8.8	<0.12
	12/9/2009	**4-5**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
VW-3	9/17/2009	4-5	<8,100	<6,400	>1,100,000	12,000,000	<3,800	<4,500	<5,200	<5,200	<5,200	<4,700	<4,700	<3,000	1.2	3.2	17	<0.12
	12/9/2009	**4-5**	**<170**	**<140**	**--**	**6,500,000**	**<81**	**<95**	**<110**	**<110**	**110**	**<100**	**<100**	**<65**	**1.4**	**2.1**	**15**	**<0.13**
VW-4	9/17/2009	4-5	170	<6.5	11,000	3,300	<3.9	<4.6	<5.2	<5.2	<5.2	<4.8	<4.8	<3.1	16	0.0015	5.2	<0.12
	12/9/2009	**4-5**	**100**	**<6.0**	**--**	**1,100**	**<3.6**	**<4.2**	**<4.9**	**<4.9**	**<4.9**	**<4.4**	**<4.4**	**<2.9**	**16**	**<0.00022**	**4.9**	**<0.11**
VW-5	9/17/2009	3-4.5	<2,800	<2,200	>1,100,000	12,000,000	<1,300	<1,600	<1,800	<1,800	<1,800	<1,600	<1,600	<1,000	1.3	10	11	<0.12
	12/9/2009	**3-4.5**	**<750**	**<590**	**>1,200,000**	**7,400,000**	**<350**	**<410**	**<480**	**<480**	**<480**	**<440**	**<440**	**<280**	**1.2**	**8.3**	**8**	**<0.11**
VW-6	9/17/2009	3-4.5	<8.6	<6.8	9,300	51,000	<4.0	<4.8	<5.5	<5.5	<5.5	<5.0	<5.0	<3.2	4.6	0.013	17	<0.13
	12/9/2009	**3-4.5**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
VW-7	9/17/2009	3-4.3	13	<6.8	<3,300	940	<4.0	<4.8	<5.5	<5.5	<5.5	<5.0	<5.0	<3.2	3.8	<0.00025	13	<0.13
	12/9/2009	**3-4.3**	**<7.6**	**<6.0**	**--**	**1,800**	**<3.6**	**<4.2**	**<4.9**	**<4.9**	**<4.9**	**<4.4**	**<4.4**	**<2.9**	**1.3**	**2.1**	**10**	**<0.11**
VW-8	9/17/2009	4-5	<81	<64	21,000	100,000	<38	<45	<52	<52	<52	64	<47	1,600	1.2	1.5	17	<0.12
	12/9/2009	**4-5**	**<16**	**<12**	**--**	**38,000**	**<7.4**	**<8.8**	**<10**	**<10**	**<10**	**46**	**<9.2**	**1,300**	**1.4**	**0.79**	**11**	**<0.12**
VW-9	9/17/2009	4-5	<76	<60	73,000	520,000	<36	54	<49	51	<49	<44	<44	<29	2.5	9.5	7.5	<0.11
	12/9/2009	**4-5**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Duplicate Samples																		
VW-4-Dup (lab)	9/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	16	0.0015	5.2	<0.12
VW-7-Dup (field)	9/17/2009	3-4.3	12	<6.8	<3,300	940	<4.0	<4.8	<5.5	<5.5	<5.5	<5.0	<5.0	<3.2	4.0	<0.00025	13	<0.13
VW-8-Dup (lab)	9/17/2009	--	<160	<130	--	110,000	<76	<90	<100	<100	<100	<94	<94	1,800	--	--	--	--
VW-9-Dup (lab)	9/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	9.6	7.5	<0.11

Abbreviations and Analyses:

<n = Not dectected (ND) above laboratory detection limit, n.
>n = Compound present at concentrations exceeding instrument calibration range, n.
ug/m^3 = Microgram per cubic meter.
% = Percent
-- = Not Analyzed, Not Avaliable
ft = Measured in feet
TPHss by EPA Method TO-17
TPHg by EPA Method TO-15 GC/MS
Benzene, Toluene, Ethylbenzene, m,p&o-Xylenes and five HVOCs by modified EPA Method TO-15 GC/MS
Oxygen, Methane, Carbon Dioxide, Helium by ASTM D-1946

APPENDIX C

STANDARD FIELD PROCEDURES

Draft

Standard Operating Procedure (SOP) for Installation of Sub-Slab Vapor Probes and Sampling Using EPA Method TO-15 to Support Vapor Intrusion Investigations

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Background

Vapor intrusion is defined as vapor phase migration of volatile organic and/or inorganic compounds into occupied buildings from underlying contaminated ground water and/or soil. Until recently, this transport pathway was not routinely considered in RCRA, CERCLA, or UST investigations. Therefore the number of buildings or homes where vapor intrusion has occurred or is occurring is undefined. However, considering the vast number of current and former industrial, commercial, and waste processing facilities in the United States capable of causing volatile organic or inorganic ground-water or soil contamination, contaminant exposure via vapor intrusion could pose a significant risk to the public. Also, consideration of this transport pathway may necessitate review of remedial decisions at RCRA and CERCLA sites as well as implementation of risk-reduction technologies at Brownsfield sites where future development and subsequent potential exposure may occur. EPA's Office of Solid Waste and Emergency Response (OSWER) recently (2002) developed guidance to facilitate assessment of vapor intrusion at sites regulated by RCRA and CERCLA where halogenated organic compounds constitute the bulk of risk to human health. EPA's Office of Underground Storage Tanks (OUST) is considering modifying this guidance to include underground storage tank sites where petroleum compounds primarily determine risk and biodegradation in subsurface media may be a dominant fate process.

The OSWER guidance recommends indoor air and sub-slab gas sampling in potentially affected buildings at sites containing elevated levels of soil-gas and ground-water contamination. To support the guidance and improve site-characterization and data interpretation methods to assess vapor intrusion, EPA's Office or Research and Development is developing a protocol for sub-slab gas sampling. When used in conjunction with indoor air, outdoor air, and soil gas and/or ground-water sampling, sub-slab gas sampling can be used to differentiate indoor and outdoor sources of volatile organic and/or inorganic compounds from compounds emanating from contaminated subsurface media. This information can then be used to assess the need for sub-slab depressurization or other risk-reduction technologies to reduce present or potential future indoor air contamination due to vapor intrusion.

Sub-Slab Vapor Probe Construction and Installation

1. Prior to drilling holes in a foundation or slab, contact local utility companies to identify and mark utilities coming into the building from the outside (e.g., gas, water, sewer, refrigerant, and electrical lines). Consult with a local electrician and plumber to identify the location of utilities inside the building.

2. Prior to fabrication of sub-slab vapor probes, drill a pilot hole to assess the thickness of a slab. As illustrated in **Figure 1**, use a rotary hammer drill to create a "shallow" (e.g., 2.5 cm or 1 in) "outer" hole (e.g., 2.2 cm or 7/8 in diameter) that partially penetrates the slab. Use a small portable vacuum cleaner to remove cuttings from the hole if penetration has not occurred. Removal of cuttings in this manner in a competent slab will not compromise sampling because of lack of pneumatic communication between sub-slab material and the source of vacuum.

3. Then use the rotary hammer drill to create a smaller diameter "inner" hole (e.g., 0.8 cm or 5/16 in) through the remainder of the slab and some depth (e.g., 7 to 8 cm or 3 in) into sub-slab material. **Figure 2** illustrates the appearance of "inner" and "outer" holes. Drilling into sub-slab material will create an open cavity which will prevent obstruction of

probes during sampling by small pieces of gravel.

4. The basic design of a sub-slab vapor probe is illustrated in **Figure 3**. Once the thickness of the slab is known, tubing should be cut to ensure that probes "float" in the slab to avoid obstruction of the probe with sub-slab material. Construct sub-slab vapor probes from small diameter (e.g., 0.64 cm or 1/4 in OD x 0.46 cm or 0.18 in ID) chromatography grade 316 stainless steel tubing and stainless-steel compression to thread fittings (e.g., 0.64 cm or 1/4 in OD x 0.32 cm or 1/8 in NPT Swagelok female thread connectors) as illustrated in **Figure 4**. Use of stainless-steel materials to ensure that construction materials are not a source of VOCs.

5. Set sub-slab vapor probes in holes. As illustrated in **Figure 5**, the top of the probes should be completed flush with the slab and have recessed stainless steel or brass plugs so as not interfere with day-to-day use of buildings. Mix a quick-drying portland cement which expands upon drying (to ensure a tight seal) with water to form a slurry and inject or push into the annular space between the probe and outside of the "outer" hole. Allow cement to cure for at least 24 hours prior to sampling.

6. Install at least 3 sub-slab vapor probes in each residence. As illustrated in **Figure 6**, create a schematic identifying the location of each sub-slab probe.

Sub-Slab Sampling

1. Connect dedicated a stainless-steel fitting and tubing (e.g., 1/8 in NPT to 1/4 in tube Swagelok fitting and 30 cm or 1 ft of 1/4 in I.D. Teflon tubing to a sub-slab vapor probe as illustrated in **Figure 7**. Use of dedicated fitting and tubing will avoid cross-contamination issues.

2. Connect the Teflon tubing to 1/4" ID Masterflex (e.g., 1.4 in ID high performance Tygon LFL) tubing and a peristaltic pump and 1-L Tedlar bag as illustrated in **Figure 8**. Use of a peristaltic pump will ensure that sampled air does not circulate through a pump causing potential cross contamination and leakage.

3. Purge vapor probe by filling two dedicated 1-L Tedlar bags. The internal volume of sub-slab probes is insignificant (< 5 cm^3). A purge volume of 2 L was chosen based on the assumption of a 0.64 cm (1/4") air space beneath a slab and an affected sample diameter of 0.61 m (2 ft).

4. Use a portable landfill gas meter to analyze for O_2, CO_2 and CH_4 in Tedlar bags as illustrated in **Figure 9**.

5. Collect sub-slab vapor samples in evacuated 10% or 100% certified 1-L Summa polished canisters and dedicated particulate filters as illustrated in **Figure 10**. Check vacuum in canisters prior to sampling. Sampling will cease when canister pressure reaches atmospheric pressure. Submit canisters to a commercial laboratory for analysis by EPA Method TO-15.

6. Collect at least one duplicate sub-slab sample per building using dedicated stainless-steel tubing as illustrated in **Figure 11**.

Figure 1. Drilling through a slab

Figure 2. "inner and "outer

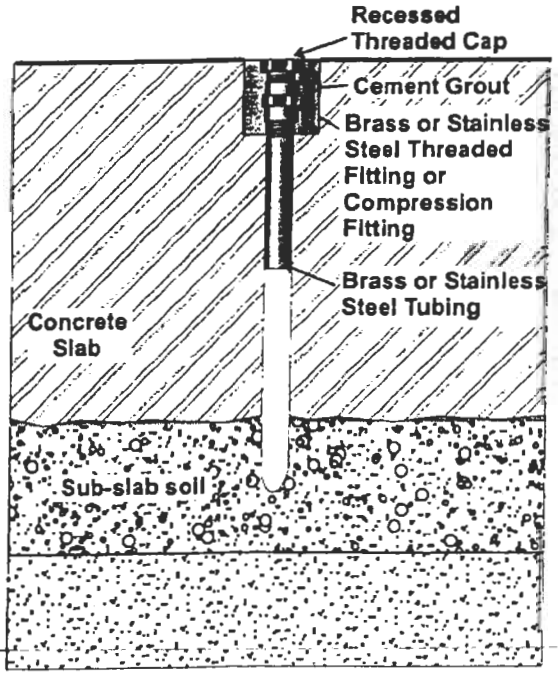

Figure 3. General schematic of sub-slab vapor probe

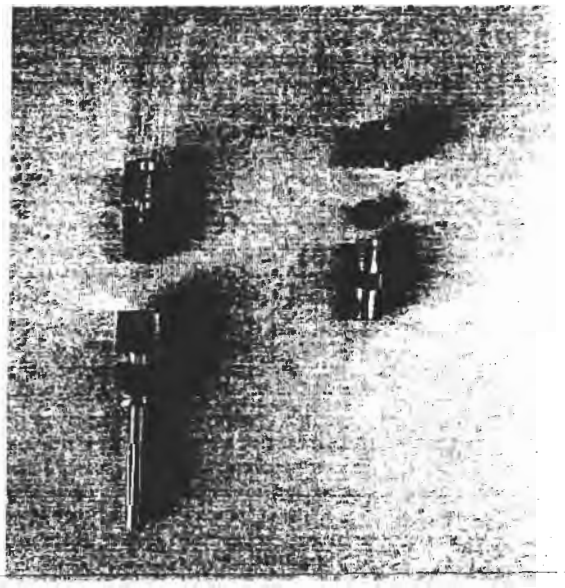

Figure 4. Stainless steel sub-slab vapor probe components

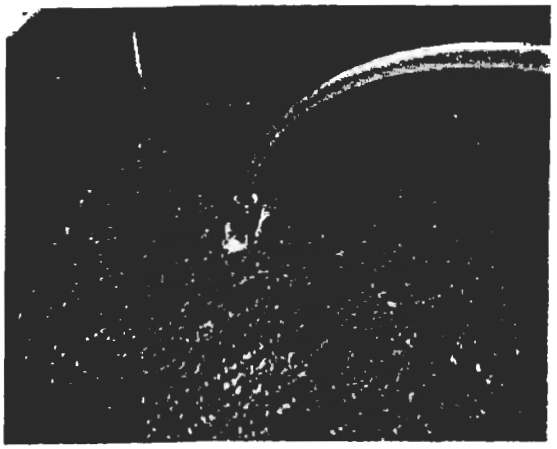

Figure 7. Compression fitting to probe

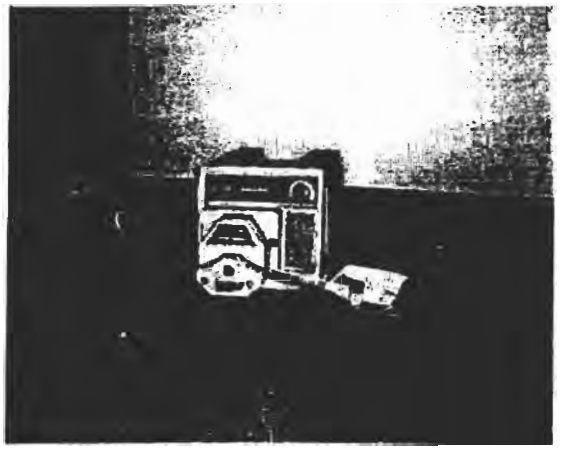

Figure 8. Purge prior to sampling

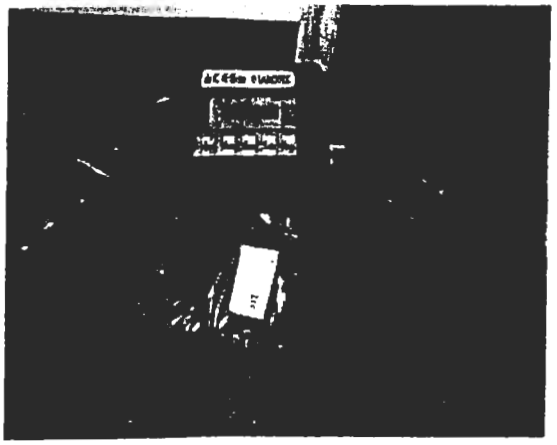

Figure 9. Analysis of O2, CO2, and CH4

Figure 10. Sampling in 1-L evacuated canister for TO-15 analysis

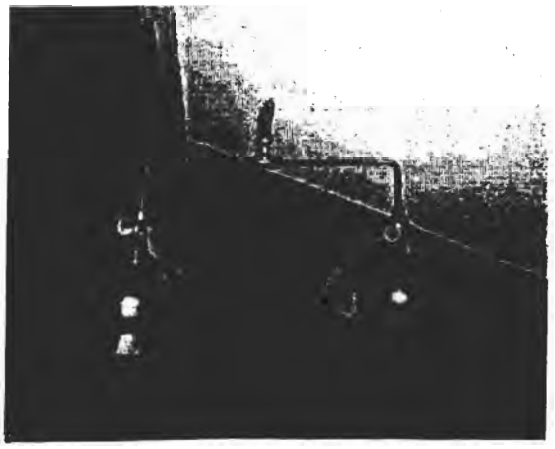

Figure 11. Collection of duplicate sample

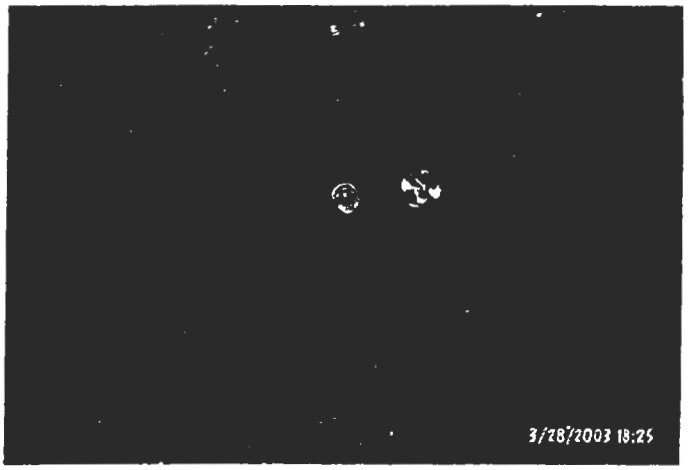

Figure 5. Competed vapor probe installation

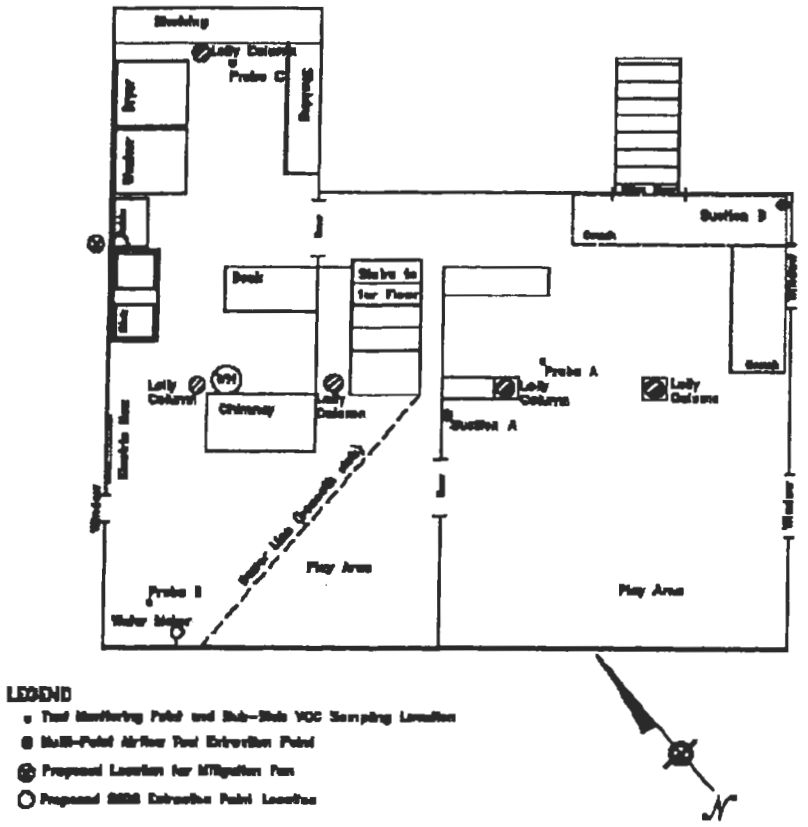

Figure 6. Schematic illustration location of vapor probes in a basement

APPENDIX D

UNDERGROUND CONDUIT SURVEY REPORT AND SURVEY METHODOLOGY

UNDERGROUND CONDUIT SURVEY REPORT

California Utility Surveys (**CUS**) performed an underground geophysical survey for **Conestoga-Rovers & Associates** (CRA) at the property address of 1137–1167 65th Street, Oakland, California. This survey was completed on September 9, 2010, witnessed by CRA staff scientist Calvin Hee.

Prior to the initiation of field activities, CUS and Calvin Hee conducted a discussion of the current site layout, followed by a site-walk. Upon completion of pre-field activities, **CUS** conducted its location and designation survey of the entire property, per the attached methodology data sheet.

The survey consisted of a visual inspection, followed by a passive signal sweep, then by an inductive sweep. To complete this portion of the survey, an electronic transmitter probe was projected through both storm and sanitary sewer pipelines from access points such as cleanouts and open drains.

Through visual, radio frequency induction and electromagnetic sweeps, a structure was located at the eastern end of the building situated near the middle of the property. Subsurface piping and what appear to be former piping stub-ups were identified and marked.

All identified utilities/conduits were marked on the site surface with spray paint

Findings of the utility survey and conduit search indicated that the majority of the utilities are connected to and distributed throughout the property aboveground. The utility survey also found that stormwater drainage at several areas of the property is connected and discharges to sanitary sewer system. This is called a combined system, and is commonly found in Oakland and San Francisco.

Representatives of CRA attempted to identify the nature and trace of the floor drain located in 1167 65th Street. The floor drain and an adjacent additional opening, which appeared to be a cleanout, were filled and plugged with a mixture of dirt, debris, leaves and miscellaneous waste. They attempted to clear the floor drain and adjacent opening with digging and vacuum equipment. Attempts to clear the drain and opening were unsuccessful beyond a depth of approximately 8-10" below ground surface.

After the completion of onsite utility conduit survey activities, CRA and **CUS** mobilized to Peabody Lane to conduct a search of utilities and conduits. No subsurface utilities or conduits were located beneath Peabody Lane.

The senior utility surveyor onsite for **CUS** was Kevin Dobson.

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UNDERGROUND UTILITY DESIGNATION METHODOLOGY
IN COMPLIANCE WITH CI/ASCE – 38-02

To complete an underground utility survey, several search techniques are utilized.

We begin with a ***visual survey*** of the dedicated site area to record surface features such as valve covers, manhole lids, catch basins, pull boxes, cable risers and pavement reinstatements. This may require our technicians to extend their survey to areas outside the proposed site. This allows us to plan what is coming into and leaving the site and also prepares for the next stage.

Electronic instrumentation is then used to implement the designation survey.

A ***passive sweep*** of the site is made with the receiver tuned to inherent frequencies of known sources, the most common of which is the 60 Hertz hum from a live electrical cable. This same signal response can be transmitted from any conductive utility that may be crossing or adjacent to electrical cables. Therefore, it cannot be taken for granted that all responses are electrical systems. A mark is made on the site surface at each point the signal is received to indicate the presence of a utility that requires positive identification.

A ***conductive search*** is then made using uses both the visual and passive sweep information by connecting a transmitter at a specific frequency to the utility and tracing it along its alignment with a matched receiver. Both the horizontal alignment and depth estimation can be achieved, though it should be noted that the electronic depth estimation is, at best, accurate to within 10%. The position is marked on the site surface for later data collection.

Eventually, a network of sub surface utilities, start to appear as the dots (so to speak) are connected.

For the signals that are still unidentified during this phase, an ***inductive sweep*** of the site is made by placing a transmitter on the surface above one of the markings and following its alignment to its termination, again, possibly beyond the site boundaries. These utilities are usually transmission mains or fuel lines.

We now have a much clearer picture of what conductive utilities, metal pipes, conduits and cables exist below ground. For non conductive entities such as Transite (A.C.) and PVC water lines, these are located ***acoustically***, by inducing a sonic wave through the water column and pinpointing the position with a specially tuned transducer or microphone (Geophone). Only the horizontal position can be determined by this method. For designation of Sanitary Sewers and Storm Drain systems a self contained radio probe or sonde is propelled by a fiberglass rod through the pipeline. Its position and depth are marked accordingly. Manhole covers and catch basin grates are lifted and pipe sizes, materials and the depth to invert are recorded.

This completes the "**DESIGNATION SURVEY.**" The recording of site information can be accomplished in several ways. This may consist of site paint mark ups for data collection by others, site sketches, scale drawings using station and offset measurements or instrument data collection, using an EDM with coordinates tied to existing control. An AutoCAD site plan, showing all utility locations can then be produced.

One can imagine that after such an intense site survey that the final results will show the designer an accurate picture of what is actually within the right of way. To have this quality of data at the very beginning of your design stage is invaluable. Clear corridors can be seen for easier planning, saving time and money, and conflicts can be more readily identified.

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TECHNICAL DATA SHEET: TDS 04.

TYPICAL SURVEY FOR USTs AND BURIED DRUMS.

STAGE 1.

- A visual survey is carried out to search for physical evidence of any buried structure, for example cracks, bulges or dips in the site surface, fill ports or vent pipes.

STAGE 2.

- The site is swept in a uniform matrix pattern, the dimensions of which are determined by the client, with instrumentation to locate metal anomalies indicating possible tanks.
- The first instrument used is a closed loop antenna instrument. This devise responds to both ferrous and non-ferrous metal objects to a depth of 20 inches, dependent upon their size and mass.
- The second instrument is an Electromagnetic Induction unit. This devise operates using both a transmitter and receiver connected together on a common support bar, and is capable of detecting a reflected signal from any metal mass to a depth of 8 feet. This again this is dependent upon size and mass of the object.
- The next survey is completed using a magnetometer. This instrument locates the vertical interface of a magnetic field of any buried ferrous object to a depth of 4 feet.
- Finally, any feature accessible on the surface, for example a vent line, is energized using a transmitter emitting a specific frequency. This frequency or signal is traced from the surface across the site.

ALL DETECTED SIGNALS ARE MARKED ON THE SITE SURFACE AND REPORTED FOR FURTHER INVESTIGATION.

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