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PROJECT NO: 211346



SITE INVESTIGATION WORKPLAN II

FORMER BELL CLEANERS

1534 Park Street

Alameda, California



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**SITE INVESTIGATION WORK PLAN II
FORMER BELL CLEANERS**

1534 Park Street
Alameda, California

1.0 INTRODUCTION

This Site Investigation Work Plan II for the Former Bell Cleaners was prepared by Bonkowski & Associates, Inc. (BAI) on behalf of the Von Wittenau Family Trust. The Former Bell Cleaners (Site) collectively includes businesses located between 1532 to 1540 Park Street, in Alameda, California. The former Luque's upholstery shop was located at 1540 Park Street. This suite is now occupied by My Angel Nails salon. The Genghis Kahn Kitchen is located at 1532 Park Street. The former Bell Cleaners, 1534 Park Street, is unoccupied. A Plan map of the Site is provided as Figure 1. Previous investigations of the Site (AEI, August 23, 2011; BAI, January 7, 2014) identified low concentrations of PCE and TCE in indoor air, and PCE in subsurface soil, sub-slab vapor and groundwater. This workplan is submitted to the Alameda County Department of Environmental Health (County) in response to a draft email directive dated September 19, 2017. The work prescribed herein is based upon the results of analyses previously submitted, including the *Phase II Subsurface Investigation Report* (AEI, August 2011); *Preferential Pathway Survey* (BAI, July 2012); *Conceptual Site Model* (BAI, February 2013); *Sub-slab Vapor Sampling Report* (BAI, January 2014); *Indoor Air Sampling Report* (BAI, April 2014); *Supplemental Indoor Air Sampling Letter Report* (BAI, May 2014), and partial completion of the tasks prescribed in the *Supplemental Soil Gas and Indoor Air Sampling Workplan* dated September 8, 2014. This workplan combines tasks yet to be performed in the *Soil and Groundwater Investigation Workplan* dated May 20, 2012 (also see addendum dated August 20, 2012), with remaining tasks to be performed from the *Supplemental Soil Gas and Indoor Air Sampling Workplan* dated September 8, 2014.

1.1 Technical Approach and Objectives

The technical approach has been developed following guidance provided in ASTM Method D6234-04 (2010), *Standard Practices for Expedited Site Characterization of Vadose Zone and Groundwater Contamination at Hazardous Waste Contaminated Sites*. The object of this phase of work is to assess contaminant migratory pathways, plume sub-areal distribution, and to enable the evaluation of appropriate corrective actions without compromising soil and groundwater quality. The approach also considers numerous communications with County and California Department of Toxics Substances Control (DTSC) staff, and the potential for DNAPL beneath the former dry-cleaning equipment.

The technical approach also considers guidance prescribed in US EPA *Quick Reference for Superfund Sites* (Newell and Ross, 1992). Soil, groundwater and soil vapor samples will be collected around and downgradient of the building, which are assumed to be DNAPL free, to help form a reliable conceptual model of the site hydrogeology, stratigraphy and potential migratory pathways. This approach is critical, because it characterizes the dissolved phase plume without the risk of drilling through finer grained lithologies which can create a pathway for migration of DNAPL. Additional indoor air and sub-slab samples collected from the Genghis Kahn Kitchen and Former Luque's Upholstery Shop will be used to evaluate the risk of exposures to dry cleaning solvents to individuals currently working at the Site. Additional ambient air samples will be collected from outside the building to identify current background air quality. The data collected from this investigation will be used to evaluate risk-based corrective action strategies, which may include removal and/or containment and monitoring of soil, groundwater and soil vapor phase contaminants. The workplan has been prepared assuming that the former dry-cleaners suite will remain unoccupied through the implementation of corrective actions.

1.2 Site History

On August 4, 2011, AEI on behalf of the Bank of East Asia, advanced a total of four (4) GeoProbe borings (SB-1 through SB-4) in the former Bell Cleaners suite located at 1534 Park Street to collect soil and groundwater samples for chemical testing (Figure 1). The borings were advanced to a total depth of 16 feet and were continuously cored using a GeoProbe MacroCore® sampler. Soils encountered beneath the Site consisted of fine to medium grained poorly graded sand and sandy silts. Groundwater was encountered at depths ranging from 11.79 to 13.15 feet. Soil and grab groundwater samples collected from the borings were tested for VOCs using EPA Method 8260 by McCampbell Analytical in Pittsburg, California. Tetrachloroethene (PCE) was reported in soil samples collected from SB-1 through SB-4 at concentrations of 0.10 mg/kg, 5.5 mg/kg, 0.23 mg/kg and 0.50 mg/kg, respectively (Table 1). 1,2,4-Tri-methylbenzene was reported at a concentration of 0.023 mg/kg in SB-3, but was ND in all remaining samples. No other VOCs were reported.

Grab groundwater samples from these borings contained from 8.2 µg/l to 16 µg/l PCE (Table 2). Tert-Butyl Alcohol (TBA) was also identified in groundwater samples collected from beneath this suite. The concentration ranged from 2.2 µg/l to 10 µg/l. No other VOCs were reported. The area is zoned community commercial, and shallow groundwater beneath the Site is not a current or anticipated future domestic supply source (ARCADIS, 2011).

BAI conducted a preferential pathway survey of the site and immediately surrounding area shown on Figure 2. The results of this work are summarized in the *Preferential Pathway Survey* report dated July 2012. The report provides a site map showing the locations the former dry-cleaning equipment; water wells, and water, sewer and electric lines near the Site.

BAI prepared the *Conceptual Site Model Report* in February 2013. The CSM discussed background conditions, general hydrogeology, nearby groundwater flow directions, constituents of concern in soil, constituents of concern in groundwater, surface water quality, indoor air quality, beneficial uses of groundwater, source characterization, migratory pathways, and identified sensitive receptors. The report included recommendations for future investigations.

In November 2013, following a County directive dated August 23, 2013, BAI conducted a sub-slab vapor survey of the former Bell Cleaners suite. A total of six sub-slab samples were collected in close proximity to locations approved by the County. The samples were tested for PCE, its degradation products, TBA and 1,2,4-trimethylbenzene. All of the sub-slab vapor samples contained PCE, at concentrations ranging from 18,000 to 320,000 µg/m³ (Table 3). No other VOCs were reported. BAI conducted a preliminary screening and a risk assessment following DTSC guidance (DTSC, 2009 and 2011), and the DTSC *Indoor Air Guidance, Unclassified Soil Screening Model*, EPA Version 2.0 (Revised 2009). The calculated indoor air concentrations of PCE ranged from 18 to 320 µg/m³ for current use, and from 9 to 160 µg/m³ for future use. These calculations used attenuation factors of 0.001 (current use) and 0.0005 (future use). These concentrations exceed the Ambient and Indoor Air Screening Level of 2.1 µg/m³ and the Indoor Air Human Health Screen Level of 0.693 µg/m³. The calculated incremental cancer risk and hazard quotient for the highest concentrations reported at this Site are 1.9 x 10⁻³ and 21, respectively. The input parameters and analysis are included in Appendix B of the *Sub-Slab Vapor Sampling Report* (BAI, January 2014).

In January 2014, BAI collected indoor and ambient air samples for chemical testing following the County email directive dated January 9, 2014. Air samples were collected from within all three suites, the emergency egress hallway between 1534 and 1540 Park Street, and at two locations on the roof of the building (Figure 1). The sample containers were regulated to collect a 6-liter sample over an 8-hour period between the times of 1100 and 1900 hours. These are normal working hours for businesses located on the



Site. All of the air samples contained PCE and TCE, including samples collected on the roof. The concentration of PCE ranged from 0.15 to 19 $\mu\text{g}/\text{m}^3$ (Table 4). The concentration of TCE ranged from 0.20 to 640 $\mu\text{g}/\text{m}^3$. The lowest concentrations were measured from samples collected from the roof, the highest concentrations were measured from samples collected within Luque's Upholstery Shop (1532 Park Street). The calculated estimated indoor air values exceeded the actual measured concentrations.

Confirmation indoor air samples were collected from the Luque's Upholstery Shop on 25 and 26 April 2014. One 8-hour sample was collected on April 25th, a normal business day, between the hours of 0800 and 1600. A subsequent 24-hour sample was collected after business hours, beginning at 1523 hours on April 25th. The business was closed during this 24-hour sample collection period. The 8-hour air sample contained 17 $\mu\text{g}/\text{m}^3$ of PCE and 41 $\mu\text{g}/\text{m}^3$ of TCE. The 24-hour sample contained 11 $\mu\text{g}/\text{m}^3$ of PCE and 19 $\mu\text{g}/\text{m}^3$ of TCE. These results suggest that the upholstery business practice itself maybe a source of TCE in indoor air. No subsurface samples collected from beneath the former dry cleaners contained TCE.

BAI performed an indoor air risk assessment incorporating updated DTSC (HHRA Note 3, July 2014) IUR's and the US EPA Regional Screening Level (RSL) RfCs, while conducting a sensitivity analysis. These analyses were performed on all indoor air chemical test data collected from the Site in 2014. They are summarized in Table 5. These replace an earlier risk assessment dated January 2014, which was based upon an earlier version of the DTSC and EPA Guidance cited above.

On June 12, 2017 an indoor air sample (A-9) was collected over an 8-hour period in the former Bell Cleaners Suite. The sample contained only 13 $\mu\text{g}/\text{m}^3$ of PCE. On June 13, 2014 three sub-slab samples (SV-7, SV-8 and SV-9) were collected in the suite along the northwest wall (Figure 1). The highest concentration was reported in sample (SV-9), collected closest to the footing of the former dry-cleaning equipment. The concentrations of PCE ranged from 8,200 to 130,000 $\mu\text{g}/\text{m}^3$. The concentration of PCE in SV-9 was less than the concentrations of PCE measured in SV-5A and SV-5B in 2013. These latter two sample locations are also near the footprint of the former dry-cleaning equipment.

1.3 Organization of the Work Plan

This work plan prescribes an investigation to further evaluate the nature of indoor air, sub-slab vapor, soil and groundwater concentrations of PCE and related compounds beneath the Site. The workplan is organized as follows: Introduction (Section 1.0), Field Methods (Section 2.0), Data Analysis and Reporting (Section 3.0), Schedule (Section 4.0), Certifications (Section 5.0), and References (Section 6.0). The work plan does not address the implementation of Corrective Measures, which will be addressed in a subsequent report.

2.0 FIELD METHODS

This section describes the technical rationale and methods that will be used to perform investigations of the Former Bell Cleaners and the adjacent suites, as required by the County. The work will be performed in the order described below, the data evaluated, and if necessary, subsequent tasks will be modified in consideration of chemical test results. The work includes a soil, soil vapor and groundwater investigation (Task 1), indoor air sampling (Task 2), and sub-slab vapor sampling (Task 3). Sub-slab vapor and indoor air samples will be collected from the adjacent suites to further evaluate the risk of worker exposure to VOCs in indoor air. The work elements required to complete these tasks are described below.

Task 1: Soil, Soil Vapor and Groundwater Investigation

The extent of dry cleaning solvents in soil and groundwater beneath the site are not known. Previous borings advanced by AEI (2011) do not provide sufficient data to evaluate groundwater quality. A



preferential pathway survey completed by BAI in 2012 identified sewer lines on Park Street, Webb Avenue and Lincoln Avenue that are potential migratory pathways, and residential structures that may be exposure areas. A sewer lateral, which is a potential preferential pathway, is located within the former Bell Cleaners (Figure 1). Spent dry cleaning equipment filters were stored outside the back of the building. This is considered an additional source area. The preferential direction of groundwater flow direction is believed to be influenced by tidal fluctuation. The groundwater investigation described below considers the ambiguity of groundwater flow direction in this area (Figure 3).

Six (6) GeoProbe borings (GP-1, GP-2, GP-3, GP-4, GP-5, and GP-6) will be advanced at the locations shown on Figure 2 to estimate the lateral distribution of dissolved dry-cleaning solvents. GP-1 will be in front of the Site on Park Street to evaluate groundwater and soil vapor quality adjacent to the lateral that originates from former Bell Cleaners. GP-2 will be placed near the reported waste storage area behind the former Bell Cleaners to evaluate possible releases from spent filters. GP-3, GP-4, GP-5 and GP-6 are located to assess the extent of dissolved solvent contamination. GP-5 and GP-6 are also located in close proximity to residential structures to evaluate the potential for soil gas intrusion into indoor air. Specific sample technical rationale are summarized as follows:

Sample	Technical Rationale	Use of Information
GP-1 and V-1	Evaluate potential releases from sewer lateral which originates within the Former Bell Cleaners suite. Collect soil vapor (V-1) and groundwater samples for chemical testing.	The data from this boring will be used to evaluate the integrity of the sewer lateral, identify immediate potential corrective actions that may apply to this pathway, and prepare subsurface contaminant distribution maps.
GP-2 and V-2	Evaluate potential releases from spent dry cleaning equipment filters held in a waste storage area in the back of the building. Collect soil vapor (V-2) and groundwater samples for chemical testing.	Assess the extent of contamination. If necessary, modify soil vapor sampling program to include soil vapors samples inside the Former Bell Cleaners. Or modify soil vapor and sub-slab vapor sample plans to reduce or eliminate the number of samples in this area.
GP-3	Evaluate groundwater quality near the Site and assess sewer line along Lincoln Avenue as a potential pollution source. Collect water sample for chemical testing.	Assess the extent of contamination.
GP-4	Evaluate groundwater quality near the Site and assess sewer line along Webb Avenue as a potential pollution source. Collect water sample for chemical testing.	Assess the extent of contamination.
GP-5 and V-5	Collect soil vapor and groundwater samples for chemical testing. To identify soil vapor (V-5) and groundwater quality in the areas of a residential structure.	Assess the extent of contamination and the risk of vapor intrusion to residential building.



GP-6 and V-6	Collect soil vapor and groundwater samples for chemical testing. To identify soil vapor (V-6) and groundwater quality in the areas of a residential structure.	Assess the extent of contamination and the risk of vapor intrusion to residential building.
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The GeoProbe borings will be advanced by a state licensed C-57 well driller, to approximate depths of 15 feet, or the top of the shallow-most groundwater, whichever occurs first. The depth to groundwater at the site was previously reported to range from 11.79 to 13.15 feet bgs (AEI, 2011). Soil samples will be collected from all of the borings using a clear acrylic 4-foot long core barrels placed inside the GeoProbe sampler. The soil cores will be continuously logged by a field geologist using the Unified Soils Classification System (USCS) Visual-Manual Procedure ASTM D2488. Depth to groundwater will be measured with a power sounder to 0.01 feet. Organic vapors will be monitored by the field geologist using a photoionization detector with a 10.6 eV lamp.

Grab groundwater samples will be collected from the top of the shallow-most groundwater for chemical testing. Soil samples will be collected from GP-2 at four-foot intervals from the ground surface, to the top of the groundwater for chemical testing. The soil and grab groundwater samples will be tested for PCE, TCE, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride by Modified EPA Method 8260.

A soil gas survey will be conducted to evaluate the potential for vapor intrusion to indoor air pathways. Four (4) samples (V-1, V-2, V-5, and V-6) will be collected at the approximate locations shown in Figure 2. The object of this work will be to evaluate the extent of PCE contamination and risk of vapor intrusion to indoor air. To reduce the effects of barometric pumping, all vapor samples will be collected approximately five (5) feet below the ground surface (bgs). If the target depth cannot be reached, a vapor sample from the closest practical depth will be collected.

Soil gas probes will be advanced using direct push technology. After each probe is advanced to the target depth, the probe will be allowed to set 20 to 30 minutes to allow the vapor and fluid pressures in the ground to equilibrate. At each given soil gas sampling location point, two attempts will be made to obtain gas samples. If the first attempt fails, the sampling probe will be withdrawn and re-driven a few feet away. This field procedure is in accordance with USEPA Method 5035 and DTSC (2011) guidance documents.

A tracer gas will be applied to the soil gas probes at each point of connection in which ambient air could enter the sampling system. These points include the top of the sampling probe where the tubing meets the probe connection and the surface bentonite seals

The soil gas samples will be tested in the field using a mobile GC/MS laboratory using modified EPA Method 8260 for aromatic and volatile hydrocarbons. If a mobile lab is not available, the vapor samples will be collected in Summa™, or equivalent, canisters and transported to a California Certified analytical laboratory. The sample will be analyzed using method TO-15.



Task 2. Indoor Air Sampling

Indoor air samples will be collected to evaluate the risk to workers in the adjacent suites. BAI will collect a total of two indoor air samples from locations A-10 and A-11 and two ambient air samples collect outdoors, A*-12 and A*-13, shown in Figure 1. The indoor air sample locations and intervals were discussed with the DTSC on August 18, 2014. The samples will be collected in individually certified 6-liter Summa™ canisters obtained from McCampbell Analytical laboratory, pre-set for 8-hour sample (p. 29, DTSC, *Final Guidance For The Evaluation And Mitigation Of Subsurface Vapor Intrusion To Indoor Air (Vapor Intrusion Guidance)*, October 2011) collection. Sampling will commence at the beginning of business hours. The sample containers will be sealed at the end of the sampling period, and transported under chain-of-custody to McCampbell Analytical in Pittsburg, California for chemical testing. The samples will be analyzed for PCE, TCE, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride using EPA method TO-15. Specific sample technical rationale are summarized as follows:

Sample	Technical Rationale	Use of Information
A-10	To identify indoor air quality adjacent to sub-slab vapor sample SV-10 in Genghis Kahn Kitchen.	Evaluate health risk for site workers and need for sub-surface remediation.
A-11	To identify indoor air quality near the SV-12 sample in Former Luque’s Upholstery Shop.	Evaluate health risk for site workers and need for sub-surface remediation.
A*-12	To identify ambient air quality adjacent to previous sample A*-6 on the roof above Former Luque’s Upholstery Shop.	Identify ambient air quality.
A*-13	To identify ambient air quality on the roof near the HVAC air handler above Genghis Kahn Kitchen.	Identify ambient air quality.

Task 3. Sub-slab Vapor Sampling

Sub-slab soil vapor samples (SV-10, SV-11 and SV-12) will be collected from the locations shown in Figure 1 one day after the indoor air samples. For example, sample SV-10 will be collected after A-10, SV-11 and SV-12 after A-11. The samples will be collected within fill lithologies through stainless steel Vapor Pin™ probes advanced to a depth of about 2 inches beneath the existing concrete slab at each location. The sample locations were selected on the basis of their proximity to either known or suspected sources of PCE releases, or adjacent to previously collected air samples which contained high concentrations of TCE. Specific sample technical rationale are summarized as follows:



Sample	Technical Rationale	Use of Information
SV-10	To identify sub-slab vapor quality adjacent to indoor air sample A-4 in Genghis Kahn Kitchen. A-4 contained low concentrations of PCE and TCE.	Evaluate the extent of contamination in the subsurface to determine if remediation necessary outboard of the site.
SV-11	To identify sub-slab vapor quality near sample A-3 in Former Luque's Upholstery Shop. Sample contained 640 µg/m ³ of TCE and 19 µg/m ³ PCE	Evaluate the extent of contamination in the subsurface to determine if remediation necessary outboard of the site.
SV-12	To identify sub-slab vapor quality adjacent to indoor air samples A-7 and A-8 in Former Luque's Upholstery Shop. 8-hour sample A-8 contained 41 µg/m ³ TCE and 17 µg/m ³ PCE.	Evaluate the extent of contamination in the subsurface to determine if remediation necessary outboard of the site.

Prior to collecting samples, an electric hammer drill will be used to advance a 1.5-inch diameter hole 2-inches into the concrete floor slab. A 5/8-inch diameter hole will be cut through the center of the 1.5-inch hole. The Vapor Pin™ with an extension and sieve will be hammered into the 5/8-inch diameter hole below the level of the floor with the screen 2 inches into the slab backfill, and sealed with a silicon sleeve. The assembly will be completed with a threaded flush mount stainless steel secured cover. If the floor slab is too thin to allow the installation of the flush mounted secure cover, a sample will be collected, but the sample location will be grouted closed.

Leak and shut-in testing and sampling will be conducted in accordance with the DTSC 2012 Advisory – Active Soil Gas Investigations (March 2013). The Vapor Pin™ assembly will be allowed to equilibrate 2-hours prior to leak testing and sampling. A 15-inch Hg vacuum will then be applied to the sample train to ensure that it can hold a vacuum for 1 to 5 minutes with no more than 0.5 in Hg loss of vacuum. The sample will be collected through the Vapor Pin™, after it has been attached to the assembly and purged three pin volumes at a rate of about 0.2 l/min. The samples will be collected directly into 1-liter Summa™ canisters. Sub-slab vapor samples will be delivered under chain-of-custody to McCampbell Analytical in Pittsburg, California for chemical testing. The samples will be analyzed for PCE, TCE, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride using EPA method TO-15.

3.0 DATA ANALYSIS AND REPORTING

A report will be prepared by BAI describing the findings and conclusions of the field investigation and will update the Site Conceptual Model dated February 1, 2013. The report will include a description of subsurface lithologies as shown in cross-sections, residual PCE in soil and dissolved PCE isoconcentration maps, and tabulated chemical test results. The report will include a risk assessment for PCE and TCE vapor inhalation exposure for a range of exposure durations. The report may recommend no further action, further investigation, or possible corrective actions, depending upon the results. The data will also be used to recommend immediate Corrective Actions per DTSC guidance documents, if necessary. Immediate Corrective actions, in the form of operating air purifying equipment, venting, or placement of a vapor barrier

will be recommended if the indoor air concentrations exceed Urgent Response Actions Levels (USEPA, 9 July 2014).

4.0 SCHEDULE

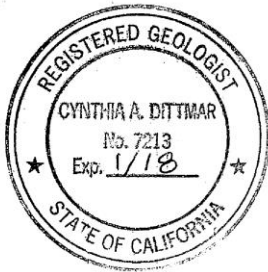
All work described herein, including preparation of a report describing the results of the field work are schedule for completion within 120 days of the approval of this work by the County, assuming the timely acquisition of site access agreements. The schedule assumes that the work can proceed in the business suites on normal business days before or after hours.

5.0 CERTIFICATIONS

This Work Plan has been prepared by the staff of Bonkowski & Associates, Inc., and has been reviewed and approved by the professional whose seal and signature appears hereon. The findings, recommendations, specifications, or professional opinions are presented, within the limits prescribed by the County and Client, after being prepared in accordance with generally accepted professional environmental geology practice in Northern California. No other warranty is either expressed or implied.

Cynthia A. Dittmar, PG 7213
Professional Geologist

Michael S. Bonkowski, PG CEG 1329 L.HG
Senior Managing Principal





6.0 REFERENCES

AEI Consultants, *Phase II Subsurface Investigation Report*, 23 August 2011

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BONKOWSKI & ASSOCIATES, INC.

United States Environmental Protection Agency, Region 9, EPA Region 9 Response Action Levels and Recommendations to Address Near-Term Inhalation Exposures to TCE in Air from Subsurface Vapor Intrusion, July 9, 2014

United States Environmental Protection Agency, Region 9, *Regional Screening Levels*, November 2013

October 13, 2017

Mr. Robert Schultz, CHG
County of Alameda – Health Care Services, Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

**Subject: Site Investigation WorkPlan II
1534 Park Street, Alameda, California**

Dear Mr. Schultz:

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

Sincerely yours,



Marcia Breese



Michael von Wittenau

Jamie Wittenau

Powell Trust,
Michael von Wittenau, Trustee

Enclosure



BONKOWSKI & ASSOCIATES, INC.

TABLES

**Table 1 Soil Sample Analytical Data (EPA Method 8260B)
1534 Park Street, Alameda, CA**

Sample ID	PCE (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	All VOCs (mg/kg)	Date
SB-1-2	0.1	<0.005	<RL	8/4/2011
SB-2-2	5.5	<0.005	<RL	8/4/2011
SB-3-2	0.23	0.023	<RL	8/4/2011
SB-4-2	0.5	<0.005	<RL	8/4/2011

ESL - PCE:

Shallow Soil, GW not current or potential source of drinking water	0.42 mg/kg
Soil Screening Levels for Leaching Concerns (non-drinking water resource)	42 mg/kg
Direct Exposure Soil Screening Level, Commercial/Industrial Worker Exposure Scenario	2.7 mg/kg
Direct Exposure Soil Screening Level, Construction/Trench Worker Exposure Scenario	33 mg/kg

ESL = Environmental Screening Levels, San Francisco Regional Water Quality Control Board, 2/16

**Table 2. Grab Groundwater Sample Analytical Data (EPA Method 8260B)
1534 Park Street, Alameda, CA**

Sample ID	PCE (µg/L)	1,2,4-Trimethylbenzene (µg/L)	All VOCs	Date (µg/L)
SB-1-W	8.2	10	<RL	8/4/2011
SB-2-W	15	3.8	<RL	8/4/2011
SB-3-W	16	2.2	<RL	8/4/2011
SB-4-W	12	4.1	<RL	8/4/2011
ESL ¹	26	--		

ESL = Environmental Screening Levels, San Francisco Regional Water Quality Control Board,

1 - Groundwater Vapor Intrusion, Human Health Risk Levels, Shallow Groundwater Commercial/Industrial (2/17)

**Table 3. Sub-Slab PCE Concentrations
1534 Park Street, Alameda, California**

Sample No.	Sub-Slab PCE ($\mu\text{g}/\text{m}^3$)	Calculated Indoor Air Concentrations*		Date
		Current Use ($\mu\text{g}/\text{m}^3$)	Future Use ($\mu\text{g}/\text{m}^3$)	
SV-1	83,000	83	42	11/6/2013
SV-2	160,000	160	80	11/6/2013
SV-3	58,000	58	29	11/6/2013
SV-4	230,000	230	115	11/6/2013
SV-5A	320,000	320	160	11/6/2013
SV-5B	320,000	320	160	11/6/2013
SV-6	18,000	18	9	11/6/2013
SV-7	8,200			6/13/2017
SV-8	69,000			6/13/2017
SV-9	130,000			6/13/2017
Attenuation Factors (α)		0.001	0.0005	
ESL ¹	2,100			
CHHSL (Shallow Soil Gas) ²	603			
ESL (Indoor Air) ³		2.1	2.1	
CHHSL (Indoor Air) ⁴		6.93E-01	6.93E-01	

* -- Calculated using DTSC, *Vapor Intrusion Guidance Document*, 10/11

1 -- SF RWQCB Sub-Slab/ Soil Gas Vapor Intrusion Screening Level (ESL), 2/16

2 -- California Human Health Screening Level, Shallow Soil Gas, 1/05

3 -- SF RWQCB Ambient and Indoor Air Screening Level (ESL), 5/13

4 -- California Human Health Screening Level, Indoor Air, 1/05

**Table 4. Indoor Air Positive Chlorinated Hydrocarbon Concentrations
1534 Park Street, Alameda, California**

Sample No.	Sample Container No.	PCE ($\mu\text{g}/\text{m}^3$)	TCE ($\mu\text{g}/\text{m}^3$)	Date
A-1	34000176	1.0	0.45	1/30/2014
A-2	34001592	4.6	34	1/30/2014
A-3	34000281	19	640	1/30/2014
A-4	34001242	7.6	8.0	1/30/2014
A-5	34002023	0.30	0.20	1/30/2014
A-6	34001307	0.15	0.43	1/30/2014
A-7	7790-937	11	19	4/25/2014
A-8	7787-934	17	41	4/25/2014
A-9	2442	13	ND	6/12/2017
ESL¹		2.1	3.0	
RSL²		47	3.0	

1 -- SF RWQCB Ambient and Indoor Air Screening Level (ESL),
Commercial/Industrial, 2/16
2 --DTSC Regional Screening Level, Indoor Air, Industrial, 2017

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A1	Site Visitor	1 Visit	Luque's	8	Off	1/30/2014	A3	1	1	70	30	0.25	PCE TCE	19 640	4.57E-11 1.07E-09	1.12E-09	5.16E-07 3.04E-04	3.05E-04
				8	Off	4/25/2014	A8	1	1	70	30	0.25	PCE TCE	17 41	4.09E-11 6.85E-11	1.09E-10	4.62E-07 1.95E-05	2.00E-05
				24	Off	4/25/2014	A7	1	1	70	30	0.25	PCE TCE	11 19	2.65E-11 3.18E-11	5.82E-11	2.99E-07 9.04E-06	9.34E-06
			Bell Cleaners	8	Off	1/30/2014	A2	1	1	70	30	0.25	PCE TCE	4.6 34	1.11E-11 5.68E-11	6.79E-11	1.25E-07 1.62E-05	1.63E-05
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	1	1	70	30	0.25	PCE TCE	7.6 8.0	1.83E-11 1.34E-11	3.17E-11	2.07E-07 3.81E-06	4.01E-06
A1	Site Visitor	1 Visit	Luque's	8	Off	1/30/2014	A3	1	1	70	30	1	PCE TCE	19 640	1.83E-10 4.28E-09	4.46E-09	2.07E-06 1.22E-03	1.22E-03
				8	Off	4/25/2014	A8	1	1	70	30	1	PCE TCE	17 41	1.64E-10 2.74E-10	4.38E-10	1.85E-06 7.80E-05	7.99E-05
				24	Off	4/25/2014	A7	1	1	70	30	1	PCE TCE	11 19	1.06E-10 1.27E-10	2.33E-10	1.20E-06 3.61E-05	3.73E-05
			Bell Cleaners	8	Off	1/30/2014	A2	1	1	70	30	1	PCE TCE	4.6 34	4.43E-11 2.27E-10	2.71E-10	5.00E-07 6.47E-05	6.52E-05
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	1	1	70	30	1	PCE TCE	7.6 8.0	7.31E-11 5.35E-11	1.27E-10	8.26E-07 1.52E-05	1.60E-05

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration (µg/m ³)	ICR	CCR	HQ	HI
A2	Site Visitor	1 Visit Per Year for 5 Years	Luque's	8	Off	1/30/2014	A3	1	5	70	30	0.25	PCE TCE	19 640	2.29E-10 5.35E-09	5.58E-09	2.58E-06 1.52E-03	1.52E-03
				8	Off	4/25/2014	A8	1	5	70	30	0.25	PCE TCE	17 41	2.04E-10 3.43E-10	5.47E-10	2.31E-06 9.75E-05	9.98E-05
				24	Off	4/25/2014	A7	1	5	70	30	0.25	PCE TCE	11 19	1.32E-10 1.59E-10	2.91E-10	1.49E-06 4.52E-05	4.67E-05
			Bell Cleaners	8	Off	1/30/2014	A2	1	5	70	30	0.25	PCE TCE	4.6 34	5.53E-11 2.84E-10	3.39E-10	6.25E-07 8.09E-05	8.15E-05
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	1	5	70	30	0.25	PCE TCE	7.6 8.0	9.14E-11 6.69E-11	1.58E-10	1.03E-06 1.90E-05	2.01E-05
A2	Site Visitor	1 Visit Per Year for 5 Years	Luque's	8	Off	1/30/2014	A3	1	5	70	30	1	PCE TCE	19 640	9.14E-10 2.14E-08	2.23E-08	1.03E-05 6.09E-03	6.10E-03
				8	Off	4/25/2014	A8	1	5	70	30	1	PCE TCE	17 41	8.18E-10 1.37E-09	2.19E-09	9.24E-06 3.90E-04	3.99E-04
				24	Off	4/25/2014	A7	1	5	70	30	1	PCE TCE	11 19	5.29E-10 6.35E-10	1.16E-09	5.98E-06 1.81E-04	1.87E-04
			Bell Cleaners	8	Off	1/30/2014	A2	1	5	70	30	1	PCE TCE	4.6 34	2.21E-10 1.14E-09	1.36E-09	2.50E-06 3.23E-04	3.26E-04
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	1	5	70	30	1	PCE TCE	7.6 8.0	3.66E-10 2.67E-10	6.33E-10	4.13E-06 7.61E-05	8.02E-05

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A3	Site Visitor	1 Visit Per Year for 10 Years	Luque's	8	Off	1/30/2014	A3	1	10	70	30	0.25	PCE TCE	19 640	4.57E-10 1.07E-08	1.12E-08	5.16E-06 3.04E-03	3.05E-03
				8	Off	4/25/2014	A8	1	10	70	30	0.25	PCE TCE	17 41	4.06E-10 6.85E-10	1.09E-09	4.62E-06 1.95E-04	2.00E-04
			24	Off	4/25/2014	A7	1	10	70	30	0.25	PCE TCE	11 19	2.65E-10 3.18E-10	5.82E-10	2.99E-06 9.04E-05	9.34E-05	
			Bell Cleaners	8	Off	1/30/2014	A2	1	10	70	30	0.25	PCE TCE	4.6 34	1.11E-10 5.68E-10	6.79E-10	1.25E-06 1.62E-04	1.63E-04
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	1	10	70	30	0.25	PCE TCE	7.6 8.0	1.83E-10 1.34E-10	3.17E-10	2.07E-06 3.81E-05	4.01E-05
A3	Site Visitor	1 Visit Per Year for 10 Years	Luque's	8	Off	1/30/2014	A3	1	10	70	30	1	PCE TCE	19 640	1.83E-09 4.28E-08	4.46E-08	2.07E-05 1.22E-02	1.22E-02
				8	Off	4/25/2014	A8	1	10	70	30	1	PCE TCE	17 41	1.64E-09 2.74E-09	4.38E-09	1.85E-05 7.80E-04	7.99E-04
			24	Off	4/25/2014	A7	1	10	70	30	1	PCE TCE	11 19	1.06E-09 1.27E-09	2.33E-09	1.20E-05 3.61E-04	3.73E-04	
			Bell Cleaners	8	Off	1/30/2014	A2	1	10	70	30	1	PCE TCE	4.6 34	4.43E-10 2.27E-09	2.72E-09	5.00E-06 6.47E-04	6.52E-04
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	1	10	70	30	1	PCE TCE	7.6 8.0	7.31E-10 5.35E-10	1.27E-09	8.26E-06 1.52E-04	1.60E-04

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A4	Site Visitor	1 Visit Per Week for 1 Years	Luque's	8	Off	1/30/2014	A3	52	1	70	30	0.25	PCE TCE	19 640	2.38E-09 5.56E-08	5.80E-08	2.69E-05 1.58E-02	1.59E-02
				8	Off	4/25/2014	A8	52	1	70	30	0.25	PCE TCE	17 41	2.13E-09 3.56E-09	5.69E-09	2.40E-05 1.01E-03	1.04E-03
				24	Off	4/25/2014	A7	52	1	70	30	0.25	PCE TCE	11 19	1.38E-09 1.65E-09	3.03E-09	1.55E-05 4.70E-04	4.85E-04
			Bell Cleaners	8	Off	1/30/2014	A2	52	1	70	30	0.25	PCE TCE	4.6 34	5.75E-10 2.96E-09	3.53E-09	6.50E-06 8.41E-04	8.48E-04
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	52	1	70	30	0.25	PCE TCE	7.6 8.0	9.51E-10 6.95E-10	1.65E-09	1.07E-05 1.98E-04	2.09E-04
A4	Site Visitor	1 Visit Per Year for 1 Years	Luque's	8	Off	1/30/2014	A3	52	1	70	30	1	PCE TCE	19 640	9.51E-09 2.23E-07	2.32E-07	1.07E-04 6.33E-02	6.34E-02
				8	Off	4/25/2014	A8	52	1	70	30	1	PCE TCE	17 41	8.51E-09 1.43E-08	2.28E-08	9.61E-05 4.06E-03	4.15E-03
				24	Off	4/25/2014	A7	52	1	70	30	1	PCE TCE	11 19	5.50E-09 6.61E-09	1.21E-08	6.22E-05 1.88E-03	1.94E-03
			Bell Cleaners	8	Off	1/30/2014	A2	52	1	70	30	1	PCE TCE	4.6 34	2.30E-09 1.18E-08	1.41E-08	2.60E-05 3.36E-03	3.39E-03
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	52	1	70	30	1	PCE TCE	7.6 8.0	3.80E-09 2.78E-09	6.58E-09	4.30E-05 7.91E-04	8.34E-04

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A5	Site Visitor	1 Visit Per Week for 5 Years	Luque's	8	Off	1/30/2014	A3	52	5	70	30	0.25	PCE TCE	19 640	1.19E-08 2.78E-07	2.90E-07	1.34E-04 7.91E-02	7.93E-02
				8	Off	4/25/2014	A8	52	5	70	30	0.25	PCE TCE	17 41	1.06E-08 1.78E-08	2.85E-08	1.20E-04 5.07E-03	5.19E-03
				24	Off	4/25/2014	A7	52	5	70	30	0.25	PCE TCE	11 19	6.88E-09 8.26E-09	1.51E-08	7.77E-05 2.35E-03	2.43E-03
			Bell Cleaners	8	Off	1/30/2014	A2	52	5	70	30	0.25	PCE TCE	4.6 34	2.88E-09 1.48E-08	1.77E-08	3.25E-05 4.20E-03	4.24E-03
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	52	5	70	30	0.25	PCE TCE	7.6 8.0	4.75E-09 3.48E-09	8.23E-09	5.37E-05 9.89E-04	1.04E-03
A5	Site Visitor	1 Visit Per Year for 5 Years	Luque's	8	Off	1/30/2014	A3	52	5	70	30	1	PCE TCE	19 640	4.75E-08 1.11E-06	1.16E-06	5.37E-04 3.17E-01	3.17E-01
				8	Off	4/25/2014	A8	52	5	70	30	1	PCE TCE	17 41	4.25E-08 7.13E-08	1.14E-07	4.81E-04 2.03E-02	2.08E-02
				24	Off	4/25/2014	A7	52	5	70	30	1	PCE TCE	11 19	2.75E-08 3.30E-08	6.05E-08	3.11E-04 9.40E-03	9.71E-03
			Bell Cleaners	8	Off	1/30/2014	A2	52	5	70	30	1	PCE TCE	4.6 34	1.15E-08 5.91E-08	7.06E-08	1.30E-04 1.68E-02	1.69E-02
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	52	5	70	30	1	PCE TCE	7.6 8.0	1.90E-08 1.39E-08	3.29E-08	2.15E-04 3.96E-03	4.17E-03

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A6	Site Visitor	1 Visit Per Week for 10 Years	Luque's	8	Off	1/30/2014	A3	52	10	70	30	0.25	PCE TCE	19 640	2.38E-08 5.56E-07	5.80E-07	2.69E-04 1.58E-01	1.59E-01
				8	Off	4/25/2014	A8	52	10	70	30	0.25	PCE TCE	17 41	2.13E-08 3.56E-08	5.69E-08	2.40E-04 1.01E-02	1.04E-02
			24	Off	4/25/2014	A7	52	10	70	30	0.25	PCE TCE	11 19	1.38E-08 1.65E-08	3.03E-08	1.55E-04 4.70E-03	4.85E-03	
			Bell Cleaners	8	Off	1/30/2014	A2	52	10	70	30	0.25	PCE TCE	4.6 34	5.75E-09 2.96E-08	3.54E-08	6.50E-05 8.41E-03	8.47E-03
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	52	10	70	30	0.25	PCE TCE	7.6 8.0	9.51E-09 6.95E-09	1.65E-08	1.07E-04 1.98E-03	2.09E-03
A6	Site Visitor	1 Visit Per Year for 10 Years	Luque's	8	Off	1/30/2014	A3	52	10	70	30	1	PCE TCE	19 640	9.51E-08 2.23E-06	2.32E-06	1.07E-03 6.33E-01	6.34E-01
				8	Off	4/25/2014	A8	52	10	70	30	1	PCE TCE	17 41	8.51E-08 1.43E-07	2.28E-07	9.61E-04 4.06E-02	4.16E-02
			24	Off	4/25/2014	A7	52	10	70	30	1	PCE TCE	11 19	5.50E-08 6.61E-08	1.21E-07	6.22E-04 1.88E-02	1.94E-02	
			Bell Cleaners	8	Off	1/30/2014	A2	52	10	70	30	1	PCE TCE	4.6 34	2.30E-08 1.18E-07	1.41E-07	2.60E-04 3.36E-02	3.39E-02
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	52	10	70	30	1	PCE TCE	7.6 8.0	3.80E-08 2.78E-08	6.58E-08	4.30E-04 7.91E-03	8.34E-03

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A7	Site Worker	1 Year	Luque's	8	Off	1/30/2014	A3	260	1	70	30	8	PCE TCE	19 640	3.80E-07 8.90E-06	9.28E-06	4.30E-03 2.53E+00	2.54E+00
				8	Off	4/25/2014	A8	260	1	70	30	8	PCE TCE	17 41	3.40E-07 5.70E-07	9.10E-07	3.84E-03 1.62E-01	1.66E-01
				24	Off	4/25/2014	A7	260	1	70	30	8	PCE TCE	11 19	2.20E-07 2.64E-07	4.84E-07	1.24E-02 3.76E-01	3.88E-01
			Bell Cleaners	8	Off	1/30/2014	A2	260	1	70	30	8	PCE TCE	4.6 34	9.21E-08 4.73E-07	5.65E-07	1.04E-03 1.35E-01	1.36E-01
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	1	70	30	8	PCE TCE	7.6 8.0	1.52E-07 1.11E-07	2.63E-07	1.72E-03 3.17E-02	3.34E-02
A7	Site Worker	1 Year	Luque's	8	Off	1/30/2014	A3	260	1	70	30	10	PCE TCE	19 640	4.75E-07 1.11E-05	1.16E-05	5.37E-03 3.17E+00	3.17E+00
				8	Off	4/25/2014	A8	260	1	70	30	10	PCE TCE	17 41	4.25E-07 7.13E-07	1.14E-06	4.81E-03 2.03E-01	2.08E-01
				24	Off	4/25/2014	A7	260	1	70	30	10	PCE TCE	11 19	2.75E-07 3.30E-07	6.05E-07	1.55E-02 4.70E-01	4.85E-01
			Bell Cleaners	8	Off	1/30/2014	A2	260	1	70	30	10	PCE TCE	4.6 34	1.15E-07 5.91E-07	7.06E-07	1.30E-03 1.68E-01	1.69E-01
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	1	70	30	10	PCE TCE	7.6 8.0	1.90E-07 1.39E-07	3.29E-07	2.15E-03 3.96E-02	4.17E-02

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A8	Site Worker	5 Years	Luque's	8	Off	1/30/2014	A3	260	5	70	30	8	PCE TCE	19 640	1.90E-06 4.45E-05	4.64E-05	2.15E-02 1.27E+01	1.27E+01
				8	Off	4/25/2014	A8	260	5	70	30	8	PCE TCE	17 41	1.70E-06 2.85E-06	4.55E-06	1.92E-02 8.11E-01	8.30E-01
				24	Off	4/25/2014	A7	260	5	70	30	8	PCE TCE	11 19	1.10E-06 1.32E-06	2.42E-06	1.24E-02 3.76E-01	3.88E-01
			Bell Cleaners	8	Off	1/30/2014	A2	260	5	70	30	8	PCE TCE	4.6 34	4.60E-07 2.36E-06	2.82E-06	5.20E-03 6.73E-01	6.78E-01
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	5	70	30	8	PCE TCE	7.6 8.0	7.60E-07 5.56E-07	1.32E-06	8.59E-03 1.58E-01	1.67E-01
A8	Site Worker	5 Years	Luque's	8	Off	1/30/2014	A3	260	5	70	30	10	PCE TCE	19 640	2.38E-06 5.56E-05	5.80E-05	2.69E-02 1.58E+01	1.59E+01
				8	Off	4/25/2014	A8	260	5	70	30	10	PCE TCE	17 41	2.13E-06 3.56E-06	5.69E-06	2.40E-02 1.01E+00	1.04E+00
				24	Off	4/25/2014	A7	260	5	70	30	10	PCE TCE	11 19	1.38E-06 1.65E-06	3.03E-06	1.55E-02 4.70E-01	4.85E-01
			Bell Cleaners	8	Off	1/30/2014	A2	260	5	70	30	10	PCE TCE	4.6 34	5.75E-07 2.96E-06	3.53E-06	6.50E-03 8.41E-01	8.47E-01
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	5	70	30	10	PCE TCE	7.6 8.0	9.51E-07 6.95E-07	1.65E-06	1.07E-02 1.98E-01	2.09E-01

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI
A9	Site Worker	10 Years	Luque's	8	Off	1/30/2014	A3	260	10	70	30	8	PCE TCE	19 640	3.80E-06 8.90E-05	9.28E-05	4.30E-02 2.53E+01	2.54E+01
				8	Off	4/25/2014	A8	260	10	70	30	8	PCE TCE	17 41	3.40E-06 5.70E-06	9.10E-06	3.84E-02 1.62E+00	1.66E+00
				24	Off	4/25/2014	A7	260	10	70	30	8	PCE TCE	11 19	2.20E-06 2.64E-06	4.84E-06	2.49E-02 7.52E-01	7.77E-01
			Bell Cleaners	8	Off	1/30/2014	A2	260	10	70	30	8	PCE TCE	4.6 34	9.21E-07 4.73E-06	5.65E-06	1.04E-02 1.35E+00	1.36E+00
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	10	70	30	8	PCE TCE	7.6 8.0	1.52E-06 1.11E-06	2.63E-06	1.72E-02 3.17E-01	3.34E-01
A9	Site Worker	10 Years	Luque's	8	Off	1/30/2014	A3	260	10	70	30	10	PCE TCE	19 640	4.75E-06 1.11E-04	1.16E-04	5.37E-02 3.17E+01	3.17E+01
				8	Off	4/25/2014	A8	260	10	70	30	10	PCE TCE	17 41	4.25E-06 7.13E-06	1.14E-05	4.81E-02 2.03E+00	2.08E+00
				24	Off	4/25/2014	A7	260	10	70	30	10	PCE TCE	11 19	2.75E-06 3.30E-06	6.05E-06	3.11E-02 9.40E-01	9.71E-01
			Bell Cleaners	8	Off	1/30/2014	A2	260	10	70	30	10	PCE TCE	4.6 34	1.15E-06 5.91E-06	7.06E-06	1.30E-02 1.68E+00	1.69E+00
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	10	70	30	10	PCE TCE	7.6 8.0	1.90E-06 1.39E-06	3.29E-06	2.15E-02 3.96E-01	4.17E-01

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration (µg/m ³)	ICR	CCR	HQ	HI
A10	Site Worker	20 Years	Luque's	8	Off	1/30/2014	A3	260	20	70	30	8	PCE TCE	19 640	7.60E-06 1.78E-04	1.86E-04	8.59E-02 5.07E+01	
				8	Off	4/25/2014	A8	260	20	70	30	8	PCE TCE	17 41	6.80E-06 1.14E-05	1.82E-05	7.69E-02 3.32E+00	
				24	Off	4/25/2014	A7	260	20	70	30	8	PCE TCE	11 19	4.40E-06 5.28E-06	9.69E-06	4.97E-02 1.50E+00	
			Bell Cleaners	8	Off	1/30/2014	A2	260	20	70	30	8	PCE TCE	4.6 34	1.84E-06 9.46E-06	1.13E-05	2.08E-02 2.69E+00	2.71E+00
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	20	70	30	8	PCE TCE	7.6 8.0	3.04E-06 2.23E-06	5.27E-06	3.44E-02 6.33E-01	6.68E-01
A10	Site Worker	20 Years	Luque's	8	Off	1/30/2014	A3	260	20	70	30	10	PCE TCE	19 640	9.51E-06 2.23E-04	2.32E-04	1.07E-01 6.33E+01	6.34E+01
				8	Off	4/25/2014	A8	260	20	70	30	10	PCE TCE	17 41	8.51E-06 1.43E-05	2.28E-05	9.61E-02 4.06E+00	4.15E+00
				24	Off	4/25/2014	A7	260	20	70	30	10	PCE TCE	11 19	5.50E-06 6.61E-06	1.21E-05	6.22E-02 1.88E+00	1.94E+00
			Bell Cleaners	8	Off	1/30/2014	A2	260	20	70	30	10	PCE TCE	4.6 34	2.30E-06 1.18E-05	1.41E-05	2.60E-02 3.36E+00	3.39E+00
			Genghis Kahn Kitchen	8	On	1/30/2014	A4	260	20	70	30	10	PCE TCE	7.6 8.0	3.80E-06 2.78E-06	6.58E-06	4.30E-02 7.91E-01	8.34E-01

**Table 5. Summary of Indoor Air Cancer Risk and Hazard Calculations (Tables A1 through A10)
1532 - 1540 Park Street, Alameda, California**

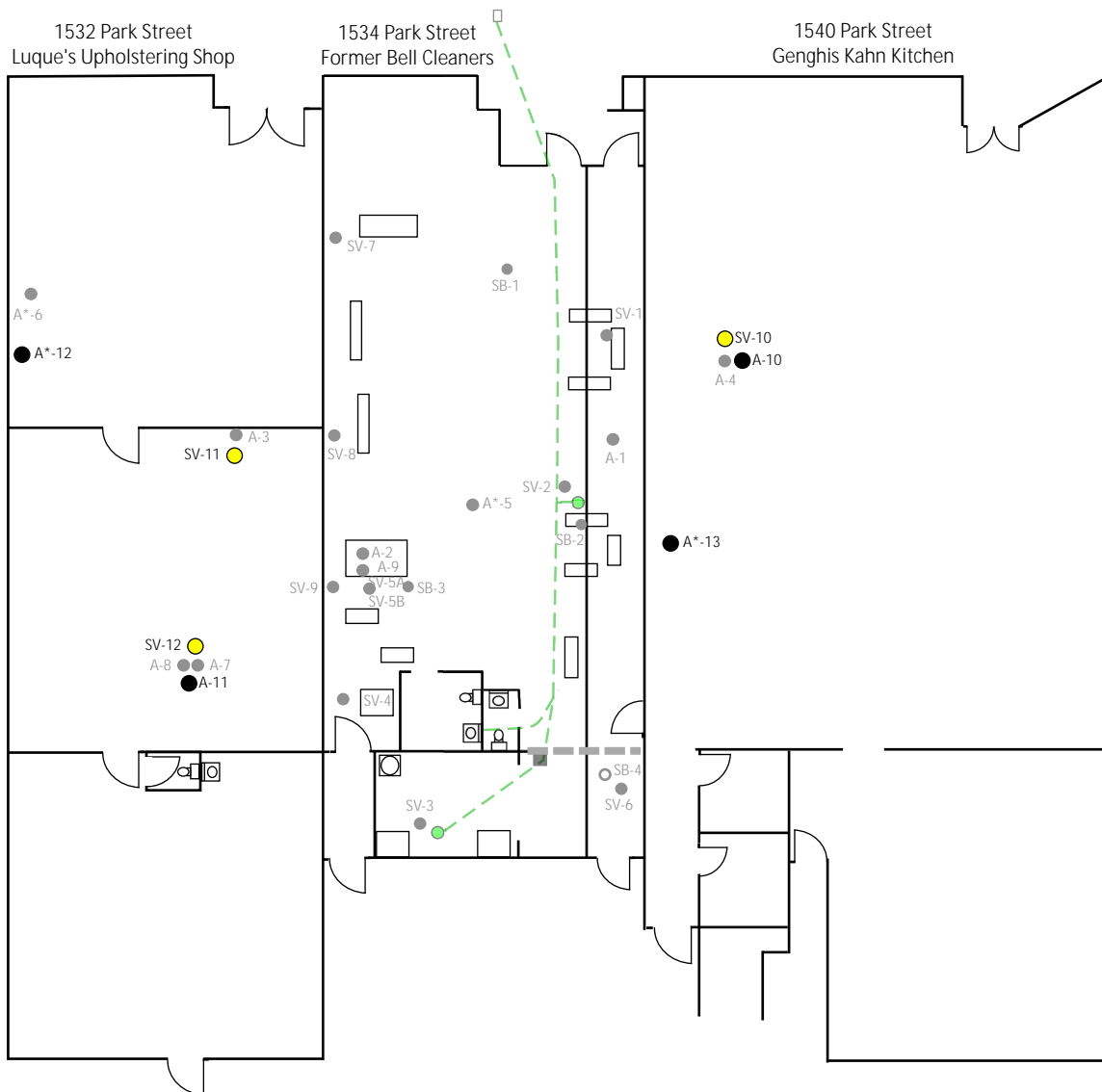
Table No.	Receptor	Frequency of Exposure	Tenant Space	Sample Collection Duration (hours)	HVAC Status	Sample Date	Sample Number	EF	ED	ATc	ATnc	ET	Chemical	Concentration ($\mu\text{g}/\text{m}^3$)	ICR	CCR	HQ	HI	
Acceptable Risk = 1.00E-6																			
Acceptable Hazard Index = 1																			
C	Indoor Air Concentration									IUR	PCE	5.9E-6 $\mu\text{g}/\text{m}^3$	DTSC Human Health Risk Assessment Note, 14 July 2014						
ET	Exposure time (hours per day)										TCE	4.1E-6 $\mu\text{g}/\text{m}^3$	USEPA Regional Screening Levels, May 2013						
EF	Exposure Frequency (days per year)									RfC	PCE	35 $\mu\text{g}/\text{m}^3$	DTSC Human Health Risk Assessment Note, 14 July 2014						
ED	Exposure duration										TCE	2.0 $\mu\text{g}/\text{m}^3$	USEPA Regional Screening Levels, November 2012						
AT _c	Period of time over which exposure is averaged - carcinogens (years)																		
AT _{nc}	Period of time over which exposure is averaged - non-carcinogens (years)																		



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FIGURES

PARK STREET



LEGEND

- SV-10 ● Planned Sub-Slab Vapor Sample
- A-10 ● Planned Air Sample
- A*-10 ● Planned Ambient Air Sample
- sv-3 ● Sub-Slab Vapor Sample
- A-3 ● Indoor Air Sample
- A*-3 ● Ambient Air Sample



Approximate Scale (feet):

0 10 20

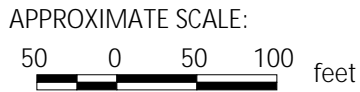


Project No. E211346	1534 Park Street Alameda, California	PLANNED SAMPLE LOCATIONS	Figure 1
Bonkowski & Associates, Inc.			

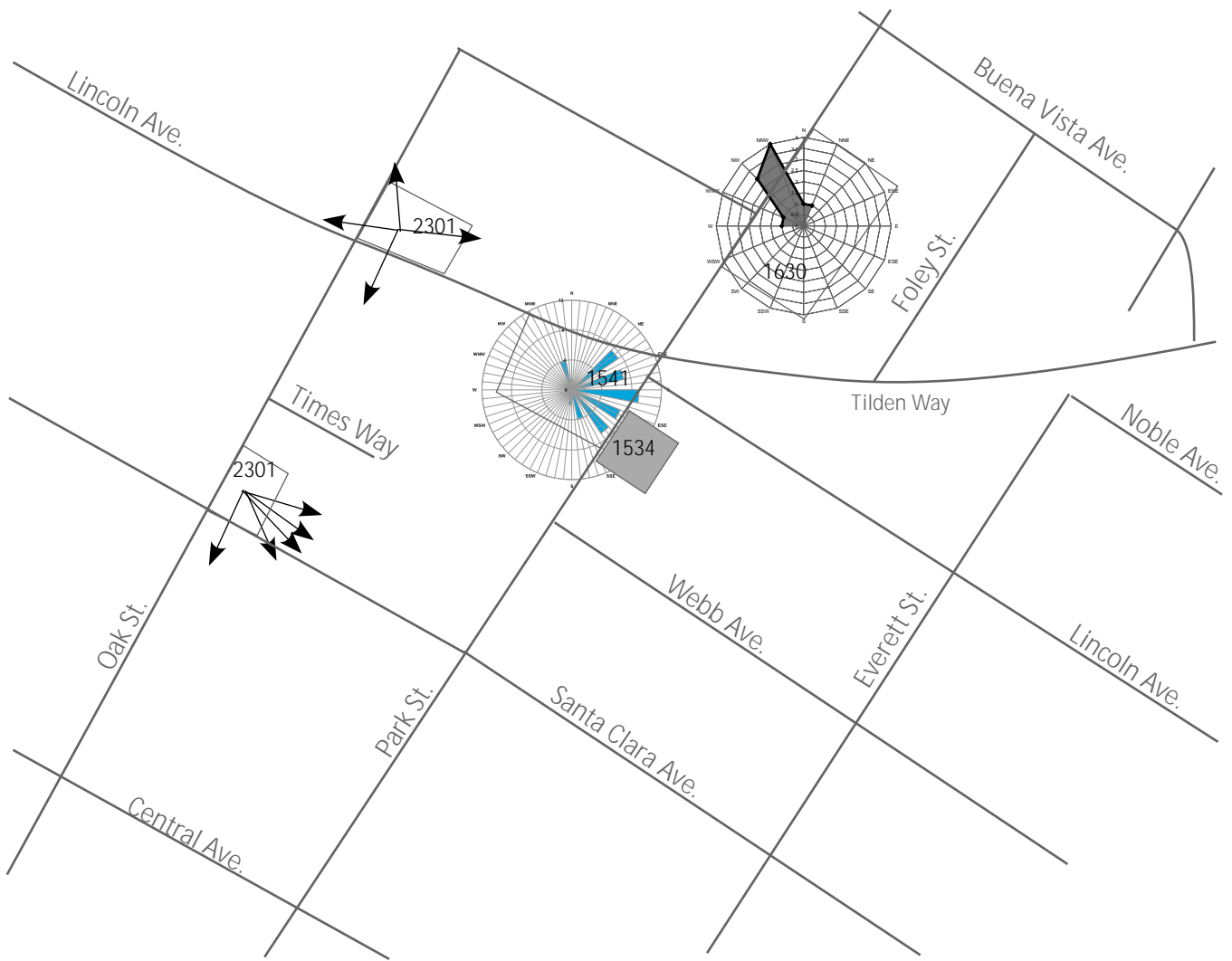


LEGEND

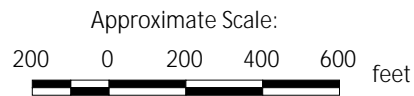
- GP-1 V-1 GeoProbe or Soil Vapor Sample Location
- 1534 Site
- Building
- ← Sanitary Sewer, Arrow Indicates Flow Direction
- EBMUD Water Line
- Alameda Power Electric Line



Project No. E211346	1534 PARK STREET ALAMEDA, CALIFORNIA	PLANNED GEOPROBE AND SOIL VAPOR SAMPLE LOCATIONS	Figure 2
Bonkowski & Associates, Inc.			



Sources: ARCADIS, Conestoga-Rovers,
Ninyo & Moore, AEI, Broadbent



Project No. E211346	1534 Park Street Alameda, California	SITE VICINITY GROUNDWATER FLOW DIRECTIONS	Figure 3
Bonkowski & Associates, Inc.			