BONKOWSKI & ASSOCIATES, INC.
GEOTECHNICAL SERVICES AND HAZARDOUS MATERIALS MANAGEMENT

January 23, 2014
Project No. E211346

Ms. Karel Detterman, PG
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

RE: Indoor Air Sampling Work Plan, 1534 Park Street, Alameda, California
Case No. RO0003080

Dear Ms. Detterman,

This indoor air sampling work plan for the former Bell Cleaners at 1534 Park Street, Alameda, California was prepared on behalf of the von Wittenau Trust by Bonkowski & Associates, Inc. (B&A) in association with Terracon - IHI (IHI). This plan is submitted to the Alameda County Department of Environmental Health in accordance with the email directive dated January 9, 2014. The object of the work will be to collect and test indoor air samples from the above referenced property for the purpose of detecting the presence of volatile organic compounds (VOCs) associated with historic dry cleaning operations at the Site. Sub-slab soil gas samples previously collected from the Site contained from 18,000 to 320,000 $\mu g/m^3$ of PCE (PERC) (Bonkowski, *Sub-Slab Vapor Sampling Report*, January 7, 2014). The estimated concentration of PCE in indoor air ranges from 18 to 320 $\mu g/m^3$ (DTSC, 2011). The common decay products of PCE, including trichloroethene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, and vinyl chloride were not detected in these same samples.

The scope of work described herein to perform indoor air sampling has been prepared in general accordance with the California Department of Toxic Substances Control (DTSC) *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* dated October 11, 2011. The objectives of the work will be to:

- Determine the indoor air concentration of PERC and its four significant decay products,
- Compare air sampling results with the 2005 California Human Health Screening Levels (CHHSLs) for indoor air of a commercial/industrial property, and
- Provide a report explaining the sampling methods, observations, analytical results, and recommendations.

The work elements required to complete these tasks are summarized and described below:

Task 1: Site Evaluation
Prior to collecting the indoor air samples, B&A/IHI will assess building conditions and operations that may affect the results of indoor air sampling. These include: reviewing normal operation of HVAC systems, pressure differentials between interior and exterior spaces, and inspecting for communication pathways between spaces other than doorways (ceiling plenums, pipe and electrical chases, etc.). B&A/IHI will conduct an inspection for other potential indoor sources of the chemicals of concern and document the results of this work (including chemicals, paints, janitorial supplies, etc.).

B&A/IHI will then evaluate available sampling locations and will select those locations where vapor intrusion into the building from subsurface vapors may be occurring, and connectivity exists between the subsurface and indoor air. Examples of possible sample locations could include areas with cracked foundations, slab penetrations (e.g. utilities, elevator shafts, sumps, etc.), or other conditions that could allow vapor flow between the subsurface and indoor air. Air monitoring will be conducted with a hand-held photo-ionization detector to identify the presence and location of VOCs indoors and outdoors.

Task 2. Field Sampling

B&A/IHI will place a total of four (4) individually certified Summa® canisters within each of the three building suites, and inside the hallway to collect indoor air samples (Figure 1). Two additional individually certified Summa® canisters will be placed outside of the building in an area to be determined in the field to assess ambient air conditions. The flow regulator for each canister will be opened and samples will be collected over a period of approximately 24 hours. The canister regulators will be pre-set by the laboratory for 24-hour sample collection. After the canisters have collected each sample, B&A/IHI will return to the site to collect the canisters and prepare them for shipment.

The Summa® canister samples will be submitted to an American Industrial Hygiene Association (AIHA)-accredited and National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory for analyses, using EPA Method TO-15 SIM. Samples will be analyzed for the following five chemicals:

- Perchloroethene (PCE)
- Trichloroethene (TCE)
- *cis*-1,2-dichloroethylene
- *trans*-1,2-dichloroethylene
- Vinyl chloride

Task 3. Data Analysis and Reporting

B&A/IHI will prepare a report to document the conducted field work and will summarize the analytical results compared to appropriate regulatory screening levels. Site maps showing the locations of the indoor and outdoor air samples will be included, and recommendations, for additional sampling (if warranted), will be made.

Schedule

B&A/IHI are prepared to begin this work within 24 hours of the von Wittennau Trust authorization to proceed. Field sampling is tentatively scheduled for January 30 and 31, 2014. A draft letter report summarizing the results of this work will be shared with the ACDEH within 30 days of completion of fieldwork. A substantial portion of this time is laboratory reporting turnaround time, normally 10 business days. The sample analyses can be rushed, but usually at an additional cost. The work schedule assumes that site access will be granted the tenants of the building within a reasonable amount of time.

BONKOWSKI & ASSOCIATES, INC.

If you have any question or need any additional information, please do not hesitate to contact either of the undersigned at (510) 450 0770.

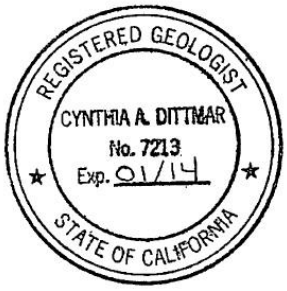
Sincerely,
BONKOWSKI & ASSOCIATES, INC.

Cynthia A. Dittmar, PG 7213
Project Geologist

Michael S. Bonkowski, PG CEG 1329 L.HG
Senior Managing Principal
Environmental and Engineering Services

cc Ms. Marcia Breese
Mr. Michael von Wittenau

ATTACHMENTS
Perjury Letter



August 23, 2012

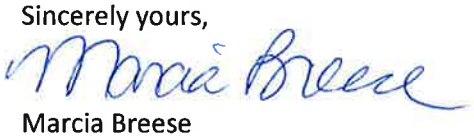
Ms. Karel Detterman, PG
Hazardous Materials Specialist
County of Alameda – Health Care Services, Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: **Indoor Air Sampling Work Plan**
1534 Park Street, Alameda, California, Case No. RO0003080

Dear Ms. Detterman:

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

Enclosure