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Alameda County  
Environmental Health

June 5, 2006

Ms. Teresa Clarke  
Affordable Housing Associates  
1250 Addison Street, Suite G  
Berkeley, California 94702

RE: Tier 1 Risk Evaluation  
160 14<sup>th</sup> Street, Oakland, California  
*ACC Project Number 6179-014-02*

Dear Ms. Clarke:

ACC Environmental Consultants (ACC) has prepared this letter summarizing its Tier 1 Risk Evaluation for 160 14<sup>th</sup> Street, Oakland, California (Site). In the May 5, 2006 *Subsurface Characterization Report*, ACC identified tetrachloroethene (PCE) in groundwater that originates from an offsite source, most likely from the adjacent property, a dry cleaning operation located at 190 14<sup>th</sup> Street. Based on the Tier 1 Risk Evaluation, the concentration levels of the PCE found in the groundwater on the Site are well below the screening levels for commercial use and do not pose an unacceptable human health risk to occupants of the proposed development at 160 14<sup>th</sup> St.

**BACKGROUND**

In April 2006, ACC advanced six exploratory soil borings designated B-1 through B-6. Three grab groundwater samples were analyzed for halogenated volatile organic compounds (HVOCs) and analytical results are summarized in Table 1. No detectable HVOCs were reported in three soil samples collected at depths of 14 to 15.5 feet below ground surface (bgs). Results of the April 2006 investigation were reported to the Oakland Fire Department.

**TABLE 1 - HVOC GROUNDWATER RESULTS**

Sample ID	PCE	TCE	Cis-DCE	Vinyl Chloride	Other HVOCs
B-1 Water	780	33	<2.0	<2.0	<RL
B-3 Water	68	5.3	16	8.7	<RL
B-5 Water	820	42	<5.0	<5.0	<RL

*Notes All concentrations of other standard HVOCs were below laboratory reporting limits*

## DISCUSSION

ACC performed a Tier 1 risk evaluation using environmental screening levels (ESLs) promulgated by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Based on proposed future Site use, Site location, and the depth to groundwater impacted by PCE, potential indoor inhalation is the only realistic complete exposure pathway.

ACC compared the April 2006 PCE analytical results to its applicable ESL in both a residential and commercial/industrial setting as documented in the RWQCB guidance document *Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater*, Interim Final - February 2005. The intent of comparing the average PCE concentration to published ESLs is to easily and cost-effectively compare the reported PCE concentration to those that would be considered unacceptable from a human health risk standpoint. Constituents of concern that exceed their respective ESLs do not necessarily indicate that remediation, institutional controls, or engineering controls are necessary, but that additional risk assessment may be necessary to fully evaluate potential human health risk.

According to Table E-1a, the PCE ESLs vary from 120 µg/L in high permeability residential soils to 1,700 µg/L in low/moderate permeability commercial soils. PCE ESLs are summarized in Table 2.

**TABLE 2 – PCE ESLs (Table E-1a)**

Constituent	Residential Land Use		Commercial Land Use	
	High Perm. Soil	Low Perm. Soil	High Perm. Soil	Low Perm. Soil
PCE	120	500	420	1,700

*Notes* All concentrations are in micrograms per Liter (µg/L)

PCE concentrations ranged from 780 to 820 µg/L in groundwater in saturated silty sands below 10 feet bgs. Based on estimated soil permeability at the Site, somewhere between low and high permeability, the applicable residential ESL for PCE would be 400 µg/L and the applicable commercial ESL for PCE would be 1,360 µg/L. Site development will be a combination of commercial space and parking on the ground floor so commercial ESLs are applicable. Based on an average PCE concentration of 800 µg/L, the commercial ESL for PCE is not exceeded.

Site development also includes the installation of a concrete foundation ranging in thickness between 6 to 24 inches, a vapor barrier under the grade level foundation, and a waterproofing system on below-grade foundation. ACC has confirmed that the manufacturers of the proposed vapor barrier and waterproofing products have verified that these products are acceptable for use with PCE contaminated

soil and groundwater. These scheduled construction methods will further decrease the potential human health risk associated with PCE by preventing soil gas from migrating vertically

Affordable Housing Associates

June 5, 2006

Page 3 of 3

through the soil, vapor barrier, and concrete slab into indoor air. Even without these measures, based on an acceptable Tier I Risk Evaluation, the monitoring of indoor air following Site development is not warranted

### **SUMMARY**

PCE originating from an offsite source has been identified in groundwater at the Site. Based on a commercial ESL of 1,360 µg/L for PCE (80 percent of the published low/moderate permeability commercial ESL of 1,700 µg/L), PCE in groundwater does not pose an unacceptable human health risk due to indoor inhalation. Proposed Site development further decreases the potential human health risk posed by potential volatilization of PCE in soil gas entering inhabited space. Based on the results of the Tier I Risk Evaluation and proposed construction methods no further risk assessment, monitoring, or regulatory approval is warranted for the proposed development at 160 14<sup>th</sup> Street.

If you have any questions, please contact me at (510) 638-8400, ext. 109.

Sincerely,

A handwritten signature in black ink, appearing to read "David DeMent". The signature is fluid and cursive, with the first name "David" and last name "DeMent" clearly distinguishable.

David DeMent, PG, REA II

Environmental Division Manager