

From: [Roe, Dilan, Env. Health](#)
To: [Jim Roessler](#)
Cc: "[Mehrdad Javaherian](#)"; DWP5334@aol.com; [Detterman, Karel, Env. Health](#)
Subject: RE: Meeting
Date: Thursday, October 15, 2015 7:43:13 PM

Hi Jim:

ACDEH scheduled the meeting with you and your consultant today to discuss our review comments on Endpoint's vapor intrusion risk assessment included in their letter report dated July 20, 2015 entitled "Focused Site Reconnaissance and Sampling Activities in Support of Site Closure, Crow Canyon Cleaners". However, during my attempt to discuss ACDEH's review comments on the risk assessment including the model inputs and the lack of adherence to the model guidance documents, Mr. Javaherian became argumentative and thus I ended the meeting.

As discussed in the April 24, 2015 meeting with you and Endpoint, and in Alameda County Department of Environmental Health's (ACDEH) email correspondence dated April 28, 2015, ACDEH is willing to consider a request for closure of the subject site based on the data and results of a site-specific Human Risk Assessment in lieu of indoor air sampling. However, the risk assessment must adhere to the model guidance documents prepared by the California Department of Toxic Substances Control (DTSC), and the United States Environmental Protection Agency (USEPA).

The model selected by Endpoint for the risk assessment is the USEPA's Johnson and Ettinger Model (J&E Model), as modified by the DTSC. This model is one of the more commonly used models for evaluating indoor air exposure and the DTSC has selected the J&E model as the recommended approach to evaluate vapor intrusion in California. As stated in the DTSC's Vapor Intrusion Model guidance document, the model should be used in conjunction with the DTSC's 2011 guidance document entitled "Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air" and the USEPA's 2004 "User Guide for Evaluating Subsurface Vapor Intrusion into Buildings".

ACDEH's review of the J&E model presented in the July 20, 2015 Endpoint report indicates deviations from various protocols and input parameters discussed in the above referenced guidance documents. Therefore, at this juncture, ACDEH requests you submit a revised vapor intrusion risk assessment addressing the following items in accordance with the model guidance documents and DTSC recommendations:

Sensitivity analysis of model input parameters - A sensitivity analysis was not presented in the July 20, 2015 . Per the DTSC, the J&E model is generally considered to have a precision no greater than an order of magnitude, hence it is important to understand the sensitivity of the model to various input parameters by performing a sensitivity analysis. This analysis should be presented in a table with inputs (range of values, basis/reference for site-specific parameter or default parameter), outputs, and should be supported by screen shots of all pages for each model run (including the intermediate calculations sheet).

Use of site-specific soil input parameters - The July 20, 2015 reports states that soil input parameters were based on visual description of subsurface soil as annotated on boring logs,

however DTSC guidance states that this is not an appropriate approach for selection of model input parameters. Site-specific soil parameters should be obtained using laboratory testing in accordance with the DTSC guidance criteria and standard geotechnical and geophysical methods for measuring or estimating these values.

Air Permeability – The DTSC guidance states that if air permeability measurements are not available and existing buildings are larger than the default size of 100 square meters, the soil gas advection rate (Q_{soil}) of 5 liters per minute should be proportionally increased in a linear fashion as a function of the spatial footprint of the building. The soil gas advection rate input value should be supported with data on the square footage of the building at the site.

Steady state conditions – The July 20, 2015 report states that the PCE concentration in well VM-9SS is slightly above the commercial/industrial environmental screening level (ESL) of 2,100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and that the concentrations show a general stable trend relative to the overall concentration trend in the well. However, a review of the data for this well indicates that there is an increasing PCE concentration trend since remediation was terminated in July 2012 and a concentration of 3,600 $\mu\text{g}/\text{m}^3$ reported in the last sample collected in June 2015. The J&E model assumes steady state contaminant conditions exist in the subsurface, therefore, the revised risk assessment must include an analysis (trend lines, Mann-Kendall, etc.) to support the assertion that the PCE concentrations in well VM-9SS are stable.

Statistical approximations versus maximum concentrations – Per the DTSC guidance, maximum contaminant concentrations should be used for modeling, however if extensive environmental media data have been collected, the input value for contaminant concentration into the J&E model may be a statistical approximation of the dataset. However, a robust dataset is needed for statistical approximation, which usually implies the collection of at least eight samples within the building footprint, both spatially and temporally. The July 20, 2015 report presents results of simulated risk calculations using the 95% UCL concentrations of PCE throughout the period of record at VM-9SS, and the 95% UCL using the latest round of sampling results from all source area monitoring wells at or immediately adjacent to the dry cleaner building. A review of the 95% UCL calculations presented in the report indicates that the calculations for VM-9SS used 6 samples and resulted in a warning that the methods used on the data sets and resulting calculations may not be reliable enough to draw conclusions, and that bootstrap methods should be used on data sets having more than 10-15 observations. Additionally, there has been an increasing trend in the concentration of PCE in this well as noted above, thus use of a 95% UCL for this well is not appropriate. Although 11 sampling data points were used to calculate the 95% UCL of the “latest round of sampling results” it is not clear what data set this is referring to and whether the sample locations were inside to the building footprint. Data must be presented in the revised risk assessment to support the use of these statistical approximations.

Cumulative risk assessment – The July 20, 2015 report presents a risk analysis of vapor intrusion to indoor air for PCE only. The revised risk assessment must also present cumulative risk calculations for all contaminants detected in the wells located within the building footprint (PCE, TCE, cis-1,2-DCE, etc.) in accordance with DTSC guidance.

Building details – The revised risk assessment must provide details on the existing building at the site including the square footage of the building footprint, foundation details, tenant spaces to support model inputs and assumptions.

J&E Model assumptions – Use of the J&E Model as a screening tool to identify sites needing further assessment requires careful evaluation of the assumptions listed in the model guidance documents to determine whether any conditions exist that would render the J&E Model inappropriate for the site. A discussion of the appropriateness of the model assumptions must be included in the revised risk assessment.

Please work with your consultant to submit a revised risk assessment addressing the above listed comments.

Dilan Roe, P.E.

Program Manager - Land Use & Local Oversight Program

Alameda County Environmental Health

1131 Harbor Bay Parkway

Alameda, CA 94502

510.567.6767; Ext. 36767

QIC: 30440

dilan.roe@acgov.org

PDF copies of case files can be reviewed/downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>

From: Jim Roessler [mailto:jim@roesslerinvestmentgroup.com]
Sent: Thursday, October 15, 2015 3:27 PM
To: Roe, Dilan, Env. Health <Dilan.Roe@acgov.org>
Cc: 'Mehrddad Javaherian' <mehrdad@endpoint-inc.com>; DWP5334@aol.com
Subject: Meeting

Dilan ,

I won't make the 4PM meeting although Mehrdad and Dwight should be there. I left my office at 2:30PM in downtown San Francisco and sat in dead lock traffic going 4 blocks in a half hour and turned around since I could not even get across Market Street. There must be an accident or fire that completely stopped traffic in downtown San Francisco. Hopefully the meeting will be fruitful. My apologies.

Jim Roessler
Roessler Investment Group
442 Post St, Ste 700
San Francisco, CA 94102
Phone: (415) 837-3722
Fax: (415) 837-3717
Email: Jim@RoesslerInvestmentGroup.com
Website: www.RoesslerInvestmentGroup.com