CENTER FOR PUBLIC ENVIRONMENTAL OVERSIGHT
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May 8, 2022

State Water Resources Control Board
Sacramento, CA
By e-mail at **commentletters@waterboards.ca.gov**

Dear Sirs/Mmes:

Thank you for the opportunity to comment on the scoping exercise for a Proposed Vapor Intrusion Amendment to State Board Resolution 92-49.

The April 28 scoping meetings pointed out a disparity of involvement in the rule amendment process. Those with primarily a business interest in vapor intrusion response appeared to be part of an organized campaign to weaken California's soil-gas-to-indoor-air attenuation factor, while other than myself, community advocates—people primarily concerned about health—did not participate. I recognize that the Waterboards did conduct outreach to environmental justice representatives, but more must be done to engage people whose lives are directly impacted by vapor exposure.

Community Engagement

I had initially planned to focus these comments on community engagement, my professional area of expertise. So I'll start with that.

The February 2020 joint draft Supplemental Guidance doesn't say much about community engagement and communications with owners, occupants (including residents), and parents of children attending school in buildings undergoing vapor intrusion responses. It does refer to DTSC's 2012 Vapor Intrusion Public Participation Advisory (VIPPA), which is a robust, useful document. Perhaps it could be better incorporated into the rule amendment.

As someone who has worked extensively with communities underground vapor intrusion responses, I suggest that the following be included in the amended rule.

- Community engagement activity should directed to *building occupants* and owners as well as the *community at large*.
- The public should be treated as partners in investigations. Often they know details of building configuration or the history of nearby hazardous substance releases about which regulators and regulated parties are unaware. Their cooperation is needed to ensure that windows, doors, and other openings are closed during sampling.
- Sampling results should be provided *promptly* to building occupants and, in the case of children, their family members.
- Impacted communities should have a say in the determination of acceptable risk.
- Particularly in new developments, local governments should be encouraged to use their review processes (such as CEQA) to reinforce regulatory requirements associated with vapor intrusion. This is what my city, Mountain View, has done in cooperation with U.S. EPA.
- In recognition of the complexity of vapor intrusion, the affected public should be offered *independent* technical assistance, provided by people with vapor intrusion expertise.
- If it is determined that background (indoors, outdoors) sources are responsible for elevated levels of the sampled vapor-forming chemicals, occupants and owners should be provided with advice on how to reduce those exposures.

Attenuation Factor

While decisions about investigation, mitigation, and remediation at potential vapor intrusion sites should be based upon multiple lines of evidence, there is a risk that low indoor-air -to-soil-gas attenuation factors currently proposed for California by industry—polluters, developers, property owners, along with their consultants and attorneys—will perpetuate environmental injustice.

These interests have been lobbying for a less protective attenuation factor in California at least since the private release of California's draft Supplemental Guidance in January 2018. I suspect that pressure from these interests is a major reason that the Guidance has not yet been finalized. At the Waterboards' virtual hearing on April 28, 2022, most of the presenters argued for a less protective attenuation factor, barely mentioning any other aspect of the under-development Waterboards Amended Resolution. It appears likely that the draft Supplemental Guidance will be incorporated into the Waterboards Amended Resolution.

U.S. EPA (2015) and California's Draft Guidance (2018/2020) both recommend a default attenuation factor of .03 for both sub-slab and near-source exterior soil gas, but Lahvis and Ettinger (2021) derived an attenuation factor of .0008 based upon California-only data. In 2021, DTSC made a conference presentation specifying .005 for sub-slab soil gas and .0009 for exterior soil gas. In December 2021, DTSC used a "future residential" attenuation factor of .001 to evaluate PCE contamination at an affordable housing development site in Redwood City.

I don't have the expertise or resources to adequately review the studies designed to support a weaker attenuation factor, but I am able to note the likely consequences of a weak attenuation factor in a neighborhood where I am assisting residents: the 2500 block of Irving in San Francisco, home to two former dry cleaners.

The March 2022 DTSC-led sampling of six homes adjacent to the Irving Street soil-gas plume found four homes with PCE above the established residential indoor air screening level of .46 $\mu g/m^3$.

Here are the ground-floor PCE Summa canister readings and the sidewalk soil gas measurements for those four homes:

Indoor ($\mu g/m^3$)	Soil Gas (5 ft. bgs) ($\mu g/m^3$)	Building-Specific Attenuation Factor
2.01	74.0	.027
0.978	90.3	.011
1.91	95.7	.020
1.23	176 (average)	.007

Another way to look at it is to utilize soil gas screening levels based on the attenuation factor. If .03 is the attenuation factor, then the residential soil gas screening level would be 15 $\mu g/m^3$. If .005 (the highest of the proposed alternatives) were used, then the residential soil gas screening level would be 92 $\mu g/m^3$. That mean: If the soil gas screening level were used to determine whether these homes should have their indoor air sampled, they would not have been sampled. Fortunately, the residents insisted on sampling, and to their dismay the indoor air screening level was exceeded. (DTSC is currently saying the levels are acceptable, but that's another debate.)

Groundwater is reportedly deep and relatively uncontaminated at the Irving Street site, so soil gas levels are the driver of the investigation and potential response. Thus far, the highest soil gas levels on non-residential property in the area have been 2500 $\mu g/m^3$. Using 67 $\mu g/m^3$ as the non-residential soil gas screening level (based upon the default attenuation factor of .03), there was a clear requirement for an investigation. However, an attenuation factor of .0008 would have generated a non-residential soil gas screening level of 2500 $\mu g/m^3$, barely enough to keep the site from being erased from the map. Yet most of the indoor air measurements in the existing Police Credit Union building on the site exceeded the commercial indoor air screening level of 2.0 $\mu g/m^3$, at least one by a factor of two

Thus, that an attenuation factor of .005 would mean that many contaminated homes in California would not be sampled and that an attenuation factor of .0008 would preclude an environmental response if soil gas screening levels were used as the guiding line of evidence.

This suggests to me that studies that derive attenuation factors should not be conducted by representatives of regulated parties; that public health advocates should be engaged in the design of such studies; and that such studies should meet U.S. EPA's criteria for reasonable

maximum exposure (RME), using approaches such as the concurrent measurement of building pressure differentials.

Finally, some have suggested that EPA's derivation of its attenuation factors was influenced by the presence of preferential pathways. In my experience, preferential pathways are commonplace, so even if EPA's dataset includes buildings with preferential pathways, it remains representative.

Off-Site Investigation

Many vapor intrusion investigations in California are managed through voluntary cleanup programs, where the regulated party is a developer. There is a risk, at such sites, that off-site impacts may not be fully investigated, let alone mitigated or remediated. Section 2A.2 of the draft Supplemental Guidance states, "Sampling will most likely be an iterative process starting at the suspected points of release within a site and stepping out until the soil gas plume is delineated." Unfortunately, it is common for volunteers to only address their own properties. Either they should be required to address their entire plumes or state agencies should conduct that work.

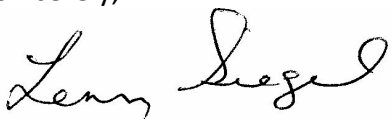
Housing

I was amazed and disappointed on April 28 to hear real estate industry representatives blame the indoor-air-to-soil-gas attenuation factor for the high cost of building housing in California. The cost per unit of building housing, including affordable housing, often exceeds $1 million per unit. Land, labor, and raw materials are expensive, and fees (or land dedication) are necessary to ensure that future residents have access to parks, schools, and infrastructure.

The cost of environmental investigation, mitigation, and remediation are small compared to overall project costs, and such work increases the value of the finished project. To me, the objective of brownfields development is to use some of the increased property value brought about by redevelopment to pay for real remediation. Not only do permanent remedies benefit future residents and other building occupants, but they can protect neighbors—many of whom have endured contaminant exposure for years, even decades—as well. That's the principal mission of the Waterboards, DTSC, and other environmental agencies.

In my work as a community organizer and Mountain View Council Member from 2015-2019, I am known as one of the Bay Area's most successful housing advocates. I know that it is possible to build housing safely on property contaminated with vapor-forming chemicals, but it doesn't make sense to do that without fully addressing the risk of exposure through the vapor intrusion pathway.

Sincerely,



Lenny Siegel
Executive Director