

Fake Data, Collateral Damage and the Need for Reform in the Vapor Intrusion Industry
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Roger C. Brewer, Senior Environmental Scientist, Hawaii Department of Health, 2785 Waimano Home Road, Suite #100, Pearl City, Hawai'i 96782,
Email: roger.brewer@doh.hawaii.gov

Abstract (Draft 8/15/22). The intrusion of subsurface vapors into buildings can pose a significant health risk to occupants. Environmental regulators and private consultants have made significant gains in addressing high-risk sites, once identified. Poor sample collection and data interpretation practices continue to plague the industry, however. Testing of a small number of traditional, small-volume samples of subslab vapors to assess risk or predict vapor attenuation is highly unreliable. Inappropriate focus on a short list of individual “target” compounds, such as BTEX, can significantly underpredict vapor intrusion risk. Poorly thought out guidance for initial screening of vapor intrusion concerns can draw in large numbers of otherwise low-risk sites, overwhelming already overtaxed regulatory agency staff. This can leave business operators and property owners, often in middle of an important business transaction when a potential problem is identified, in bureaucratic as well financial and legal limbo. Such pressure on the private sector is often hidden from the daily view of environmental regulators, either because the investigations are not formally reported or because they are placed in an ever growing pile of “low priority” cases.

These problems can be more efficiently addressed and managed, but regulatory agencies in particular first need to accept that some past beliefs and practices were erroneous or inadequate and that change is needed. Risk-based, “Large Volume Purge” subslab vapor sampling methods can be employed to more reliably assess initial vapor intrusion concerns at sites where significant, subsurface contamination is not already anticipated.

Progressively more complex, expensive and time consuming methods to assess risk and optimize remedial actions can be employed as needed as potential problems are identified. Training of environmental workers as well as pressure from liability-savvy responsible parties, attorneys and financial institutions will continue to force the vapor intrusion industry to evolve, to the benefit of the environment as well as stakeholders on all sides.