



North Carolina Proposes New Guidance for Vapor Intrusion Assessment and Mitigation

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The North Carolina Department of Environmental Quality (DEQ) has drafted new and revised guidance documents for the assessment and mitigation of vapor intrusion (VI) at properties undergoing reuse and redevelopment (Draft Guidance). Spearheaded by the Brownfields Redevelopment Section of DEQ's Division of Waste Management, the proposed new guidance was developed in February and presented to stakeholders for review and comment on March 10, 2023. At that time, DEQ solicited comments for 30 days on the new and revised guidance, and comments are now being reviewed by DEQ.

There are four draft documents included in the new vapor intrusion guidance:

- Revised Brownfields Vapor Intrusion Assessment Checklist
- New Minimum Mitigation Requirements for Reuse
- Revised Brownfields Vapor Intrusion Mitigation System Design Checklist
- New Minimum Sampling Guidelines Summary Table

In its rollout of the draft guidance, DEQ stated it was responding to stakeholder desires for consistency in decisions, predictability for project budgeting, and getting to an endpoint in assessing and mitigating vapor intrusion in site reuse projects. Technical issues which the new guidance seeks to address were identified as responding to the overall changing technical landscape for vapor intrusion issues, as well as specific concerns over experience with discrepancies between exterior soil gas measurements and sub-slab soil vapor data, concerns about the presence of trichloroethene (TCE) as an immediate exposure threat, and addressing methane where a significant source exists. Ultimately, the guidance seeks to foster maximum consistency and predictability of sampling and achieving a sampling endpoint balanced against concerns about TCE because of immediate exposure threats, differentiation between residential and commercial sites (e.g., TCE Action Levels lower for residential), and reflection that sub-slab vapor is the best risk predictor compared to exterior soil gas.

Key components of the Draft Guidance include the following:

- **Baseline Assessment:** Recommendations on sampling protocol for exterior soil gas, sub-slab soil gas, and indoor air sampling, including for the following: Spatial distribution/sample frequency
 - o Minimum initial and final sample canister vacuum
 - o Maximum purge rate during sampling
 - o Sampling times following probe installation
 - o Addition of analytes for vapor testing
- **VI Mitigation System Decision Making:** Incorporation of several decision matrices driven by the results of DEQ Risk Calculator, the presence of TCE, and whether the site end use is residential or nonresidential. Mitigation is recommended and/or additional pre- and post-occupancy testing requirements are now applied when TCE is identified in any media (soil, groundwater, soil gas, or indoor air) due to acute exposure concerns for this chemical.
- **Pre- and Post-Occupancy Sampling:** Requirement of both indoor and sub-slab pre- and post-occupancy vapor sampling based on the presence of TCE and Risk Calculator results. Post-occupancy sampling for sites generally defaults to at least one year of sampling, regardless of TCE concentrations or mitigation approaches.

The Draft Guidance seeks to establish minimum mitigation and sampling requirements for vapor intrusion for the entire Division of Waste Management ? not just the Brownfields Redevelopment Section. In describing them as minimum requirements, the Draft Guidance could be read to establish binding standards of conduct for all contaminated sites in North Carolina. Consequently, this guidance could be relevant to other cleanups outside of the Brownfields Redevelopment Section, and therefore have invited scrutiny and comment from a wide range of stakeholders.

DEQ is still reviewing the comments, but it can be expected that final versions of the Draft Guidance will be issued in the near future.

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