

Notification and Response Actions Associated with Trichloroethylene (TCE) in Indoor-Air

Property owners, remediating parties, prospective purchasers or Brownfields Program applicants should be aware of reporting, notification and response actions associated with sampling for trichloroethylene (also called trichloroethene or TCE). Outlined below are the requirements if you have contracted a consultant to perform indoor air sampling for TCE on your behalf or another entity has contracted a consultant to perform indoor air sampling for TCE in a building located on a property that you own.

Purpose

There are stringent timeframes regarding reporting, notification and potential response actions required by the Division of Waste Management (DWM) due to potential health risks associated with exposure to TCE in air above the action level for women of child-bearing age (between 15 and 50 years of age) that may be pregnant or plan to become pregnant soon.

These requirements are specific to TCE exposures due to vapor intrusion from subsurface contamination. This information applies to workplaces that do not use TCE as part of their operations. The Occupational Safety and Health Administration covers the use of TCE at work and may have different standards.

The N.C. Department of Environmental Quality (DEQ) recommends that all women that may be pregnant or plan to become pregnant avoid exposure to TCE above the action level concentrations regardless of the source of the TCE.

Action Levels for TCE

- **The action level to protect women of child-bearing age in a residential setting is 2.1 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$).**
- **The action level to protect women of child-bearing age in a non-residential setting is 8.8 $\mu\text{g}/\text{m}^3$.**

The TCE-sensitive population at risk is women of child-bearing age (defined as age 15 to 50 years). The potential health risk is permanent damage to fetal heart development. Therefore, it is especially important to protect women who may be in their first trimester of a pregnancy, including women who may not yet know they are pregnant. Based upon information from the Environmental Protection Agency and other scientific studies, DWM has determined that when the inhalation action level concentration has been exceeded and this TCE-sensitive population may be exposed, immediate actions must be taken to report the concentrations to the division along with notifying any exposed TCE-sensitive population and taking response actions to reduce the exposure to below the action level concentration as quickly as possible. **The goal is to reduce exposures below the action level within 72-hours or less for women in their first trimester.**

Notification

Owners: The property owner, remediating party or Brownfields Program applicant (if currently the owner of the property) must report the data to the DWM within **one business day** of receipt of validated laboratory data if TCE is detected above the applicable action level. Failing to do so may cause additional risk and may make the property owner, remediating party or Brownfields Program applicant more vulnerable to private and public legal actions.

Prospective Owners: When the indoor air sampling is performed by a prospective property purchaser,

Brownfields Program applicant or other entity that does not currently own the property, the entity doing the sampling should make the property owner aware of the **one business day** reporting requirement prior to sampling. Once sample results are received, the results should be provided to the property owner immediately to fulfill reporting requirements.

Building occupants must be notified of the results as soon as possible. It is highly recommended that property owners work directly with the appropriate DWM program to coordinate notification efforts. The DWM risk assessor can assist parties in providing health risk information to potentially affected individuals.

Response Actions

The division will work with reporting entities to identify appropriate mitigation options and begin implementation quickly for locations where women of child-bearing age are present. If women of child-bearing age have been relocated out of the impacted building, they should not be reintroduced to the contaminated area until laboratory data for two consecutive sampling events collected after temporary or permanent mitigation shows that TCE levels are below action levels. Depending on specific scenarios and which DWM program has oversight of the property, response actions may be implemented by property owners, remediating parties, contractors for DWM state-led programs or other entities. If there are questions regarding who is responsible for implementing immediate response actions, DWM should be contacted for clarification and guidance.

Initial response actions that should be implemented immediately (typically within 24 hours) include:

- Notification of the results to building occupants as discussed above.
- Vent the basement (if a basement exists in the building) or lowest level of the building by opening windows.
- Seal potential conduits where vapors may be entering the bottom floor of the building and any subsurface walls.
- Enclose and passively vent sumps.
- Resample and verify results.

The goal is to reduce exposures to below the action level within 72-hours or less for women in their first trimester of pregnancy.

After the initial response, other actions to prevent TCE exposure above the action levels may need to be implemented as soon as possible but require days, weeks or months to implement. Some examples include: adjusting the HVAC system, installing carbon filtration on the HVAC system, using portable air-purifying units or installation of a sub-slab depressurization system. Your environmental consultant can assist with determining the best course of action.

TCE Information

The DWM Supplemental Vapor Intrusion Guidance for TCE, which provides more information, can be found at: <https://deq.nc.gov/VaporIntrusionGuidance>. More information on TCE health effects and the basis of DWM's action levels can be found at <http://epi.publichealth.nc.gov/oe/az.html#tce> and the Agency for Toxic Substances and Disease Registry's website at <https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=30>.

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