



Rationale for the Potential Addition of a Vapor Intrusion Component to U.S. EPA's Hazard Ranking System

The U.S. Environmental Protection Agency (EPA) is responsible for protecting human health and the environment. The policies and rules that EPA develops are based on scientific research and dialog with stakeholders in the public and private sectors. One major EPA program that protects human health and the environment is the Superfund program. Since 1980, this program has identified and enabled the cleanup or containment of thousands of sites across the nation that are linked to contamination of surface water, ground water, soil, or air, endangering public health and the environment.

EPA uses a methodology known as the Hazard Ranking System (HRS) to identify sites for the National Priorities List (NPL). EPA has evaluated sites across the nation and in U.S. territories. Sites receiving HRS scores above a specific threshold are eligible to be proposed for placement on the NPL; sites on the NPL are targeted for further investigation and possible site remediation through the Superfund program. Since the inception of the HRS in 1982, more than 1,600 sites have been placed on the NPL.

As part of its ongoing evaluation of the Superfund program, EPA is considering an addition to the HRS that would evaluate the threats posed by intrusion of hazardous vapors into dwellings and other occupied structures.

What is Vapor Intrusion and What Threat Does It Pose?

At some sites with subsurface contamination, many chemical contaminants – especially volatile substances – have been shown to enter into overlying structures. Once these contaminants have entered the structures, especially in the case of contaminants forming vapors, they can pose a threat to individuals living, working in, or otherwise occupying these structures. The threat results mainly from inhalation, but dermal contact and ingestion also are concerns, as is the possibility of concentrations building up sufficiently to pose explosion or fire hazards.

Why Add Vapor Intrusion Evaluation to the HRS?

The HRS currently evaluates the release of hazardous substances from sites via four pathways: surface water, ground water, air, and soil exposure. The HRS has no mechanism for evaluating the threat to human health posed by vapor intrusion. While the ground water and soil exposure pathways consider contaminated ground water and contaminated surfaces (e.g., surface soils), respectively, neither addresses site-related contaminants, such as vapors that can enter buildings and pose exposure threat to occupants. The air migration pathway considers the threat posed by contaminants released to atmospheric air, but does not address indoor air.

Evaluation of threats related to vapor intrusion will allow EPA to address particular priorities of its mission, such as ensuring the health of children and of women of childbearing age. Consideration of vapor intrusion threats also will enable EPA to address indoor air contamination issues for low-income, minority, indigenous and Tribal (Native American) persons, who may live and work in areas where the design and condition of structures may result in vapor intrusion.

How Can the Public Become Involved?

As it considers whether to add a vapor intrusion component to the HRS, EPA seeks public input on the need for and benefits of an addition to the HRS. The public can submit questions or comments on the potential addition of a new HRS pathway via the EPA docket [Docket ID: EPA-HQ-SFUND-2010-1086].

In addition, EPA will hold a number of “listening sessions” at locations across the country. At these listening sessions, EPA officials will present an overview of vapor intrusion HRS issues. EPA’s formal remarks will be followed by a three-hour or longer session for oral comments and questions from the public. Members of the public also will be able to submit written questions or comments to EPA at the listening sessions.

Questions and comments received by EPA will be evaluated as the Agency considers whether to develop a proposed rulemaking to add vapor intrusion to the HRS.

For More Information

- For more information on EPA’s plan to consider an addition to the HRS to address the threat posed by vapor intrusion, please contact Terry Jeng at jeng.terry@epa.gov.
- For more information on the HRS, visit http://www.epa.gov/superfund/programs/npl_hrs/hrsint.htm
- For more information on the National Priorities List, visit <http://www.epa.gov/superfund/sites/npl/>
- For more information on Superfund, visit <http://www.epa.gov/superfund/index.htm>.