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Environmental LAW

Soil vapor intrusion: A volatile issue

More than a decade has passed since the New York State Departments of Health and Environmental Conservation and the U.S. Environmental Protection Agency discovered they had significantly underestimated the potential for contaminated soil and groundwater to “off-gas,” and for the resulting chemical vapors to migrate through the soil into homes and other buildings.

In that time, the regulatory agencies and the environmental consulting industry have struggled to gain a firm and predictable understanding of the phenomenon dubbed “soil vapor intrusion.”

By early this year, EPA and approximately 30 states, including New York, had issued some form of regulation or guidance to identify SVI, quantify the risks and direct mitigation to control human exposure. Such mitigation may range from inexpensive, passive venting to sophisticated sub-slab depressurization and vapor treatment systems sucking vapors from beneath buildings of hundreds of thousands of square feet. New York also has the first, and as yet only, statute requiring landlords to disclose certain indoor air test results to tenants.

The environmental assessment industry has tried to modify due diligence recommendations to keep pace with the ASTM-issued “Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions.”

More recently, and inevitably, soil vapor intrusion, actual or potential, has moved into the courts.

Generally speaking, vapor intrusion refers to the mechanical process by which chemicals in the soil or groundwater become gaseous and migrate up through the soil and into the indoor air of a building or structure through basements or foundation slabs. Technically, the pathway is the same as followed by naturally occurring radon, and the mitigation techniques may be identical, although in this case we are concerned with man-made contaminants.

For a problem to exist there must be a source of underground contamination and a pathway into a building or structure. In extreme cases, concentration of chemical vapors may create a risk of fire or explosion in a confined space such as a basement. Vapor intrusion is not a new phenomenon, but the scientific understanding is continuing to evolve.

Historically, scientists believed vapor intrusion only occurred where the source of contamination, such as a groundwater plume, was shallow, close to a building and at a high concentration. All of these conventions have been challenged, leading to estimates that 100,000 or more sites are potential sources of vapor intrusion into nearby buildings. Locally, vapor intrusion has been a factor at properties from Batavia to Brighton to Victor.

Many issues remain unresolved. Among the more controversial has been the development of screening standards and mitigation action levels based solely on residential exposure, which are then applied to assess risks at commercial and industrial buildings where the actual exposure is much different and where alternative permissible exposure levels for worker safety have been promulgated by OSHA.

With the scientific and regulatory uncertainty surrounding vapor intrusion and the added threat of liability for personal injury caused by exposure to chemical vapors, the lack of curiosity by purchasers and lenders has been surprising. On the whole, buyers and lenders are not paying adequate attention to the possibility of soil vapor intrusion as a potential source of property impairment, added cost and future liability.

Rightly, the primary focus of pre-purchase due diligence should remain on identifying potential sources of soil and groundwater contamination, both on and off the site under consideration. Soil vapor intrusion cannot exist without a source.

However, where a source of contamination has been identified, the investigation should not end with the mere determination that the plume, itself, does not pose a direct threat to the property, for example, because groundwater flow is in a direction away from the property. Soil vapors are directed by factors other than the direction of groundwater flow. In such cases, the investigation should be expanded to evaluate the potential for soil vapor intrusion.

Part of the complacency or lack of concern can be attributed to the fact that liability for remediation under state and federal statutes is focused on the sources of contamination. There is no case holding a property owner liable to remediate vapors originating from a source on someone else's property.

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Continued ...

However, that may be small comfort if the Department of Health requires mitigation as a condition for the continued occupancy of your building and the responsible party cannot be found or has no assets. It may also prove a hollow protection to future claims by tenants or others injured by exposure who argue the building owner, albeit innocent of causing the original contamination, knew or should have known of the danger and failed to

prevent the injury.

Environmental due diligence began with concerns about Superfund liability for remediation, but also serves to warn about potential restrictions on use or future tort liability.

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