

A New Approach to Managing LNAPL

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Background. Like doctors we cannot and should not simply send every patient who spikes a temperature under the knife. Our symptoms and outcomes have been measured based on LNAPL thickness in wells and our medicines have been centered on LNAPL recovery. On the surface it appears few of our patients have recovered using this treatment because it turns out that health of our patients has little to do with thickness in wells. Instead, it has everything to do with answering the following questions:

1. What is the distribution and mobility of the LNAPL in the formation?
2. What are the completed exposure pathways and risk associated with the LNAPL and its constituents?
3. And what are the risks associated with any completed expose pathways?

To this end, site stake holders have worked diligently together to develop a new approach to LNAPL sites. This new approach establishes a clear set of goals, involves more investigative tools and ways to analyze data, and devises treatments that are aligned with the goals of our LNAPL patients. This presentation will provide a basis for this new approach to managing LNAPL sites and an overview of the building blocks which support it.

Approach. Although the basis for this approach is provided by many documents, the ITRC LNAPL guidance entitled *Evaluating LNAPL Remedial Technologies for Achieving Project Goals* (2009, pending update publication in 2018) provides the preeminent summary. It is built on a collaboration between industry specialists and regulatory agency input. Within this *document* is the identification of the key metric of LNAPL transmissivity which proportionally characterizes LNAPL saturation impacts irrespective of site setting. This metric is defined by the ASTM standard entitled *Standard Guide for Estimation of LNAPL Transmissivity (2013)* and is increasingly *being* recognized by numerous regulatory agencies.

As with the evaluation of any environmental site, the formulation of the *LNAPL* conceptual site model (LCSM) is a centerpiece of this process and there are several unique aspects which inform the LCSM. These include the use of innovative screening technologies such as laser induced fluorescence, diagnostic gauge plots, undisturbed core analysis, and LNAPL transmissivity evaluations. Combining these into the LCSM and using them to evaluate receptor pathways, risks, and effective remedial technologies is the cornerstone of this new approach. This presentation will provide an approach that has been utilized over the last five years using a combination of third party review, regulatory interaction, and new LNAPL management practices across a dozen different American states and Canadian provinces to achieve meaningful progress in environmental site cleanup.

Results. As environmental stewards, our responsibilities extend far beyond remediating subsurface contamination. We must prioritize the risks we address and the pathways needing protection. This presentation will provide an approach that has been utilized over the last 5 years using a combination of third party review, regulatory interaction, and new LNAPL management practices across a dozen different American states and Canadian provinces to achieve meaningful progress in environmental site cleanup and more than a million dollars in cost savings.