

Hydrocarbons Training: Effective Application of ITRC Guidance Documents

Since 2014, ITRC has published three technical guidance documents addressing various types of hydrocarbon-impacted sites:

- Light Non-Aqueous Phase Liquid (LNAPL): LNAPL Site Management: LCSM Evolution, Decision Process, and Remedial Technologies
- Petroleum Vapor Intrusion (PVI): Fundamentals of Screening, Investigation, and Management
- Total Petroleum Hydrocarbon (TPH) Risk Evaluation: TPH Risk Evaluation at Petroleum-Contaminated Sites

In 2021, the ITRC Hydrocarbons Team formed to create a series of interactive, team-based workshops to help people fully utilize all three petroleum documents holistically to avoid data gaps that result in:

1. Unnecessary field mobilizations,
2. Delays in characterizing risks,
3. An inaccurate conceptual site model (CSM),
4. Delayed or inaccurate remedial decisions.

The training goals include:

- Developing a broad technical understanding of the three ITRC hydrocarbon guidance documents and improve familiarity with the content of these documents.
- Presenting a holistic approach to investigating a hydrocarbon release by developing a cohesive Conceptual Site Model (CSM) and strategizing a comprehensive risk management approach.
- Leading participants to better project management of the investigation by recognizing common concerns more quickly in order to avoid the creation of data.

This workshop exposes participants to a theoretical, but practical and realistic, exercise to emphasize concerns that a petroleum release can present while addressing those concerns in a cost-effective and time-efficient manner. The Hydrocarbons Team crafted five scenarios (see Training Exercise Matrix) that encourages discussion about alternative approaches and best practices for site assessments. Each 3-hour and 4-hour workshop will focus on one scenario:

- Glacial – AST Gasoline Site
- Glacial – Pipeline Diesel Site
- Fluvial – Refinery / Brownfield Site
- Fluvial – UST Gasoline Site
- Saprolite / Shallow Bedrock – UST Gasoline Site

In addition, the Hydrocarbons Team created a Petroleum Risk Evaluation Checklist to assist in conducting a detailed site assessment. The Petroleum Risk Evaluation Checklist helps project managers ensure that they have considered many site issues in developing a Conceptual Site Model (CSM) for a specific site. It provides links to specific sections of the three ITRC Guidance Documents for quick reference.

Upcoming Hydrocarbons Training

The Hydrocarbons Training exposes participants to a theoretical but practical and realistic exercise that familiarizes participants more thoroughly with the contents of the three ITRC Guidance Documents (LNAPL, PVI, TPH). The training emphasizes all of the concerns that a petroleum release can present while addressing those concerns in a cost-effective and time-efficient manner.

The Hydrocarbon Training is designed to be flexible in the format. This includes a virtual or in-person format with a 3-hour, 4-hour, or 8-hour course options. ITRC expects most virtual classes will follow the 3-hour format. Each workshop will operate with a main classroom and multiple teams (breakout groups).

Visit ITRC's Upcoming Training page to find any upcoming in-person or virtual Hydrocarbons Training Courses.

Interested in Hosting a Hydrocarbons Training Course?

Hydrocarbons trainers are available to provide an in-person or virtual session for your organization, subject to trainer availability and/or travel funding. Contact itrc@itrcweb.org with any Hydrocarbons Training requests.

Want to decide which of the five exercises will work best for your organization? View the Training Exercise Matrix that maps information covered in each Scenario. The Training Exercise Matrix is a tool to assist individuals and organizations that are interested in taking the Hydrocarbon Team training decide which of the five training Scenarios will best meet the needs of the organization. The matrix outlines the focus of the training Scenario (e.g.: geologic type, product release type, ITRC Guidance Document focus).

Instructional Videos

▼*View Available Videos*

Ten short videos were created to help participants understand some key concepts of ITRC's three petroleum Guidance Documents. These videos are currently in production; live links will be coming.

1. **Overlap Between TPH, LNAPL and PVI (Course Introduction)**: ITRC's basic concepts of LNAPL, Petroleum Vapor Intrusion and Total Petroleum Hydrocarbons
2. **LNAPL Migration**: ITRC's description of the science behind LNAPL body stability
3. **"Bottoms Up" – the Characterization of PVI**: ITRC's recommended approach for PVI site characterization
4. **A "How To" on PVI Screening**: The process ITRC recommends for applying PVI screening distances
5. **"The Case for Change" – PVI Screening**: Why ITRC recommends screening PVI sites based on source-building separation distance
6. **"Now What?" Strategies for Characterizing PVI After Screening**: ITRC's recommended approach for evaluating PVI at sites that cannot be screened out
7. **TPH General Chemistry**: ITRC's general chemistry concepts of Total Petroleum Hydrocarbons
8. **TPH Partitioning / Fate & Transport**: ITRC's concepts for fate and transport of Total Petroleum Hydrocarbons
9. **TPH Analytical Methods**: Common analytical approaches for TPH and how your selection of analytical method can impact your site characterization
10. **TPH Risk Assessment/Management**: ITRC's summary of the tiered TPH Risk Assessment Framework, specific elements of a risk assessment, and different risk management options

Publication Date: October 2022