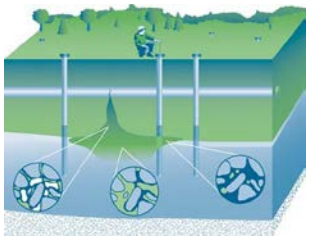
An ITRC 2-Day Training Course

Light Nonaqueous-Phase Liquids: Science, Management, and Technology

Course Overview

Light, nonaqueous-phase liquid (LNAPL) assessment and remediation presents a significant challenge for corrective action and cleanup at petroleum processing, storage, and handling facilities such as refineries, bulk product terminals, gas stations, airports and military bases. Once in the subsurface, LNAPLs can be difficult to adequately assess and remediate. The result can be long-term risk and exposure issues such as vapor intrusion, groundwater, surface water and soil contamination or other risk sensitive habitat. It may present acute-risk concerns such as explosive conditions or LNAPL may pose aesthetic concerns, or in some cases, pose no risk. In addition, regulatory drivers for LNAPL concerns present challenges to site closure, such as regulations that require recovery of "free product," (a.k.a., "free-phase hydrocarbon" and "liquid-phase hydrocarbon") to the agency determined "maximum extent practicable." ITRC offers this 2-day classroom training course, based on ITRC's Technical and Regulatory Guidance document, Evaluating LNAPL Remedial Technologies for Achieving Project Goals (LNAPL-2) to assist environmental practitioners with applying science-based solutions for LNAPL sites. The ITRC guidance was developed through the combined efforts of environmental professionals, including state and federal regulators, consultants, industry, and community stakeholders. This 2-day ITRC classroom training led by internationally recognized experts, should enable you to:



- **Develop and apply an LNAPL Conceptual Site Model (LCSM)**
- **Understand and assess LNAPL subsurface behavior**
- **Develop and justify LNAPL remedial objectives including maximum extent practicable considerations**
- **Select appropriate LNAPL remedial technologies and measure progress**
- **Use ITRC's science-based LNAPL guidance to efficiently move sites to closure**

Interactive learning with classroom exercises and Q&A sessions will reinforce these course learning objectives. You will also have the opportunity to network with other environmental professionals.

Class Date & Location:

April 1-2, 2014

InterContinental at the Plaza
Kansas City, Missouri

hosted by ITRC state members:

Nebraska Department of Environmental Quality

Kansas Department of Health and Environment

in partnership with

NEIWPCC
New England Interstate Water Pollution Control Commission

Course Outline & Agenda

Day 1

7:00 a.m.–8:00 a.m.

- Participant check in

8:00 a.m.–5:00 p.m.

- Basics
- LNAPL Conceptual Site Model

Day 2

8:00 a.m.–5:00 p.m.

- LNAPL Objectives
- Remediation Technologies
- Application Exercises

Registration Instructions

To register, go to www.itrcweb.org/training and select the registration button associated with the class of interest. Follow the instructions to register and provide payment (if required). If you have questions after viewing the online registration information, please contact the **ITRC Training Program at (402) 201-2419 or training@itrcweb.org**.

Who should attend?

Regulatory staff involved in LNAPL remediation programs, site owners, consultants, public stakeholders and others interested in using science-based approaches to assess, remediate, and close LNAPL contaminated sites. Space is available for 200 participants and may be limited by sector to ensure participant diversity.

ITRC's LNAPL Guidance:

- *Evaluating LNAPL Remedial Technologies for Achieving Project Goals* (LNAPL-2, Dec. 2009)

No cost download at: http://www.itrcweb.org/LNAPLs

Course Instructors (instructors vary by class)

Pamela Trowbridge, P.G. *Pennsylvania Dept. of Environmental Protection,* Harrisburg, PA. Technical co-Lead for ITRC's LNAPL Project and developing guidance for separate phase liquids for PADEP

John Menatti *Utah Dept. of Environmental Quality,* Salt Lake City, UT. Manager of the Petroleum Storage Tank Trust Fund at UTDEQ

Paul Stock *Minnesota Pollution Control Agency (MPCA),* Detroit Lakes, MN. Remediation Coordinator for MPCA's Petroleum Remediation Program

Sanjay Garg, Ph.D. *Shell Global Solutions,* Houston, TX. Consultant within Shell's global operations specializing in underground fate-and-transport of hydrocarbons

Andrew Kirkman, P.E. *BP,* Naperville, IL. BP's Lead LNAPL Technical Specialist supporting remediation, education, and research

Derek Tomlinson, P.E. *Geosyntec Consultants,* Blue Bell, PA. Environmental engineer specializing in managing sites with DNAPL and LNAPL

Terrence Johnson, Ph.D. *US Environmental Protection Agency,* Las Vegas, NV. Environmental Scientist on the EPA Emergency Response Team specializing in multiphase flow and contaminant transport

Rick Ahlers, P.E. *ARCADIS,* San Diego, CA. NAPLs Subdiscipline Leader for ARCADIS specializing in characterization, cleanup, and closure of LNAPL sites

Mark Lyverse, P.G, *Chevron Energy Tech Co,* San Ramon, CA. Hydrogeologist and technical remediation specialist with an emphasis on LNAPL distribution, fate and transport, and recovery

Registration Fee

The course fee is $895 (with early bird fee of $695 until March 3). This fee includes a student manual, ITRC LNAPL guidance document, and networking opportunities with refreshments. Registrants from organizations that are members of the ITRC Industry Affiliates Program are eligible for a discounted registration fee. **Note:** For U.S. local, state, and federal government, students, community stakeholders, and tribal representatives, ITRC will offer a limited number of scholarships. More information is available on the registration webpage: www.itrcweb.org/training.

Cancellations: If you must cancel and notify us on or before February 15, the registration fee will be refunded (Note: a $100 processing fee will apply).

Continuing Education Information

A certificate of participation will be provided to interested participants indicating 16 professional development hours. Please check with your organization or appropriate licensing board for their requirements and if they will accept this ITRC training course. More information is on the registration page.

Training Locations / Accommodations

InterContinental Kansas City at the Plaza
401 Ward Parkway
Kansas City, MO 64112

Until March 3, a limited number of rooms are available at a special group rate. Participants are responsible for arranging and paying for their lodging. More lodging information and a link to register for the hotel are available on the registration page. Please visit www.itrcweb.org/training to learn more.

ADA (Americans with Disabilities Act)

If you require special accommodation to fully participate in this seminar, please contact the ITRC Training Program at (402) 201-2419 or training@itrcweb.org at least four weeks prior to the course start date.

ITRC is hosted by ECOS Environmental Council of the States

For more information about ITRC and its available products and services go to **www.itrcweb.org**

ITRC Federal Partners

U.S. Department of Energy | U.S. Department of Defense | U.S. Environmental Protection Agency

IAP ITRC Industry Affiliates Program

Training Sponsor Opportunities:

$2000 per location (or $5,000 for all 3 locations in 2014)

Registration for all 3 locations must be completed by March 1, 2014 to qualify for the discounted price.

Includes free attendance by one company representative. Recognition will be given at the event, in class materials, in ITRC news emails, and on ITRC website. Optional exhibit space at event available.

More information on the registration page: www.itrcweb.org/training