



ITRC Implementing the Use of Advanced Site Characterization Tools

WHAT IS ITRC?

The Interstate Technology Regulatory Council (ITRC) is a state-led, public-private coalition dedicated to reducing barriers to the use of innovative environmental technologies. ITRC represents over 900 individuals across 50 states, working to produce guidance and training on innovative environmental solutions. Bringing together teams of state and federal regulators along with private, academic, and stakeholder experts, ITRC broadens and deepens technical knowledge and reduces barriers to the use of environmental technologies and processes. Since 1995, the collective success of this coalition has generated huge benefits to the environment, inspired new technical innovations, and saved hundreds of millions of dollars.

ITRC is a program of the Environmental Research Institute of the States (ERIS), managed by the Environmental Council of the States (ECOS). This partnership is based on a commitment to protect and improve human health and the environment across the U.S.

ABOUT ADVANCED SITE CHARACTERIZATION TOOLS

A number of advanced site characterization tools, which greatly expand the ability to understand contaminant concentration and mass, as well as increase the ability to understand the stratigraphy of the contaminated media (soil, rock), are available but underutilized. These



advanced site characterization tools can be broadly classified into analytical tools and geophysical tools. Analytical tools may be represented by membrane interface probe (MIP), an older well-known technology, and ultraviolet optical screening tool (UVOST), also known as laser-induced fluorescence (LIF), a newer technology.

While some of these tools, as well as the core principles underlying newer variations of such tools, have been in existence for several years, advances in computing and supporting technologies have vastly improved data analysis, presentation, and user experience. Despite significant progress, these tools are commonly only applied at the

largest, most complex sites, and often only after conventional investigation techniques have failed to adequately characterize a problem. This is surprising given that the amount of data collected per time invested exceeds that provided by more traditional methods. Additionally, costs have fallen significantly while the number of companies offering these services (and their geographic range) have increased. Given these factors, typified by the amount and quality of the data acquired versus the cost to obtain that data, a tipping point has been reached such that characterizing contaminated sites using conventional monitoring wells, discrete soil samples, and visually-described core logs is becoming obsolete. Sole dependence on these methods, because they are comparatively time-consuming, costly, and data quantity limited, typically results in significant data gaps relative to the effort expended. Despite the obvious advantages of the advanced site characterization tools, guidance on implementation and practical application is not readily available.

THE ADVANCED SITE CHARACTERIZATION TOOLS PROJECT

The goal of this project is to meld existing guidance, primary literature, vendor literature, and personal experience, illustrated by projects from the states, into a practical guide on the selection and application of advanced site characterization tools. The team plans to develop an online, interactive guidance, leading to online and classroom training. A group of complementary, advanced site characterization tools

will be identified by the team. They will address the selection, application, and integration of the tools into the project life-cycle of site characterization, remediation, monitoring, and closure. The guidance will provide practical explanations regarding the function and operation of each tool (how it works and when to use it). Without focusing on more conventional subsurface characterization techniques, the guidance will illustrate both the advantages and disadvantages of the newer tools in the amount and quality of data collected per time, in relative costs, and in tool availability. The team will address common misunderstandings and misapplications associated with individual, advanced characterization tools. In addition to evaluating individual techniques, they will discuss appropriate site characterization tool combinations. The team will ensure that the guidance handles interpretation of the results and management of the data. The guidance will also address perceived regulatory barriers to the full use of these techniques. This project is expected to span up to two years in order to prepare the relevant guidance, and up to another year thereafter to review and finalize the guidance and prepare the online training.

JOIN THE TEAM!

The Advanced Site Characterization Tools Project will begin in January 2018! To join, visit <http://itrcweb.org/Membership/TeamRegistration>.

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