



Benefits of the Interstate Technology & Regulatory Council

EPA Region IV and the ITRC

March 2004

Facts about ITRC involvement in Region IV

States in EPA Region IV: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

State Points of Contact (POCs)

AL: Larry Bryant
FL: Jeff Lockwood
GA: Bill Mundy
KY: Ahad Chowdhury
MS: Not a state ITRC member
NC: Rob McDaniel
SC: Mihir Mehta
TN: David Randolph

Number of people trained in Region IV: 1,990 Internet training participants
472 Classroom training participants

Number of members: 67 Members
34 Interested parties

Teams with membership from Region IV:

Alternative Landfill, Brownfields, Contaminated Sediments, DNAPL, Diffusion Samplers, In Situ Bioremediation (ISB), MTBE, Mitigation Wetlands, Radionuclides (RADS), Permeable Reactive Barriers (PRB), Remediation Process Optimization (RPO), Risk Assessment (Risk), Unexploded Ordnance, SC&M, Small Arms

Diffusion Samplers Saves Labor and Waste

Robert Neff of WRS Infrastructure and Environment, Inc. of Tallahassee, Florida, sees potential savings from \$50,000 to \$100,000 by using information gained in internet training on Diffusion Samplers (PDBs for Volatile Organic Compounds in Groundwater). “Estimated savings will come through reduced labor and investigative-derived waste from implementing a PDB sampling program,” according to Mr. Neff.

Tennessee Environmental Staff and the Knowledge Base for Decision making

David Randolph, Tennessee State Department of the Environment and the Tennessee State Point of Contact for the ITRC, indicates that their office utilizes the knowledge base of documents, training and the networking with other experts available from and through the ITRC. “Use of the ITRC training and technical regulatory guidance documents allows a common understanding of issues and potential solutions. This information is used as a ‘common ground’ from which we begin our conversations. This knowledge base is built-in to the decision making process as the state office works with consultants and clients”.

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In the case of a Superfund site, the Naval Support Activity Mid-South in Memphis, diffusion samplers were first used successfully in the mid-90s, prior to ITRC involvement, to monitor Dense Non-Aqueous Phase Liquids (DNAPLs). As BRAC (Base Realignment and Closure) Project Manager for this site, Jim Morrison states that

“While we had great success using diffusion samplers, saving us considerable time and money and locating contaminant preferential pathways in the subsurface, it is very important to understand the limitations of diffusion sampler. A problem we experienced in the beginning was acquiring false negative data by misapplication of the diffusion samplers that in turn led to some misinterpretation. While diffusion sampling is not the panacea for detecting and evaluating volatile organics in the environment, it does come very close, especially if proper application of the samplers is adhered to and site conditions evaluated prior to installation. The ITRC resources, information and industry-wide dialogue within the ITRC are critical to ensure that the technology is used and promoted appropriately.”

The new Diffusion Sampler Technical Regulatory Guidance Document should further promote the effective and appropriate use of the technology.

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John Hoffelt of the Tennessee Division of Superfund has utilized both internet and classroom training, along with guidance documents, in order to prepare for remediation plans on a number of topics. “The technologies reviewed and information gained are important aspects for project evaluations and decisions. None of the technologies evaluated proved feasible for specific site remediation and no specific cost savings have been realized. However, there are other site evaluations ongoing and cost savings may be realized on these projects,” according to Mr. Hoffelt.

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“Large numbers of our state of Tennessee staff, especially the Superfund staff, attend training in order to increase their knowledge base,” according to David Randolph. In fact, Tennessee has had 226 participants in internet training and 148 in classroom training.

UXO Training Included in Air Force Safety Information

According to Dave Brown at the Tyndall Air Force Base in Florida, the Air Force created an interactive, four-lesson UXO Safety CD and included the UXO basic training information on visiting a UXO contaminated site. This training will be posted on the web site. "Thanks again for allowing us to plagiarize portions of your UXO training plan. It provided a perfect launching point for sections of our lesson on visiting a UXO contaminated site," according to Mr. Brown. "Having the ITRC information already available saved us about a week of development time, probably \$1,200 in development cost. The course focuses on day to day cleanup up at facilities and educates people before going onto a range."

Up to date Training for Alabama

Brian Espy of the Alabama Department of Environmental Management reported on the successful classroom training on the topic 'Accelerated Bioremediation of Chlorinated Solvents'.

"This is one of the more useful classes I've attended. It included discussions concerning performance validation of data, and the basic discussions regarding the biodegradation pathways and the chemistry behind the phenomena were very helpful. The training course workbook was copied and used by both industry representatives and consultants as a tool to better understand the behavior of chlorinated solvents and the bacteria that may or may not reside in the environment. This has helped bring about a more proactive response to the remediation and cleanup of a site. Site managers are beginning to see the potential impacts of an accelerated approach to the bioremediation of chlorinated solvents over the more conventional methods such as pump and treat."

Risk Team Connections

Brad Parman of the Tennessee Department of Environment and Conservation is utilizing the newly established Risk Team in helping to organize state risk assessment contacts. "To be able to coordinate which meetings to attend and to have a network for risk assessment discussions will be invaluable. This will be particularly beneficial in areas with military installations which frequently straddle state lines or pipelines which cross several states." Several proponents and ITRC members met in the summer of 2003 to establish this network.

Training Participants at Savannah River Site

Teresa Feagin, training coordinator for electronic training at the Westinghouse environmental restoration group 'Soil and Groundwater Closure Project' at the Savannah River Site, stated 21 training activities have been offered since they began to offer ITRC training in April 2002. To date, 222 participants have taken courses that include *Natural Attenuation of Chlorinated Solvents*, *Phytotechnologies*, and *Permeable Reactive Barriers*. Ms. Feagin said they offer six to seven sessions monthly based on ITRC offerings and employee interest.

"ITRC instructors are the crème de crème, the most knowledgeable people covering the topics. Speakers are well known, lending credibility and interest. Most of our employees have a deep knowledge of subject matter and the classes are good, solid material with a deep content. These trainings allow us to find out what is going on outside. During the training we get to hear from regulators and subject matter experts discuss current, ongoing issues outside our own backyard and expanding our knowledge," Ms. Feagin explained.

In Situ Bioremediation Training Proves Helpful to DOE Activities

According to Larry Moos of Florida International University who is conducting academic research in support of the U.S. Department of Energy remediation program,

"Technologies we are studying have great potential to reduce cost, particularly at DOE sites that have large or very large plumes, but exhibit low risk to human health or the environment. This work is designed to identify ways to utilize natural systems to remove or contain contaminants including Volatile Organic Compounds (VOCs) and toxic metals. We utilize a large number of students in this program with varying degrees of experience with remedial technologies. We utilized ITRC on-line training to introduce students and staff to the basic principles of in-situ biodegradation to improve the speed and accuracy of research efforts. We believe this training accelerated the student's understanding of the topic and helped us move forward in our research activities more quickly than if we had not used the training.

By documenting that natural attenuation is sufficient to deal with these plumes, or identifying engineering enhancements that will allow natural system to remove or contain the contaminants, cost savings that could total in the billions of dollars are possible. Using natural systems also has the advantage of reducing damage to sensitive natural environments such as wetlands and stream beds, which otherwise would be damaged or destroyed while wells are installed, trenches dug or other systems installed.

The in-situ biodegradation technologies we are looking at for DOE would replace existing approaches such as groundwater extraction and treatment, in-situ reactive barriers or soil vapor extraction. Our work is supporting the use of monitored natural attenuation in natural or engineered environments."

Radionuclides (RADs) Team and the DOE

The Radionuclides Team supported and participated in DOE's Environmental Restoration Technology End-User Conference (ERTEC) in Columbia, South Carolina this year. The team also produced a web-based training session on risk assessment for radionuclides, *Radiation Risk Assessment: Updates & Tools*, which supports DOE's risk-based end-state concept and which was "attended" by a number of DOE personnel. This training also introduces a Preliminary Remediation Goals calculator, which will assist in expediting cleanup and closure at DOE sites.

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The Radionuclides team also supported DOE in the development of two documents. ITRC RADs team provided comments on the DOE "Risk-Based End State Policy" and worked with Oak Ridge National Lab (ORNL) and Argonne National Lab (ANL) in development of a document on the use of real time radiological characterization technologies. The latter will be converted to an ITRC document over the next year. ITRC was able to provide support for the use of real time technologies at the Oak Ridge and Mound sites, according to RADs team co-leader Thomas Schneider. In addition, the RADs team reviewed and commented on the draft Long Term Stewardship Science and Technology (LTS S&T) Roadmap along with an ITRC survey of state regulators in conjunction with S&T needs.

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In Mississippi, a confidential RCRA site is benefiting from internet training on Permeable Reactive Barriers (PRB) attended by Dale Showers of Brown and Caldwell. Mr. Showers explained that

“The biggest benefit we realized from the training was confirmation of our design. We had recently gone through the process with ETI and were interested in what they and others had to say about testing, design and installation of PRBs. It gave us increased confidence in our design.”

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Zoe Kulakowski of the Florida Department of Environmental Protection (DEP) was instrumental in providing information to Sue Doubet of the Illinois EPA regarding the use of certain chemicals at phosphogypsum stacks as well as information regarding whether the state of Florida had scored a site for CERCLA using radioactivity or a radioactive element. The common thread in this communication was ITRC membership and the ability to coordinate this question among the experts who were able to provide an answer. “The Florida Department of Health is charged with the human health regulation related to radioactivity except for groundwater quality delegated to the Florida DEP. Florida DEP has groundwater standards for gross alpha and radium 226 + 228. At gypsum stacks we are also concerned with pH, sulfate, fluoride, metals, aluminum and total dissolved solids,” according to Kulakowski. This is just another example of the synergy that comes from the technical and regulatory expertise in the ITRC.

Remedial Process Optimization (RPO) Document Development

DOE has made major contributions to the RPO Technical Regulatory Guidance Document *Remediation Process Optimization: Identifying Opportunities for Enhanced and More Efficient Site Remediation*, which includes an appendix of case studies. Richard Daley of DOE drafted a section of this document to ensure that the language is consistent with DOE's conduct in remediation efforts.

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The DOE team members are gaining valuable experience with RPO by participating in the Air Force closed base RPO reviews. Member participation on teams provides experience that can be applied to their own RPO efforts. Discussions are underway that will lead to RPO reviews at Navy and DOE facilities, specifically Savannah River.

ITRC and the Paducah Gaseous Diffusion Plant

Jon Maybriar, previous Point of Contact for the Commonwealth of Kentucky, reports on the cleanup activities going on at the U. S. Department of Energy Paducah Gaseous Diffusion Plant. The state has utilized the ITRC Permeable Reactive Barrier (PRB) documents to evaluate the technology for use at the site. DOE proposed using a PRB wall for the SW TCE groundwater plume. The Kentucky geology staff working on the project did not have any experience with the technology. The ITRC document and contacts developed by the ITRC PRB team was instrumental to DOE being approved by the Kentucky Department of Environmental Protection for implementation at the site. The project manager traveled to another site which had implemented a PRB wall, learning first-hand the capabilities and limitations of the wall.

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The Kentucky DEP has recently purchased a "down-hole camera" and Diffusion Sampling equipment to use the technology at the site. DOE has considered the Trichloroethylene (TCE) contaminated groundwater to be "F-listed" waste. Kentucky has used the ITRC Diffusion Sampler document to determine that this is a reliable sampling technique that could result in significant cost savings to both DOE and the state for groundwater sampling at the site. Diffusion sampling eliminates waste purge water which typically requires disposal, reduces time for sample collection, and eliminates the need for identification of exact locations in the groundwater column for source identification.

Community Stakeholder, Cleanup Issues and the ITRC

What a difference a training class and a few citizen stakeholders can make! In the spring 2002, ITRC held a Phytotechnologies Training class in Chattanooga, Tennessee and from that workshop sprang a group dedicated to cleaning up and beautifying Chattanooga. Phytotechnologies are a set of technologies using plants to remediate or contain contaminants in soil, groundwater, surface water or sediments (itrcweb.org/PHYTO-2.pdf). ITRC made a huge impact simply by taking the class to Chattanooga.

The Committee to Clean and Beautify Chattanooga (CCBC) initially came together following this ITRC Phytoremediation Workshop. A brainstorming session determined potential “impaired” or “contaminated” sites in the greater Chattanooga area and the list was honed down to approximately 5 priority sites. Follow up for committee action began that summer.

Over the past year the CCBC has laid the foundation for a dynamic partnership between local educational institutions, regional regulatory agencies, and community interest groups. By creating a core committee of local regulators, educators, and concerned citizens, the committee has publicized the potential for environmentally sound reuse, revitalization, and development in the heart of the heavily industrialized setting of Chattanooga. Recent successes have shown that a community interest partnership such as CCBC can progress beyond the role of environmental technology publicists and actually achieve goals and cleanup solutions.

The committee has brought together many different people with a variety of backgrounds who were able to approach specific site issues from their own specialty. Among the sites discussed initially were the coal tar contaminated Chattanooga Creek area; the TNT contaminated Volunteer Army Ammunition plant; a local high school built on a former coal tar fill area; and a PCB contaminated lake. These sites were identified for initial research and remediation efforts. Howard High School concerns were publicized by local reporters and discussed with local politicians while alternative clean up technologies were pushed by local regulatory authorities.

The CCBC successfully fostered the cooperation and coordination necessary to expedite the research and cleanup process at a variety of sites in the Metro-Chattanooga area. According to citizen stakeholder John Chambliss, “through continued cooperation, the future environment in the Tennessee Valley is headed for cleaner days. ITRC had much to do in the initial stages of the local effort. ITRC strives to think beyond conventional technologies and advocates the use of alternative techniques to cleanup the environment”.

In the case of Phyto technologies, as can easily be seen in Chattanooga, effectively designed cleanup can be invisible to the untrained eye and provide aesthetic appeal to a community. ITRC, with the tremendous commitment and healthy volunteerism in Chattanooga, is advocating alternative and reliable cleanup alternatives

Whom can I contact to learn more about these examples of ITRC success?

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What is ITRC about?

ITRC is a state-led coalition working together with industry and stakeholders to achieve regulatory acceptance of environmental technologies. ITRC consists of 42 states, the District of Columbia, multiple federal partners, industry participants, and other stakeholders, cooperating to break down barriers and reduce compliance costs, making it easier to use new technologies, and helping states maximize resources. ITRC brings together a diverse mix of environmental experts and stakeholders from both the public and private sectors to broaden and deepen technical knowledge and streamline the regulation of new environmental technologies. ITRC accomplishes its mission in two ways: it develops guidance documents and training courses to meet the needs of both regulators and environmental consultants, and it works with state representatives to ensure that ITRC products and services have maximum impact among state environmental agencies and technology users.

When would I Benefit from ITRC?

ITRC is all about environmental cleanup—getting the right technology or strategy applied to the situation at hand. Many times that “right technology” is a new technique, approach, or device that leads to faster, better, more cost-effective cleanup strategies. Often finding and implementing the “right” technology or strategy requires innovation on the part of the site manager and industry consultant. Approving the “right” technology may require state environmental offices to change their decision-making process. ITRC teams, documents, and training courses not only provide information but also foster interaction within the environmental community. You would benefit from ITRC whenever you wish to explore better methods of site characterization and remediation because ITRC resources will lead to more efficient decision-making with an increased level of confidence and trust. ...

How is ITRC useful to EPA Region 4?

So what is being accomplished through ITRC involvement? How do we measure success within the framework of environmental cleanup? Protection of human health and protection of the environment are two of ITRC’s critical goals. Our accomplishments and success include:

- Assistance to the community
- Acceleration of cleanup—Cutting approval time
- Decreasing the cost of cleanup—Slashing remediation costs
- Knowledge transfer to facilitate cleanup—Finding better solutions and transferring technologies
- Building expertise industry- and nationwide
- Paving the way for new technologies
- Long-term management of cleanup sites
- Institutional innovation—Breaking down regulatory barriers

Measures of ITRC success include the extent to which guidance documents are used in deploying specific technologies at specific sites (product use) in Region 4, the degree to which ITRC helps create acceptance of innovative technologies as regular practice rather than as an extraordinary occurrence (institutional change), and the effectiveness of the synergy created in the environmental community as ITRC teams collectively address cleanup issues from various perspectives.

Why Should I use ITRC resources?

As described by the examples in this document, ITRC saves time and money and result in better environmental protection. Working to bring together regulators, project managers, environmental consultants and state representatives, ITRC is a catalyst, providing a network of experts and industry leaders to think creatively about cleanup issues and how best to solve them.

A complete list of ITRC documents and training opportunities is available on www.itrcweb.org!