



Quarterly Update

June 2001

ITRC / Air Force partnership will save millions

A unique partnership between ITRC and the Air Force Base Conversion Agency will improve the effectiveness of environmental cleanups while also containing long-term costs to taxpayers. The partnership will be a framework for close cooperation and coordination on efforts to deploy innovative environmental technologies, optimize remedial systems, and institutionalize long-term stewardship. The first AFBCA/IRC joint effort is facilitating deployments of the diffusion sampler—a device that measures contaminant levels in groundwater at a fraction of the cost of conventional methods. AFBCA plans to use this new technology at its closed or closing bases to reduce groundwater well sampling costs associated with long-term monitoring of environmental remedies. Developed by the U.S. Geological Survey, the new technology reduces costs without compromising data quality or sampling objectives.

Diffusion sampler methods can save from \$275 to \$600 per sample due to the decrease in labor. Military bases like McClellan sample over 300 monitoring wells on and off base. Considering that some wells are sampled at least quarterly, improvements in sampling methods can amount to significant savings.

The diffusion sampler uses a screen-type material to collect groundwater for testing for the presence of volatile organic compounds. A low-density, net-like membrane on the sampler enables volatile organic compounds to diffuse into the membrane. To collect a sample, the 18-inch-long device is attached to a weighted rope and lowered into the well. It is left there for at least 14 days to reach equilibrium with the well water. The sampler is then brought up, cut open, and water is collected in test tube vials for laboratory analysis.

This latest agreement between ITRC and AFBCA grew out of their joint participation on ITRC's Diffusion Sampler Protocol Team, which over the past year has been instrumental in structuring a document that standardizes the use of this new technology. This year, AFBCA will deploy diffusion samplers at six closed or closing Air Force bases in California beginning with McClellan and Mather in Sacramento, Castle in Merced County, Norton in San Bernardino, March in Riverside, and George in Victorville.

At a ceremony to formalize the agreement, ITRC and the ITRC Diffusion Sampler Protocol Team were honored for their role in bringing the parties together to collaborate on

ways to promote diffusion samplers. New Jersey Commissioner Robert C. Shinn, Jr. and ITRC Co-chairs Roger Kennett and Brian Sogorka accepted an award on behalf of ITRC. The Diffusion Sampler Protocol Team was represented by Co-team Leaders George Nicholas (NJ) and Paul Bergstrand (SC), as well as Christopher Guerre (CA) and David Randolph (TN). POCs from California, Tennessee, South Carolina, and New Jersey were also recognized—Paul Hadley, David Randolph, Mihir Mehta, and Marybeth Brenner, respectively.

The agreement between the partners provides for AFBCA to participate with ITRC in developing more guidance documents and training, assisting stakeholders during deployments, leveraging resources, tracking costs and performance, and capturing successes. AFBCA has plans to budget ITRC support into its funding cycles to coincide with ITRC's Five-Year Program Plan.

ITRC fall conference scheduled for Long Beach

Mark your calendar—the 2001 ITRC Fall Conference will meet in Long Beach, California at the Westin Long Beach on November 5–8. This conference will be your chance to meet with your ITRC teammates, receive technical/regulatory training on environmental technologies, and explore mutually beneficial environmental partnerships. Your attendance is your ticket to

- ▼ **Dialogue** on pressing issues in environmental technology;
- ▼ **Participate** in exhibits of environmental technology;
- ▼ **Attend** sessions of current ITRC work teams;
- ▼ **Train** with industry and public-sector representatives on natural attenuation, phytotechnologies, and diffusion samplers;
- ▼ **Gain** new perspectives on important issues and technologies; and
- ▼ **Network** with public-and private-sector professionals and specialists.

There's no better way to support ITRC and its goal of building regulatory acceptance for better environmental solutions than to help sponsor the Fall Conference. Please contact Marty Kushner at (202) 624-3501, mkushner@sso.org about your interest in being a conference sponsor.

Online registration for both the conference and the training sessions opens August 1 at ITRC's Web site at www.itrcweb.org. (Registration closes on October 10.) While the conference is free, industry representatives will be charged a \$250 fee to attend the three training sessions on Tuesday, November 6. Complete details about the conference will be posted at the Web site.

ITRC provides technical assistance to Kelly AFB

William Ryan of the Air Force Base Conversion Agency at Kelly AFB in San Antonio has some wonderful things to say about ITRC and the important role state regulators can play in gaining community support for environmental restoration at Kelly. Mr. Ryan is a civilian working as a base environmental coordinator at Kelly and supporting AFBCA in determining the best way to remediate a large area of contaminated groundwater in southwest San Antonio. Kelly is on AFBCA's list of closing bases and must be cleaned up prior to transferring property to the Local Reuse Authority.

The relationship between the community and Kelly AFB had deteriorated to the point where the public had become skeptical of Air Force cleanup proposals. To counter the adversarial relationship that had developed, ITRC participants offered a nonthreatening, unbiased resource for technical expertise and quality decision-making tools. ITRC provided the building blocks for a productive exchange around "solutions" acceptable to the public.

In support of a project that Mr. Ryan describes as "highly visible in the community," Mr. Ryan worked with the local Restoration Advisory Board to hold a series of public workshops to begin the process of engaging the community in a dialogue on the nature and extent of contamination, technologies available to remediate the groundwater, as well as the remedy selection process. ITRC representatives—Bob Mueller (NJ) and Program Advisors Mary Yelken and Todd Margrave—participated in several of these meetings with the community, and Mr. Ryan credits them with being critical to the meetings' success. They conveyed technical information on the advantages and limitations of alternative technologies, as well as began the process of gaining the public's trust.

"Not only did ITRC provide extremely knowledgeable individuals who spoke to community members about specific technologies, they also made available informative hand-out materials, references for additional literature, Web site links for information, and technical guides. Equally as important as the technical expertise is the credibility ITRC brings.

"We are often asked the question, 'Where has this technology been used before?' Typically, we can cite other Air Force locations; but when we cite non-DOD applications and can point to the state regulators who have direct knowledge about other uses of these technologies, the community confidence level builds."

Mr. Ryan is so upbeat about ITRC's continued participation in Kelly's public involvement effort that he invited the organization to send representatives to the June 12 meeting of the RAB's Technical Review Subcommittee to share information on permeable reactive barriers. Bob Mueller (NJ) attended the meeting and shared his understanding about this technology with community members. With this beginning, ITRC has an opportunity to work with AFBCA and the public in building a coalition for deploying better technologies.

ITRC offers classroom training

For four years, ITRC has offered courses to help regulators and others become more knowledgeable about new environmental technologies. Now, ITRC is about to launch its fifth year of offering these face-to-face training events in cities across the country. In 2001, ITRC will offer classes in accelerated in situ bioremediation of chlorinated solvents and phytotechnologies.

❖ Accelerated In Situ Bioremediation of Chlorinated Solvents

Chlorinated solvents are present in soil and groundwater of thousands of sites in North America. Accelerated bioremediation can provide an innovative and cost-effective approach for remediation of many of these sites. This class, which is a logical follow-on to the highly acclaimed training series "Natural Attenuation of Chlorinated Solvents in Groundwater," will examine the roles of site characterization, modeling, design, monitoring, and regulatory interaction in applying in-situ engineered bioremediation.

▼ October 23–24, Pasadena, CA

▼ December 4–5, New Orleans, LA

❖ Phytotechnologies

Phytotechnologies use plants to contain, stabilize, sequester, assimilate, reduce, detoxify, degrade, metabolize, and/or mineralize organic contaminants in soil, groundwater, surface water, or sediments. This course provides scientific, engineering, and regulatory information designed to help regulators and practitioners uniformly conduct site remediation using phytotechnologies in a variety of applications. The curriculum includes the advantages and limitations plus the uncertainties science is still researching.

- ▼September 12–13, Austin, TX
- ▼October 24–25, University of Massachusetts at Amherst, MA

For registration information on these classroom courses, visit the ITRC Web site at www.itrcweb.org and click on “Classroom Training.”

ITRC Internet training—a valuable resource

To date in 2001, ITRC’s Internet training program has offered 12 courses, which more than 1,400 people in the environmental community have taken to increase their practical knowledge about natural attenuation, enhanced in situ bioremediation, permeable reactive barriers, and phytotechnologies. As the year progresses, ITRC will begin to offer Internet training on in situ chemical oxidation and passive diffusion samplers. With the year’s close, ITRC will have presented 28 Internet courses on a variety of environmental technologies. These courses are proving a valuable resource to busy professionals.

Registration for ITRC Internet training courses is open at www.itrcweb.org (click on “Internet Training”) four weeks prior to scheduled courses. For additional information, contact Mary Yelken, (402) 325-9615, myelken@westgov.org.

STATE ENGAGEMENT UPDATE

❖ITRC points of contact to meet

ITRC’s points of contact, or POCs, will be meeting in Austin, TX in conjunction with the ITRC classroom training on phytotechnologies scheduled for September 12–13. The POCs and others attending the phytotechnologies classroom training may also have an opportunity to attend a summit on alternative landfill covers, which ITRC and the Air Force Center for Environmental Excellence are making plans to convene at that time in Austin.

❖Ensuring quality ITRC products and services

The State Engagement Team and technical team leaders are working together to develop guidance to ensure that ITRC maintains high-quality products and services. The issue of establishing and maintaining consistent quality standards among ITRC products has come to the forefront as the number of technical teams producing documents has grown.

Drawing from the most successful elements and approaches employed by ITRC’s most effective documents, the QA/QC team has produced a first draft of its guidance. The team is led by Paul Hadley, state engagement coordinator, and Gary Baughman, team leader liaison. Other team members include POCs, team leaders, and

support staff. The QA/QC guidance document is being reviewed by POCs, team leaders, and the Board of Directors. The team hopes to have the guidance approved by team leaders during the ITRC Mid-Year Review in late July. When final, the document will be available on the State Engagement page of the ITRC Web site.

❖Concurrence

The concurrence process serves as a formal mechanism to gain state commitment to use ITRC products and services. In addition, concurrence on ITRC technical/regulatory guidance documents provides predictability for parties wanting to use an innovative technology in an ITRC state. Currently, ITRC has three technical/regulatory guidance documents proceeding through the concurrence process: *Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater* (ISCO-1), *User’s Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* (DSP-1), and *Phytotechnology Technical and Regulatory Guidance Document* (PHYTO-2). ITRC states are asked to complete the concurrence process on these three documents by August 31, 2001.

The leader of the State Engagement Team is Paul Hadley (CA), who is assisted by Program Advisors Mary Yelken (WGA) and Cain Diehl (SSEB). Paul can be reached at (916) 324-3823, phadley@dtsc.ca.gov. You’ll find Mary at (402) 325-9615, myelken@westgov.org, and Cain at (770) 242-7712, diehl@sseb.org.

TECHNICAL TEAM UPDATES

❖Dense Nonaqueous Phase Liquids (DNAPLs)

Based on comments from the Air Force and the ITRC Board of Directors, the DNAPLs Team has rewritten its second document, which is dubbed a regulatory overview. The working title is *DNAPL Source Reduction: Facing the Challenge*. It specifies guiding principles for DNAPL source reduction. The team will meet in June and begin development of an outline for its third document, a technical/regulatory guidance document. Jim Harrington (NY) and Eric Hausamann (NY) lead the DNAPLs Team. Jim can be reached at (518) 457-0337, jbharrin@gw.dec.state.ny.us; Eric is at (518) 457-0327, eghausam@gw.dec.state.ny.us.

❖Diffusion Sampler Protocol (DSP)

The DSP Team has made good on its plans to expand relationships with the U.S. Department of Defense. The team was instrumental in securing an agreement between ITRC and the Air Force Base Conversion Agency to expand deployments of the diffusion sampler. The agree-

ment will lead to AFBCA's deploying diffusion samplers at six closed or closing Air Force bases in California. George Nicholas (NJ) and Paul Bergstrand (SC) lead the DSP Team. George is at (609) 984-6565, gnichola@dep.state.nj.us; Paul is at (803) 896-4016, bergstpm@columb34.dhec.state.sc.us.

❖ In Situ Bioremediation (ISB)

During 2001, the ISB team is operating with three subteams—Nitrates, Perchlorate, and Carbon Tetrachloride—which are working on their individual modules to bolster the ISB Team's 2001 product, *Systematic Approaches to In Situ Bioremediation*. This document describes the basic framework and will include a decision tree from each of the subteams for use in evaluating a site's ability to support in situ bioremediation of nitrates, perchlorate, and carbon tetrachloride. The team reviewed the second draft of *Systematic Approaches* and the first draft of the nitrates module at a team meeting that was held in conjunction with the 6th International Symposium: In Situ and On-Site Bioremediation conference in San Diego on June 4–7, 2001.

The Perchlorate Subteam held three conference calls this quarter to revise its problem statement, locate information, confirm team members, and formulate budgets for a January 1, 2002 start as an independent team. The Perchlorate Subteam is also gathering information to include as a module to *Systematic Approaches*. The first draft is expected in July. The Carbon Tetrachloride Subteam, which is also scheduled to launch its independent status in 2002, has revised the 2002 and out-year proposal and is establishing a firm team for a January 1, 2002 start. This subteam is also working to develop a module to include in *Systematic Approaches to In Situ Bioremediation*.

ITRC does not stop at the bookshelf; we promote real field activities. One example is the ISB Team's efforts to involve a community in a biodenitrification demonstration. The ISB Team identified a deployment opportunity in a small community in Idaho, which has nitrate contamination in a municipal well. DOE's Idaho National Engineering and Environmental Laboratory, a mere 50 miles away, has similar problems and a similar subsurface geology. The ISB Team identified these similarities plus all involved parties and is assisting in organizing a meeting among the mayor of the community, DOE technical services, the Idaho Department of Environmental Quality, and ITRC to establish whether site and contaminant similarities support a biodenitrification demonstration at the community municipal well. Such a demonstration would generate data that could have implications for cleaning up INEEL sites.

Bart Faris (NM) and Kris Roberts (ND) lead the In Situ Bioremediation Team. Reach Bart at (505) 841-9466, bart_faris@nmenv.state.nm.us; Kris can be reached at (701) 328-5236, kroberts@state.nd.us.

❖ In Situ Chemical Oxidation (ISCO)

The ISCO Team completed its technical/regulatory document, *Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater* (ISCO-1). It is being printed and will be distributed in July. The team is now developing an Internet training module. Two practice Internet training sessions were held in May and June. Internet training events are planned for September 25 and 27. Tom Stafford (LA) leads the ISCO Team. He can be reached at (225) 765-0462, t_stafford@deq.state.la.us.

❖ Permeable Reactive Barriers (PRBs)

The team has delivered its Internet training on permeable reactive barriers a number of times. Responding to students' requests, the team is developing an advanced Internet training that discusses specific case studies, as well as presents updated information from many of the ongoing PRB installations around the nation. This course will also include information from recent studies that have monitored PRBs' long-term performance. September is the target for the first full advanced Internet training on PRBs. Matthew Turner (NJ) leads the PRBs Team and can be reached at (609) 984-1742, mturner@dep.state.nj.us.

❖ Phytotechnologies (Phyto)

In April, the Phytotechnologies Team completed its second document—*Phytotechnology Technical and Regulatory Guidance Document* (PHYTO-2). Since then, the team has prepared, tested, and delivered Internet training on phytotechnologies, based on its new guidance document. The training offers case studies and a question-and-answer session. Instructors are Dr. David Tsao, BP Corporation; Steve Rock, EPA Cincinnati; and Kris Geller, New Jersey Department of Environmental Protection. The next Internet courses are scheduled for August 7 and 9, 2001. Visit www.itrcweb.org for registration information.

The Phyto Team has also developed a two-day classroom training on phytotechnologies. The instructors are from EPA, Kansas State University, BP Corporation, and New Jersey DEP. The team conducted a dry run of the course in Naperville, Illinois at the BP Corporation facilities in front of 44 state regulators and industry and community stakeholders. Emphasis was on student input and interactivity. Revisions are currently being made to the curriculum, and the next course will be held in

Austin, TX on September 12 and 13, 2001. The course presents the scientific foundation required to implement phytotechnologies at a site, case studies, design criteria, limitations and advantages, hands-on exercises, and a discussion forum for regulatory issues encountered in the field.

The course will also be offered as a 1.5-day training in conjunction with the 17th Annual International Conference on Contaminated Soils, Sediments, and Water: "Expediting and Economizing Cleanups," October 22–25, University of Massachusetts at Amherst. ITRC is a cosponsor of this 2001 conference, and Roger Kennett, co-chair of ITRC, will be the lunch speaker on Wednesday of the conference. The phytotechnologies course begins at 1:30 p.m. on October 24. Dib Goswami (WA) and Bob Mueller (NJ) lead the Phytotechnologies Team. Dib can be reached at (509) 736-3015, dgos461@ecy.wa.gov. Bob can be reached at (609) 984-3910, bmueller@dep.state.nj.us.

❖ Radionuclides (Rads)

The Radionuclides Team attended the ITRC-cosponsored meeting "Developing Effective Strategies to Accelerate Cleanup in the Federal Complex" near Salt Lake City in late April. During the forum, the team met to discuss its document, *Cleanup Goals at Radioactively Contaminated Sites: Case Studies*, and project proposals for updating ITRC's Five-Year Program Plan. The team has revised three proposals covering planned activities for the current and out years.

Team representatives planned to attend several DOE conferences in June and July:

- ▼ DOE Containment Conference, June 10–13, Orlando. The workshop on long-term monitoring was of particular interest to the team.
- ▼ Air and Waste Management Conference, June 24–28, Orlando. Carl Spreng attended and presented a paper.
- ▼ Environmental Restoration Technology End User Conference, July 16–19, Atlanta. Robert Jolley is scheduled to attend.
- ▼ The team is also planning a working meeting during the Long-Term Stewardship Conference, July 30–August 2, Grand Junction, CO.

Jeff Short from DOE notified the team that the Idaho National Engineering and Environmental Laboratory is preparing a long-term stewardship roadmap. The document will be sent out to various stakeholders for review. Team members expressed interest in providing technical comments/review of the document. Tom Schneider (OH) and

Carl Spreng (CO) lead the Rads Team. Tom can be reached at (937) 285-6466, tom.schneider@epa.state.oh.us. You'll find Carl at (303) 692-3358, carl.spreng@state.co.us.

❖ Small Arms Firing Range (SAFR)

The SAFR Team has completed a rough draft of a technical/regulatory document for remediation of small arms firing ranges. Team members continue to work on refining assigned portions of the draft document and plan to have a draft final version of the document completed by September. The team plans to meet in Cape Cod and visit a range remediation site at the Camp Edwards National Guard Facility. The SAFR Team is led by Dib Goswami (WA) and Bob Mueller (NJ). Dib can be reached at (509) 736-3015, dgos461@ecy.wa.gov; Bob can be reached at (609) 984-3910, bmueller@dep.state.nj.us.

❖ Unexploded Ordnance (UXO)

According to unofficial estimates, the total cost of cleaning up ordnance and explosives (OE/UXO) in the United States could exceed \$400 billion. Members of the ITRC UXO Team, representing federal, state, and community representatives, have been working to prepare a series of much-needed technical and regulatory tools to assist site assessment and cleanup efforts. In April, a draft of the upcoming UXO training program was reviewed during DOD's UXO/Countermining Forum held in New Orleans. The four-part program consists of separate modules targeting OE/UXO identification, state and federal regulations, site characterization, and site remediation. The UXO Team tentatively plans to conduct UXO training throughout the United States beginning in January 2002. Simultaneously, the group will commence work on an OE/UXO technical/regulatory guidance document tentatively scheduled for a late 2002 or early 2003 release. The OE/UXO technical/regulatory guidance document will be the first multistate-reviewed reference guide on OE/UXO site assessment and remediation. The UXO Team is led by Stephen Nussbaum (IL) and Jennifer Roberts (AK). Reach Stephen at (217) 782-9803, epa4129@epa.state.il.us. Jennifer is at (907) 269-7553, jennifer_roberts@envircon.state.ak.us.

CONTACTS

For questions or comments regarding ITRC, please contact Rick Tomlinson, ITRC program director, Environmental Council of States, (202) 624-3660, rickt@sso.org.

To provide comments, suggestions, or input for ITRC's *Quarterly Update*, please contact Elaine Specht, WPI, (540) 557-6071, elaine_specht@wpi.org.

***CALENDAR**

Event	Location	Date	Contact
Internet Course: Natural Attenuation of Chlorinated Solvents in Groundwater		July 10	Register at www.itrcweb.org Click on "Internet Training"
Internet Course: Diffusion Sampler Protocol		July 12	Register at www.itrcweb.org Click on "Internet Training"
ITRC Mid-Year Review	Portland, OR	July 23–25	Marty Kushner, (202) 624-3501 mkushner@sso.org
Internet Course: Phytotechnologies		Aug. 7 & 9	Register at www.itrcweb.org Click on "Internet Training"
Internet Course: Enhanced In Situ Bioremediation of Chlorinated Solvents in Groundwater		Aug. 21 & 23	Register at www.itrcweb.org Click on "Internet Training"
Internet Course: Permeable Reactive Barriers for Chlorinated Solvent, Inorganic, and Radionuclide Contamination		Sept. 11 & 13	Register at www.itrcweb.org Click on "Internet Training"
Classroom Course: Phytotechnologies	Austin, TX	Sept. 12–13	Register at www.itrcweb.org Click on "Classroom Training"
Internet Course: In Situ Chemical Oxidation for Contaminated Soil and Groundwater		Sept. 25 & 27	Register at www.itrcweb.org Click on "Internet Training"
2001 Fall Conference	Long Beach, CA	Nov. 5–8	Marty Kushner, (202) 624-3501 mkushner@sso.org

* All course dates and times are subject to change. Check the ITRC Web site at www.itrcweb.org for updates and registration. Registration opens four to six weeks prior to events.

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