



Quarterly Update

December 2000

❖ **New Jersey seeks to streamline regulatory approval of enhanced in situ bioremediation**

During the first full ITRC “Accelerated Bioremediation of Chlorinated Solvents” class in Atlantic City in June 2000, New Jersey regulatory staff stated they were receiving a large number of proposals for enhanced in situ bioremediation (EISB). Because of the similarity and volume of these proposals, the state agency began investigating methods to simplify the permitting process for injection wells. While re-injection of contaminated water, along with additives, may enhance bioremediation, it is a practice strictly regulated by many state environmental departments, including New Jersey. In the past, two federal statutes have hindered the injection of contaminated groundwater and amendments—RCRA 3020(b) and Underground Injection Control (UIC) rules in states equivalent to the Safe Drinking Water Act.

In fall 1999, ITRC requested that EPA clarify the impact of RCRA 3020(b) on re-injection, and EPA responded that re-injection is allowable if it results in subsequent substantial reduction of hazardous constituents. And while EPA’s UIC rules prohibit injection of hazardous waste, they provide for exceptions for in situ bioremediation.

In New Jersey, approval for enhanced in situ bioremediation of groundwater is complicated by the requirement to obtain a New Jersey Pollution Discharge Elimination System (NJPDES) permit—a process that can be time-consuming and, because it was designed for long-term wastewater discharges, is cumbersome when applied to periodic injections associated with EISB. Under a full NJPDES permit, each time an injection is planned under an EISB scenario, the requirement to notify the public and conduct a 30-day comment period and public meeting is triggered.

Approval in New Jersey for an EISB proposal can also be obtained through a NJPDES permit-by-rule. While this option is useful for pilot testing new technologies and allows for the addition of amendments, nutrients, electron acceptors, and other enhancements of biodegradation, it is also burdensome in that time limits of 90 to 180 days are imposed.

New Jersey’s proposed solution for speeding up and simplifying the regulatory approval of EISB is to develop a general permit that would be based on the NJPDES

permit-by-rule process. Modifications to the process would include extending the time period to between one and five years; requiring only one public notice, comment period, and public meeting; and applying the general permit to specific amendments, contaminants, or treatment processes. Safeguards would be built into the system, such as detailed monitoring above and within the treated zone and built-in community notification.

New Jersey’s proposed solution would accelerate approval for adding amendments to the subsurface, such as metallic and nonmetallic peroxides, lactic acid (organic fruit acids), microbial inorganic nutrients (nitrogen and phosphorus), microbial growth factors (yeast extracts), electron acceptors (nitrates), biodegradable surfactants, reactive iron, or soluble carbonate salts. It could be used for treatment processes ranging from barrier walls and interceptor trenches to aerobic and anaerobic bioremediation for the treatment of chlorinated solvents, fuels oil, or gasoline. This proposed streamlined process would minimize paperwork for the state and site owner and promote an accelerated remediation.

While this general permit process is still only an idea, New Jersey has proven itself a government leader in devising streamlined approaches to the conventional command and control process that threatens to bankrupt the regulated public and delays real cleanup.

❖ **We thought you’d want to know**

If you’ve ever wondered if ITRC work is making a difference, the answer is “yes, definitely.” That’s how Chuck McLaughlin, an employee of an environmental consulting firm, responded when asked if his recent order of ISB and EISBD documents had been beneficial to him. In research to prepare for an ISB project in California, Mr. McLaughlin found ITRC documents helpful because they provided specific examples of situations where ISB has been applied successfully and they listed other resources and references. Mr. McLaughlin was searching the Internet when he found the ITRC Web site. He subsequently decided to attend one of the ISB Internet-based training sessions and found the links provided afterwards also helpful. Because the regional water quality control board with whom McLaughlin will soon be working has not dealt with an ISB project before, he’s hopeful that the ITRC documents will become the basis for showing the board that this technology has value and has been successfully used elsewhere.

❖ ITRC on a roll

In the September 2000 issue, we reported that ITRC membership was up to 36 states and the District of Columbia. Since then, the organization has enlisted two more states—Rhode Island and Vermont. In 2000, ITRC has experienced a 52% increase in membership over 1999's state membership numbers. States that joined in 2000 are Alabama, Arizona, Hawaii, Idaho, Illinois, Maine, Missouri, North Dakota, Oklahoma, Rhode Island, Vermont, Wisconsin, West Virginia, and the District of Columbia. ITRC welcomes its newest POCs:

- ▼ Ron Gagnon—Rhode Island
- ▼ Michael Smith—Vermont

❖ e.TARP moves on

The ITRC team that was formed by the merging of two ITRC teams has decided to go it alone. The Environmental Technology Acceptance and Reciprocity Partnership (e.TARP), formed when the Six-State Memorandum of Understanding blended with the Verification Team, has opted to operate outside the auspices of ITRC in seeking ways states can reciprocate in accepting technology data and permitting new environmental technologies. e.TARP team members credit ITRC with being an incubator for building reciprocity among states. ITRC will continue to work on approaches for encouraging states to agree on performance and regulatory requirements for new environmental technologies.

❖ Five-Year Program Plan is approved

More than 20 projects will start over the next three years

ITRC's Leadership Team has elected to go forward with 23 projects that were proposed in the organization's first ever Five-Year Program Plan. The projects, which will be phased in over a three-year period from 2001 through 2003, will become the focus of existing ITRC teams and other teams yet to be named.

The Five-Year Program Plan, which has served in 2000 as the focal point for discussions regarding ITRC's direction, has enabled broader member and stakeholder participation in planning ITRC's future activities, helped ITRC provide timely input for federal sponsors' budget cycles, encouraged a more strategic approach to defining and achieving goals, and established a basis for building necessary infrastructure prior to undertaking new activities.

In 2000, the Five-Year Program Plan was an evolving document that eventually encompassed 23 separate proposed activities—11 proposals for continuing activities by existing teams, 10 proposed projects to be undertaken

by new teams, a project that would involve the efforts of more than one team (DOE Gate 6 Technologies), and a development support project for providing technical support and resources to help organize 2002 and 2003 teams and work plans. All the proposed topical area projects were suggested and voted on by ITRC's membership at the Spring Conference in April 2000 and again presented at ITRC's Fall Conference in October 2000. By approving the Five-Year Program Plan with its provision for a full contingent of ITRC projects, the Leadership Team has set in motion a surge of energy and activities to move ITRC forward through the next few years.

Most of the projects approved for a 2001 start will be undertaken by existing ITRC teams:

- ▼ Enhanced ISB Training Course
- ▼ Dense Nonaqueous Phase Liquids/Thermal Enhanced In Situ Bionitrification
- ▼ Chemical Oxidation
- ▼ Diffusion Sampler Technology Deployment Facilitation
- ▼ Permeable Reactive Barriers Long-Term Performance Monitoring
- ▼ Phytoremediation Training
- ▼ Radionuclides—In Situ Characterization, Cleanup, and Long-Term Stewardship
- ▼ Unexploded Ordnance Guidance and Training
- ▼ Small Arms Firing Range Contaminants (undertaken by the Phytoremediation Team)
- ▼ DOE Gate 6 Technologies
- ▼ Project Development Support

2002 starts will focus on

- ▼ Carbon Tetrachloride—Fumigant
- ▼ Constructed Wetlands (undertaken by the Phytoremediation Team)
- ▼ Contaminated Sediments
- ▼ MTBE-Contaminated Groundwater
- ▼ Perchlorate in Groundwater
- ▼ Sampling, Characterization, and Monitoring

Starting in 2003 will be projects focusing on

- ▼ Bioavailability of Metals
- ▼ Mercury
- ▼ Landfill Reclamation, Alternative Covers, and Bioreactors
- ▼ Greenhouse Technology Tier II Protocols
- ▼ Pollution Prevention

Would you like to join?

Are you ready to declare a preference for membership in one or more of the above projects? You can help ITRC begin the process of building team membership for 2001 by considering where you'd like to fit into ITRC's plan for projects. To be considered a team member, you must

agree to be an active participant in the team's calls, meetings, and document and training development. The first team meetings in 2001 will be held on February 7 at the Renaissance Hotel at the Inner Harbor in Baltimore, Maryland. Team leaders will meet there a day earlier on February 6 (see calendar on page 6). Send an e-mail to Marty Kushner at mkushner@sso.org to let him know on which team(s) you'd like to serve.

STATE ENGAGEMENT UPDATE

The State Engagement Team met in December to plan its scope and activities for 2001. Chief responsibilities for State Engagement will be collecting and documenting ITRC's successes, providing assistance to technical teams with developing and holding Internet-based training sessions, gaining concurrence on ITRC's technical and regulatory guidance, and helping deploy innovative technologies by matching ITRC guidance and training with site contaminant problems.

The team discussed strategies for identifying, pursuing, and publicizing the successful use of ITRC documents and training. An electronic process relying on e-mail and Internet survey forms will be instituted in 2001 to get feedback on ITRC's products and services. To date, the team has documented more than 130 successes and is following up on more than 100 potential successes.

Tentative dates for 28 Internet-based training sessions in seven technical areas have been planned. In most cases, the training sessions will be based on a technical and regulatory guidance document. The first few Internet-based training sessions in each technical area will focus on providing information to help obtain state concurrence on the technical and regulatory guidance published by ITRC. The 2001 session dates will be confirmed in early February, based on availability of instructors. Registration for each session will open 4–6 weeks in advance. Watch the ITRC Web site, e-mail, and the *Quarterly Update* for specific training dates.

The State Engagement Team Lead is Paul Hadley (CA), who is assisted by Circuit Riders 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

❖ Accelerated Bioremediation of Chlorinated Solvents

The Accelerated Bioremediation of Chlorinated Solvents Team, in conjunction with the Remediation Technologies

Development Forum, developed the classroom training course "Accelerated In Situ Bioremediation of Chlorinated Solvents" as a follow-on to the team's successful natural attenuation course. This course focuses on the use of enhancements to the subsurface environment to accelerate the biodegradation of chlorinated solvents and is designed to provide sufficient technical and regulatory information for making informed decisions about the feasibility of enhanced in situ bioremediation projects. The course is tentatively scheduled for four locations around the country during 2000–2002.

The team has also developed a two-hour, Internet-based course called "Enhanced In Situ Bioremediation of Chlorinated Solvents in Groundwater," which is designed to help state regulators, environmental consultants, site owners, and community stakeholders use the ISB guidance document *Technical and Regulatory Requirements for Enhanced In Situ Bioremediation of Chlorinated Solvents in Groundwater* (ISB-6). This document presents and discusses regulatory processes appropriate to a variety of active bioremediation techniques for chlorinated solvents in groundwater. Please check the ITRC Web site at www.itrcweb.org for both classroom and Internet-based courses. Paul Hadley leads the Accelerated Bioremediation of Chlorinated Solvents Team and can be reached at (916) 324-3823, phadley@dtsc.ca.gov.

❖ Bioremediation of Nitrates

The Bioremediation of Nitrates Team had a great meeting during the ITRC Fall Conference in San Antonio. The team decided to increase membership, and regulators from Kansas, California, and Oklahoma have tentatively agreed to serve as team members depending on next year's funding. The team also decided to continue to pursue further deployment of enhanced in situ bioremediation and to continue to serve as facilitators to deploy this technology. Next year's goals will be to develop a decision tree document and revamp the team's five-year plan. Since the bioremediation of perchlorate is identical to the bioremediation of nitrates, the team discussed the option of including perchlorate remediation as part of its goals. Bart Faris (NM) leads the Bioremediation of Nitrates Team. Reach him at (505) 841-9466, bart_faris@nmenv.state.nm.us.

❖ Chemical Oxidation (CO)

The Chemical Oxidation Team has finished its technical/regulatory document, and it will soon be printed and

distributed in early 2001. The CO Team plans to meet in early January to discuss training and presenters. Tom Stafford (LA) is leading the CO Team. He can be reached at (225) 765-0462, t_stafford@deq.state.la.us.

❖ **Dense Non-Aqueous Phase Liquids (DNAPLs)**

The DNAPLs Team had a number of conference calls and a very successful team meeting at the Fall ITRC Conference in San Antonio. The five-year project plan has been revised, and the team has determined a course of action for completing this year a document espousing DNAPL guiding principles. A revised draft was completed based on the team meeting and placed on the Web site for comment within the team in early November. Jim Harrington (NY) leads the DNAPLs Team and can be reached at (518) 457-0337, jbharrin@gw.dec.state.ny.us.

❖ **Diffusion Sampler Protocol (DSP)**

The revised draft final protocol titled *Guidance Document for the Use of Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* was issued in August 2000. Don Vroblesky of the U.S. Geological Survey has been the primary author of this document with input coming from the ITRC DSP Team, the U.S. Air Force, and the U.S. Navy. A copy of this draft document is on the ITRC Web site for viewing and downloading at <http://www.itrc.web> under "Guidance Documents." The Air Force Center for Environmental Excellence (AFCEE) negotiated with USEPA to facilitate USEPA's review and comments on the document prior to the document being issued final. Since an USEPA endorsement of the document will enhance the deployment potential of the sampling approach, all members of the DSP Team welcomed USEPA participation. USEPA completed its review of the document in November 2000. USEPA forwarded a copy of the comments to George Nicholas, DSP Team leader, who then distributed them to all DSP Team members. AFCEE is currently arranging a conference call to enable the participants to respond to comments and issues. It was anticipated that the call would take place in early December. Don Vroblesky will respond to USEPA comments and revise the final document, which should be issued in late December or early January.

Future work for the DSP Team will involve tracking the

performance of the samplers and assisting deployment of the technology. Anyone who has questions or comments regarding the use of diffusion samplers is encouraged to contact DSP Team leader George Nicholas (NJ) at (609) 984-6565, gnichola@dep.state.nj.us.

❖ **Environmental Technology Acceptance and Reciprocity Partnership (e.TARP)**

As its last quarter as part of ITRC wound down, the Environmental Technology Acceptance and Reciprocity Partnership (e.TARP) continued to develop common pathways for reciprocal state approval and permitting of environmental technologies via a three-tiered protocol development process. These protocols provide vendors with the guidance for assembling credible and consistent data and documentation pertaining to all environmental technology classes for performing, evaluating, and approving full-scale field demonstrations. In addition, regulators and permit reviewers from participating states will benefit by having the assurance that data, approvals, and permits from a demonstration in another participating state has been produced in an agreed-upon manner based on common industry standards and guidelines.

The team is presently focusing on three protocol areas: Stormwater Best Management Practice, Beneficial Use Determinations (BUD), and Innovative and Alternative On-site Wastewater Disposal.

The fifth version of the *Stormwater Best Management Practice Demonstration, Tier II Protocol for Interstate Reciprocity* has generated a thoughtful set of comments, which will be considered by the Stormwater Work Group, as it prepares another draft protocol. The most recent version has been in circulation for the past two months. In the next draft, the work group will be striving to develop a stormwater technology performance demonstration and review process that will be sufficiently flexible to accommodate a variety of technology types and adjust to future changes in technology industries and government programs.

Participation in the Stormwater Work Group is expanding. With the addition of Virginia DEP staff, the work group now represents five states. Although development of the protocol is the work group's main focus, the states also need to plan for staff training on the protocol, for technology information exchange in an accessible database, and for periodic modifications to the protocol and audits.

The Beneficial Use Determination Work Group met at the ITRC Fall Conference to review the latest draft of its

Tier II protocol. A line-by-line review of the draft identified minor modifications to the document. This final draft will then be circulated among participants for review prior to publication of the final Tier II document for BUDs. The discussion also framed a draft procedure for developing a Tier III document. It's anticipated that a final draft of this Tier II document will be completed and circulated shortly and that a template for proceeding with a concept/procedural format for Tier III will be issued as well.

The Innovative and Alternative On-site Wastewater Disposal Work Group has been developing its Tier II protocol and conducting numerous meetings and discussions with members and other interested on-site regulators from all over the country. The protocol consists of obtaining buy-in from a consortium of review entities (CORE). The verification and review process consists of two process levels: a verification and assessment level, and an approval level.

At the verification and assessment level, the vendor proposes a scientific study to validate a claim, or hypothesis. After the study is complete, the CORE assesses the results, and a numerical or narrative "approved performance value" is assigned for the product on a nationally circulated database. At the approval process level, a review entity utilizes a standardized procedure to establish approval(s) that are specifically relevant to the local domain or governing agency. This approval is accomplished by using a logical process that compares the verified "approved performance value" to a set of domain-specific alternate requirements, which can be described as variances from the standard requirements.

Using the protocol, technology is not approved in a wholesale manner. Instead, the two-level system allows for a maximum degree of universality while maintaining a maximum degree of sovereignty for each review entity. Universality is obtained by universal acceptance of the verification protocol. Allowing each entity to establish approvals that are based on the findings from the verification process level preserves sovereignty. This sovereignty is widely acknowledged to be necessary for the successful implementation of the protocol, since each domain has different regulations and customs. For example, even if two states agreed that an innovative cesspool works as well or better than a typical cesspool, one state may not allow cesspools at all, so the innovative cesspool could not be approved any more readily than a standard one.

The Innovative and Alternative On-site Wastewater Disposal Work Group expects to release its draft proto-

col for review in December 2000. The draft is still open for review. Linda Benevides (MA) and Nancy Uziemblo (WA) are the co-team leaders of the e.TARP Team. Linda can be reached at (617) 292-5782, linda.benevides@state.ma.us. Nancy can be reached at (509) 736-3014, nuzi461@ecy.wa.gov. The leader of the BUD Work Group is Joseph Carpenter (NJ) at (609) 292-4871, jcarpenter@dep.state.nj.us. The Stormwater Work Group leader is Nancy Baker (MA) at (617) 556-1143, nancy.baker@state.ma.us. The Innovative Septic System Work Group leader is Fred Bowers, Ph. D. (NJ) at (609) 292-0407, fbowers@dep.state.nj.us.

❖ **Permeable Reactive Barriers (PRB)**

Having completed its series of live, 1^{1/2}-day courses that were presented in 12 cities, the PRB Team is now concentrating on a series of Internet presentations. To date, over 400 people have accessed the two Web-based courses that have been presented. The PRB Team is also continuing its involvement in a Department of Defense Long-Term Performance Monitoring Project for PRBs, which is addressing longevity and hydraulic performance issues of permeable reactive barriers. Matthew Turner (NJ) leads the PRB Team and can be reached at (609) 984-1742, mturner@dep.state.nj.us.

❖ **Phytoremediation**

The Phytoremediation Team continues to work on two technical/regulatory documents. The phytoremediation document will soon be ready for printing, while a section of that document on constructed wetlands is being spun off into a separate document that will be printed in 2001. The team also plans to begin phytoremediation training in 2001 and has been working with the Air Force on the topic of alternative covers for landfills. Dib Goswami (WA) and Bob Mueller (NJ) lead the Phytoremediation 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 (Rad)**

The Radionuclides Team had a successful and well-attended session at the Fall ITRC Conference. Work continues on the team's two products for this year—a document discussing cleanup levels and decision making for radionuclides at various DOE sites and a document addressing stewardship technology needs. Members of the team attended the site-specific advisory board meeting on long-term stewardship in Denver, including a tour

of Rocky Flats. Also in October, Rad Team members attended a two-day conference on stewardship technology needs in Cincinnati, toured the Fernald Site, and observed some of the technology demonstrations. The team also met with members of DOE's Office of Science and Technology to discuss long-term stewardship issues.

Rad Team members presented findings from both their documents in two conferences in December. The cleanup levels document was presented at the Society of Risk Analysis Conference in Washington, D.C. in early December, while the stewardship technologies document was presented at the Land Transfer and Long-Term Management of Contaminated Federal Facilities Conference in San Francisco in mid-December. Team leaders Tom Schneider (OH) and Carl Spreng (CO) can be reached at (937) 285-6466, tom.schneider@epa.state.oh.us; and (303) 692-3358, carl.spreng@state.co.us.

❖ Unexploded Ordnance (UXO)

The UXO Team held a team meeting and site tour in Denver on September 6 and 7. During the Colorado meeting, the UXO Team developed an initial outline of the team's five-year plan and completed the first review and comment cycle of the team's case study document. The Colorado Department of Public Health and the Environment hosted a site tour of the former Lowry Bombing and Gunnery Range. After a thorough safety briefing, the attendees had the opportunity to observe the site characterization and range residue handling tech-

niques employed on site.

During ITRC's Fall Conference in San Antonio, the speakers for the UXO Technical Panel Session presented briefings on Standardized UXO Test Sites by the U.S. Army Environmental Center; a Case Study from Adak, Alaska by the U.S. Navy; and a Conceptual Site Model for Characterization by the USEPA, Region IX. The presentations are available on the ITRC Web site under the UXO Team. In addition, the UXO Team was able to finalize the team's five-year plan of training and technical guidance development at the team meeting held during the Fall Conference.

The UXO Team has completed the final draft of the case study related to breaking barriers to the use of innovative technologies. The team met informally during the SERDP/ESTCP Technical Symposium in early December to discuss final changes to the case study document before the document was submitted for printing. The final five-year plan will build upon the knowledge gained from completing the case studies and incorporate follow-on projects resulting from the training. Jennifer Roberts (AK), and Jim Austreng (CA), provide leadership for the team. Jennifer is at (907) 269-7553, jennifer_roberts@envircon.state.ak.us. Jim can be reached at (916) 255-3702, jaustren@dtsc.ca.gov.

CONTACTS

For questions or comments regarding ITRC, please contact Rick Tomlinson, ITRC program manager, 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
ITRC Leadership Team Retreat	Washington, D.C.	Jan. 10-12	Marty Kushner, (202) 624-3501 mkushner@sso.org
ITRC Leadership Training and 2001 Team Kickoff Meeting	Baltimore, MD	Feb. 6-8	Marty Kushner, (202) 624-3501 mkushner@sso.org
Treatment Technology Alternatives	Salt Lake City, UT	April 23-26 (tentative)	Marty Kushner, (202) 624-3501 mkushner@sso.org