

Quarterly Update

March 2000

❖ Changes on the Leadership Team

Five members of the Leadership Team are “retiring” from their positions and a new member has stepped up. Stepping down are Linda Benevides, Anne Callison, Jim Harrington, Carolyn Kiely, and Nancy Uziemblo. ITRC appreciates their contributions and will continue to benefit from their dedication as they lend their talents to technical teams. The new member of the Leadership Team is Gary Baughman of Colorado, who will serve as liaison for ITRC team leaders. In this role, Gary will communicate with team leaders to ensure that their input, ideas, and suggestions are brought to the Leadership Team. Gary can be reached at (303) 692-3338, gary.baughman@state.co.us.

❖ ITRC membership keeps growing

ITRC has recently added to its membership. Environmental regulatory agencies from 31 states and the District of Columbia are now a part of the ITRC network. Welcome aboard to our newest states and POCs from Missouri, Rhode Island, Maine, Arizona, and the District of Columbia. We look forward to building productive relationships and many successes with your states.

❖ Introducing Marty Kushner, ITRC Program Analyst

Marty Kushner has arrived on the scene at ECOS in Washington, D.C. to administer the wealth of details that go into keeping the ITRC ship afloat—including meeting

planning, budget management, and progress/schedule tracking. You can reach Marty at ECOS at (202) 624-3501, mkushner@sso.org.

❖ New titles for ITRC’s bookshelf

The following documents are new or updated offerings from ITRC work teams:

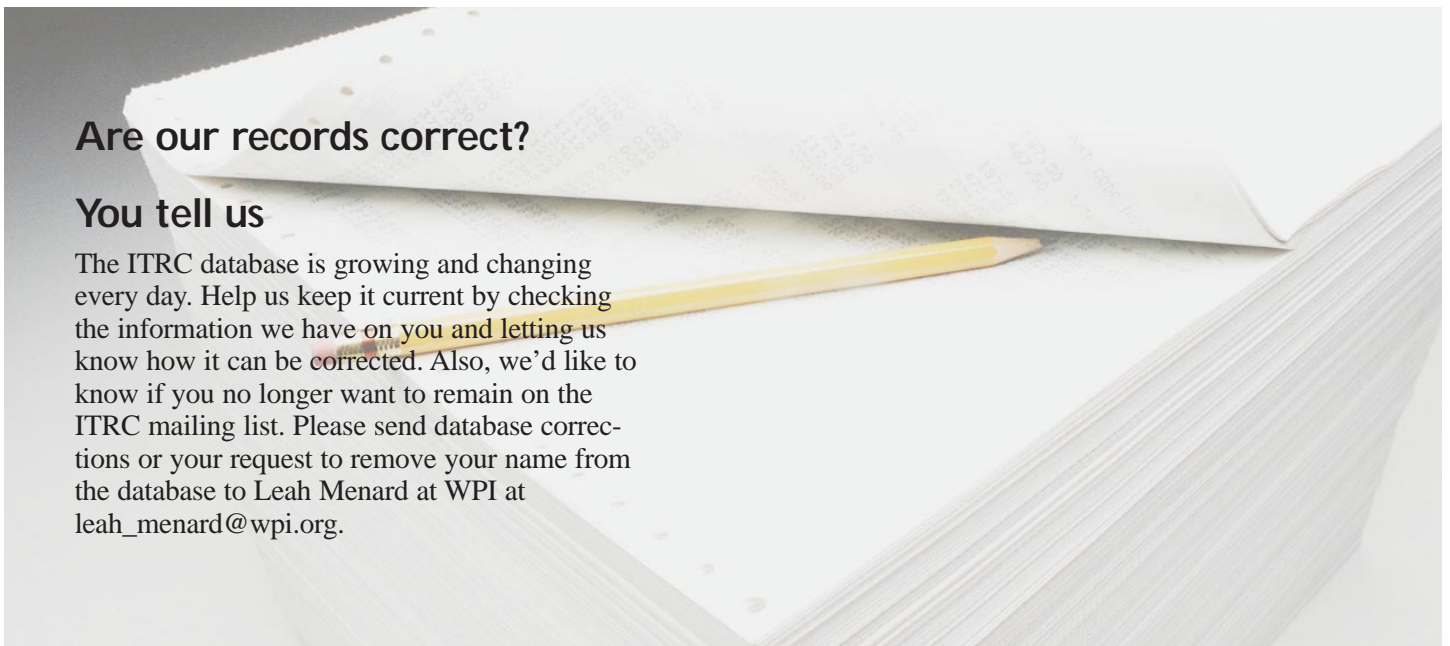
- ▼ New Permeable Reactive Barriers document: PRB-3, *Regulatory Guidance for Permeable Reactive Barriers Designed to Remediate Inorganic and Radionuclide Contamination*
- ▼ Reprinted Permeable Reactive Barriers document: PBW1, *Regulatory Guidance for Permeable Reactive Barriers Designed to Remediate Chlorinated Solvents*
- ▼ New Phytoremediation document: PHYTO-1, *Phytoremediation Decision Tree*
- ▼ Updated Verification document: VT-1, *Multi-State Evaluation of Elements Important to the Verification of Remediation Technologies*
- ▼ New Radiation document: RAD-1, *Radiation Reference Guide: Relevant Organizations and Regulatory Terms*

These documents have been distributed to relevant work teams and other interested parties. If you’re interested in receiving copies, contact Elaine Specht at WPI, (540) 557-6071, Elaine_Specht@wpi.org. Please request documents by their numbers rather than their titles.

Are our records correct?

You tell us

The ITRC database is growing and changing every day. Help us keep it current by checking the information we have on you and letting us know how it can be corrected. Also, we’d like to know if you no longer want to remain on the ITRC mailing list. Please send database corrections or your request to remove your name from the database to Leah Menard at WPI at leah_menard@wpi.org.



STATE ENGAGEMENT UPDATE

While ITRC technical work teams produce technical and regulatory guidance documents that streamline the permitting and implementation of innovative environmental technologies, the State Engagement Program ensures that the documents are available, understood, and used. Part of this activity involves a network of 31 state points of contact (POCs), two circuit riders, contract support, and a state engagement coordinator. This infrastructure is the lifeline that connects member states with one another, with ITRC technical work teams, and with ITRC management. It is also the primary mechanism through which state members encourage cleanup programs to use ITRC documents.

❖ WGA circuit rider

Mary Yelken (former state engagement coordinator from the Nebraska Department of Environmental Quality) has officially assumed the role of WGA/ITRC circuit rider within the State Engagement Program. Along with Ted Joy (SSEB circuit rider), she will assist the states in getting the most out of their ITRC participation. You can still reach Mary in Nebraska at (402) 471-2181. Her new e-mail address is myelken@westgov.org.

❖ Accomplishments in 1999

During 1999, the State Engagement Program began its initiative to “Build More Successes.” The program has provided POCs with the tools they need to increase the use of ITRC products and services, including:

- ▼ Five Internet training sessions on ITRC documents were provided to POCs, other state regulators, federal agency participants, industry representatives, and stakeholders. In addition to increased POC awareness of and confidence in using ITRC documents, the process has resulted in a useful and user-friendly State Engagement training Web site, compliments of USEPA’s Technology Innovation Office.
- ▼ Direct in-state training/informational sessions in a number of states are providing regulators, stakeholders, consultants, and federal regulatory personnel with information on a variety of ITRC documents.
- ▼ Increased coordination and consistent communications between POCs and team leaders are generating stronger professional networks.
- ▼ A conscientious effort to address regulatory issues previously overlooked is building increased ownership among POCs and team leaders.
- ▼ A simplified concurrence process is clarifying states’ status in the process, ensuring flexibility, and streamlining concurrence levels.

❖ Addressing regulatory barriers—the heart of the ITRC mission

Recognizing that innovative in situ groundwater remedial options often include the addition of additives along with the reintroduction of untreated groundwater into the subsurface, technical team leaders and POCs joined forces to address a regulatory barrier to using viable in situ technologies—that barrier is RCRA 3020b. ITRC requested that USEPA clarify RCRA 3020b. USEPA’s response indicates that injection/reinjection of additives and untreated groundwater as part of a treatment system is acceptable.

Spearheaded by Jim Harrington (NY), POCs are building state consensus for a working principle: “ITRC states are amenable to remediation proposals that include injection of a remedial additive and reinjection of contaminated groundwater with or without additives. The proposal must demonstrate that the process will not increase risk to human health and the environment and that it is necessary to accomplish the remedial goal.” In addition to the 14 POCs who have endorsed the principle, the State Engagement Team is working to obtain additional formal letters of acceptance from state regulatory agencies. For more information on this topic and for a copy of USEPA’s letter clarifying RCRA 3020b, please contact Paul Hadley at (916) 324-3823, phadley@dtsc.ca.gov.

❖ Plans for 2000

The State Engagement Team plans to keep the momentum going in its efforts to engage states in “Building More Successes.” Ongoing activities with the technical teams will provide Internet training on ITRC documents and a forum to address regulatory barriers to the use of innovative technologies. Additionally, the program will continue to document how ITRC products and services are effective resources to the states and the environmental community for cleaning up contaminated sites. Through the State Engagement effort, POCs will be assisted in creating and practicing innovative ways to institutionalize the ITRC process within their regulatory frameworks.

Among the new activities that will be undertaken by the team is the development and implementation of an in-state program to help POCs engage state regulators and others in the environmental community. This “engagement” program will be customized for specific state needs and issues relating to environmental cleanup activities. The effort will support POCs in hosting outreach events, which will highlight the use, applicability, and value of ITRC products and processes. Please contact Ted Joy at (770) 242-7712, joy@sseb.org or Mary Yelken at (402) 471-2181, myelken@westgov.org for more information on state engagement activities and to learn how your organization can benefit from our program.

TECHNICAL TEAM UPDATES

❖ Dense Nonaqueous Phase Liquids (DNAPLs)

In 1999, the DNAPLs Team produced a draft technology overview document of innovative DNAPL characterization and remediation technologies, which will be finalized in early 2000. This document provides a general overview of the technologies, their limitations and advantages, regulatory concerns, stakeholder issues, and a listing of sites where the technologies have been implemented. Also in 1999, the DNAPLs Team worked with the Interagency DNAPL Consortium (IDC) to review the test plans for two of the three technologies that are or will be deployed at Cape Canaveral Air Station, Complex 34. The team reviewed the test plans for in situ chemical oxidation (utilizing KmnO_4) and Six-Phase Soil Heating, and the technologies were subsequently deployed in 1999. The third technology to be deployed under IDC—steam injection—is awaiting a test plan and will be deployed later in 2000. The team also began working with the USEPA Superfund Innovative Technology Evaluation (SITE) program to identify state-specific regulatory parameters associated with the technologies being used at Cape Canaveral.

The DNAPLs Team has ambitious plans for 2000 to produce a thermal remediation of DNAPL source areas technical requirements document and continue to follow the development and status of emerging technologies in the same category. The team will utilize the work being done by the USEPA SITE program case study effort, which will occur this year. The team also plans to continue its work with IDC relative to the findings of the in situ chemical oxidation and Six-Phase Soil Heating technology demonstrations and will review the test plan for implementing steam injection. In addition, the team will become involved in a project of USEPA's Technology Innovation Office's State Dry Cleaner Remediation Program. This project identifies states that have dry cleaner sites undergoing site characterization or remediation and evaluates the use of technologies at these sites. Jim Harrington (NY), who led the Low-Temperature Thermal Desorption Team, is the new leader for the DNAPLs Team, taking over where Baird Swanson (NM) left off. Jim can be reached at (518) 457-0337, jbharrin@gw.dec.state.ny.us.

❖ Diffusion Sampler Protocol (DSP)

The DSP Team is a new ITRC team that will participate with the Navy, the U.S. Geological Survey, and the Air Force Center for Environmental Excellence to develop a joint protocol on when, where, and how to use diffusion samplers for groundwater monitoring. Diffusion samplers are a relatively simple and inexpensive way to

sample groundwater and groundwater discharges to surface water. Since no purging is required, this methodology could potentially result in significant cost savings for facilities where long-term monitoring of groundwater is being conducted. Initial studies being performed by USGS show good correlation between samples obtained through traditional methods and samples obtained with diffusion samplers. Because the diffusion membrane is polyethylene, this method is not effective in detecting compounds with extremely high solubility and extremely low solubility (i.e. MTBE, acetone, and many PAHs, and PCBs). But since many of the more common sampling parameters are amenable to sampling with diffusion samplers (BTEX and chlorinated solvents), the technology warrants further consideration.

The simplicity and low cost associated with this sampling approach make it very attractive to facilities conducting long-term monitoring and for remedial investigations at sites where contaminated groundwater is discharging to surface water. However, before the methodology can be used effectively throughout the country, a standard operating procedure must be established, making application of the methodology uniform and reproducible.

The DSP Team, working with AFCEE and USGS under the direction of the Navy, will compile site data verifying the effectiveness of the technology and will produce a hands-on, usable protocol for using diffusion samplers for long-term monitoring of groundwater. The DSP Team will identify states' performance expectations that the Navy will need to address in the protocol.

George Nicholas (NJ) is heading up the DSP Team. George can be reached at (609) 984-6565, gnichola@dep.state.nj.us.

❖ Enhanced In Situ Bionitrification (EISBD)

EISBD may have applicability to a wide range of contamination caused by nitrogen fertilizer, concentrated animal feeding operations, explosives manufacturing, wastewater treatment sites, DOD and DOE facilities, and unexploded ordinance facilities. Although this technology has the potential to deliver a quicker, more cost-effective solution for dealing with nitrate-contaminated groundwater than other remediation technologies, EISBD has been deployed only a few times due to the lack of regulatory drivers for cleaning up nitrates.

In 2000, the EISBD Team proposes to work toward increasing the deployments of EISBD by

- ▼ identifying nitrate-contaminated sites that have current regulatory drivers,

- ▼ educating relevant regulators and responsible parties about the use of EISBD and facilitating interactions between regulators and responsible parties,
- ▼ sending relevant regulators and responsible parties to EISBD demonstration sites to facilitate discussions regarding regulatory, economic, and technical feasibility issues, and
- ▼ working with other organizations to assist in the deployment of EISBD.

Bart Faris (NM) leads the EISBD Team, (505) 841-9466, bart_faris@nmenv.state.nm.us.

❖ In Situ Bioremediation (ISB)

The In Situ Bioremediation Team has published seven work products through mid-1999, including four technical and regulatory guidance documents. This team has also led the way, through coordination with the ITRC State Engagement Team, in developing and implementing a highly successful series of regional training courses on *Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices* (ISB-3). In 1999, the team, in conjunction with the Remediation Technologies Development Forum, developed a course on *Accelerated Bioremediation of Chlorinated Solvents*. A dry run was conducted in October 1999 in Louisiana, with a second dry run in California in December 1999.

In 2000, the *Accelerated Bioremediation of Chlorinated Solvents* course is tentatively scheduled in six cities, including a one-day session for ITRC's federal partners in the Washington, D.C. Area. Paul Hadley, the ISB Team leader, can be reached at (916) 324-3823, phadley@dtsc.ca.gov.

❖ In Situ Chemical Oxidation (ISCO)

In 1999, the ISCO Team was a part of the DNAPLs Team, and some of the technical issues related to in situ chemical oxidation were included in the DNAPL technology overview document, which will be finalized in 2000. This year, the ISCO Team is independent, which will enable it to better address the technical and regulatory issues that surround the use of in situ chemical oxidation—a technology based on the delivery of chemical oxidants to destroy and/or convert contaminants into innocuous compounds commonly found in nature. This technology is one of several innovative technologies that shows promise in destroying or degrading an extensive variety of hazardous wastes in groundwater, sediment, and soil. Because the oxidants used are readily available and treatment time is usually calculated in months rather than years, the technology has provoked an increase in popularity within the environmental remediation field.

Building on preliminary work, the ISCO Team will develop a technical and regulatory guidance document to assist regulators, site owners, industry representatives, and stakeholders in understanding the capabilities, limitations, cost, efficiency, and regulatory concerns/barriers for using in situ chemical oxidation. The primary contaminants that have been treated with these technologies are chlorinated solvents: perchloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride. The guidance document will primarily focus on the three most common chemical oxidants/processes that vendors are using today—hydrogen peroxide (H₂O₂), potassium permanganate (KMnO₄), sodium permanganate (NaMnO₄), and ozone (O₃). Tom Stafford (LA) is leading the ISCO Team. He can be reached at (225) 765-0462, t_stafford@deq.state.la.us.

❖ Permeable Reactive Barriers (PRB)

The PRB Team, in partnership with USEPA and the Remediation Technologies Development Forum, continues to present its one-and-a-half-day training course *In Situ Permeable Reactive Barriers: Application and Deployment*. The course is designed to assist professionals in the regulatory community in overseeing the design, implementation, and monitoring of groundwater remedies that involve the deployment of permeable reactive barriers. Industry professionals and environmental consultants have benefited from the updated technical information presented as well as the interaction with regulators and other professional colleagues.

Begun in 1999, the course has been presented eight times, including two pilot sessions, and has reached more than 850 regulators and consultants. Upcoming courses are listed on the calendar on the last page.

In 2000, the U.S. Department of Defense, through the Naval Facilities Engineering Service Center (NFESC), is making possible the participation of the PRB Team on a DOD Long-Term Performance Monitoring Project for PRBs. The project is designed to address longevity and hydraulic performance issues of PRBs. NFESC is the lead agency on this project, which also involves USEPA and DOE. As part of this multiagency effort, the PRB Team will review documents and participate in project meetings. Matthew Turner (NJ) leads the PRB Team and can be reached at (609) 984-1742, mturner@dep.state.nj.us.

❖ Phytoremediation (Phyto)

In 1999, the Phyto Team issued the 40-page *Phytoremediation Decision Tree* for regulators, responsible parties, consultants, and stakeholders to determine if phytoremediation is appropriate for use at a particular site. In 2000, the team plans to work with the Naval Facilities Engineering Service Center to place an interactive phytore-

mediation decision tree on the Internet. The team also conducted a survey of ITRC member states to identify regulatory concerns associated with the deployment of phytoremediation technologies. The team also prepared a draft technical and regulatory guidance document during the last quarter of 1999.

If more funds are granted to the Phyto Team, it plans to complete its draft guidance document this year and begin writing another technical and regulatory guidance document on the use of soil washing coupled with various treatment and stabilization techniques to clean up firing ranges. Also dependent on obtaining more funding is the Phyto Team's plan to develop a training course on phytoremediation and to pursue the feasibility of breaking out components of this course for delivery as an Internet training module. Dib Goswami (WA) and Bob Mueller (NJ) lead the Phyto 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 was formed in 1999 to investigate innovative methods and approaches for characterizing, treating, and managing radioactive contamination at federal facilities. The team's 1999 accomplishments include fostering dialogue among states, stakeholders, and federal agencies; establishing an ITRC radionuclide list server; developing an initial case study to address cleanup levels and associated assumptions for remediating radionuclides at DOE sites; and issuing *Radiation Reference Guide: Relevant Organizations, Activities, and Regulatory Terms*.

In 2000, the Rad Team will complete its case study regarding radionuclide cleanup levels at DOE sites and develop another case study addressing stewardship with the working title of *Case Study: Comparison of Institutional Controls for Long-Term Management of Radiological Contaminants*. Tom Schneider (OH) and Carl Spreng (CO) lead the Rad Team. Tom can be reached at (937) 285-6466, tom.schneider@epa.state.oh.us; Carl can be reached at (303) 692-3358, carl.spreng@state.co.us.

❖ Technology Acceptance and Reciprocity Partnership (TARP)

Two ITRC groups have joined forces to formalize the process by which states reciprocate in accepting technology data and permitting new environmental technologies. The Six-State Memorandum of Understanding and the Verification Team have blended into a new team known as TARP. The states participating in this partnership are changing how states review and accept information from new environmental technologies. For states, this change

means improved communication and information sharing among state regulators, more efficient permit reviews, more environmental technologies available to solve tough environmental problems, and better relationships with technology vendors. For technology vendors, TARP can improve the way research is conducted and how quickly their technologies get used in the field.

Last year, TARP finalized a pilot "Applicant for the Day" program; developed a strategy for how states can work together, which has been signed by participating states' environmental leaders; and finalized a Tier I protocol that defines the quality of information for a field demonstration of any technology. This year, TARP is finalizing common, multimedia protocols to

- ▼ encourage the use of new, possibly more effective stormwater control technologies,
- ▼ define the performance expectations and regulatory requirements for the beneficial use of solid and hazardous waste products,
- ▼ clarify the testing requirements and data submittal needs for alternative septic system designs, and
- ▼ report results of technology demonstrations in a common, easily transferable format (the green book format used successfully by the Department of Energy in its Innovative Technology Summary Reports, or ITSRS).

To access and participate in other states' reviews, TARP will develop a shared database for technologies undergoing review by participating states. An audit process will be developed to ensure confidence in the data and evaluate the performance of the partnership. The team is also exploring partnerships with other state-led organizations on greenhouse gas control, pollution prevention, and other technologies.

In establishing protocols, TARP will use the verification matrix produced by the Verification Team and found in its document *Multi-State Evaluation of Elements Important to the Verification of Remediation Technologies*. By maintaining contacts with verification programs, TARP will play a continuing role in fostering cooperation and dialogue among verification programs and states. Linda Benevides (MA) and Nancy Uziemblo (WA) are TARP's co-team leaders. 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.

❖ Unexploded Ordnance (UXO)

The U.S. Department of Defense is responsible for detecting and cleaning up millions of acres contaminated with unexploded ordnance (UXO). The UXO Team is collecting and analyzing case studies of states having experience in remediating UXO-contaminated sites and is finding that contractual limitations are barriers to the deployment of advanced

technologies. The team is developing recommendations for overcoming these barriers.

In 1999, in conjunction with DOD, the team coordinated a national UXO summit to help states and other interested parties understand issues surrounding UXO regulatory requirements, technology implications, community concerns, and opportunities to be involved in UXO decision making processes. The team developed a report of the summit proceedings, which includes a meeting summary, analysis of issues, and recommended next steps.

In 2000, the team will complete its analysis of case studies, forming the basis for the rest of the team's 2000 efforts. The team's focus during 2000 is on

- ▼ developing a composite report based on analysis of the case studies, including recommendations on how states can appropriately participate in the selection of technologies for site characterization,

- ▼ obtaining state and stakeholder acceptance of early involvement in technology selection, including the development of technology selection processes, and
- ▼ participating in the technical symposium and workshop put on by the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP).

Jim Austreng (CO) leads the UXO Team. Jim can be reached at (916) 255-3702, jaustren@dtsc.ca.gov.

CONTACTS

For questions or comments regarding ITRC, please contact Rick Tomlinson, ITRC project 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
Permeable Reactive Barriers Training Course	San Francisco, CA	March 21–22	www.trainex.org/prb Matthew Turner, (609) 984-1742 mturner@dep.state.nj.us
ITRC Spring Meeting	Crystal City, VA	April 4–6	Rebecca Diamond, (703) 902-3613 (fax) diamond_rebecca@bah.com
Accelerated Bioremediation of Chlorinated Solvents Course	Washington, D.C. (for federal personnel)	April 5	Marty Kushner, (202) 624-3501 mkushner@sso.org.
ECOS Spring Meeting	Philadelphia	April 10–12	Lia Parisien, (202) 624-3660 lparisie@sso.org
Permeable Reactive Barriers Training Course	New York, NY	May 2–3	www.trainex.org/prb Matthew Turner, (609) 984-1742 mturner@dep.state.nj.us
Permeable Reactive Barriers Training Course	Denver, CO	June 13–14	www.trainex.org/prb Matthew Turner, (609) 984-1742 mturner@dep.state.nj.us
ITRC Mid-Year Review	Albuquerque, NM	late June	Rebecca Diamond, (703) 902-3613 (fax) diamond_rebecca@bah.com
Permeable Reactive Barriers Training Course	Chicago, IL	July 25–26	www.trainex.org/prb Matthew Turner, (609) 984-1742 mturner@dep.state.nj.us
ECOS Annual Meeting	Anchorage, AK	August 13–16	Lia Parisien, (202) 624-3660 lparisie@sso.org
Permeable Reactive Barriers Training Course	Kansas City, MO	Sept. 12–13	www.trainex.org/prb Matthew Turner, (609) 984-1742 mturner@dep.state.nj.us
ITRC Annual Meeting	San Antonio or L.A.	Oct. 24–26	Rebecca Diamond, (703) 902-3613 (fax) diamond_rebecca@bah.com