



Quarterly Update

December 2001

Fall conference was a huge success

More than 300 people met in Long Beach, California during the first week of November to conduct ITRC business, learn about innovative technologies, and explore opportunities for partnering. Attendees, representing the gamut of the environmental community, came from state environmental agencies, industry, DOD, DOE, USEPA, universities, and citizen groups. Attendees were enthusiastic about the conference's mix of plenary and panel sessions, networking time, and technology exhibits. An exhibitor commented, "I thoroughly enjoyed the technical sessions and networking opportunities. I was able to get a sense of the true value of this organization." An attendee from the Missouri Department of Natural Resources said, "My first conference.... I love the intent of the ITRC, and I'm very willing and enthusiastic to be a part [of it]."

The conference lived up to its theme of "Environmental Partnerships and Technology Education." At plenary and workshop sessions, discussion centered on how states, DOD, EPA, and DOE are forging partnerships to find creative solutions to cleanup challenges. Two-hour training courses were offered on the second day on diffusion samplers, phytotechnologies, permeable reactive barriers, chemical oxidation, and unexploded ordnance.

Workshops on DNAPL source reduction and long-term stewardship also provoked interest. The DNAPL source reduction workshop especially hit home for a participant from the Georgia Environmental Protection Division. "My trip was well worth it just to attend the DNAPL panel session.... I congratulate the people responsible for putting this session together. They brought together some high-caliber folks to talk turkey on this question [of removing DNAPL sources]."

ITRC business took up the last two days. Three new board members were named, and technical teams met to work on their team products. New 2002 teams held preliminary meetings. To join a 2002 team, fill out the membership form on page 2.

ITRC names new board members

Three new board members are ready to begin their terms in January. Both Roger Kennett (N.M.) and Brian Sogorka (N.J.) are turning over their cochair responsibilities, while Aimee Houghton, who has been an untiring ITRC participant since ITRC began six years ago, is leaving her board position but will continue to work as a member of the

Unexploded Ordnance Team. Brian Griffin of Oklahoma and Ken Taylor of South Carolina will be the new co-chairs; Wade Waters from the Savannah River Site Citizen Advisory Board (SRS CAB) will fill the stakeholder position on the board.

Brian C. Griffin has served in Governor Keating's Cabinet since April 1997 as Oklahoma's Secretary of Environment. In this capacity, Secretary Griffin has responsibility for all environmental matters within Oklahoma. As the highest-ranking environmental official in Oklahoma, Brian brings high-profile visibility and added prominence to ITRC.

G. Ken Taylor is director of the Hydrogeology Division of the South Carolina Department of Health and Environmental Control's Bureau of Land and Waste Management. The division provides groundwater technical expertise to the monitoring and remedial activities for South Carolina's Superfund, hazardous waste, and solid waste programs and is the lead permitting authority for postclosure-only RCRA treatment, storage, and disposal facility permits. The groundwater programs under Ken's direction interact with organizations that seek to implement innovative technologies, including the U.S. Geological Survey, DOE Savannah River Site, DOD, and private companies.

Wade Waters hasn't let retirement slow him down. After careers in the U.S. Marine Corps, sales and marketing, and public school administration, Wade is active as a lay speaker in the Methodist Church and as the chair of the Waste Management Committee on the SRS CAB. He's proud to have been selected as the public/tribal stakeholder member of the ITRC Board of Directors and will work to convey the ITRC technical teams' work products to prospective users and to the general public in language that they can understand.

ITRC expertise is solicited

In recognition of the excellent work ITRC teams are doing to provide information on innovative environmental technologies, several organizations have invited ITRC to review their works in progress. ITRC team leaders recently worked to help the Federal Remediation Technologies Roundtable (FRTR) produce an improved *Remediation Technologies Screening Matrix and Reference Guide*. FRTR updates its matrix and reference guide periodically to provide a timely resource for remedial project managers as they decide among competing remediation technologies. Recently, Rick Williams of the U.S. Army Environmental

Center invited ITRC team leaders to review information that had been proposed for updating Chapter 4 of the document—"Treatment Technology Profiles." ITRC feedback helped FRTR develop revised technology descriptions, cost information, performance limitations, and other categories of information on emerging environmental technologies.

ITRC participation has also helped DOE improve one of its products—*Ground Water Evaluation and Remediation Strategy Guide for Department of Energy Sites*. ITRC POCs and team leaders were asked to provide comments on this document, which was written to promote the concept of phasing response actions and developing remedial action objectives for each phase of a response.

ITRC wants you!

ITRC invites you to join one of the teams in its 2002 technical team lineup. The Board of Directors selected this 2002 roster after it and other ITRC participants thoroughly reviewed proposed team work scopes. The 2002 teams are listed on the membership form below.

Teams typically create technical/regulatory documents and develop and deliver training courses. By joining an ITRC team, you commit to devote 10% of your time on ITRC activities. To indicate your interest in either remaining on a continuing team or joining a new team, fill out the form below and fax to Marty Kushner at (202) 624-3666 by March 1, 2002.

ITRC 2002 Team Membership Form

Membership in ITRC is open to any state, federal, industry, or citizen stakeholder individual or organization that is willing to volunteer and participate by providing substantive input on an ITRC team. ITRC provides travel resources to a limited number of state and citizen stakeholders to offset costs of team participation, as resources allow.

Name _____	Title _____
Organization _____	Phone _____
Address 1 _____	Fax _____
Address 2 _____	E-mail _____

I am interested in participating on the ITRC _____ Team. I hereby pledge a 10% commitment of my time to facilitate the deployment of innovative technologies by contributing to the work plan of the above referenced team.

Signature _____ Date Signed _____

2002 Teams

- Alternative Landfill Covers
- Brownfields
- Constructed Wetlands
- Contaminated Sediments
- Dense Nonaqueous Phase Liquids
- Diffusion Sampler Protocol
- DOE Gate 6 Technologies
- In Situ Bioremediation
- MTBE-Contaminated Groundwater
- Permeable Reactive Barriers
- Radionuclides
- Remedial Process Optimization
- Sampling, Characterization, and Monitoring
- Small Arms Firing Range
- Unexploded Ordnance

Please fax this page to (202) 624-3666 by March 1, 2002.

STATE ENGAGEMENT WRAPS UP SUCCESSFUL YEAR

❖ Strengthening commitment to ITRC

The ITRC State Engagement effort had a successful year in gaining stronger state commitment and participation in ITRC. During 2001, Arkansas and Georgia appointed ITRC state points of contact (POCs), bringing the total level of state membership to 40 states and the District of Columbia. As ITRC leaders within their states, POCs promote the ITRC process from identifying and developing their states' environmental priorities to facilitating the use of ITRC's network, documents, and training materials and reporting the results of ITRC activities.

ITRC state POCs were instrumental in developing and promoting two ITRC-specific resolutions that were introduced at the Environmental Council of the States meeting in August 2001. State environmental commissioners and directors nationwide unanimously adopted these resolutions urging states and federal agencies to expand their support of ITRC. The resolutions are available at www.itrcweb.org.

❖ Driving ITRC's vehicle to the future— Five-Year Program Plan

State POCs are embracing the ITRC Five-Year Program Plan (FYPP) as ITRC's vehicle to the future. The FYPP is a key element in the overall strategy to establish and support an annual ITRC planning, programming, budgeting, and program implementation process. At the ITRC Fall Conference, POCs met with ITRC federal partners and other stakeholder representatives to identify priorities for future ITRC efforts addressing problems of mutual interest. The priorities identified at this meeting will help focus ITRC efforts in 2003–2007. These partnering sessions are one step in the ITRC planning process—laying the framework for development of proposals to be entered into the ITRC Five-Year Program Plan. POCs are leading this effort by initiating the proposals based on their states' priorities.

❖ Tracking successes

Through the POC network, ITRC tracks and documents the use of ITRC products and services to highlight successful use of ITRC resources in meeting customers' needs. Through this activity, ITRC has tracked hundreds of innovative technology deployments across the country. During 2001, the State Engagement Team accounted for over 100 new success stories, where ITRC has provided over \$10 million in cost savings to private industry and state/federal government through participation in the

ITRC network, classroom and Internet training, and the use of ITRC technical/regulatory guidance documents. ITRC has documented millions of dollars in cost savings to the U.S. departments of Energy and Defense and created institutional change within states, expediting cleanup time.

ITRC technical teams developed three technical/regulatory guidance documents in 2001. POCs lead the state engagement document concurrence process in their states. This process facilitates formal review of documents in order to promote the acceptance and willingness of states to use the guidance in evaluating the appropriate use of specific technologies at sites. The three ITRC-produced documents in 2001 are

- ▼ *User's Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* (DSP-1, March 2001);
- ▼ *Phytotechnology Technical and Regulatory Guidance Document* (PHYTO-1, April 2001); and
- ▼ *Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil in Groundwater* (ISCO-1, June 2001).

❖ ITRC's virtual classroom

During 2001, ITRC offered 28 Internet-based trainings on innovative technology application to environmental problems. More than 4,000 people were trained during these sessions. Training courses were offered on

- ▼ natural attenuation,
- ▼ enhanced in situ bioremediation of chlorinated solvents,
- ▼ permeable reactive barriers for chlorinated solvents,
- ▼ advanced training on permeable reactive barriers for chlorinated solvents,
- ▼ diffusion sampler protocol,
- ▼ phytotechnologies, and
- ▼ in situ chemical oxidation.

❖ Classroom training

During 2001, ITRC technical teams offered four classroom trainings on innovative technology application to environmental problems. More than 350 people were trained during these sessions. Training was offered on

- ▼ accelerated in situ bioremediation of chlorinated solvents and
- ▼ phytotechnologies.

ITRC plans to offer a variety of both Internet-based and classroom courses in 2002 and is currently developing the training schedule. Visit www.itrcweb.org for details.

For more information on ITRC State Engagement activities, see the ITRC Web site at www.itrcweb.org, or con-

tact Paul Hadley, ITRC State Engagement coordinator, phadley@dtsc.ca.gov, (916) 324-3823 or ITRC program advisors: Mary Yelken, myelken@westgov.org, (402) 325-9615 or Cain Diehl, diehl@sseb.org, (770) 242-7712. Your ITRC state point of contact is also an ITRC resource (contact information available at www.itrcweb.org.)

2001 TECHNICAL TEAM ROUNDUPS

❖ Dense Nonaqueous Phase Liquids (DNAPLs)

The DNAPLs Team had an exciting year and is well on its way to producing several technical/regulatory guidance documents for release in 2002. At the 2001 Team Kickoff Meeting in Baltimore, the DNAPLs Team made plans to complete a "guiding principles" document on DNAPL source reduction and begin work on a technical/regulatory document. Significant progress has been made toward finalizing the document now titled *DNAPL Source Reduction: Facing the Challenge*. Based on a recommendation from ITRC's Board of Directors, the document underwent a third-party academic review, and the team looks forward to publishing *Facing the Challenge* sometime in 2002.

The DNAPLs Team also has pushed ahead with its goal of producing one or more technical/regulatory guidance documents on DNAPL source zone remediation. In addition to monthly conference calls, the team had a chance to meet face to face in connection with an international remediation conference in Orlando in June. During the meeting, the team divided into three subteams to focus on developing technical/regulatory documents on characterization, surfactant/cosolvent flushing, and thermal remediation technologies. The team also identified approximately 20 sites where innovative DNAPL remediation technology deployments are planned and started writing case summary reports.

The thermal subteam has joined forces with the U.S. Army Corps of Engineers (USACE) and USEPA's Technology Innovation Office (TIO) in producing a technical guidance document on in situ thermal remediation, for which the thermal group will produce case summaries and provide a state regulatory perspective. The thermal subteam also plans to produce its own document, a companion to the document being developed by USACE/TIO, which will focus more attention on regulatory/stakeholder issues.

For the ITRC Fall Conference in Long Beach, the DNAPLs Team organized and led a thought-provoking workshop on DNAPL source reduction science and poli-

cy that was attended by more than 110 people. The diverse viewpoints expressed during the workshop sessions provided valuable insight and will be represented in the various documents being developed by the team. At the full team meeting, the characterization and surfactant/cosolvent flushing subteams presented draft versions of their respective documents and are currently seeking comments from the full team. The team plans to publish these two documents by July 2002. The thermal document should be ready for publication by September 2002. During this year, Jim Harrington (N.Y.) stepped down from leading the DNAPLs Team, and Eric Hausamann (N.Y.) is now the sole leader. Eric can be reached at eghausam@gw.dec.state.ny.us.

❖ Diffusion Sampler Protocol (DSP)

The first accomplishment of this new-in-2001 team was participating in the review of *User's Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* (DSP-1). Don Vrobley of the U.S. Geological Survey (USGS) wrote this document with input from the DSP Team, U.S. Air Force, U.S. Navy, Defense Logistics Agency, USEPA, and the Federal Remediation Technology Roundtable. The document, available at www.itrcweb.org under "Guidance Documents," serves as a template for states that don't have a protocol for use of passive diffusion bag (PDB) samplers. Other states may incorporate information from it for use in their own technical guidance documents.

In cooperation with USGS and the Technology Innovation Office of USEPA, the DSP Team began offering in 2001 Internet-based training on PDB samplers. Five sessions were held with excellent attendance and feedback from a diverse audience. The training course is archived on the USEPA CLU-IN Web site at <http://clu-in.org/studio/seminar.cfm>.

The DSP Team worked with the Air Force Base Conversion Agency (AFBCA) to implement a partnership for the appropriate deployment of diffusion samplers at selected Base Realignment and Closure (BRAC) and Defense Environmental Restoration Account (DERA) bases in California and elsewhere. As part of this initiative, ITRC and the Air Force conducted meetings at McClellan and March Air Force bases in June 2001 to kick off the initiative and inform BRAC cleanup team members, stakeholders, base personnel, and contractors about PDB samplers and the scope of the initiative. At these two meetings, the team presented its Internet-based training and discussed issues that might be raised by the deployment of the technology.

The DSP Team capped a successful year with a well-attended session at the Fall ITRC Conference in Long Beach. Following a “live, in-person” presentation of the ITRC Internet-based training on PDB samplers, several organizations presented their experiences at using the samplers, including the Air Force Center for Environmental Excellence, the U.S. Navy, and DuPont. AFBCA presented information on its partnership with ITRC to expand deployments of the technology. Don Vroblesky of USGS then gave a short talk on “New Approaches and Capabilities in Passive Sampling Technology.” The presentations are available on the new ITRC Diffusion Sampler Information Center, which the team unveiled at the conference (see below for link).

The culmination of the diffusion sampler workshop was a panel discussion on the regulatory aspects of deploying diffusion samplers. The panel was composed of representatives from USEPA (Region 1), California Water Quality Control Board, Arizona Department of Environmental Quality, Air Force Center for Environmental Excellence, DuPont, and USGS.

At the conference, the team debuted a Frequently Asked Questions brochure to give quick answers on what PDB samplers do. This useful tool is now available on the Diffusion Sampler Information Center site at <http://diffusionsampler.itrcweb.org>.

The DSP Team, U.S. Air Force, U.S. Navy, USEPA, USGS, and private industry collaborated to establish the Diffusion Sampler Information Center to compile, analyze, and disseminate information on the deployment of PDB samplers on a national basis. Site users can access a current listing of deployments nationwide, news updates, and a searchable deployment database (in development). The site offers technical reports on PDB samplers and will also attempt to keep updated information on diffusion sampler training, lessons learned, and Frequently Asked Questions. The site links to other useful information sources. George Nicholas (N.J.), the leader of the DSP Team, can be reached at (609) 984-6565, gnichola@dep.state.nj.us.

❖ DOE Gate 6 Technologies

The Gate 6 Team is not a traditional ITRC team but is more aptly defined as a management initiative to incorporate DOE technology efforts into existing technical teams. In special cases, an ad hoc team can be formed to address an area where there is no current technical team. In 2001, several ITRC technical teams were involved with various aspects of DOE technologies. The DNAPLs and RADs teams were two of the teams most involved

with DOE, and that involvement is expected to continue throughout 2002. These teams participated in DOE conferences and reviewed work plans for new demonstrations or deployments. Almost all 2002 teams have the potential to be involved with DOE technology efforts, so Gate 6 can be a part of any team’s work efforts.

A series of conference calls conducted in September gave ITRC team leaders an opportunity to learn DOE’s plans for technology advancement in 2002 and to discuss how ITRC teams and DOE could best partner. ITRC teams involved in these calls included the DNAPLs; Rads; PRB; and Characterization, Sensing, and Monitoring teams. ITRC and DOE participants felt that the calls were a good start toward partnering to accomplish mutual goals. Beginning in 2002, the Gate 6 Team effort will be consolidated with the Project Development effort, which is for mentoring new teams. In addition to his many other duties with ITRC, Roger Kennett served as the Gate 6 Team leader in 2001. Roger can be reached at roger_kennett@nmenv.state.nm.us, (505) 845-5933.

❖ In Situ Bioremediation (ISB)

The ISB Team has almost completed three decision trees and supporting documentation for in situ bioremediation of groundwater contaminated with nitrate compounds, perchlorate, or carbon tetrachloride. Kris Roberts (N.D.) and Ralph Martin (Neb.) have led subteams to develop the perchlorate and carbon tetrachloride modules, respectively. The team met at the 2001 Fall Conference in Long Beach to complete drafts of all the modules and solidify the logic diagram, which constitutes the decision framework. A first draft of the Internet training for the *Systematic Approach to In Situ Bioremediation* was also reviewed in Long Beach. The team expects to begin delivery of this training in spring 2002. Bart Faris (N.M.) and Kris Roberts 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. Ralph Martin, who heads up the Carbon Tetrachloride Subteam, can be reached at (402) 471-3120, ralph.martin@ndeq.state.ne.us.

❖ In Situ Chemical Oxidation (ISCO)

The ISCO Team had a banner year in 2001. The team completed and published a technical/regulatory guidance document—*Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater* (ISCO-1) and developed an Internet-based training module. The Internet-based training was conducted three times in 2001 and was conducted live at the ITRC Fall Conference. The team met in February at the ITRC Spring Kickoff Meeting in Baltimore and

worked to finalize the draft technical/regulatory document. A subteam met in May in Denver to develop the approach for the training module for the Internet presentation. In September, the Internet-based training made its debut with Tom Stafford and Wilson Clayton serving as instructors. The team met again at the ITRC Fall Conference in Long Beach and discussed additional activities to pursue if funding becomes available, including a new or revised technical/regulatory document to account for new oxidants that are now being used, development of a classroom training module, and expansion of the Internet site. Tom Stafford (La.) leads the ISCO Team. He can be reached at (225) 765-0462, t_stafford@deq.state.la.us.

❖ **Permeable Reactive Barriers (PRB)**

The PRB Team further encouraged the use of permeable reactive barriers to remediate a variety of contaminants by developing a second and advanced Internet training class in 2001—*Advanced Techniques on Installation of Iron-Based Permeable Reactive Barrier and Noniron-Based Treatment Material*. The class, the second of a series, presents the latest research and demonstration information on advancements in iron-based system design and monitoring and also reviews other barrier materials being used and tested in the field. Team leader Matt Turner (N.J.), recognizing performance problems were being reported, organized a suite of specialists for the PRB team meeting at the ITRC Fall Conference to discuss common and expected problems encountered in barrier-type systems and how to design reliability into the systems.

The team expects to soon see the results of federal agency research on long-term monitoring of reactive barrier systems. If applicable, the team may update its technical/regulatory guidance to reflect the federal research. Team leader Matt Turner (N.J.) can be reached at (609) 984-1742, mturner@dep.state.nj.us.

❖ **Phytotechnologies**

Early in 2001, the Phytotechnologies Team completed its first technical/regulatory guidance document—*Phytotechnology Technical and Regulatory Guidance Document (PHTYO-1)*. Distribution of hard copies and Internet electronic copies have been enhanced by Internet-based training titled *Phytotechnologies: Mechanism and Application*. This training was developed and tested internally and externally with the ITRC state POCs. This class was then delivered to the general public using the EPA CLU-IN Web site four times during 2001. The instructors were Kris Geller of the New

Jersey Department of Environmental Protection, Dr. David Tsao of BP Corporation, and Steve Rock of USEPA's Office of Research and Development.

Greater technical and regulatory detail has been added to produce a two-day classroom training on phytotechnologies. The instructors are Dr. David Tsao, Kris Geller, Steve Rock, and Dr. Peter Kulakow and Blase Leven from Kansas State University. The course was tested with ITRC state POCs and industry guests in Naperville, Illinois and hosted by BP Corporation at its headquarters. The class has been delivered twice during 2001—in Austin, Texas, during September and in conjunction with the 17th Annual International Conference on Contaminated Soils, Sediments, and Water in Amherst, Massachusetts at the University of Massachusetts in October.

The team also developed and hosted a forum to discuss the pros and cons of using alternative landfills covers—primarily focusing on evapotranspiration covers. Along with researchers from the Air Force Center for Environmental Excellence, the team developed a white paper describing the technique, which was distributed to POCs for review. The result of the white paper and meeting is an ITRC team and solid proposal for work during 2002 and subsequent years on alternative landfill covers, bioreactors, and postclosure care monitoring. Team coleader Dib Goswami (Wash.) can be reached at (509) 736-3015, dgos461@ecy.wa.gov; Bob Mueller (N.J.) can be reached at (609) 984-3910, bmueller@dep.state.nj.us.

❖ **Radionuclides (Rads)**

The Radionuclides Team made progress on two documents in 2001. The team completed a final draft of *Determining Cleanup Goals at Radioactive Sites: Comparative Case Study* and further developed the outline of a document addressing relevant stewardship issues, tentatively titled *Stewardship and Technology: Challenges for Future Management of Radioactive Disposal Cells*.

In seeking to make connections with relevant sponsors and other professionals, the Rads Team participated, presented papers, and chaired sessions at five conferences. In addition, the team met with DOE area and site managers during an ITRC/DOE-sponsored forum on "Developing Strategies to Accelerate Federal Agency Environmental Cleanup" held near Salt Lake City in April and conducted conference calls with representatives of DOE's focus areas. These calls enabled the Rads Team to hear DOE's priorities for upcoming years and

specific ways the team can work with DOE to facilitate technology deployment at DOE sites. The team also developed relationships with DOE's Office of Long-Term Stewardship and DOE's Grand Junction Office, as well as USEPA's Superfund Innovative Technology Evaluation (SITE) program and USEPA's Office of Radiation and Indoor Air, Radiation Protection Division.

The Rads Team participated in several technology demonstrations this year:

- ▼ A plasma arc in situ vitrification unit application for radionuclides near Atlanta, Ga.
- ▼ Estes Gulch Disposal Cell – Rifle, Colo.
- ▼ An Uranium Mill Tailings Remedial Action groundwater site at Rifle, Colo.
- ▼ Permeable reactive barrier installations at Rocky Flats, Colo.
- ▼ Molten aluminum technology at Sandia National Laboratories, N.M.

For the successful 2001 ITRC Fall Conference, the Rads Team conducted a long-term stewardship workshop. Speakers were from DOE's Office of Science and Technology, the Citizens Advisory Board from the Idaho National Engineering and Environmental Laboratory, Ohio EPA, and DOE's Grand Junction Office. The workshop attracted approximately 30 participants from various states. Tom Schneider (Ohio) and Carl Spreng (Colo.) 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 Remediation (SMART)

The SMART Team held a meeting in late March in Monterey, Calif., and made a site visit to an active range remediation project at nearby Ft. Ord, where a dry screening method was tried to separate soil from casings and bullet fragments. This technique was not economical, so dig and haul was used. Members of the team were surprised by the quantity of metals left on the ground in range areas that had been cleaned. The base was using a visual inspection method for quality control, and a 10% metal cover over the area was allowed. Many areas had ice plant coverage over a significant portion, and the thick ice plant hid the metal fragments.

The team completed the first draft of a technical/regulatory guidance document soon after the Monterey meeting and made minor improvements on this draft during the summer. A planned meeting in Falmouth, Mass. in September had to be cancelled due to disruption of com-

mercial travel following 9/11. Prior to the planned September meeting, the team completed a preliminary draft final version of the technical/regulatory document.

The team met jointly with the UXO Team at the ITRC Fall Conference to explore ways to cooperate and then spent the remainder of the day in a closed team meeting, planning how to regain lost momentum due to the cancelled September meeting. The team plans to complete the technical/regulatory document in spring 2002, develop and present a classroom training module, and concurrently develop a maintenance/management tool for small arms firing ranges. Tentative plans call for the team to present its training course at the ITRC Spring Meeting in Salt Lake City during the week of March 4. The SMART Team is led by Dib Goswami (Wash.) and Bob Mueller (N.J.). 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)

The UXO Team was busy in 2001 preparing the *UXO Basic Training* program, which is tentatively scheduled to begin during spring 2002. Additional trainings will be conducted throughout the United States as part of ITRC's ambitious effort to keep state regulators and community stakeholders up to speed on current UXO topics. The full two-day series of courses is highly anticipated by DOD and USEPA as a means of complementing existing UXO training primarily targeted to federal environmental managers and field personnel. Attendees of the full course will receive up-to-date information on ordnance identification, regulations, technology, and site characterization and remediation.

Most recently, the UXO Team conducted a two-hour miniversion of the full *UXO Basic Training* course to a standing-room-only audience during the ITRC Fall Conference in Long Beach. Attendees overwhelmingly praised ITRC for offering a comprehensive yet easy-to-digest UXO course. State regulators who have participated in currently offered USEPA-sponsored training describe the ITRC training as a "must attend" first course for anyone involved in UXO planning, oversight, or field management. A copy of the two-hour miniversion is available on the UXO Team page of the ITRC Web site. Set your browser to www.itrcweb.org and select "UXO" from the dropdown list under "Teams."

The UXO Team has also started to prepare for the development of two technical/regulatory guidance documents during 2002. The first document, on ordnance and explosives (OE) historical records, is tentatively scheduled for

completion by fall 2002. A second document, on geophysical site proveouts, is scheduled for a spring 2003 rollout. Both technical/regulatory documents represent the first multistate-reviewed references available on OE/UXO. Six additional documents are planned for 2003–2007, covering topics from sampling plan development to postremediation considerations.

Replacing Steve Nausbaum as a team coleader for the UXO Team is Jeff Swanson (Colo.). Jeff can be reached at (303) 692-3416, jeffrey.swanson@state.co.us. Team coleader Jennifer Roberts (Alaska) 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 the 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
2002 Team Leaders Kick-Off Meeting	Trenton, N.J.	January 23–24	Marty Kushner, (202) 624-3501, mkushner@sso.org
ITRC Spring Meeting	Salt Lake City, Utah	Week of March 4	Marty Kushner, (202) 624-3501, mkushner@sso.org

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