INTERSTATE TECHNOLOGY & REGULATORY COUNCIL

Quarterly Update

September 2003

ITRC and ERIS Boards meet

by Ken Taylor, Co-Chair of ITRC Board of Advisors

Representatives of the ITRC Board of Advisors met with the Environmental Research Institute of the States (ERIS) Board of Directors at the Environmental Council of the States (ECOS) annual meeting in Salt Lake City on August 10, 2003. Paul Hadley, Bart Faris, Wade Waters, and I discussed with the ERIS Board how ITRC would operate under the amended ERIS bylaws approved on April 10, 2003 that brought ITRC more formally into ERIS as a standing committee. Previously, ITRC had operated under a five-year memorandum of understanding with ERIS, originally signed in 1998. Our new arrangement with ERIS benefits ITRC by providing a more solid legal and fiscal home for the ITRC program and also links ITRC better with state environmental leaders. ERIS expressed to us that it sees ITRC as an example of a productive, state-run environmental effort and wants to foster the continued success and growth of the program. We expressed our keen desire that the operational structure ensure that ITRC's control and strategic direction remain with the ITRC Board of Advisors while allowing ERIS an appropriate and necessary level of oversight.

ITRC and ERIS Board members discussed how the two entities will work together to hire a permanent program manager; maintain future program success with adequate funding and sustained state support; and convey ITRC benefits to states, federal agencies, and public and private stakeholders. While there are many details to work out, this meeting was the first time that the two groups were able to sit down together and talk about the nuts and bolts of the arrangement. It was a positive start. You should expect to see the ITRC Board working on several mechanisms that will help ITRC stay on course, enhance our training components and the quality of all our team efforts, and move into new areas. You will have a chance to meet several of the ERIS and ECOS members during future meetings. The ITRC Board of Advisors will keep you informed of further developments.

Co-chair nominations sought

The ITRC Board of Advisors announces that the co-chair position formerly held by Brian Griffin will be filled by a vote of the membership at the Fall Meeting at Monterey, Calif., September 29–October 2, 2003.

Nominations are invited and should be sent to Wade Waters, chair of the board's Personnel Committee at wwaters258@aol.com or faxed to (912) 748-9532. All candidates must be employed by a state environmental agency.

For information about nominating a new State Engagement coordinator, see the State Engagement Team Update on page 3. Send your nominations for this position to Wade Waters at the e-mail address or fax number above.

A note from the ERIS president

I was pleased that the ERIS Board of Directors and several members of the ITRC Board of Advisors had an opportunity to sit down together at the ECOS annual meeting in Salt Lake City. Speaking on behalf of the members of the ERIS Board, we know what a significant contribution ITRC has made to environmental cleanup. Several ERIS Board members as well as ECOS members participated in the early days of ITRC, and everyone is pleased and proud of the accomplishments of the program.

ERIS and its parent organization, ECOS, can bring a lot to the ITRC program. We will champion the benefits of the program; support our states' participation as state points of contact (POCs), team members, and team leaders; and encourage our federal funders to continue their active and generous support. In fact, at the annual meeting, the ECOS membership passed a resolution recognizing the success of ITRC and pledging our support.

I was also at the ITRC Midyear Review in Princeton, N.J. as team leaders and members of the Board of Advisors reviewed the 22 new proposals competing for next year's funds. I was impressed by the caliber of experience and the dedication to purpose of your ITRC leadership as they planned next year's program and future year successes. Please know that the ERIS Board of Directors, ECOS members, and I look forward to working with all of you as we use our collective expertise to prepare relevant documents, offer meaningful training, and build a network of state and other technical professionals to improve our environment. Furthermore, ERIS members look forward to meeting many of you during your endeavors this coming year.

Wishing you continued success,

R. Lewis Shaw
ERIS President
Deputy Commissioner,
Environmental Quality Control,
South Carolina Department of
Health and Environmental Control

Midyear Review in Princeton

Team leaders and members of the ITRC Board of Advisors met in Princeton, N.J. in mid-July to assess the progress of technical teams and rank proposals for new 2004 projects. The three-day event kicked off with a team leader meeting on Tuesday, July 15. Bart Faris, team leader liaison to the Board, led discussions on crosscutting issues impacting the overall performance of ITRC technical teams. Among the issues examined were team accountability, leadership responsibilities, and the process for ensuring the quality of ITRC technical/regulatory documents.

The team leaders also drafted and sent a letter to the ERIS Board expressing the value of ITRC's technical teams to the organization's core success and the opportunity that exists for team leaders to work closely with the ERIS Board in setting the future direction of ITRC. The letter urged the ERIS Board to

- involve team leaders in determining the process for securing contractor support and the scope of program advisor duties,
- ensure team leader and POC input in the management review process,
- solicit ITRC Board of Advisors participation in seeking ways to achieve an efficient classroom training program,
- ensure the stability of the ITRC Board of Advisors and its continued involvement in the evaluation of support personnel, budgetary planning, expenditures, and personnel management.

On the second day of the Midyear Review, team leaders and members of the ITRC Board of Advisors held a joint meeting. Bart Faris reported to the Board on team progress and summarized issues discussed during the previous day's team leader meeting. The Board heard from R. Lewis Shaw (S.C.), ERIS president, concerning the future and the continued relationship between the ERIS and ITRC Boards. The federal representatives on the Board—from DOE, DOD, and USEPA—also discussed future funding, collaborative efforts, and greater involvement with the Board and team leaders.

On the final day of the Midyear Review, the ITRC Board of Advisors discussed and ranked proposals for new 2004 projects. The board also discussed ways to improve the process by which new projects receive funding and endorsement through ITRC. Among the ideas proposed were targeted solicitations and a phased approach to obtaining proposals.

The board considered 22 new project proposals, which POCs had ranked before the Midyear Review. After ranking the proposals, the board discovered that POCs and members of the board concurred in placing the same eight projects in top positions—certainly a validation of the merit of these eight projects.

The board also began to examine the budget and discussed other possible sources of funding to enable the top-ranked projects to go forward. The board considered ways to streamline the FYPP process and discussed the question of how much bigger ITRC can grow without sacrificing the quality of ITRC products. The federal representatives on the board also considered whether the funding from their agencies should be strictly tied to teams related to their agencies' specific missions. ITRC supports the idea that federal partners can legitimately fund infrastructure, the wide variety of expenditures that build the capacity of ITRC and help make it possible for ITRC to continue to shape the future of regulatory acceptance. The board's final decisions on the 2004 Five-Year Program Plan will be presented at the Fall Meeting in Monterey.

Bart Faris, Paul Hadley, and Ken Taylor contributed to this article.

One POC at a time

In July, ITRC gained another state POC—from Indiana—making it official that ITRC now represents 41 states and the District of Columbia. Gaining official recognition as an ITRC state hinges on a state's designating someone from its state environmental agency to serve as an ITRC representative. Bill Hayes is the Indiana POC. Renee Sanford, POC from Wisconsin, played a big part in bringing Indiana on as an ITRC member.

ITRC looking for success stories

Success stories are all about capturing the value of ITRC to the environmental cleanup community. An example from New Jersey shows that remediation at two former aerospace sites is going forward at a lower cost than originally proposed and in a shorter implementation period than traditional solutions, thanks in part to training and guidance documents from ITRC concerning in situ chemical oxidation (ISCO).

At one site in Essex County, the site remediation plan to incorporate ISCO as a way of ridding the site of chlorinated solvents was chosen over the more traditional soil-vapor extraction (SVE). In reviewing the proposal for site remediation, the regulator used ITRC documentation and found it provided useful information in understanding that the proposed remediation strategy would be economical and effective. Combining ozone sparging with soil-vapor extraction will save several hundred thousand dollars, as well as reduce remediation time from 5–10 years to 1–2 years.

At another former aerospace facility in New Jersey, "the remediation technology previously selected for use was not supported by investigative data. Based on the concentration of contaminants (PCE and TCE), the heterogeneity of the soils, and the distribution of contaminants, in situ technologies would have had to overcome several challenges. By combining various chemical oxidation technologies with in situ and ex situ approaches, the contaminants will be aggressively destroyed and the soils will be able to be reused on site. The approach taken at this site will achieve site closure in a fraction of the time and at a significant cost savings over the previously proposed approach."

Chuck Elmendorf of Panther Technologies, Inc. suggested the timing of the classroom training he attended on ISCO could not have been better. While the company had completed a number of chemical oxidation projects, "exposure to emerging chemical oxidation technologies through ITRC-sponsored training and technical transfer seminars has enhanced our ability to bring innovative, cost-effective solutions to our clients."

ITRC is interested in publishing more success stories in the *Quarterly Update*. Please continue to report your potential stories to Gary Garrett at garrett@sseb.org or fill out an online survey by clicking on "Success Stories" on the Web site (www.itrcweb.org).

Teams gear up for Monterey

The primary focus of the ITRC Fall Meeting in Monterey, Calif. will be meetings to enable teams to concentrate on their projects and products. Two days (Tuesday, September 30 and Wednesday, October 1) have been set aside for team meetings; and for those teams not meeting both days, the opportunity exists for team members to attend other team meetings of interest.

The first day, Monday, September 29 begins with registration (1 p.m.), followed by an open plenary session (3 p.m.) where the ITRC Board of Advisors will report on the 2004 Five-Year Program Plan. Also scheduled are sessions on crosscutting team issues and updates. A reception on Monday evening will feature a team poster session and a ceremony honoring Rick Tomlinson, retiring ITRC program director, and Brian Griffin, who has stepped down as co-chair of the ITRC Board of Advisors.

While in Monterey, ITRC members will select a new co-chair from among people nominated to serve with co-chair Ken Taylor (S.C.). State POCs will also vote from among candidates nominated for state engagement coordinator. Based on the vote, the State Engagement Team will then recommend to the ITRC Board its first and second choices for state engagement coordinator. Paul Hadley, the current state engagement coordinator, will be stepping down at the end of the year.

A special treat for all ITRC members wishing to participate is a sporting clays event sponsored by the National Shooting Sports Foundation. No ITRC funds will be used to support this fully NSSF-sponsored event. Sporting clays replicate the winged hunting experience by delivering clay targets to the shooter at various speeds, directions, targets, and distances. Sporting clays is a sanctioned competition organized by the National Sporting Clays Association and is enjoyed by millions of men, women, and children of shooting age. ITRC has a connection to shooting sports through its Small Arms Firing Range Team, which completed *Characterization and Remediation of Soils at Small Arms Firing Ranges* (SMART-1, January 2003) and is currently working on a document titled *Environmental Stewardship Using Best Management Practices at Active Outdoor Small Arms Firing Ranges*.

Another special event is a new member mentoring luncheon on Tuesday, where new members, paired with knowledgeable veterans, will enjoy lunch together and, at the same time, get their ITRC questions answered and gain a better understanding of how the organization operates.

On Wednesday morning, state POCs will lead breakfast sessions and host ITRC members from their states. These workshops will be an opportunity for all ITRC members to better know their ITRC state representative and to encourage members to work more closely with others in their state in promoting ITRC. The Fall Meeting concludes at 5:00 p.m. on Wednesday. Team leaders will stay over Wednesday night for a Thursday morning meeting.

State Engagement Team Update

States advance their priorities through FYPP process

During June, 36 of 41 state points of contact (POCs) ranked new ITRC project proposals and proposals from last year's Five-Year Program Plan (FYPP) that were unfunded in 2003. The results of the prioritization process were provided to ITRC management to assist them in determining ITRC teams for 2004–2008. Information on the ITRC FYPP process is available at www.itrcweb.org by clicking on "FYPP." Thanks to all state POCs who provided input into the ITRC prioritization process.

Seeking a new state engagement coordinator

The search is on for a new state engagement coordinator. Paul Hadley's (Calif.) term is up on December 31, 2003, and

a special search committee, headed by Naji Akladiss (Maine) and supported by Julieann Warren (Mo.) and Rob Weber (Kan.), is seeking candidates to serve the next three-year term. Candidates must be employed by a state environmental agency. The state engagement coordinator is responsible for the overall coordination of POCs (designated by each member state) in the State Engagement program and serves on the ITRC Board of Advisors. For further information, contact Naji Akladiss at (207) 287-7709, naji.n.akladiss@state.me.us.

Two hellos, one goodbye

The Statement Engagement Team is happy to welcome Bill Hayes from the Indiana Department of Environmental Management, who is serving as that state's first POC (see page 2).

Also, the State Engagement program wishes a fond farewell to Stephen Wust, POC from New Mexico, who has taken a job with Santa Fe County as its chief hydrologist. Steve was instrumental in developing the proposal for Arsenic in Drinking Water. As we say "so long" to Steve, we also say "welcome!" to David Mayerson of the New Mexico Environment Department, who will now serve as New Mexico's POC.

If you would like more information on ITRC State Engagement activities, please refer to the ITRC Web site at www.itrcweb.org or contact Paul Hadley, ITRC State Engagement coordinator, phadley@dtsc.ca.gov, (916) 324-3823 or ITRC program advisors, Mary Yelken, myelken@earthlink.net, (402) 325-9615 or Gary Garrett, garrett@ sseb.org, (770) 242-7712. Your ITRC POC is your ITRC resource in your state. State POC contact information is available at www.itrcweb.org by clicking on "Contacts."

Technical Team Updates

Alternative Landfill Technologies (ALT)

During 2002, the ALT Team collected and analyzed the results of alternative landfill cap case studies from around the United States. The ALT Team, which published its findings in its first product, *Technology Overview Using Case Studies of Alternative Landfill Technologies and Associated Regulatory Topics* (March 2003), concluded that alternative landfill cover designs have contributed substantially to the waste management industry and can be as protective and economically feasible as traditional capping technologies. However, experience in the industry is limited, and a valid guidance describing the regulatory flexibilities, critical design parameters, construction considerations, monitoring, and postclosure care is necessary. Follow-up guidance from this ITRC team will encourage the proper application of this innovative technique and foster awareness of these new cover designs among the regulatory and consulting communities.

During the third quarter of 2003, the team received and evaluated the results of a survey sent to the 44 ITRC states. The team has clearly determined that federal requirements do not prohibit the use of alternative capping on solid, municipal, and hazardous waste landfills; however, the operator must obtain an exemption from the standard requirements. The team's experience is that states are either unaware of the exemption or disallow exemptions from conventional capping technologies. The team survey shows that 71% of RCRA-authorized states have adopted the same flexibilities the federal government offers in RCRA, resolving much of the question regarding flexibilities among states.

The ITRC survey and the new USEPA national database on alternative covers also documents the following:

- Seven states have applied this flexibility to hazardous waste alternative landfill cover projects.
- Eighteen states have applied this flexibility to solid waste alternative landfill cover demonstrations.
- Eight states have applied this flexibility to mixed waste alternative landfill cover demonstrations.
- Nine states have applied this flexibility to solid waste alternative landfill cover full-scale projects.
- Of the states responding to the ITRC survey, 71% will approve the full-scale operation of a landfill without construction and evaluation of a test pad or modeling results.

Through further questioning of surveyed states, the team found that states differ on how they evaluate performance, leading to different design parameters at landfills. The results are contained in the following table.

Percent of States Surveyed Using Various Design Criteria

Performance Monitoring	Hazardous Waste Landfill	Solid Waste Landfill
Flux through the cover	100%	75%
Total leachate collection	67%	75%
Liner leakage rate	67%	87%
Groundwater monitoring	33%	37%

These results form an important part of the technical and regulatory guidance document the team is currently drafting. More survey data will be included in the regulatory barriers section of the document. The remaining sections will address alternative cover design, construction, and postclosure care. The ALT Team expects to finalize its technical/regulatory guidance document on alternative landfill covers in fall 2003 with Internet-based training beginning in spring 2004.

The ALT Team plans to produce additional documents on bioreactors and alternative methods of postclosure care. During the Fall Meeting, the ALT Team will begin developing a plan for its 2004 bioreactor work. For more information on the ALT Team, please contact team leader Charles Johnson (Colo.) at charles.johnson@state.co.us, (303) 692-3348.

Brownfields

The Brownfields Team has produced a final draft version of its background document, *Vapor Intrusion Issues at Brownfield Sites*. This document, which is intended as a resource for stakeholders involved with redevelopment projects, presents an overview of vapor intrusion, the type of contaminants that may have vapor intrusion potential, the potential of brownfield sites to have indoor air exposure from vapor intrusion, and steps to take to control and mitigate potential exposures. The document also discusses state and federal approaches for determining whether vapor intrusion poses risks and includes case studies to illustrate site conditions associated with vapor intrusion impacting indoor air quality. The team met in Philadelphia during late July to finalize the document, discuss outstanding issues, and identify external peer reviewers. Ken Gilland of the Research Triangle Institute is the lead on the vapor intrusion document.

While in Philadelphia, the team continued its effort to improve guidance being developed by USEPA as part of the U.S./German Bilateral Working Group on the Site-Specific Management Approach and Redevelopment Tools (SMART). The Brownfields Team is reviewing, commenting on, suggesting case studies, and developing criteria for beta site testing of the SMART guidance. When finalized, the SMART guidance will enable practitioners to investigate a broad spectrum of activities related to brownfields redevelopment, including the analysis of environmental, economic, and social issues that affect brownfield reuse. Ann Vega of USEPA is the lead on incorporating Brownfields Team comments and insights into the SMART guidance. Also during its summer meeting, the Brownfields Team discussed with federal partners ways to work together in facilitating federal property transfers under DOD's Base Realignment and Closure (BRAC). The Navy, Air Force, the General Services Administration, and California's State Water Resources Control Board made presentations on property transfers of BRAC bases.

The Brownfields Team continues to coordinate with other teams to prepare an ITRC-led session during Brownfields 2003, the annual conference addressing brownfield issues and technologies, hosted by USEPA. Brownfields 2003 will be held in Portland, Oregon in October. The session will provide other ITRC teams with the opportunity to present their work to the brownfields community. The Brownfields Team is also exploring the possibility of coordinating with other ITRC teams that have some overlapping technical issues. The team is considering assigning technical liaisons to these other teams and providing comments on other ITRC documents as a means of enriching and broadening the use of ITRC documents among the brownfields community. Christine Costopoulos (N.Y.) leads the Brownfields Team and can be reached at (518) 402-9711, cjcostop@gw.dec.state.ny.us.

Constructed Wetlands

Constructed treatment wetlands are manmade wetlands built specifically to treat contaminants in surface water, groundwater, or waste streams such as leachate and acid mine drainage. The nearly complete technical and regulatory guidance document for constructed treatment wetlands will help regulators, industry, consultants, and technology vendors understand, evaluate, and make informed decisions about the use of constructed treatment wetland systems. While there is extensive published literature on the subject, constructed wetland applications have generally been limited to the treatment of stormwater and municipal wastewaters. However, this technology is now a valid treatment option for a variety of waste streams, including acid mine water, remedial wastewaters, and agriculture waste streams. This guidance presents a number of current successful treatment systems and documents the maturity of the technology in many emerging applications.

The document describes the fundamental mechanisms of wetland contaminant removal and overall wetland functions and provides detailed descriptions of various contaminant treatment objectives, treatment efficiencies, and goals of different constructed wetland applications. Detailed, site-specific predesign criteria and conceptual designs are outlined, followed by final design, postconstruction activities, operation and maintenance, monitoring, and implementation costs.

The document provides decision trees for each of the major constructed treatment wetland applications, designed to enable users to take basic information from a specific site and, through a flow chart, decide whether a particular wetland system is appropriate for the site.

The regulatory issues that affect the implementation of constructed wetland systems include performance specifications, contingency plans, and potential ecological impacts. Constructed treatment wetland discharges are normally regulated under the National Pollution Discharge Elimination System (NPDES). Many states have internal oversight of this program. Regulations address issues such as

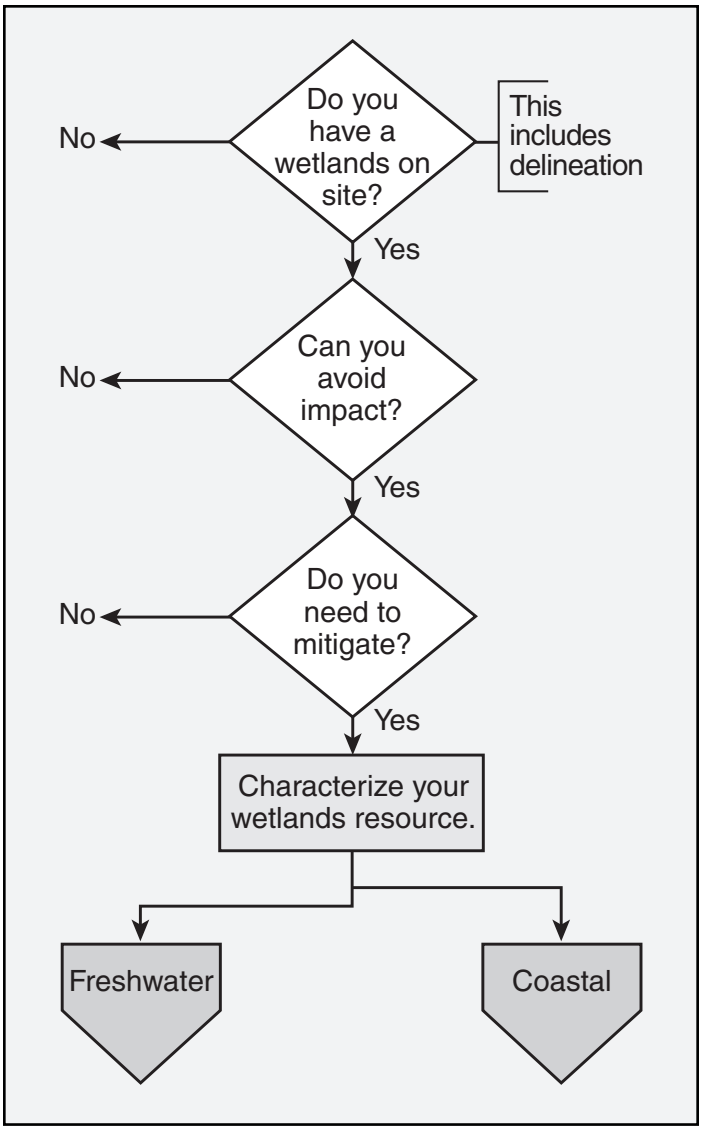
- use of nonnative, invasive, or noxious plants;
- identifying the treatment mechanism;

- accounting for seasonal variability in system performance and maintenance requirements;
- determining the length of time to establish the wetland treatment system;
- documenting the expected future use of the site and determining whether the future use is compatible with sustaining the wetlands or removing all traces of the wetlands;
- removing mercury prior to wetland treatment; and
- determining ecotoxicity.

Case studies included in the document were selected to represent various constructed wetland systems and their applications. Each of the projects included in the case studies are under way, and contact information enables the reader to follow up on the progress of demonstrations and full-scale operations. Every effort was made to include detailed performance and cost information and a comparative evaluation against what may be considered more conventional techniques. POCs are currently reviewing the document. The first Internet-based training is scheduled for later this year.

The team is also developing a decision tree for determining when and how to mitigate (repair or replace) destruction of wetlands. New Jersey's Virginia Kopkash explained to the team during a kickoff team meeting in June the documentation New Jersey requires during a freshwater or coastal waters mitigation project. During the presentation, the team discussed individual topics of the N.J. mitigation program. By the end of the first day, the team had accumulated a rather good understanding of mitigation, including the elements of a standing program for managing mitigation of coastal and freshwater wetlands.

The day's discussion resulted in the general decision tree (diagrammed on the right) for the team's guidance document. The obvious simplicity of this decision tree is dwarfed by the complexity of the decisions following characterization of the wetlands resource. A decision tree for freshwater wetlands was also developed, but it is still in draft form. When the freshwater flow is completed, the team will construct a coastal flow diagram. Following completion of the first draft decision tree, the team developed an outline for documentation to support the decision tree. Writing assignments for this outline were made, and a tentative schedule for completion developed. The team expects to complete a full draft of the mitigation document by the close of 2003. For more information on constructed treatment wetlands or mitigation wetlands, contact team leaders Bob Mueller (N.J.) or Dib Goswami (Wash.). Reach Bob at (609) 984-3910, bob.mueller@dep.state.nj.us and Dib at (509) 736-3015, dgos461@ecy.wa.gov.



Contaminated Sediments

The Contaminated Sediments Team had a very productive team meeting in Monterey, Calif. in mid-June and is making good progress on its overview document on issues involving the investigation, remediation, and risk assessment of sediments. While in Monterey, the team made a side trip to Moss Landing Harbor, where harbor mistress Linda Horning discussed sediment management challenges with the team. Later, the team considered ways to include case studies, such as the Moss Landing Harbor example, within the overview document. On the final meeting day, the Sediments Team met with the Constructed Wetlands and the ALT teams to discuss possible overlapping areas where partnering could be productive. Richard DeWan (N.J.) is the Sediments Team leader and can be reached at (609) 984-4426, richard.dewan@dep.state.nj.us.

The Sediments Team prepares to inspect the harbor at Moss Landing during their team meeting in Monterey, Calif. From left to right are Kim Parker-Brown (Naval Facilities Engineering Service Center), harbor mistress Linda Horning, Jennifer Sutter (Ore.), Nancy Grosso (Dupont), Mary Jo Ondrechen (Northeastern University), Brad Helland (Wash.), Rich DeWan (N.J.), George Hall (Hall Consulting, program advisor for the Sediments Team), Satya Vardhi (Gas Technology Institute), Shun Ling (Naval Facilities Engineering Service Center), Reggie Robinson (S.C.), and Paul DePercin (USEPA).

Dense Nonaqueous Phase Liquids (DNAPLs)

The DNAPLs Team has been very busy preparing new documents for publication. The team met in June in Albany, N.Y. at the New York State Department of Environmental Quality offices to begin working on its technical/regulatory guidance on performance assessment, which will address various ways that performance measures can be used to evaluate the effectiveness of a remedial technology. John Prendergast attended the Team Leader MidYear Review meeting in July. The team met again in early August in Stowe, Vt. to continue work on the performance assessment document. The team plans to send its characterization overview document for publishing in late August. The team presented Internet-based training on surfactant/cosolvent flushing in June and early September. The next scheduled Internet-based course is October 23. Eric Hausamann (N.Y.) leads the DNAPLs Team and can be reached at (518) 402-9759, eghausam@gw.dec.state.ny.us.

Diffusion Samplers (DS)

In May, the Diffusion Samplers Team conducted an Internet-based survey of state regulators to identify any regulatory roadblocks to the use of diffusion samplers. Responses from 54 regulators from 23 states did not identify any rules or regulations that would preclude the use of passive diffusion bags (PDBs) at remediation sites. Regulators supported the use of PDBs not only for long-term monitoring, but also for compliance and sentinel wells. A preliminary analysis of the survey results is available on the ITRC Diffusion Sampler Information Center Web site (http://ds.itrcweb.org).

External organizations and POCs are currently reviewing the diffusion sampler technical and regulatory guidance document. Although delays have been encountered in the process, the DS Team expects to publish this document by the end of the calendar year.

Diffusion sampling is being recognized and implemented. Pease AFB is beginning work to implement PDB sampling for long-term monitoring at several sites. Barry Weand, DS Team program advisor, teamed with Dave Strainge from Pease AFB to speak on the implementation process at an Air Force Real Property Agency meeting in Crystal City, Va. in June. New Jersey will become the first state to offer specific written guidance on the use of PDB samplers. This guidance will be part of a new field sampling guidance manual to be published in fall 2003.

The DS Team met in South Lake Tahoe, Calif. on August 19–21. The team reviewed comments on its technical and regulatory guidance document, were given a preview of a new passive sampling database, and learned about new developments in non-PDB passive sampling. The group is broadening its focus to other passive samplers, especially those that can deliver samples for target compounds other than the volatile organic compounds collected by the PDB. This broadening of focus will continue as a theme at future team meetings.

The DS Team congratulates team member James Taylor of the California Regional Water Quality Control Board and a remedial project manager at McClellan AFB. The Air Force Center for Environmental Excellence recently recognized James and five other environmental professionals for their outstanding accomplishments and efforts. The awardees were said to "embody the spirit of teamwork while acting as stewards of the environment."

The Diffusion Samplers Team recently added a new member representing the Army Environmental Center. We look forward to working with Ms. Laurie Haines. Welcome! DS Team leader George Nicholas (N.J.) can be reached at (609) 984-6565, george.nicholas@dep.state.nj.us.

In Situ Bioremediation (ISB)

The In Situ Bioremediation Team is well on its way to producing *A Systematic Approach to In Situ Bioremediation in Groundwater for Chlorinated Ethene DNAPLs*—the second document in its Systematic Approach series. The first document (ISB-8, August 2002)—which describes how to systematically examine site parameters and criteria for the effective characterization, testing, design, monitoring, and implementation of ISB technologies—demonstrated the systematic approach for evaluating ISB for treating nitrates, carbon tetrachloride, and perchlorate in groundwater. Partnering with

interested members of the DNAPLs Team, the team is applying the framework of last year's document to develop decision trees to address ISB directly treating DNAPL source zones and to evaluate secondary effects on ISB systems following thermal, chemical flushing, and physical source term treatment. The systematic approach consists of understanding the contaminant background and relationships, site description and characterization, geochemistry, contaminant degradation and microorganisms, fate and transport, pilot- and full-scale implementation, health and safety, stakeholder input, and issues and solutions.

An exciting new opportunity has arisen for the ISB Team to work cooperatively with a DOE team focusing on monitored natural attenuation (MNA) and enhanced passive remediation (EPR) through ISB. The DOE team's objectives are to (1) improve monitoring methodology to increase reliability and reduce cost, (2) combine MNA with EPR for organics to enhance natural attenuation and all forms of sustainable passive natural remediation and advance the science and understanding of the attenuation process, and (3) develop a regulatory framework to enable applications of MNA/EPR to reduce risks and close sites across DOE. The goal is to develop and document an approach for assembling an appropriate suite of MNA/EPR technologies and apply the next-generation approach to at least one DOE site. The ISB Team will provide peer review and comments at the Fall Meeting to the DOE team's initial document, which addresses how these three objectives may be achieved. Future cooperative efforts between the two teams may include development of a technical and regulatory guidance document, application of the next-generation approach to state-led sites, and development of Internet-based and classroom training.

The ISB Internet training team has successfully presented two Internet-based training courses, with another scheduled for October 21. Questions should be directed to ISB Team leader Bart Faris (N.M.), (505) 841-9466, bart_faris@nmenv.state.nm.us.

In Situ Chemical Oxidation (ISCO)

The In Situ Chemical Oxidation Team plans to develop an updated version of the original technical/regulatory guidance document, ISCO-1. New oxidants have become commonly used since ISCO-1 was written in June 2001, and the team plans to include a discussion of these new oxidants and additional case studies in ISCO-2. Co-leaders are Tom Stafford (La.), (225) 765-0462, t_stafford@deq.state.la.us, and Pat Quinn (Mo.), (573) 751-0944, nrquinp@mail.dnr.state.mo.us. Along with Tom Stafford, team member Wilson Clayton of Aquifer Solutions, Inc., lead instructor for the ITRC Internet-based ISCO training, will present a session on September 16.

MTBE-Contaminated Groundwater

Challenges posed by groundwater contaminated with MTBE, TBA, and other fuel-related oxygenates continue to dominate the focus of ITRC MTBE Team members. No less than 30 members representing seven states, two federal agencies, 12 industry/consulting firms, two major universities, and one community stakeholder group contribute to three products currently under development. Due to generous grants from the American Petroleum Institute, Tighe & Bond Consulting, and USEPA, the team has adjusted its 2003 schedule to accommodate two multiday MTBE classroom training sessions during the fourth quarter. An invitation-only dry run is planned for October 27–28 in Concord, N.H. and a full event during the week of December 15.

To accommodate MTBE training during 2003, the team will delay formal release of its MTBE technology overview document and case study database products to coincide with the accelerated training events. According to training task leader Joe Haas (N.Y.), "MTBE training is closely based on the technical outline developed in the overview and provides objective, science-based training on MTBE and TBA assessment and remediation." Simultaneous product release enables the team to fully leverage limited resources and increase focus on time-critical course development. Team leader Fred McGarry (N.H.) is confident that the addition of classroom training is a smart move given USEPA's recent decision not to regulate MTBE and other fuel oxygenates. Program advisor Todd Margrave (Razor Resources, LLC) says "the states are basically on their own now. They desperately need tools that expand understanding of MTBE site characterization and remediation of contaminated groundwater and, ultimately, enhance ability to select and apply appropriate remedial technologies."

The MTBE Team continues to serve as a leading forum for state-led efforts to regulate MTBE as well as promote clear national guidance on MTBE risk standards. Fred McGarry, MTBE team founder, can be reached at (603) 271-4978, fmcgarry@des.state.nh.us.

Permeable Reactive Barriers (PRBs)

The PRBs Team believes that additional guidance on permeable reactive barriers (PRBs) is needed. At the ITRC meeting in Charlotte, N.C. and in follow-up conference calls, the team developed the concept for a technical and regulatory guidance document that will address new developments in PRBs since the team's last guidance document and will provide detailed information on noniron-based treatment media. This new document, tentatively titled *Lessons Learned, New Directions*, would be developed during 2004. The PRBs Team has developed a draft outline of the document and wants to further develop the PRB public page on the ITRC Web site to provide links and resources on PRBs. The team is

looking forward to the Fall Meeting and the opportunity to meet and continue development of the draft outline for the proposed document. Some members of the team will also be attending the Remediation Technologies Development Forum PRB Action Team meeting to be held at the Holiday Inn Select in Niagara Falls, N.Y. on October 15–16, 2003. Team leader Matt Turner (N.J.) can be reached at (609) 984-1742, matthew.turner@dep.state.nj.us.

Radionuclides (Rads)

The Radionuclides Team has been busy with various activities since its team meeting in June, including participation at DOE's ERTEC Conference in Columbia, S.C. In late July, the team offered its first Internet-based public training session on "Radiation Risk Assessment: Tools and Updates," after incorporating comments from POCs, who tried out the training in mid-July. The next training will be October 9. The team has conducted monthly and subteam calls to push forward on this year's two team products: a document related to the long-term stewardship (LTS) survey of state regulators that the team conducted last year (*Implementation Challenges for Long-Term Management of Radioactive Sites: State Regulators' and Federal Perspectives*) and a real-time characterization technical/regulatory document (*Real-Time Characterization Technologies for Radioactive Waste*).

For the long-term stewardship survey document, the team is working with DOE's Legacy Management group to incorporate DOE's findings from its science and technology roadmap project. The team is busy working on chapters of its documents to be ready for fruitful discussions of drafts at the Fall Meeting. In August, the Rads Team participated in the ECOS interagency meeting on LTS and also in the national RCRA meeting in Washington, D.C. Rads Team co-leader Tom Schneider can be reached at (937) 285-6466, tom.schneider@epa.state.oh.us; and co-leader Carl Spreng can be reached at (303) 692-3358, carl.spreng@state.co.us.

Remediation Process Optimization (RPO)

The RPO team met in Princeton, N.J. in late June. The team welcomed three new state members: Bheem Kothur from Florida's Department of Environmental Protection; Sriram Madabushi from South Carolina's Department of Health and Environmental Control; and Christopher Hurst from Georgia's Environmental Protection Department.

For the first two days, the team used an innovative writing method derived from the PRO process developed by the Air Force Center for Environmental Excellence. The team broke up into three writing teams, each team headed by a state team member. The state team lead, along with other team members with interests in particular sections, went to work on assigned sections of the document. Team leader Tom O'Neil and program advisors acted as facilitators, advisors, and editors for the writing teams. The team made good progress on its technical regulatory guidance document for RPO, and the writing method will be employed again at the team meeting in Monterey during the ITRC Fall Meeting.

While in New Jersey for a team meeting, the RPO Team visited the Syncon Resins Superfund Site in Kearny, N.J. From left to right are Don Gronstal (Air Force Real Property Agency), Sriram Madabhushi (S.C.), Patty Reyes (Mitretek, program advisor for RPO Team), Tom O'Neill (N.J.), Laura Yeh (Naval Facilities Engineering Service Center), Chris Hurst (Ga.), Rod Whitten (Air Force Real Property Agency), Bheem Kothur (Fla.), Jon Horin (Mitretek, program advisor for RPO Team), and Karla Harre (Naval Facilities Engineering Service Center).

On the last day of the New Jersey meeting, the team made a field trip to the Syncon Resins Superfund Site in Kearny, N.J. Syncon Resins is a former paint and varnish-manufacturing facility, which operated as a recycler and unauthorized disposal facility prior to its closing in 1982. The site is a state-lead Superfund project. One phase of cleanup includes a passive soil-flushing operable unit with a water treatment plant that discharges to the adjacent Passaic River. The RPO team conducted a site visit with an eye toward a future formal RPO review of the project. For more information about the RPO Team, contact Tom O'Neill (N.J.) at (609) 292-2150, tom.o'neill@dep.state.nj.us.

Risk Assessment Resources (Risk)

The Risk Team met in late June at the Lawrence Livermore National Laboratory. One Risk subteam, which is working with USEPA Region VI Corrective Action Strategy (CAS), presented papers and participated in the RCRA national meeting in Washington D.C. in August. Another subteam is interested in understanding the vapor intrusion database and guidance that was discussed at the RCRA meeting. The vapor intrusion subteam is examining the applicability of the Johnson-Ettinger Model on indoor air exposures. Another subteam is coordinating with the California Center for Land Recycling, which recently conducted a state survey of soil screening levels. The project is to understand the basis of variations among states and use the analysis for further discussions at a workshop on this topic at the ITRC Fall Meeting. The Risk Team continues to work closely with DOE members to understand and contribute to the development of DOE's risk-based end state regulations.

Steve DiZio (Calif.), the leader of the Risk Team, can be reached at (916) 255-6634, sdizio@dtsc.ca.gov.

Sampling, Characterization, and Monitoring (SCM)

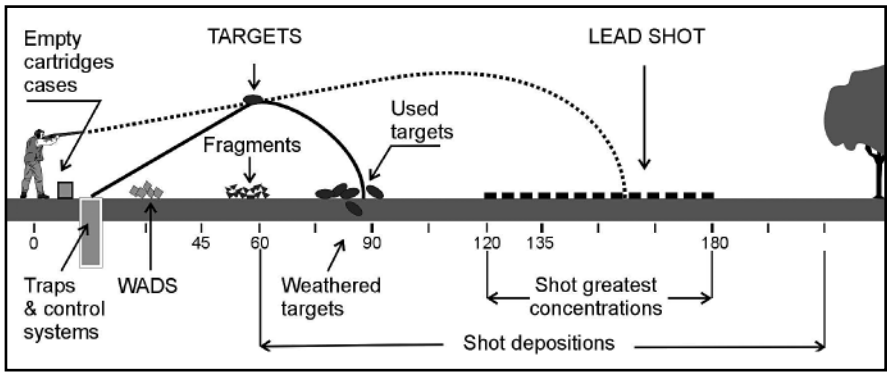
The Sampling, Characterization, and Monitoring Team is putting the final touches on a technical/regulatory document describing the Triad Approach to environmental project management and execution. The SCM Team expects to send that document to the publishers before the end of 2003. Concurrently, the team is writing a document on direct-push wells, which the team expects to complete and send for publishing in early 2004. The team met recently in Stowe, Vt. and used most of the meeting for hands-on writing and editing of its two documents. Team member John Pohl presented a case study on the McGuire Air Force Base C-17 project, a project that will be highlighted as an example of a Triad success.

New Jersey has taken a real interest in the Triad Approach and has recently hosted a workshop to train and prepare environmental consultants to begin using this concept on New Jersey projects. The state plans to certify professionals for Triad projects and to certify applicable field methods for real-time measurement analyses. The team is keeping a close eye on the New Jersey effort. Team leader Stu Nagourney can be reached at (609) 292-2150, stu.nagourney@dep.state.nj.us.

Small Arms Firing Range (SMART)

The SMART Team will next present its Internet-based course on the "Characterization and Remediation of Soils at Closed Small Arms Firing Ranges" on November 18. Please go to the ITRC Web site to register.

The team has been compiling information into a document initially titled *Environmental Stewardship Using Best Management Practices at Active Outdoor Small Arms Firing Ranges*. The document will briefly review some legal case studies that shed light on regulatory oversight responsibilities for active small arms firing ranges and will reference other materials for finding details. However, the primary focus of the document will be encouragement of better management at active small arms firing ranges (SAFRs) to prevent contamination. Regulatory authorities do not oversee the day-to-day operations at SAFRs in the same sense as they do at wastewater treatment plants or landfills. The regulatory responsibility at SAFRs is more similar to golf courses, where the operation (golfing or, in this case, sport shooting) may contain elements that, if incorrectly managed, may result in a contaminated environment. For instance, lead is a particular concern during the operation and management of firing ranges. Lead, the primary potential contaminant at SAFRs, is in the spent bullets and shot and in smaller particles resulting from fragmentation of bullets and shot. Other metal contaminants can include copper, zinc, arsenic, antimony, and nickel. Polycyclic aromatic hydrocarbons may be present in the immediate shooting area as a partially unburned propellant and possibly from clay targets (see SMART-1, 2002).



Some operators of active ranges are unaware of the potential to contaminate the environment and may not have designed or operated the range appropriately to avoid contamination. State and federal environmental agencies have no specific regulatory authority geared to the operation of SAFRs; however, regulatory authorities can and do enforce the release of contaminants to the environment. Therefore, some states and federal agencies have developed technical services programs to inform range owners and operators and community stakeholders of the design options for environmentally safe SAFRs. The current document will focus on management practices that, if appropriately applied and monitored, will prevent contamination entering the environment.

In response to environmental concerns associated with lead, manufacturers have examined a variety of alternative shot materials. Manufacturers continue to develop practical target loads with shot materials such as steel, bismuth, tungsten, tin, molybdenum, and other substances. The added cost of nonlead shot is often cited as a reason for not using newer materials. However, if the cost of environmental management of lead shot, particularly the cost of reclaiming, is factored in, then the net cost of using newer material is much less.

The development of nonlead or reduced-lead rifle and pistol bullets is advancing largely as the result of police and military uses of ammunition. The primary motivation to develop alternative bullets has been the potential human exposure to lead vapors in in-door range situations. Ammunition is commonly available for many handgun and rifle calibers at a slightly higher cost than convention-

al ammunition. Regardless of the munitions, however, alternative shot or bullet material is not a replacement for environmental stewardship.

For information about the SMART Team, please contact team leaders Dib Goswami (Wash.) or Bob Mueller (N.J.). Dib can be reached at (509) 736-3015, dgos461@ecy.wa.gov; Bob can be reached at (609) 984-3910, bob.mueller@dep.state.nj.us.

Unexploded Ordnance (UXO)

The UXO Team has completed its final draft of *Munitions Response Historical Records Review* (MR HRR), which will be published this fall. Historical research is the first step in the munitions response process and provides the basis for future potential site investigation and remediation processes on munitions response sites. The MR HRR document provides guidance on evaluating the adequacy of historic research, regardless of regulatory framework or military service associated with that research. The UXO Team has developed Internet-based training for this document. The first public offering, originally scheduled for August, has been delayed pending final document review by the Department of Defense. The first public offering of training on this document is now scheduled for November 18.

With its large membership and record state participation (17 state members from 13 states and the District of Columbia), UXO team members have been able to perform extensive outreach this year, giving briefings, attending meetings, and participating on committees for a variety of organizations. This outreach has promoted two-way communication between the team and members of the following organizations and projects:

- National Defense Center for Environmental Excellence
- Strategic Environmental Research & Development Program/Environmental Security Technology Certification Program (SERDP/ESTCP)
- Association of State & Territorial Solid Waste Management Officials
- Munitions Response Committee
- National Association of Ordnance Contractors
- Environmental Quality Technology
- Department of Defense Explosives Safety Board
- USEPA

UXO Team leaders are Jeff Swanson (Colo.), who can be reached at (303) 692-3416, jeffrey.swanson@state.co.us, and Jennifer Roberts (Alaska) who can be reached at (907) 269-7553, jennifer_roberts@dec.state.ak.us.

Contacts

For questions or comments regarding ITRC, please contact Tim Titus, interim ITRC program director, Environmental Council of the States, (202) 624-3686, ttitus@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
In Situ Chemical Oxidation*	Sept. 16, 2–4:15 p.m. Eastern	
Natural Attenuation of Chlorinated Solvents*	Sept. 23, 2–4 p.m. Eastern	
Diffusion Samplers*	Sept. 25, 11 a.m.–1 p.m. Eastern	
ITRC Fall Meeting	Sept. 29–Oct. 2/Monterey, Calif.	Carolyn Hanson, (202) 624-3501 chanson@sso.org
Radiation Risk Assessment*	Oct. 9, 11 a.m.–1:15 p.m. Eastern	
Systematic Approach to ISB*	Oct. 21, 2–4:15 p.m. Eastern	
Surfactant/Cosolvent Flushing*	Oct. 23, 11 a.m.–1:15 p.m. Eastern	
Phytotechnologies**	San Francisco, Calif./Oct. 23–24	
Phytotechnologies**	Seattle, Wash./Oct. 27–28	
UXO Basic Training Course**	Austin, Tex./Oct. 28–29	
Accelerated ISB of Chlorinated Solvents**	Chicago, Ill./Oct. 28–29	
Munitions Response Historical Records Review*	Nov. 18, 11 a.m.–1 p.m. Eastern	
Small Arms Firing Ranges*	Nov. 18, 2–4:15 p.m. Eastern	
Phytotechnologies*	Dec. 9, 2–4:15 p.m. Eastern	
Constructed Treatment Wetlands*	Dec., TBD	Check Web site for date and time

**Internet-based courses–contact Mary Yelken, (402) 325-9615, myelken@earthlink.net.*
***Classroom courses–contact Gary Garrett, (770) 242-7712, garrett@sseb.org.*

ITRC
c/o WPI
Suite 1000
2000 Kraft Drive
Blacksburg, VA 24060-6373

ADDRESS SERVICE REQUESTED

Not-for-Profit Organization
U.S. Postage Paid
Blacksburg, VA
Permit No. 73