



# ITRC- *loaded with value*

ITRC products and services are having a profound effect on the environmental community. State regulators are using ITRC guidance documents, training, and peer exchange to cut approval time and find creative ways to reduce regulatory barriers to new environmental technologies. Regulated industries and contractors are benefiting from reduced remediation costs and accelerated cleanup schedules.

## **Cutting approval time**

- ▲ A Florida regulator saved 25% to 50% of time required in reviewing a work plan proposing natural attenuation. For a chlorinated solvent site in Miami, regulatory staff saved 10% to 25% of the time required to review an enhanced in situ bioremediation plan.
- ▲ Approval for Kansas' first natural attenuation pilot for chlorinated solvents was accelerated by two weeks, a 50% reduction in the time normally required for the regulator to research a proposal involving Kansas' first-time use of a technology.
- ▲ Approval for Massachusetts' first permeable reactive barrier was speeded up by several months, reducing the staff time required to manage the project by 50%—a savings of about 200 to 300 hours.
- ▲ New Jersey's approval of the state's first permeable reactive barrier saved 20% of the regulator's time.

## **Slashing remediation costs**

- ▲ Installation cost of a permeable reactive barrier at the Mound Site Plume at Rocky Flats in Colorado was \$300,000, compared to the life-cycle cost of \$3 million for a pump-and-treat solution.

- ▲ A permeable reactive barrier installed in Fairfield, New Jersey saved Dupont \$10 million over a pump-and-treat alternative.
- ▲ Rockwell forecasts a \$1.8 million savings over a 30-year period using a PRB instead of pump and treat.
- ▲ New York found the cost of thermal desorption has dropped from \$150 per ton to less than \$50 per ton.

## **Finding better solutions**

- ▲ Dow Chemical used ITRC guidance on enhanced in situ bioremediation to develop a pilot test in California.
- ▲ Massachusetts is finding that permeable reactive barriers lower operation and maintenance costs as compared to mechanical systems.
- ▲ Use of soil washing at Ft. Dix in New Jersey for cleaning up firing ranges will lower the cost as compared to soil excavations.
- ▲ In New York, thermal desorption units were used to treat 14,000 tons of soil contaminated with PCBs and 3,000 tons of soil contaminated with organic solvents and resins.
- ▲ Two technologies on which ITRC has focused have broad applicability and real potential to substantially lower the cost of remediation and characterization respectively: monitored natural attenuation and diffusion samplers.

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## **Building expertise**

- ▲ ITRC's natural attenuation classroom training has successfully reached more than 1,320 members of the environmental community.
- ▲ More than 1,255 members of the environmental community have attended ITRC's course on permeable reactive barriers.
- ▲ In 1999 and 2000, ITRC used the Internet to reach more than 3,770 people, who received instruction on natural attenuation, permeable reactive barriers, and enhanced in situ bioremediation.

## **Regulatory barriers are falling**

- ▲ ITRC catalyzed USEPA to clarify RCRA 3020(b). USEPA subsequently described reinjection of contaminated groundwater as consistent with RCRA 3020(b), a boon to furthering deployments of enhanced in situ bioremediation across the country.
- ▲ New Jersey has proposed modifying the permitting process for injection wells, a move that could increase the use of enhanced in situ bioremediation in the state.
- ▲ Pennsylvania has integrated an ITRC product—a Tier I protocol document—into the state's regulatory review process. This document, which seven other states have approved for use, will guide vendors in generating credible performance data.

- ▲ In 1997, New Mexico signed its first record of decision incorporating monitored natural attenuation.
- ▲ In December 1999, New Mexico approved the use of low-temperature thermal desorption as a presumptive remedy for treatment of media contaminated with volatile and semivolatile organic compounds.

## **Paving the way for new technologies**

- ▲ Massachusetts has issued two requests for proposals to install permeable reactive barriers, based on ITRC guidance documents.
- ▲ New York has used ITRC guidance documents on thermal desorption to help environmental cleanup firms structure their bids on state-financed projects.
- ▲ Pennsylvania and the U.S. Department of Defense have signed an agreement that accelerates the schedule for cleanup of contaminated military sites by 10 years.

## **The value keeps on coming**

- ▲ In 2001, ITRC will sponsor more than 30 training events, both classroom courses and Web-based training sessions.
- ▲ In the past two years, ITRC's return on investment has been more than 2:1.
- ▲ States recognize the value of ITRC and their in-kind support has increased accordingly. In 2001, in-kind support from states is valued at more than \$1.7 million.