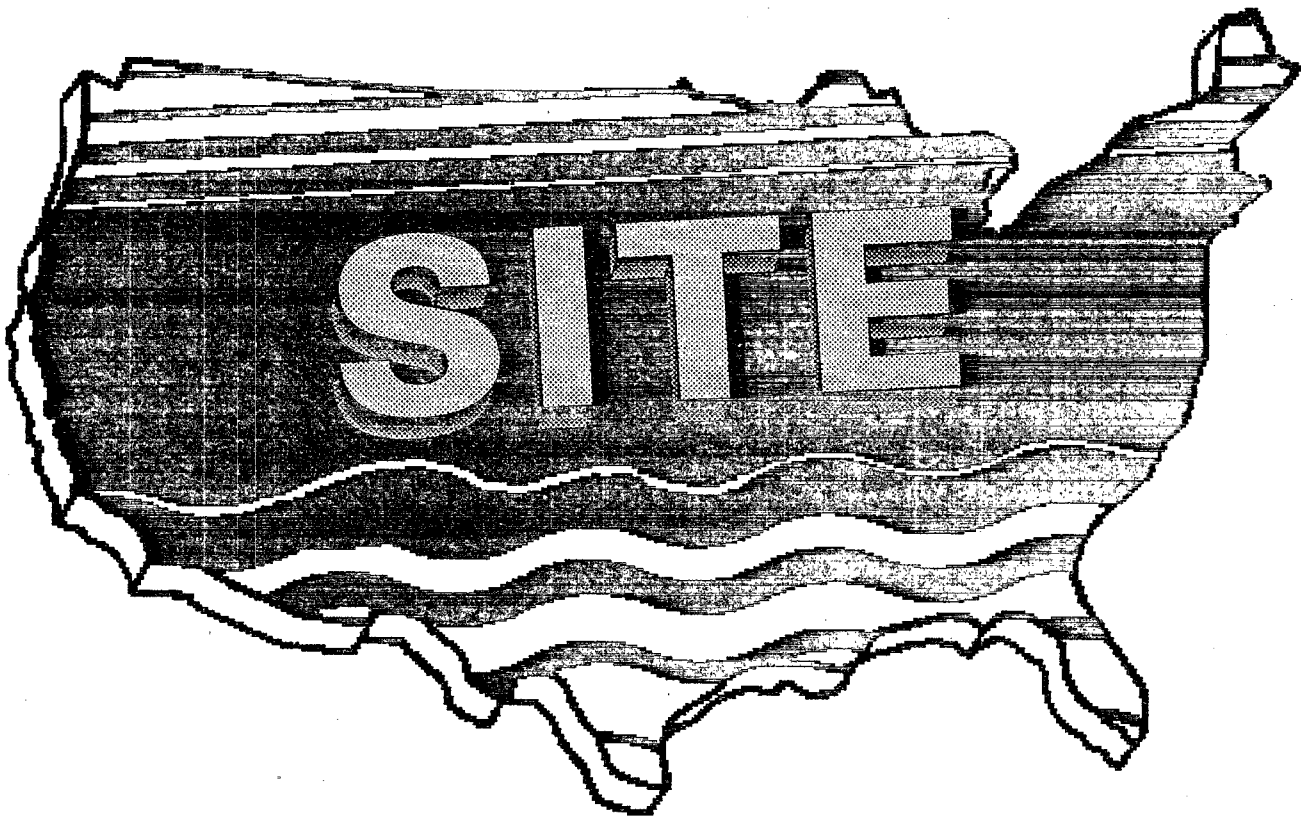




*Superfund
Innovative
Technology
Evaluation
Program*



Technology with an

IMPACT

SITE: Technology Advancement and Commercialization

Promoting Cost-effective Alternative Technologies

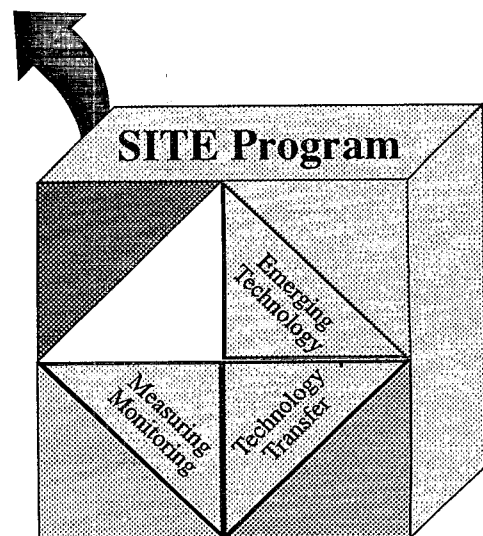
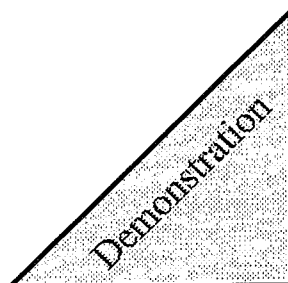
Today both the EPA and the private sector find an increasing need for new cost-effective technologies to prevent, control, and destroy pollution. The environmental community is continually searching for safe technologies that work better, faster and more cost effectively. Increasing the availability of cost-effective environmental technologies promotes economic market stability and enhances competitiveness. The Superfund Innovative Technology Evaluation (SITE) Program is one mechanism promoting the advancement and commercialization of new environmental technologies.

BACKGROUND:

SITE promotes the development and implementation of innovative technologies for remediating hazardous waste sites and for evaluating the nature and extent of hazardous waste site contamination through four component segments. The SITE Program is a key element in EPA's efforts to increase the use of innovative technologies for the cleanup of hazardous waste sites. The features of SITE include:

- Saving costs significantly when compared to conventional technologies
- Increasing communication and technology transfer
- Transferring high quality technology-specific data
- Encouraging commercial use of innovative technologies

An impact evaluation was performed specifically on the Demonstration segment of the Program. This segment assesses promising innovative technologies on-site and provides reliable performance, cost and applicability information for making cleanup decisions.



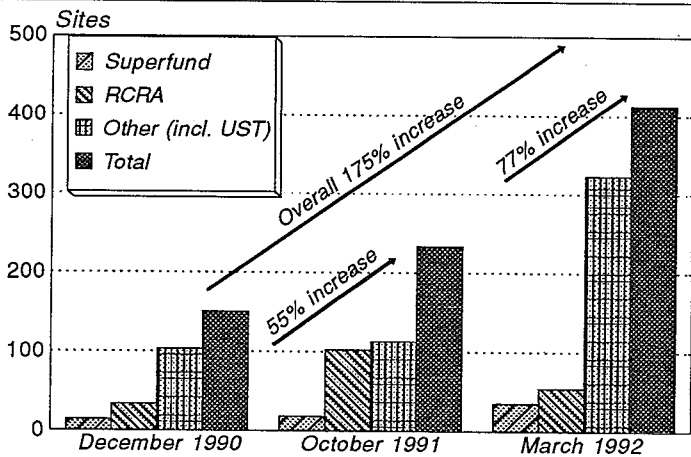
PROGRAM IMPACT:

Increasing Technology Utilization

The SITE Program has made considerable progress toward stimulating commercialization of innovative technologies and promoting the use of these innovative technologies for remediating hazardous waste sites.

Innovative technology usage has increased by nearly 60% since the inception of the SITE Program in 1986. During the period from 1982 through 1991, EPA signed a total of 945 RODs for 563 of the 1236 sites on the National Priorities List. Significant increases in the numbers of innovative technologies selected for remedial action began with the passage of SARA in 1986. While SITE was only one contributing factor in increasing technology selection, the program played a significant role. Increases in innovative technology usage became more dramatic in 1988, the second year after implementation of the SITE Program. In 1991, the Office of Solid Waste and Emergency Response reported that innovative treatment technologies accounted for more than half the treatment remedies selected.

Remediation by SITE Technologies*



April 1992

tions, business revenues increased by more than three fourths. On average, vendors reported receiving 23 inquiries per month about their technologies; almost half of these inquiries were directly attributed to participation in the SITE Program. To date over 43 technologies have been demonstrated under the SITE Program with current projects numbering close to 100.

"Success in the SITE Program is critical to our financing and market strategies"

BioGenesis Enterprises

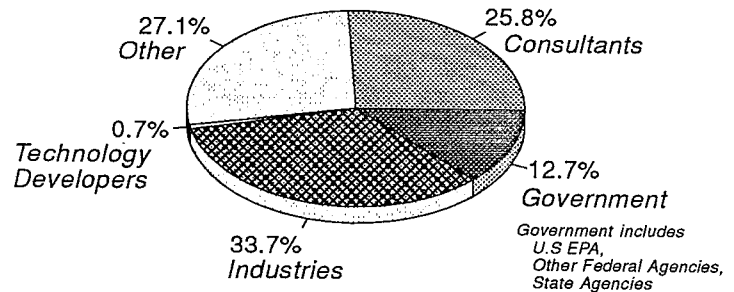
ACCOMPLISHMENTS:

Flexibility for Participants

SITE is reaching a broad user community. Document distribution data show an increasing interest in SITE Program literature over a wide geographical range. EPA's Center for Environmental Research Information (CERI) has published and distributed more than 182,000 copies of 38 reports, as well as 133,740 copies of 15 engineering and demonstration bulletins. Over 19,000 copies of the SITE Program Technology Profiles overview document were distributed in 1992.

The number of SITE Program participants continues to grow. Superfund's changing needs have required flexibility of the SITE Program. In turn, this has attracted new technology

SITE Mailing List Distribution By Occupation*

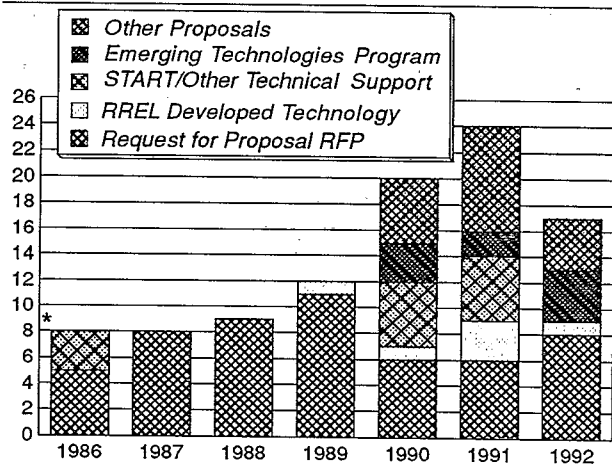


*Total cumulative mailing list of 5500 addresses

August 1992

developers. Participants may enter the program through an annual solicitation, or via SITE support of remedial activities where the focus is on implementation of innovative technologies. Participants also enter through advancement from the Emerging Technology Program and from other EPA technology development projects.

SITE Sources of Demonstrations



* SITE region support for three projects

October 1992

FOR MORE INFORMATION CONTACT:

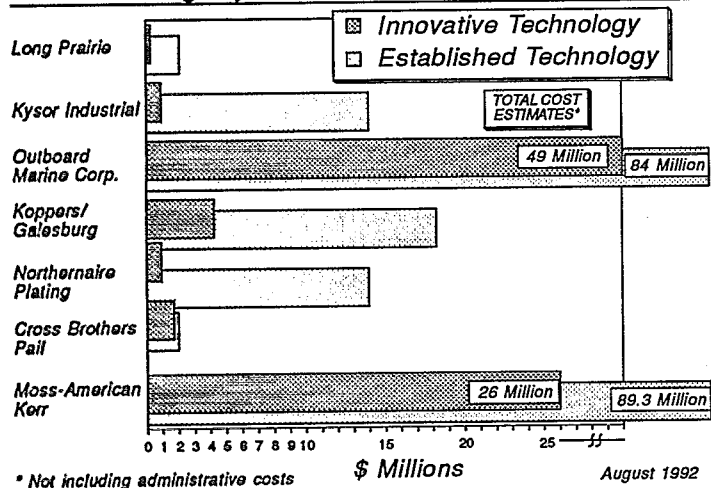
United States Environmental Protection Agency
 Risk Reduction Engineering Laboratory
 Superfund Technology Demonstration Division (MS-215)
 26 W. Martin Luther King Drive
 Cincinnati, Ohio 45268

phone: 513/569-7696

fax: 513/569-7620

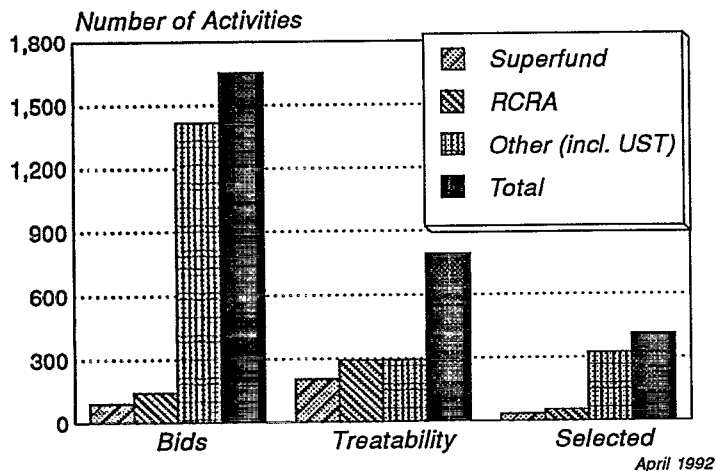
SITE is contributing to significant cost savings. A review of Region V RODs from 1987 to 1990 quantified a total cost savings of over \$140 million or an average cost reduction of 68% for seven sites which used innovative technologies. Five of the seven sites used technologies which were demonstrated under the SITE Program.

Cost Savings by Selected Innovative Technologies



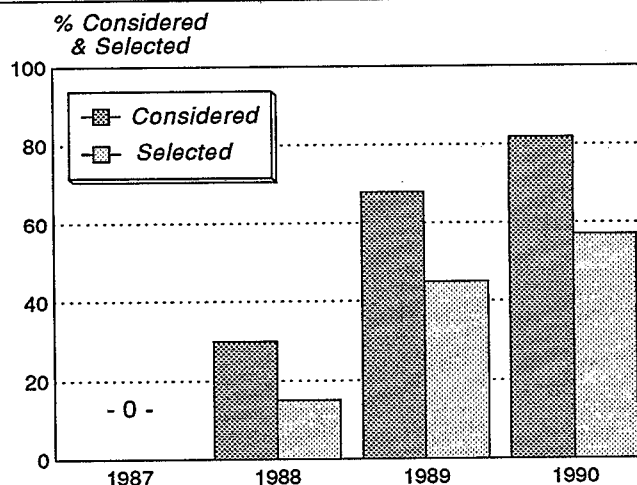
Site managers use SITE Program reports and information to support clean-up decisions. SITE provides the user community with technical data as well as valuable cost and performance information. In a recent survey of Region V Project Managers, 85% of the remediation decisions selected innovative treatment technologies that were tested under the SITE Program. SITE technology vendors were selected to remediate all but one site where remedial selections have been made. Further, increasing acceptance of innovative technologies is demonstrated by the level of commercial activity reported by SITE Vendors.

Current Developer Commercial Activities



A case study was conducted for the 85 Region V RODs issued between 1987 and 1990. During 1987, the year in which SITE field demonstrations were initiated, innovative treatment technologies were not considered. In 1988, three innovative technologies including one SITE demonstration technology were selected for remedial actions. By 1990, 82% of the RODs considered innovative technologies; more than half selected an innovative technology for remedial design.

Region V RODs Innovative Technologies Considered & Selected

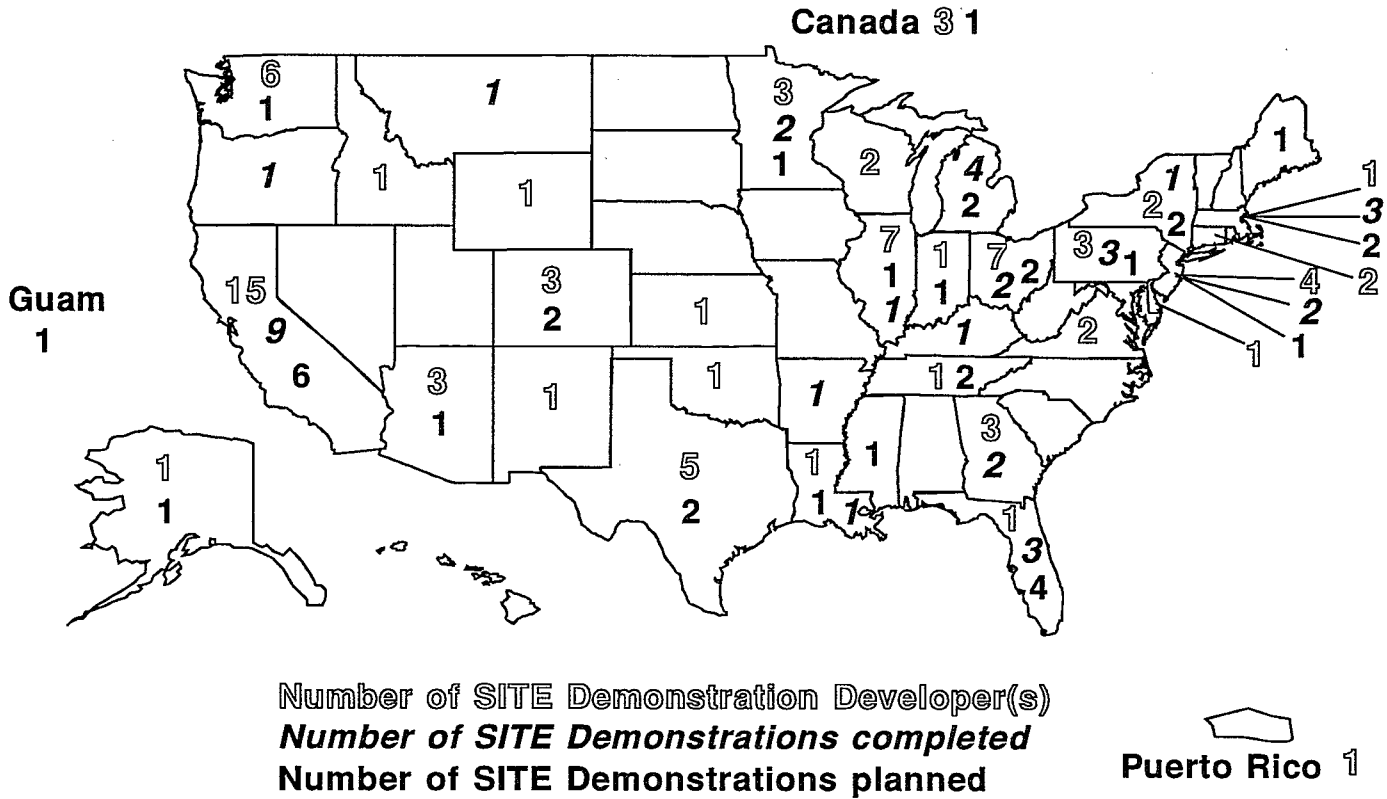


Several former SITE demonstration technologies are now routinely used and are considered proven. The SITE Program has facilitated the acceptance of soil vapor extraction, advanced oxidation, solidification/stabilization and low temperature thermal desorption technologies. These technologies are now generally considered off-the-shelf and available for commercial applications.

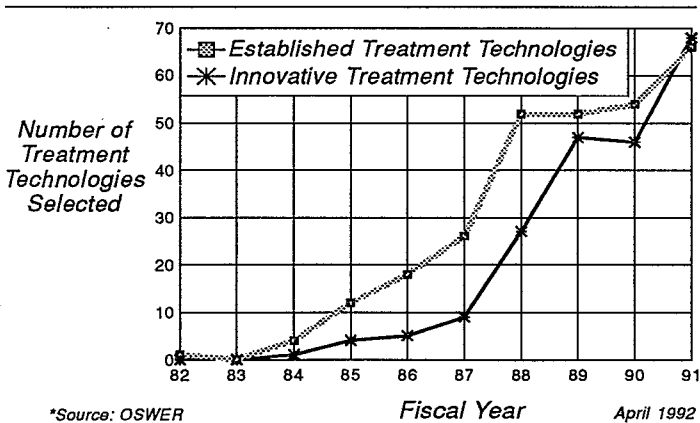
SITE Program technology vendors report increased market opportunities. The exposure and independent evaluation provided by the SITE Program enhances the marketing efforts of SITE vendor technologies. SITE technology vendors who had completed demonstrations reported a 55% increase in total remediation activities awarded between December 1990 and October 1991. An additional 77% increase was reported when participants were surveyed again 6 months later.

A survey of SITE demonstration participants indicated that the SITE Program had a positive impact on commercial activities. As innovative technologies advance through the program, vendors report that they are more often selected for remediations. For vendors who had completed demonstra-

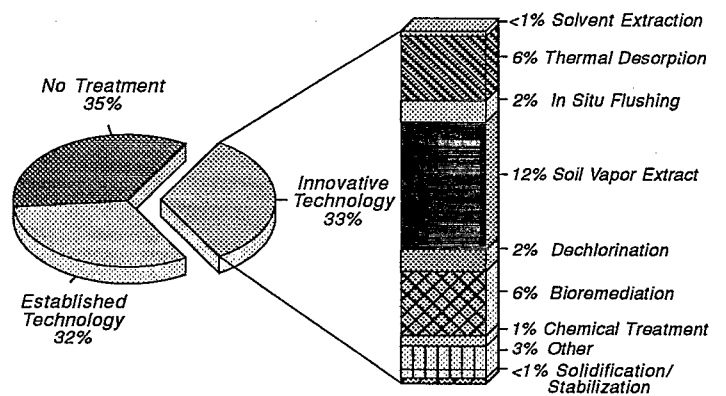
Technology Developers, Completed and Planned SITE Demonstrations



Remedial Actions: Number of Established Versus Innovative Treatment Technologies*



FY91 ROD Analysis*



United States
Environmental Protection Agency
Center for Environmental Research Information
Cincinnati, OH 45268

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