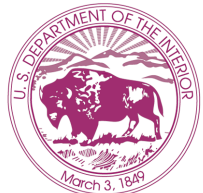
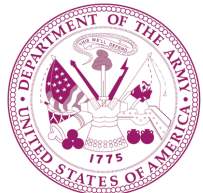


FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE

REMEDIATION CASE STUDIES: FACT SHEET AND ORDER FORM



The Federal Remediation Technologies Roundtable (FRTR) has announced the release of 39 new case study reports describing the cost and performance of remediation at hazardous waste sites. The new reports are accessible at www.frtr.gov.

The FRTR leads the federal government's efforts to promote interagency cooperation to advance the use of innovative technologies for the remediation of hazardous waste sites. The FRTR agenda is driven by the highest priority needs of the hazardous waste cleanup community. One of the FRTR's priorities is to document the cost and performance of completed and ongoing site remediation projects. Primary members of the FRTR include the U.S. Departments of Defense, Energy, and Interior, National Aeronautics and Space Administration, and the U.S. Environmental Protection Agency.

Areas of emphasis in previous cost and performance updates have included treatment of MTBE in groundwater and drinking water and optimization of groundwater cleanup systems (2001); bioremediation of chlorinated solvents and dense non-aqueous phase liquid (DNAPL) treatment (2000); groundwater pump and treat and incineration (1998); and thermal desorption, soil vapor extraction, and land treatment (1995). A total of 313 remediation case study reports are now available. In addition, the FRTR is making available 110 case study reports about site characterization and monitoring technologies, and 7 reports about optimization of long-term monitoring.

The remediation case studies describe actual applications of technologies at full scale or nearly full scale. The case studies document real experiences and lessons learned in selecting and implementing technologies to treat a wide range of

HIGHLIGHTS

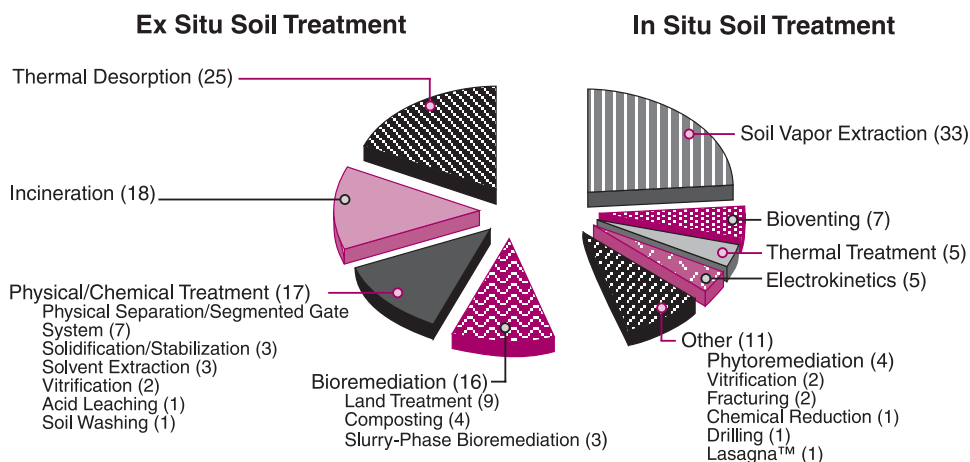
- 22 new case studies addressing cleanup of contaminated groundwater using *in situ* technologies such as bioremediation, surfactant flushing, chemical oxidation, thermal treatment, permeable reactive barriers, phytoremediation, air sparging, and in-well air stripping
- 7 new case studies addressing cleanup of tetrachloroethene (PCE) and related contaminants at 34 dry cleaner sites, including various *in situ* treatment technologies
- On-line access with the ability to search and screen all 313 case studies at [<www.frtr.gov>](http://www.frtr.gov)

soil and groundwater contamination at a variety of sites. This information is used by project managers, technology providers, consulting engineers, and other interested parties in identifying smarter solutions for and making better engineering judgements about site remediation.

CASE STUDY REPORTS – CURRENT STATUS

The 313 FRTR case study reports now available cover a wide range of technology types and contaminants. Each report (10-40 pages in length) provides information about site background and hydrogeology, a description of the technology design and operation, data about cost and performance, information about lessons learned from the project, and points of contact. The 313 reports, along with additional, related FRTR resources, are available on CD-ROM (EPA 542-C-02-004, June 2002). The FRTR case study reports include almost 40 types of technologies for treating soil and groundwater contamination, with 137 reports addressing soil cleanup and 142 reports concerning

EXHIBIT 1. SOIL REMEDIATION CASE STUDIES



groundwater. Exhibits 1 and 2 show the specific technologies covered by the site remediation reports, along with the number of reports for each technology.

CONTAMINANTS AND

MEDIA TYPES

Exhibit 3 provides a summary of the contaminants and media types addressed by the FRTR case studies. This exhibit shows that a variety of contaminants and media are addressed, with chlorinated solvents, metals, and BTEX/TPH being the contaminants most frequently addressed.

PROJECT SCALE

The FRTR has focused the cost and performance effort on full-scale and large field demonstration-scale projects, providing practical information about actual field experiences. Approximately two-thirds of the case study reports are for full-scale applications.

SITE CHARACTERIZATION AND MONITORING

As shown in Exhibit 4, the FRTR has added a substantial number of case study reports about field-based site characterization technologies, such as organic chemical characterization and surface geophysical techniques. These case studies cover the full range of activities used to conduct site characterization and monitoring, with most case studies focused on technologies used in the investigation stage of site cleanup.

PROGRESS OVER TIME

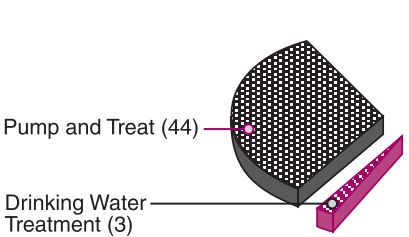
Over the past twelve years, the FRTR has made a significant contribution to increasing the supply and availability of cost and performance information from federal cleanups. The inventory of reports now encompasses a wide variety of technologies and contaminants and is continually being expanded by new case studies from contributing agencies. The new reports address technology applications which are deemed to be relevant and often correspond to technical themes which are discussed at regular FRTR meetings.

More recently, the FRTR has begun to include additional case studies about topics related to optimization for site cleanup. Optimization activities are changes that enhance protectiveness, reduce cost, provide for technical improvement, or lead to faster cleanup or increased likelihood of site closeout. Specific activities include treatment technology optimization (e.g., evaluation checklists and handbooks), monitoring optimization (e.g., sampling frequency and data management and evaluation), or simulation optimization (e.g., hydraulic and contaminant transport).

In the future, the FRTR will continue to focus on providing cost and performance case studies about timely topics and sharing experiences and lessons learned based on actual field applications of technologies.

EXHIBIT 2. GROUNDWATER REMEDIATION CASE STUDIES

Ex Situ Groundwater Treatment



In Situ Groundwater Treatment

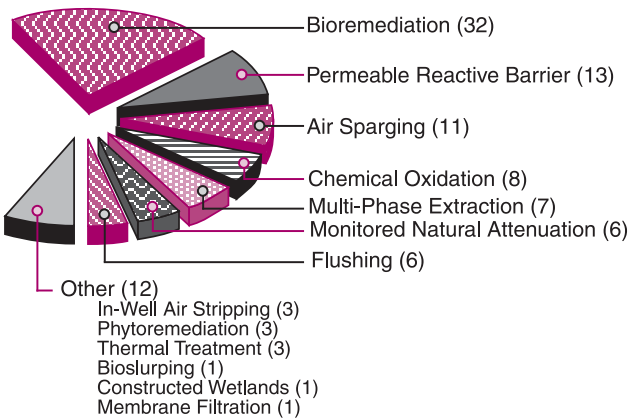


EXHIBIT 3. SUMMARY OF CONTAMINANTS AND MEDIA FOR REMEDIATION CASE STUDIES

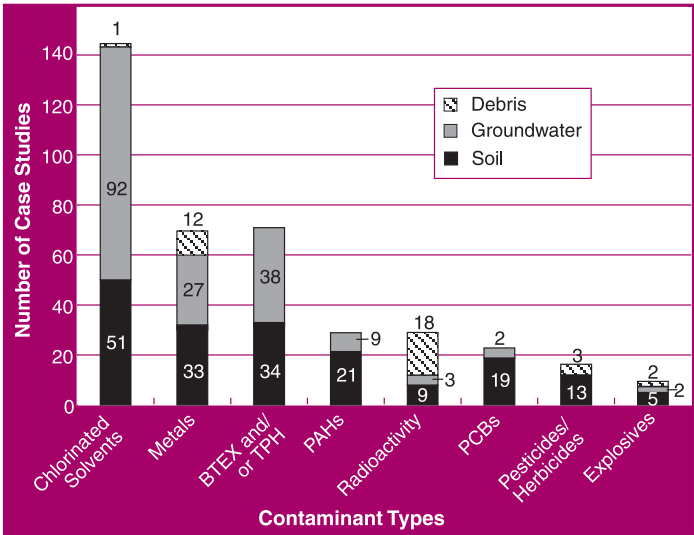
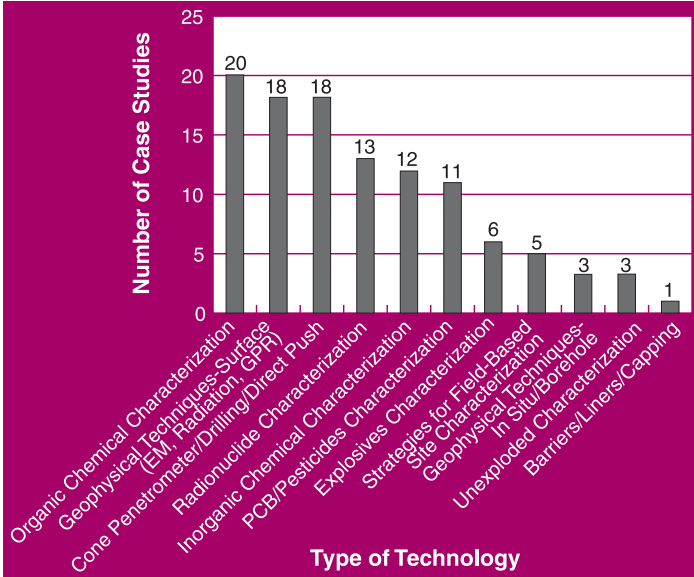


EXHIBIT 4. SITE CHARACTERIZATION AND MONITORING CASE STUDY REPORTS



REMEDIATION CASE STUDIES - ORDERING INFORMATION

The following FRTR documents are available free-of-charge from the U.S. EPA/National Service Center for Environmental Publications (NSCEP), while supplies last. To order, mail this completed form to:

U.S. EPA/National Service Center for Environmental Publications
P.O. Box 42419
Cincinnati, OH 45242

or FAX to (513) 489-8695. Also, telephone orders may be placed at (800) 490-9198 or (513) 489-8190.

CD-ROM

- ☐ FRTR Cost and Performance Remediation Case Studies and Related Information, Third Edition, June 2002 (EPA-542-C-02-004)

Abstracts of Remediation Case Studies

- ☐ Abstracts of Remediation Case Studies, Volume 1, March 1995 (EPA-542-R-95-001)
- ☐ Abstracts of Remediation Case Studies, Volume 2, July 1997 (EPA-542-R-97-010)
- ☐ Abstracts of Remediation Case Studies, Volume 3, September 1998 (EPA-542-R-98-010)
- ☐ Abstracts of Remediation Case Studies, Volume 4, June 2000 (EPA-542-R-00-006)
- ☐ Abstracts of Remediation Case Studies, Volume 5, May 2001 (EPA-542-R-01-008)
- ☐ Abstracts of Remediation Case Studies, Volume 6, June 2002 (EPA-542-R-02-006)

Abstracts (2 page summaries) of each case study are available in five volumes. Volume 1 covers the 37 reports published in March 1995, Volume 2 the 17 reports published in July 1997, Volume 3 the 86 reports published in September 1998, Volume 4 the 78 reports published in June 2000, Volume 5 the 56 reports published in May 2001, and Volume 6 the 39 reports published in June 2002.

Guide to Documenting and Managing Cost and Performance Information for Remediation Projects

- ☐ Guide to Documenting and Managing Cost and Performance Information for Remediation Projects, Revised Version, October 1998 (EPA-542-B-98-007).

The FRTR Guide provides recommended procedures for documenting the matrix characteristics and technology operation, performance, and cost for conventional and innovative cleanup technologies. An example format is provided, as well as look-up tables for several key remediation parameters.

On-Line Access (<http://www.frtr.gov>)

The case studies and case study abstracts are available on the Internet through the FRTR home page at <http://www.frtr.gov>. The home page provides links to individual FRTR members' home pages, and includes other information and activities on site characterization and remediation technologies.

SEND TO:

Name: _____ Date: _____

Organization: _____

Address: _____

City/State/Zip: _____ Telephone: _____

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Remediation Case Studies: Fact Sheet and Order Form

June 2002



Federal Remediation Technologies Roundtable



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