

EPA Completed North American Innovative Remediation Technology Demonstration Projects

This report summarizes key information about more than 300 completed innovative remediation technology demonstration projects. The information is presented in a manner that enables project managers and other interested persons to easily identify the innovative technologies that may be appropriate for their particular site remediation needs. The projects are organized according to the media treated and the type of treatment technology. The report includes technical report numbers, as well as the address and telephone number of the technology vendor and the sponsoring agency. An electronic version of the report is available free of charge on EPA's Cleanup Information (CLU-IN) bulletin board.

BACKGROUND

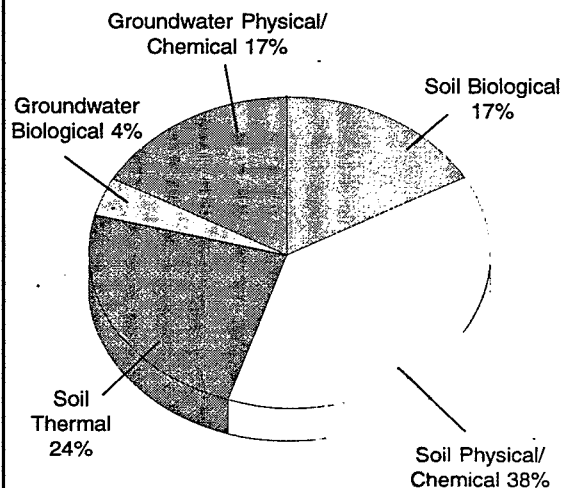
More than 300 government-sponsored innovative technology field demonstration projects have been completed in North America. Many of the demonstration projects were performed, sponsored, or funded through programs developed by the U.S. Environmental Protection Agency (EPA), the Armed Forces (Army, Navy, and Air Force), the Department of Energy, the California EPA, and the Canadian government. The demonstration results from these programs usually are scattered among numerous technical reports that federal site project managers, consultants, educators and other professionals responsible for waste remediation and corrective action cleanup projects may find difficult to obtain.

The purpose of this report therefore is to consolidate key information from innovative remediation technology demonstration projects into a single document and present that information in a matrix that enables project managers and other interested persons to easily identify innovative technologies that may be appropriate for their particular site remediation needs. The matrix, which is limited to completed demonstration projects and a small number of full-scale cleanup efforts, does not address emerging technologies or laboratory-scale projects.

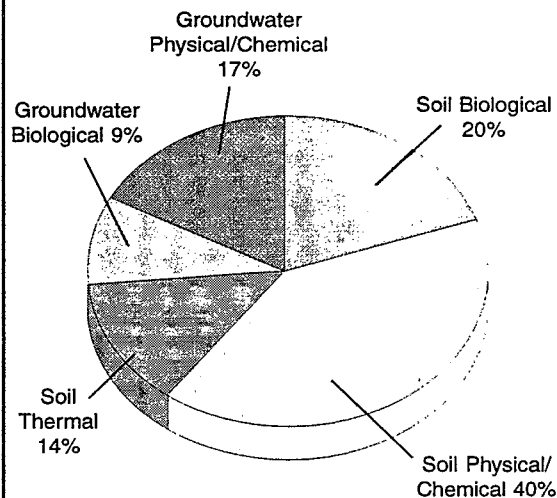
MATRIX OF COMPLETED DEMONSTRATION PROJECTS

The matrix is organized according to the media treated: soil, sludge, and sediment projects or groundwater projects. The demonstrations are differentiated further by the following treatment technology types: (1) ex situ biological, (2) in situ biological, (3) ex situ physical or chemical, (4) in situ physical or chemical, (5) ex situ thermal, and (6) in situ thermal.

Demonstration Projects by Media and Type of Treatment



Ex Situ Technologies (120)



In Situ Technologies (139)

Technology	Number of Projects	
Soil Vapor Extraction	29 Soil	13%
	5 Groundwater	
Biodegradation	23 Soil	13%
	10 Groundwater	
Stabilization / Solidification	23 Soil	9%
	1 Groundwater	
Soil Washing	23 Soil	9%
	0 Groundwater	
Air Stripping	9 Soil	9%
	14 Groundwater	
Bioventing	13 Soil	6%
	3 Groundwater	
Thermal Desorption	14 Soil	5%
	0 Groundwater	
Radio / Electric Heating	13 Soil	5%
	0 Groundwater	
Other Physical Processes	10 Soil	5%
	2 Groundwater	
Oxidation	0 Soil	5%
	12 Groundwater	
Incineration	10 Soil	4%
	0 Groundwater	
Precipitation / Filtration	2 Soil	4%
	8 Groundwater	
Solvent Extraction	5 Soil	3%
	2 Groundwater	
Bioreactor	4 Soil	2%
	2 Groundwater	
Other Biological Processes	4 Soil	2%
	2 Groundwater	
Thermal Enhanced Extraction	6 Soil	2%
	0 Groundwater	
Bioslurry	4 Soil	2%
	0 Groundwater	
Vitirification	3 Soil	1%
	0 Groundwater	
Other Thermal Processes	3 Soil	1%
	0 Groundwater	

Contaminant	Number of Projects
SVOC Nonhalogenated	108 Soil
	16 Groundwater
VOC Nonhalogenated	92 Soil
	27 Groundwater
VOC Halogenated	41 Soil
	31 Groundwater
Inorganics	60 Soil
	10 Groundwater
SVOC Halogenated	50 Soil
	11 Groundwater
Explosives / Propellants	6 Soil
	1 Groundwater

Each technology demonstration listing includes (1) the name of the technology or process; (2) the type(s) of contaminant treated; (3) a description of the site activity; (4) the demonstration date; (5) the technical report number; (6) the project title; (7) the name, address, and telephone number of the developer or vendor of the technology; (8) the name, address, and tele-

phone number of the sponsor of the demonstration project; and (9) an annotation indicating whether the vendor of the technology is listed in EPA's Vendor Information System for Innovative Treatment Technologies (VISITT). The levels of detail included in the listings vary according to the availability of information about the demonstration project.

An electronic, menu-driven version of the report currently is available free of charge on EPA's CLU-IN bulletin board (<http://clu-in.com>).

The report is available free of charge to government employees and nonprofit organizations through the National Center for Environmental Publications and Information (NCEPI) at (800) 490-9198; Fax Orders: (513) 489-8695.

For non-EPA parties, the report (#PB 96-153-127) can be purchased for \$21.50 from the National Technical Information Service (NTIS) at (703) 487-4650.