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** Completed North American
Innovative Remediation Technology
Demonstration Projects**



NOTICE

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FOREWORD

The investment of public and private resources in the demonstration of remediation technologies represents a major commitment to furthering the confidence of the engineering community in the efficacy and cost of these newer technologies. The existence of more than 300 completed projects in North America represents an impressive collection of information on the probable success of these technologies in routine implementation. The projects summarized in this report are completed field demonstrations in North America sponsored by formal government programs along with numerous other individual demonstrations that are being carried out by and for the private sector and universities on a project-specific basis.

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OVERVIEW

Given the multiple sponsors of more than 300 completed innovative technology field demonstration projects in North America, the records of the projects are spread among a large number of technical reports, technology transfer mechanisms, and other information sources. Project managers, consultants, educators, and other professionals responsible for waste remediation and corrective action cleanup projects frequently find it difficult to locate the information they need. The purpose of this report therefore is to consolidate key information from innovative 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 to 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.

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. 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 respective agency 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 telephone number of the sponsor of the demonstration project; and (9) an annotation indicating whether the vendor of the technology is listed in the EPA Vendor Information System for Innovative Treatment Technologies (VISITT). The levels of detail included in the listings varies according to the availability of data and information about the demonstration project. Of key interest to the reader are the type(s) of medium, type(s) of contaminant treated, and the description of the site activity, which enables the reader to find a technology that may fit specific remediation needs. Conversely, if the reader is appraising

a remediation technology, the matrix can be used to identify other projects in which the technology has been used and the medium(a) and contaminant(s) treated. The agency technical report number is given so that the user can research the actual project demonstration for further information. When possible, the name, address, and phone number of the developer or vendor or the sponsor are given, so that the user can contact those parties about the technology or the program under which the demonstration was performed. In addition, if the vendor participates in VISITT, that fact is indicated, enabling the user to identify the vendor in VISITT to obtain the most current information about development of the technology.

Appendix A presents summary information about the demonstration projects taken from the matrix in this publication. The summary graphics are presented as a combined pie chart, with a separate bar chart to differentiate the soil demonstrations from those related to groundwater. Almost 200 of the 259 projects inventoried dealt with the soil media. While about 25 percent of the projects were demonstrations of biological processes, other physical and chemical techniques are well represented. The choice of technologies demonstrated is determined by the priorities of the various programs. In some cases, technologies are developed in-house and require review by the organization itself; in other cases, the demonstration efforts solicited interest on the part of technology vendors. While the current ratio of ex-situ to in-situ projects is almost 50:50, efforts to reduce costs and risks from materials handling seem to point to increasing interest in in-situ processes.

With regard to the three major contaminant groups, the fewest completed projects (70) treated inorganic contaminants, while much attention has been focused on VOCs. At the date of this printing, Air Force technical reports summarizing data from bioventing and bioslurping sites under the Air Force's Installation Remediation Program are still in development or are in draft form. A graphic illustrating the number of bioventing and bioslurping technology demonstrations completed by the Air Force is presented separately at the end of Appendix A. As supplemental information, Appendix B

provides two maps that show the locations of the Air Force bioventing initiative sites and bioslurper sites. For the map of bioslurper sites; the sites are identified as check-out, pilot-test, extended testing, or expanded testing sites. The bioventing initiative map provides only the locations of the sites.

Most of the demonstration projects selected for this report were performed, cosponsored, or funded through programs developed by the U.S. Environmental Protection Agency, the military services (Army, Navy, and Air Force), the U.S. Department of Energy, the government of Canada, and the state of California. Appendix C describes many of the major formal demonstration programs and provides a contact for those programs. The contacts provide a starting point for those who wish to obtain more information about individual programs or demonstration projects. In addition, the appendix lists the sponsors of the projects included in the matrix and the number of demonstrations performed.

Appendix D provides a cross-reference list for the technical report numbers identified in the innovative technology demonstration matrix. The reader can find the title of the technical report by looking up (in the list provided in Appendix D) the technical report number included in the demonstration matrix. The reports are listed first by number, followed by title. Note that, in some cases, the title of the technical report may be identical to the project title presented in the demonstration matrix.

This document represents a concerted attempt to collect and summarize information for as many completed demonstration projects as possible. This compendium should not be looked upon as the sole source of such information.

MATRIX OF COMPLETED DEMONSTRATION PROJECTS

Using the Matrix

The matrix summarizes key information about more than 300 completed innovative 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 as follows:

- a) The projects first are separated according to the media treated:
 - Soil, sludge, and sediment projects
 - Groundwater projects
- b) Projects are differentiated further by treatment technology type:
 - Ex-situ biological
 - In-situ biological
 - Ex-situ physical or chemical
 - In-situ physical or chemical
 - Ex-situ thermal
 - In-situ thermal
- c) Within the subdivisions identified above, projects are listed alphabetically by technology (for example, *bioslurry*, *bioremediation*, and *composting*).


For each project the following information is presented:


Column	Column Name and Definition
1	Technology - Name of technology
2-7	Contaminant(s) - An "X" indicating the type(s) of contaminant treated <ul style="list-style-type: none"> - Volatile organic compounds (VOCs), halogenated - VOCs, nonhalogenated - Semivolatile organic compounds (SVOCs), halogenated - SVOCs, nonhalogenated - Inorganic compounds - Explosives or propellants
8	Technical Comment Field - Specific contaminant(s) treated
9	Site Activity/Waste Source - Type of contamination present or type of industry conducted at the site
10	Demonstration Date - Date of performance of the project (typically the start date)
11	Technical Report Number - The respective agency technical report number for the document that describes the demonstration project


Column	Column Name and Definition
12	Page Number - Number of the page on which the project description is found in the technical report cited
13	Project Title - Title of the project
14	General Comment Field - Additional pertinent information about the project
15	Technology Developer/Vendor and Address - Name and address of either the developer or the vendor of the technology
16	Technology Developer/Vendor Telephone Number - Telephone number of the developer or the vendor listed in item 15
17	Sponsor and Address - Name and address of the sponsor of the demonstration project
18	Sponsor Telephone Number - Telephone number of the sponsor listed in item 17
19	VISITT ¹ Reference - An "X" indicating whether the vendor of the technology is listed in the Vendor Information System for Innovative Treatment Technologies (VISITT)


1 = VISITT contains information submitted by developers, manufacturers, and suppliers of innovative technologies. It is a database that provides the means for vendors to showcase their products to state and federal agencies and the general public. VISITT may be accessed from the Environmental Protection Agency's Cleanup Information (CLU-IN) (301-589-8366) electronic bulletin board system or at website <http://clu-in.com>.


**MATRIX OF
COMPLETED DEMONSTRATION PROJECTS**


												Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISITT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																														
Ex-Situ Biological																														
Bio-Slurry				X			PAHs	Creosote Wood Preserving	1991	EPA/540/A 5-91/009	31	Bioslurry Reactor		Services, Inc., 800 Jefferson County Parkway, Golden, CO 80401	303-273-7177	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7328													
Bio-Slurry					X		TNT, RDX, HMX	Ordnance Plant	1993	T S-CR-94038 Jul 95		Soil Slurry-Sequencing Batch Bioreactor	Selected in ROD	Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439		U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010	410-612-6840													
Biological Cyanide Detoxification					X		Heavy Metals	Precious Metals Heap	1992	EPA/542/B-93/009 - Oct 93	23	Biological Cyanide Detoxification	Sponsor No Longer in Existence			U.S. Bureau of Mines, Salt Lake Research Center, 729 Arapen Drive, Salt Lake City, UT 84108														
Bioremediation	X						TCE	Fort Gillem, GA		Abstract		Bioremediation of Chlorinated Solvents and Diesel Soils	Fort Gillem IRP	U.S. Army/TVA/ENSR, 2809 West Mall Dr., Florence, AL 35630		U.S. Army, DPW, Building 358, Fort McPherson, GA 30330-5000														
Bioremediation		X					BTEX	Fuel Spill Site		EPA/542/B-93/009 - Oct 93	29	Bioremediation of Aromatic Hydrocarbons	Treated Groundwater also			Naval Weapons Station, Seal Beach, Code 0923, Seal Beach, CA 90740	310-594-7273													
Bioremediation		X					TPH	Fuel Tank	1988	Demonstration Report Mar 90		Biological Remediation of a Fuel Contaminated Soil Site in Carson, California		Protek Environmental, Inc.		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670													
Bioremediation		X					TPH	Two Maintenance Yards		Demonstration Report Nov 90		Bioremediation of Used Oil-contaminated Soil at Two Caltrans Maintenance Yards		Groundwater Technology Corporation		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670													
Bioremediation			X				PCB	Oak Ridge Test Site	1994	DOE/EM-0248	172	Bioremediation of PCB Contamination		Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831	615-574-6813	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7966													
Bioremediation				X			Dinoseb	Pesticides at Bowers Field	1993	EPA/540/R-94/508		Ex-Situ Anaerobic Bioremediation System, Dinoseb, J.R. Simplot Company		J.R. Simplot, P.O. Box 912, Pocatello, ID 83204	208-234-5367	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7206													


	Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/ Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISITT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																			
Ex-Situ Biological																			
Bioremediation		X		X				VOCs, PAH, TPH	Don River Valley, Toronto	1995	DESRT - Mar 95		Technology of the Remediation of Hydrocarbon Contaminated Soil	Mobile Bioremed.	Natural Environment Recovery, Inc., Richmond Hill, Ontario, Canada		Ontario Ministry of Environment and Energy, Ontario, Canada	416-327-8327	
Bioremediation		X		X				Diesel Fuel, Transformer Oil	Two Different Sites	1992	DESRT 21 - Aug 94		Bioremediation of Soil Contaminated by Transformer Oil and Diesel Fuel		Biogenie, Inc.		Technology Development Branch, Conservation & Protection, Environment Canada, Hull, Quebec K1A 0H3	514-283-9678	
Bioremediation		X		X				Petroleum	Test Site	1994	Abstract		Minnesota Department of Transportation, Biomound Field Evaluation		Minnesota Department of Transportation		U.S. EPA Region 5, Office of Underground Storage Tanks	312-886-6143	
Bioremediation			X	X				PAHs, PCPs	Wood Preserving	1994	EPA/540/R-94/526 - Nov 94	78	Grace Dearborn Inc. (Bioremediation Technology)		Grace Dearborn Inc., 3451 Erindale Station Rd., Mississauga, Ontario, Canada L5A 3T5	905-279-2222	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949	
Bioremediation			X	X				PAH, PCP	Wood Preserving	1992	EPA/540/F-95/506G - Jul 95		Bioremediation Field Initiative Site Profile: Escambia Wood Preserving Site	Lignin Degrading Fungi	Laboratory, One Grifford Pinchot Drive, Madison WI 53705	608-231-9469	U.S. EPA Region 4, 345 Courtland Street, N.E., Atlanta, GA 30365	404-347-3016	
Slurry-Phase Bioremediation				X	X			PAHs, Metals	Disposal Pit	1993	EPA/542/R-95/001 - Mar 95	22	Slurry-Phase Bioremediation at the, French Limited Superfund Site, Crosby, Texas		Praxair, Inc., 39 Old Ridgebury Road, Danbury, CT 06810	203-837-2174	U.S. EPA Region 6, 1445 Ross Ave., Dallas, TX 75202	214-665-6739	X
Bioremediation/Vacuum Extraction		X						TPH	Fuel Leaks	1989	EPA/542/B-93/009 - Oct 93	30	Bioremediation/Vacuum Extraction				Naval Facilities Engineering Service Center, Code ESC 40, Port Hueneme, CA 93043-4370	805-982-1668	
Composting						X		TNT, RDX, HMX	Army Depot	1992	EPA/542/R-95/001 - Mar 95		Explosives Contaminated Soil at, Umatilla Army Depot Activity, Hermiston, OR		Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010-5401	410-612-6840	X
Aerated Static Pile Composting						X		TNT, RDX, HMX	Ordnance	1987	EPA/542/B-93/009 - Oct 93	3	Aerated Static Pile Composting	Lagoon Sediments	Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010-5401	410-612-6840	X


Technology							Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants												
SOIL, SLUDGE, AND SEDIMENT PROJECTS																		
<i>Ex-Situ Biological</i>																		
Aerated Static Pile Composting						X	Nitrocellulose	Propellants	1988	EPA/542/B-93/009 - Oct 93	6	Aerated Static Pile Composting		Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010-5401	410-612-6840	X
Aerobic Composting Optimization						X	TNT, RDX, HMX	Ordnance	1987	EPA/542/B-93/009 - Oct 93	10	Aerobic Composting Optimization	Lagoon Sediments	Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010-5401	410-612-6840	X
<i>In-Situ Biological</i>																		
Biodecontamination		X		X			Fuel Oil	Fuel Pipelines	1985	EPA/542/B-93/009 - Oct 93	15	Biodecontamination of Fuel Oil Spills				Naval Facilities Engineering Service Center, Code ESC 40, Port Hueneme, CA 93043-4370	805-982-1668	
Biodegradation	X						TCE/PCE	Seepage Basin		EPA/542/B-93/009 - Oct 93	17	Biodegradation		Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5178	DOE Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5178	
Biodegradation		X		X			Motor Oil	Test Site		EPA/542/B-93/009 - Oct 93	18	Biodegradation of Lube Oil-Contaminated Soils				U.S. Army Construction Engineering Research Laboratory, P.O. Box 4005, Champaign, IL 61820	217-352-6511	
Biodegradation		X		X			& Non-halogen Solvents	JP-4 at Kelly Air Force Base		EPA/542/B-93/009 - Oct 93	49	In Situ Biodegradation	Treated Groundwater also			USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6036	
Biodegradation		X		X			& Non-halogen Solvents	JP-4 at Eglin Air Force Base		EPA/542/B-93/009 - Oct 93	49	In Situ Biodegradation	Treated Groundwater also			USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6036	
Accelerated Biodegradation		X					TPH	Oil/Water Sump Spill	1991	EPA/542/B-93/009 - Oct 93	41	Enzyme Catalyzed, Accelerated Biodegradation		Inplant Bio Remedial Services, Inc., P.O. Box 3385, Long Beach, CA 90803	310-987-3746	Facilities Maintenance, U.S. Marine Corps Base, Camp Pendleton, CA 92055	619-725-3868	


Technology							Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference					
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants										Technical Comment Field	Site Activity/Waste Source	Demonstration Date		
SOIL, SLUDGE, AND SEDIMENT PROJECTS																				
<i>In-Situ Biological</i>																				
Biolysis, Dredging		X							Polystyrene effluents	Manufacturing Plant	1993	DESRT - Aug 94		Technology Using Biolysis™ and Dredging, Mansonville, Quebec		Sanexen Environmental		Technology Development Branch, Conservation & Protection, Environment Canada, Hull, Quebec K1A 0H3	514-283-9678	
Bioremediation		X							VOCs	Gas Nutrient Injection	1995	DOE/EM-0270 Apr 95		In Situ Bioremediation Using Horizontal Wells				U.S. Department of Energy, Office of Technology Development, Washington, DC 20585	703-903-7289	
Bioremediation		X							BTEX	Refinery Site	1992	Abstract		Fracturing with Bioremediation for the Enhanced Removal of BTEX	Gasoline Contaminated Soils	New Jersey Institute of Technology, 138 Warren St., Newark, NJ	201-642-7076	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949	
Bioremediation				X					PAH	Wood Preserving	1994	DESRT 16 - Jun 94		of Wood Treatment Soils Containing Chlorinated Phenols and PAHs	On-site Experimental Plot	Grace Dearborn Inc., 3451 Erindale Station Rd., Mississauga, Ontario, Canada L5A 3T5	905-279-2222	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Bioremediation			X	X					PCPs, PAHs	Wood Preserving	1992	EPA/540/R-94/526 - Nov 94	112	Laboratory & USDA Forest Products Laboratory (Fungal Treatment)		Laboratory, One Grifford Pinchot Drive, Madison WI 53705	608-231-9469	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949	
Bioremediation			X	X					PAH, Phenols	Wood Preserving	1992	DESRT 16 - Jun 94		of Wood Treatment Soil Containing Chlorinated Phenols and PAHs	Second Demo	Grace Dearborn Inc., 3451 Erindale Station Rd., Mississauga, Ontario, Canada L5A 3T5	905-279-2222	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Bioremediation			X	X					PAH, PCP	Wood Preserving		EPA/540/F-95/506A - Jul 95		Bioremediation Field Initiative Site Profile: Libby Ground Water Superfund Site	Treated Groundwater also	EPA NRMRL/Utah State University, Utah		U.S. EPA Region 8, 301 S. Park, Drawer 10096, Helena, MT 59626		
Bioremediation				X	X				PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 07 - Apr 93		Bioremediation Project, Pacific Place Site		Chem-Security/ Remediation Technologies		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Bioremediation				X					PAH	Test Site	1993	DESRT 13 - Apr 93		Polyaromatic Hydrocarbon (PAH)-Contaminated Soils Using White Rot Fungi	Using White Rot Fungi	GEOBAC Technologies Group, Inc.		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	


Technology						Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference			
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds										Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source
SOIL, SLUDGE, AND SEDIMENT PROJECTS																	
<i>In-Situ Biological</i>																	
Aerobic Slurry-Phase Bioremediation				X	X	PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 05 - Apr 93		Slurry-Phase Bioremediation Project, Pacific Place Site		Chemical Waste Management of Canada, Inc.	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962		
Augmented Subsurface Bioremediation	X		X			Hydrocarbons	Airfield	1993	EPA/540/MR-93/527		Augmented In-Situ Subsurface Bioremediation Process, Bio-Rem, Inc.	Treated Water also	Bio-Rem, Inc., P.O. Box 116, Butler, IN 46721	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	219-868-5823	513-569-7949	
Bioslurping	X					TPH	Fuel Farm	1994	Abstract		Bioslurping - Vacuum-Enhanced Free-Product Recovery Coupled With Bioventing: A Case Study	Treated Water also	Battelle Columbus Laboratory, 505 King Avenue, Columbus, OH 43201	U.S. Navy, Public Works Department, NAS Fallon, Fallon, NV 89406	614-424-4698	702-426-2772	X
Bioslurping (x16)	X		X			LNAPLs	Military Air Base				(Tech Reports in Development)	16 Sites at 16 Bases	Various Developers/Vendors	U.S. Air Force Center for Environmental Excellence, Technology Transfer Division, 8001 Arnold, Brooks AFB, TX	210-536-4331		
Bioventing	X					TPH	Airfield	1990	EPA/542/B-93/009 - Oct 93	37	Bioventing in the Vadose Zone		Battelle Columbus Laboratory, 505 King Avenue, Columbus, OH 43201	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	614-424-4698	904-283-6035	X
Bioventing	X					TPH	Airfield	1994	EPA/542/B-93/009 - Oct 93	39	Bioventing in Sub-Arctic Environments		Battelle Columbus Laboratory, 505 King Avenue, Columbus, OH 43201	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	614-424-4698	904-283-6035	X
Bioventing	X					TPH, BTEX	Gas Station	1994	Performance Report - Apr 95		Evaluation of Purus Padre System for the Treatment of Hydrocarbon Vapors	Purus Padre Regenerative Resin	Purus Inc., 2713 N First Street, San Jose, CA 95134-2000	U.S. Air Force Center for Environmental Excellence, Technology Transfer Division, 8001 Arnold, Brooks AFB, TX	210-536-4331	X	
Bioventing			X			PAHs	Tar Distill. & Wood Pres.	1992	EPA/540/F-95/508H - Jun 95		Site Profile: Reilly Tar and Chemical Corporation Superfund Site		Biosystems, Inc.	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7328		
Bioventing	X		X			Hydrocarbons	Industrial Wastes	1992	EPA/542/B-93/009 - Oct 93	33	Bioventing		Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7444	513-569-7328	


	Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																			
<i>In-Situ Biological</i>																			
Bioventing		X		X				Hydrocarbons	Airfield	1992	EPA/542/B-93/009 - Oct 93	35	Bioventing	Treated Groundwater also	Battelle Columbus Laboratory, 505 King Avenue, Columbus, OH 43201	614-424-4698	U.S. Navy, Public Works Department, NAS Fallon, Fallon, NV 89406	702-426-2772	X
Bioventing (x125)		X		X				Hydrocarbons	Military Air Base				Bioventing, by Battelle Laboratories for the U.S. Air Force	125 Sites at 54 Bases	Various Developers/Vendors		U.S. Air Force Center for Environmental Excellence, Technology Transfer Division, 8001 Arnold, Brooks AFB, TX	210-536-4331	
Bioventing		X		X				JP-4 Jet Fuel Spill	Airfield	1995	Bioremediation Field Evaluation		Hydrocarbons, Cold Climate with Soil Warming: Field Study, Eielson AFB, AK		Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH	513-569-7328	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6036	
Bioventing/Soil Warming		X		X				TPH, BTEX	Airfield	1994	EPA/542/R-95/001 - Mar 95	20	Refueling Loop E-7, Source Area ST20, Bioventing at Eielson Air Force Base, Alaska		Pacific Northwest Laboratory, Battelle Blvd., Richland, WA 99352	509-376-0554	U.S. Air Force, 354 CES/ CEVR, 2258 Central Ave., Suite 1, Eilson AFB, Alaska 99702		X
Land Treatment				X				PAHs	Wood Preserving	1990	EPA/542/R-95/001 - Mar 95		Land Treatment at the Brown Wood Preserving Superfund Site, Live Oak, Florida		Remediation Technologies, Inc., 1011 Southwest Klickitat Way, Suite 207, Seattle, WA 98134	206-624-9349	U.S. EPA Region 4, 345 Courtland Street, N.E., Atlanta, GA 30365	404-347-3016	X
Land Treatment		X		X				PAHs	Lumber Treatment	1991	EPA/542/R-95/001 - Mar 95		Land Treatment at the Scott Lumber Company Superfund Site, Alton, Missouri		Remediation Technologies, Inc., 1001 S. 24th Street, W., Suite 105, Billings, MT 59102	406-652-7481	U.S. EPA Region 7, Emergency Planning and Response Branch, 25 Funston Road, Kansas City, KS 66115	913-551-7755	X
<i>Ex-Situ Physical/Chemical</i>																			
Chemical Detoxification			X					Dioxin, Chlorinated Aromatics			EPA/542/B-93/009 - Oct 93	61	Chlorinated Aromatic Compounds - Dioxin & Herbicides in Soil		Naval Facilities Engineering Service Center, Code ESC 40 Port Hueneme, CA 93043-4370	805-982-1668	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7757	
Chemical Fixation		X		X	X			Metals and Organics	Refinery	1987	EPA/542/B-93/009 - Oct 93	72	SAREX Chemical Fixation Process		Separation and Recovery Systems, Inc., 1762 McGraw Ave., Irvine, CA 92714	714-261-8860	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7757	X


 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Spans or Telephone Number	VISIT Reference
	SOIL, SLUDGE, AND SEDIMENT PROJECTS																	
Ex-Situ Physical/Chemical																		
Chemical Fixation/Solidification			X		X		PCPs, Metals	Wood Preserving	1990	EPA/540/A R-92/010		Corporation - Solidification and Stabilization of Organic/Inorganic	Treated Wastewater also	STC Omega, Inc., 7655 East Gelding Drive, Suite B-2, Scottsdale, AZ 85260	602-948-7100	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7774	
Chemical Treatment					X		Lead, Heavy Metals	Ordnance	1994	EPA/540/R-94/526 - Nov 94	50	Cognis, Inc. (Chemical Treatment)		Cognis, Inc., 2330 Circadian Way, Santa Rosa, CA 95407	707-576-6235	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison, NJ 08837	908-321-6623	X
Chemical Treatment					X		Heavy Metals	Drum Storage Area		Demonstration Report Jun 91		Hexavalent Chromium Contaminated Soils for a Site in Bkersfield, CA		Versar, Incorporated		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670	
Chemical Treatment	X		X		X		Heavy Metals, Oil, and Grease	Oil Processing Plant	1987	EPA/542/B-93/009 - Oct 93	63	Chemical Treatment and Immobilization	Soil/Sludge Treatment	Funderburk & Associates, Route 1, Box 250, Oakwood, Texas 75855	800-227-6543	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7757	
Cyclone Furnace					X	X	Metals, Phthalates, PAHs	Babcock & Wilcox Test Site	1991	EPA/540/A R-92/017 - Aug 92		Babcock & Wilcox Co. - Cyclone Furnace Vitrification	Produced vitrified slag	Babcock and Wilcox Co., 1562 Beeson Street, Alliance, OH 44601	216-829-7395	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	
Analytical Enhanced Remediation		X	X	X	X		BTEX, Trace Metals	British Columbia Sites	1995	DESRT - May 95		Near-Real-Time Monitoring Of Contaminated Soils	Six technologies	Analytical Services Laboratory, Ltd.		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Entrained-Bed Gasification	X	X	X	X	X		specific Organics/Inorganics	Oil Processing	1994	EPA/540/M R-94/514		Texaco Gasification Process - Texaco Inc.		Texaco Inc., 2000 Westchester Ave., White Plains, NY 10650	914-253-4047	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7692	X
Techniques and Foam Suppression		X		X			Hydrocarbons	McColl Superfund Site	1990	EPA/540/A R-92/015		McColl Superfund Site - Demonstration of a Trial Excavation		U.S. EPA, Region 9, Mail Code H-7-1, 75 Hawthorne Ave., San Francisco, CA 94105	415-744-2400	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7507	
Selective Extraction					X		Uranium	Uranium Production		EPA/542/B-93/009 - Oct 93	222	Selective Extraction, Uranium in Soil				DOE Fernald Environmental Remediation, Management Corporation, P.O. Box 398704, Cincinnati, OH 45239-8704	514-648-6556	


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SOIL, SLUDGE, AND SEDIMENT PROJECTS																													
<i>Ex-Situ Physical/Chemical</i>																													
Soil Vapor Extraction	X	X			X		Heavy Metals, Solvents	Industrial Waste Dump	1993	EPA/542/R-95/006 - May 95	29	Basket Creek Surface Impoundment				U.S. EPA Region 4, 345 Courtland Street, N.E., Atlanta, GA 30365	404-347-3931												
Solvent Extraction			X				PCBs, Dioxins	Drilling Oil Site	1991	EPA/540/A-R-92/002		Dehydro-Tech - Carver-Greenfield		Dehydro-Tech Corporation, 6 Great Meadow Lane, East Hanover, NJ 07936	201-887-2182	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	X											
Solvent Extraction	X	X	X	X			PCBs, VOCs, SVOCs	Air Station	1994	EPA/540/R-94/521a - Feb 95		SITE Technology Capsule - Terra Kleen Solvent Extraction Technology		Terra-Kleen Response Group, Inc., 7321 North Hammond Ave, Oklahoma City, OK 73132	405-728-0001	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7348	X											
Solvent Extraction			X	X			PCBs, PAHs	Grand River Test Site	1992	EPA/540/A-R-92/079		Resources Conservation Company - Basic Extractive Sludge Treatment (B.E.S.T.)		Resources Conservation Company, 3630 Cornus Lane, Ellicott City, MD 21042	410-596-6066	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7349	X											
Liquefied Gas Solvent Extraction			X				PCBs	Harbor Sediment	1988	EPA/540/A-5-90/002		CF Systems Corp.- Solvent Extraction		CF Systems Corporation, 3D Gill Street, Woburn, MA 01801	617-937-0800	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7348	X											
Steam Enhanced Extraction	X	X	X	X			VOCs and SVOCs	Gasoline Test	1993	EPA/540/R-94/526 - Nov 94	32	Berkeley Environmental Restoration Center (Enhanced Extraction)		Berkeley Environmental Restoration Center, 3112A Etch Hall, Berkeley, CA 94720	510-642-2928	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797												
Gas-Phase Chemical Reduction			X	X			PCBs, PAHs, Dioxin	Harbor Sediment		EPA/542/R-95/006 - May 95	3	Demonstration of Thermal Gas-Phase Reduction Process	Desorption of PCBs	Eli Eco Logic International Inc., 143 Dennis Street, Rockwood, Ontario, Canada N0B 2K0	519-856-9591	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7696	X											
Immobilization			X		X		PCBs, Heavy Metals	Oil Processing	1987	EPA/540/A-5-89/001		Hazcon - Solidification		Funderburk & Associates, Route 1, Box 250, Oakwood, Texas 75855	800-227-6543	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797												
Physical Separation			X				PCBs	River Sediment	1992	EPA/542/B-93/009 - Oct 93	161	Particle Separation Process		Bergmann USA, 1550 Airport Road, Gallatin, TN 37066	615-452-5500	U.S. Army Engineer District, Detroit, Box 1027, Detroit, MI 48231	313-226-6760	X											


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	SOIL, SLUDGE, AND SEDIMENT PROJECTS																	
<i>Ex-Situ Physical/Chemical</i>																		
Precipitation, Microfiltration, & Dewatering						X	Metals, Pesticides	Mining	1992	EPA/540/R-94/526 - Nov 94	64	Epoc Water, Inc. (Precipitation, Microfiltration, & Sludge Dewatering)		EPOC Water, Inc., 3065 Sunnyside, Suite 101, Fresno, CA 93727	209-291-8144	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7507	
Pyrovac Vacuum Pyrolysis	X		X				Petroleum Hydrocarbons	Sand-Quarry	1993	DESRT 22 - Aug 94		Technology for the Remediation of Contaminated Soils		Laval Univ / Institute Pyrovac, Inc.		Technology Development Branch, Conservation & Protection, Environment Canada, Hull, Quebec K1A OH3	514-283-9678	
Soil Leaching/ Soil Extraction					X		Heavy Metals	Army Ammunition Plant	1994	Abstract		Full-Scale Soil Washing/TERRAMET Soil Leaching	Ammo Test Burn Area	Cognis, Inc., 2330 Circadian Way, Santa Rosa, CA 95407	707-576-6235	U.S. Army, Twin Cities Army Ammunition Plant, New Brighton, MN		X
Soil Recycling	X		X	X			Lead, Oil, PAHs,	Metal Finishing & Refinery Products	1992	EPA/540/A R-93/517		Toronto Harbor Commissioners - Soil Recycling Treatment Train	Three technologies	Toronto Harbor Commission, 60 Harbor Street, Toronto, Ontario, Canada M5J 1B7	416-863-2071	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949	
Soil Washing		X					PCBs	Warehouse		EPA/542/B-93/009 - Oct 93	165	Soil Restoration Unit		Terra-Kleen Corporation, 7321 North Hammond Avenue, Oklahoma City, OK 73132	405-728-0001	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7348	X
Soil Washing					X		Heavy Metals	Battery Yard	1992	EPA/540/A 5-93/503		Bescorp Soil Washing System Battery Enterprises Site - Brice Environmental Services, Inc.		Brice Environmental Services Corp., P.O. Box 73520, Fairbanks, AK 99707	907-452-2512	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison, NJ 08837	908-321-6678	
Soil Washing					X		Heavy Metals	Oxidation Lagoons	1992	EPA/542/B-93/009 - Oct 93	168	Soil Washing				Division, Sacramento Army Depot, 8350 Fruitridge Road, M552, Sacramento, CA 95325	916-388-4344	
Soil Washing					X		Copper, Lead, Arsenic	Industrial	1992	DESRT 23 - Aug 94		Application of Tallon Technology in the Dickson Remediation Project		Bombardier, Inc.		Technology Development Branch, Conservation & Protection, Environment Canada, Hull, Quebec K1A OH3	514-283-9678	
Soil Washing	X	X	X	X			PCBs, VOCs, PAHs	Refinery	1992	EPA/540/R-93/510 - Sep 93		Biogenesis Soil Washing Technology		Biogenesis Enterprises, Inc., 7420 Alban Station Blvd., Suite B-208, Springfield, VA 22150	703-913-9700	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	


												Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																														
<i>Ex-Situ Physical/Chemical</i>																														
Soil Washing		X		X				TPH, Oil-Soluble Organics	Oil Processing	1991	EPA/542/B-93/009 - Oct 93	154	Carver-Greenfield Process		Dehydro-Tech Corporation, 6 Great Meadow Lane, East Hanover, NJ 07936	201-887-2182	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	X											
Soil Washing		X		X				Hydrocarbons	Fuels	1992	EPA/542/B-93/009 - Oct 93	163	RENEU Extraction Technology		Terrasys, Inc., 912-D Pancho Road, Camarillo, CA 93012	805-389-6766	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7469												
Soil Washing			X	X				PCPs, PAHs	Wood Preserving	1992	EPA/540/A R-93/508		U.S. EPA - Mobile Volume Reduction Unit		Research Laboratory - Edison, 2890 Woodbridge, Edison NJ 08837	908-321-6629	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949												
Soil Washing			X	X	X			PAHs, PCBs, Metals	Wood Preserving	1989	EPA/540/A 5-91/003		Biotrol - Soil Washing System		Biotrol, Inc., 10300 Valley View Road, Suite 107, Eden Prairie, MN 55344	612-942-8032	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison, NJ 08837	908-321-6683	X											
Soil Washing			X		X			PCBs and Metals	Shipyards	1992	EPA/540/M R-92/075		Bergmann USA - Soil and Sediment Washing System		Bergmann USA, 1550 Airport Road, Gallatin, TN 37066	615-230-2217	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7507	X											
Soil Washing				X	X			PAH, Heavy Metals	Industrial Sites		EPA/542/R-95/006 - May 95	7	Technology for the Inorganic and Organic Contaminants from Soil	Coarse/Fine Metals Recovery	Tallon Metal Technologies, Inc., 1961 Cohen, Ville St. Laurent, Quebec, H4R 2N7, Canada	514-335-0057	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962												
Soil Washing				X	X			PCB-Heavy Metal	Metal Scrap Yard	1992	DESRT 14 - Dec 93		Reactor Treatments for PCB-Heavy Metal Contaminated Soils	Reagents; Stabilization	Washburn & Gillis Associates Ltd.		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962												
Aqueous-Based Soil Washing		X		X				Hydrocarbon Contaminants	Oil and Gas Extraction	1994	CET Newsletter, Vol. 1, No. 1, Spring 1994		Systems Demonstrates Aqueous-Based Soil Wash System in Oak Ridge		Soil Tech Environmental		DOE Center for Environmental Technology, Oak Ridge, TN 37831	423-574-1907												
Stabilization/Solidification						X		Metals	Salvage Yard	1989	EPA/540/A 5-89/011		Chemfix Technologies, Inc. - Chemical Fixation/Stabilization		Advanced Remediation Mixing, Inc., 711 Oxley Street, Kenner, LA 70062	504-461-0466	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7585												


Technology							Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants												
SOIL, SLUDGE, AND SEDIMENT PROJECTS																		
Ex-Situ Physical/Chemical																		
Stabilization/Solidification					X		Lead	Test Soil	1988	Demonstration Report Jun 91		Portland Cement Stabilization Process for Lead-Contaminated Soil		Levine-Fricke, Inc.		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670	
Stabilization/Solidification					X		Zinc, Lead, & Cadmium	Scrap Metal		Demonstration Report Mar 90		A Silicate Stabilization Process for Heavy Metal Contaminated Soil at the Tamco Steel Site		Solids Treatment Systems, Inc.		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670	
Stabilization/Solidification					X		Metal Contaminants	Hazardous Waste Landfill	1993	DESRT - Apr 95		Methods for Solidified Waste Evaluation - Wastewater Technology Centre	Cementitious Binders	Wastewater Technology Center		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Stabilization/Solidification					X		Metal Contaminants	Metal Contaminated Soil Test	1988	Demonstration Report Nov 90		Sulfide Stabilization Technology for Copper-Contaminated Soil		Toxco Incorporated		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670	
Stabilization/Solidification	X	X	X	X	X		specific Organics/Inorganics	Industrial Sludge Pit	1991	EPA/540/R-94/526 - Nov 94	146	Wastech, Inc. (Solidification and Stabilization)		Wastech, Inc., P.O. Box 4638, 1021 D Alvin Weinberg Drive, Oak Ridge, TN 37831	615-483-6515	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7589	
Stabilization/Solidification		X	X	X	X		PCBs, Hydrocarbons	Chemical Process	1988	EPA/540/A-5-89/005 - Sep 90		SolidiTech, Inc. - Solidification/Stabilization Process	Not Available From	SolidiTech, Inc.		National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7507	
Ultraviolet Irradiation	X						PCE, TCE, TCA	Savannah River Test Site		DOE/EM-0248 - Jun 95	213	Integrated Pulsed Ultraviolet Irradiation		Purus, Inc., 2713 North First Street, San Jose, CA 95134	408-955-1000	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7289	X
Ultraviolet Oxidation					X		Explosives	Army Depot	1994	SFIM-AEC-ET-CR-95068		Evaluation of UV Methods for the Remediation of Explosives in Groundwater		Purifics Inc., Solarchena Ultrex (Zimpro), Vulcan Peroxide System Inc.		U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010	410-612-6840	


Technology							Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants												
SOIL, SLUDGE, AND SEDIMENT PROJECTS																		
<i>In-Situ Physical/Chemical</i>																		
Air Stripping		X					VOCs	Savannah River Site	1990	DOE/EM-0269 Apr 95		In-Situ Air Stripping Using Horizontal Wells		Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-3692	U.S. Department of Energy, Office of Technology Development, Washington, DC 20585	301-909-7289	
Air Stripping Remediation	X						TEC	Savannah River Site		MSSRC-MS-91-290		The Savannah River Integrated Demonstration Program	Treated Groundwater also	Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-3692	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5178	
Recovery of Oily Wastes (CROW)		X		X			Oil Waste	Penn. Power & Light Site	1993	EPA/542/B-93/009 - Oct 93	194	Wastes Process, Coal Tar Derivatives and Petroleum By-products in Soil		Western Research Institute, P.O. Box 3395, University Station, Laramie, WY 82071-3395	307-721-2281	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7862	X
Electrokinetic Enhancement		X		X			(gasoline contaminants)	Oil and Gas Field Services, NEC	1994	EPA/542/K-94/007 - Apr 95	7	Spill, Environment & Technology Services, Electrokinetic Enhancement		Environment & Technology Services, 2081 15th Street, San Francisco, CA 94114	415-861-0810	Environment & Technology Services, 2081 15th Street, San Francisco, CA	415-861-0810	
Hydraulic Fracturing		X					TPH, BTEX	Fuel Spill	1992	EPA/540/SR-93/505		Laboratory, Univ. of Cincinnati, & FRX, Inc. (Hydraulic Fracturing)	With In-situ Bioremed.	FRX Inc., P.O. Box 37945, Cincinnati, OH 45223	513-556-2526	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7796	
Hydraulic Fracturing	X	X					VOCs & SVOCs	Chemicals	1992	EPA/540/SR-93/505		Laboratory, Univ. of Cincinnati, & FRX, Inc. (Hydraulic Fracturing)	With Vapor Extraction	FRX Inc., P.O. Box 37945, Cincinnati, OH 45222	513-556-2526	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7796	
Immobilization					X		Heavy Metals	Oil Processing	1987	EPA/540/A-R-89/001		Funderburk & Associates (Dechlorination & Immobilization)	Not Available From	Funderburk & Associates, Route 1, Box 250, Oakwood, Texas 75855	800-227-6543	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	
MAECTITE Process					X		Lead	VA, IN, MI, OH, SD, WI Sites	1991	EPA/542/B-93/009 - Oct 93	205	MAECTITE Process Leads in Soils, Sludges, Other Waste Materials, and Debris		MAECORP, Inc., 155 North Wacker Drive, Suite 400, Chicago, IL 60606	312-853-4050	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7507	
Pneumatic Fracturing Extraction	X	X	X	X			VOCs and SVOCs	Airfield	1993	Abstract		Demonstration, Tinker Air Force Base, Oklahoma City, Oklahoma		Accutech Remedial Systems, Inc., Cass Street at Highway 35, Keyport, NJ 07735	908-739-6444	Center for Environmental Engineering & Science, New Jersey Institute of Technology, 138 Warren St., Newark, NJ	201-642-7076	X


 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	SOIL, SLUDGE, AND SEDIMENT PROJECTS																	
<i>In-Situ Physical/Chemical</i>																		
Pneumatic Fracturing Extraction	X	X	X	X			VOCs and SVOCs	NJ EECR Act Site	1992	EPA/540/A-R-93/509		Accutec Pneumatic Fracturing Extraction and Hot Gas Injection, Phase I	With Catalytic Oxidation	Accutec Remedial Systems, Inc., Cass Street at Highway 35, Keyport, NJ 07735	908-739-6444	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison NJ 08837	908-321-6626	X
Precipitation/Filtration		X		X	X		Pesticides, Oil, Grease	Iron Mine	1991	EPA/542/B-93/009 - Oct 93	216	Precipitation, Microfiltration, and Sludge Dewatering		EPOC Water, Inc., 3065 Sunnyside, Suite 101, Fresno, CA 93727	209-291-8144	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7507	
Soil Injection and Vapor Extraction		X		X			JP-5 (Jet Fuel)	Airfield	1994	EPA/542/K-94/009 - Apr 95	17	California, SIVE, Naval Facilities Engineering Service Center		Udell Tech and OHM, Inc.		Naval Facilities Engineering Service Center, Code ESC 441, Port Hueneme, CA 93043-4370	805-982-4191	
Soil Recycling		X		X	X		PAH, Oils & Grease	Industrial Site		EPA/542/B-93/009 - Oct 93	223	Soil Recycling, Organics and Inorganics in Soils				DOE Fernald Environmental Remediation, Management Corporation, P.O. Box 39, Cincinnati, OH 45239-8704	513-569-7949	
Soil Vapor Extraction	X						TCE	Repair Shop	1991	EPA/542/R-95/001 - Mar 95	74	Rocky Mountain Arsenal Superfund Site, Motor Pool Area (OU-18)		Woodward-Clyde Federal Services, 4582 S. Ulster St., Suite 1200, Denver, CO 80237	303-740-2600	U.S. Army, Rocky Mountain Arsenal, AMCPM-RME, Commerce City, CO 80022-1749	303-289-0249	
Soil Vapor Extraction	X						DCE, PCA, PCE, TCE	Storage Tanks	1994	EPA/542/R-95/001 - Mar 95	62	Bay, South Tacoma Channel (Well 12A), Phase 2, Tacoma, WA		Environmental Science & Engineering, Inc.		U.S. Army Corps of Engineers, Seattle District, 4735 East Marginal Way South, Seattle, WA 98134	206-764-3704	
Soil Vapor Extraction	X						Chloroform, TCE, PCA, TCA	Spill: Contaminated Acquirer	1993	EPA/542/R-95/001 - Mar 95	66	SVE at Hastings Groundwater Contamination Superfund site, Well #3 Subsite, Hastings, NE		Morrison-Knudsen Corporation, 7100 East Belleview Ave., Suite 300, Englewood, CO 80111	303-793-5089	U.S. EPA Region 7, 726 Minnesota Ave., Kansas City, KS 66101	913-551-7797	
Soil Vapor Extraction		X					BTEX	Underground Storage Tanks	1993	EPA/542/R-95/001 - Mar 95	76	SVE at the Sacramento Army Depot Superfund Site, Tank 2 Operable Unit, Sacramento, CA		Terra Vac, Corporation, 14798 Wicks Boulevard, San Leandro, CA 94577	510-351-8900	Division, Sacramento Army Depot, 8350 Fruitridge Road, M552, Sacramento, CA 95325	916-388-3289	X
Soil Vapor Extraction	X	X					PCE, LNAPL	Disposal, Storage Area	1992	EPA/542/R-95/001 - Mar 95	80	Superfund Site, Thomas, Solvent Raymond Road (OU-1) Battle, Creek, MI		Terra Vac, Corporation, 9030 Secor Road, Temperance, MI 48182	313-847-4444	U.S. EPA Region 5, 77 West Jackson Boulevard, Chicago, IL 60604	312-886-0399	X


		Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISITT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																				
<i>In-Situ Physical/Chemical</i>																				
Soil Vapor Extraction	X				X			Freon-113, DCE, TCA, PCE, TCE	Disposal Pit	1994	EPA/542/R-95/001 - Mar 95	72	In Situ Soil Vapor Extraction at, McClellan Air Force Base, California		CH2M Hill		USAF, Environmental Management Directorate, McClellan Air Force Base, Sacramento, CA			
Soil Vapor Extraction	X				X			PCE, Freon-113, Acetone	Underground Storage Tanks	1990	EPA/542/R-95/001 - Mar 95	64	Soil Vapor Extraction at the Fairchild, Semiconductor Corporation Superfund Site		Canonie Environmental Services Corp., 441 N. Whisman Rd., Mountain View, CA 94043	415-960-1640	U.S. EPA Region 9, 75 Hawthorne Street, San Francisco, CA 94105	415-744-2280	X	
Soil Vapor Extraction		X		X				TPH, BTEX, MEK	Fire Training Area, Airfield	1992	EPA/542/R-95/001 - Mar 95	70	Soil Vapor Extraction at, North Fire Training Area (NFTA), Luke AFB, Arizona		Envirocon, Inc.; Rust Environment		U.S. Army, Corps of Engineers, Brandeis Bldg, 6th Fl., 210 S. 16th St., Omaha, NE 68102			
Soil Vapor Extraction		X		X				VOC, SVOC	Underground Storage Tanks	1993	EPA/542/R-95/001 - Mar 95	78	Soil Vapor Extraction at the, SMS Instruments Superfund Site, Deer Park, New York		Four Seasons Environmental, Inc., 3107 S. Elm - Eugene Street, Greensboro, NC 27416	919-273-2718	U.S. EPA Region 2, 26 Federal Plaza, New York, NY	212-264-4706		
Soil Vapor Extraction		X		X				TPH (JP-4)	Airfield	1990	EPA/542/R-95/001 - Mar 95	68	Remediation of a JP-4 Fuel Spill, at Site 914, Hill Air Force Base, Ogden, UT				U.S. Air Force, OO-ACC/EMR, 7274 Wardleigh Road, Hill AFB, UT 84055			
Soil Vapor Extraction/Bioventing		X		X				TPH	Airfield	1990	EPA/542/R-95/001 - Mar 95		Remediation of a JP-4 Fuel Spill at Site 914, Hill AFB, Ogden, UT				U.S. Air Force, OO-ACC/EMR, 7274 Wardleigh Road, Hill AFB, UT 84055			
Soil Vapor Extraction/Combustion		X		X				Non-halogenated VOCs	Gas Station	1993	Performance Report - Dec 94		of Internal Combustion Engines for the Destruction of Hydrocarbon Vapors		VR Systems, Inc., Anaheim, California	714-826-0483	U.S. Air Force Center for Environmental Excellence, Technology Transfer Division, 8001 Arnold, Brooks AFB, TX	210-536-4331		
Passive Soil Vapor Extraction	X			X				Chlorinated Solvents	Three DOE Test Sites	1993	DOE/EM-0248 - Jun 95	136	Passive Soil Vapor Extraction		Laboratory, 7000 East Ave., P.O. Box 808, Livermore, CA 94550	510-422-6806	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7920		
Soil Venting/Vapor Extraction	X							Fuels, TCE	Hill Air Force Base, Utah	1989	EPA/542/B-93/009 - Oct 93	124	In Situ Soil Venting				USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6023		


 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/ Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/ Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference	
SOIL, SLUDGE, AND SEDIMENT PROJECTS																			
<i>In-Situ Physical/Chemical</i>																			
Soil Venting/ Vapor Extraction	X	X					Volatile Contamina nts	Ammo Site	1993	EPA/542/B- 93/009 - Oct 93	126	In Situ Soil Venting				U.S. Army Environmental Center, SFIM- AEC-ETD, Aberdeen Proving Ground, MD 21010-5401	410-612- 6840		
Soil Washing				X			DNAPLs, CTET	Corpus Christi, TX Site	1992	EPA/542/K- 94/003 - Apr 95	7	Corpus Christi Dupont Site, SUNY Buffalo Corporate Remediation Group		University at Buffalo, Dept of Geology, 772 Natural Science Complex, Buffalo, NY 14260	716-645- 6800 x3996	University at Buffalo, Dept of Geology, 772 Natural Science Complex, Buffalo, NY 14260	716-645- 6800 x3996		
Soil Washing					X		Heavy Metals	Impoundment Lagoon	1993	EPA/542/R- 95/001 - Mar 95	86	Prussia Technical Corporation Superfund Site, Winslow Township, NJ		Technologies, Inc., 14497 Dale Mabry Highway, Tampa, FL 33618	813-264- 3506	U.S. EPA Region 2, 26 Federal Plaza, New York, NY	202-264- 7592	X	
Soil Washing	X		X				PCBs, Oils	Warren, MI Site	1993	EPA/542/K- 94/003 - Apr 95	9	Demonstration, General Motors NAO Research & Development Center, Warren, MI		General Motors NAO R&D Center, Warren, MI 48090-9055	810-986- 1600	General Motors NAO R&D Center, Warren, MI 48090-9055	810-986- 1600		
Soil Washing			X	X			Heavy Metals, PAH	Field	1994	DESRT 17 - Aug 94		Remediation Trials for Industrially-Contaminated Hazardous Soils	Res./Comm . Developm ent	Tallon Metal Technologies, Inc., 1961 Cohen, Ville St. Laurent, Quebec, H4R 2N7, Canada	514-335- 0057	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953- 0962		
Density-Driven Groundwater Sparging	X		X				BTEX, TPH	Underground Storage Tanks	1993	EPA/542/R- 95/001 - Mar 95	38	Density-Driven Groundwater Sparging at, Amcor Precast, Ogden, Utah		Wastach Env., Inc., 2251B West California Ave., Salt Lake City, UT 84104	801-972- 8400	Utah Dept. of Environmental Quality, DERR, Salt Lake City, Utah	801-538- 6146		
Stabilization/ Solidification				X			DNAPL	Wood Preserving	1991	DESRT 12 - Dec 93		Gravel Washing Project - Canada Creosote Site		Alberta Research Council, Alberta, Canada	405-427- 6181	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953- 0962		
Stabilization/ Solidification					X		Metals (Al, Be, Cd, Fe, Zn, etc.)	Salvage Yard	1989	EPA/542/B- 93/009 - Oct 93	245	Chemfix Process, Solid Waste in Soil and Sludge				National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569- 7669		
Stabilization/ Solidification					X		Lead and Copper	Port Hueneme, CA Site	1992	EPA/542/B- 93/009 - Oct 93	252	Solidification of Spent Blasting, Heavy Metals in Spent Blasting Abrasives, Grit, and Sands				Naval Facilities Engineering Service Center, Code ESC 40, Port Hueneme, CA 93043-4370	805-982- 1668		


 Technology	VOC- Halogenated	VOC- Nonhalogenated	SVOC- Halogenated	SVOC- Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/ Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/ Vendor and Address	Technology Developer/ Vendor Telephone Number	Sponsor and Address	Spans or Telephone Number	VISIT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																		
<i>In-Situ Physical/Chemical</i>																		
Stabilization/ Solidification		X		X			Oil, Aromatic Solvents	Robins Air Force Base, Macon, GA	1991	EPA/542/B-93/009 - Oct 93	253	Solidification/Stabilization, Organics and Inorganics in Soil, Sludge, and Liquid		Geo-Con, Inc., 4075 Monroeville Blvd, Monroeville, PA 15146	412-856-7700	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7589	
Stabilization/ Solidification		X		X	X		PAH, Keytones, Glycols	Industrial	1993	EPA/542/B-93/009 - Oct 93	255	Silicate Compounds, Organics & Inorganics in Groundwater, Soil, Sludge				National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7774	
Stabilization/ Solidification			X		X		Metals, PCBs	Electrical	1988	EPA/540/A-5-89/004		IWT/Geo-Con In-Situ Stabilization		Geo-Con, Inc., 4075 Monroeville Blvd, Monroeville, PA 15146	412-856-7700	National Risk Management Research Laboratory - Edison, 2890 Woodbridge Ave, Edison, NJ 08837	908-321-6683	
Stabilization/ Solidification				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 10 - Apr 93		Stabilization/Solidification Project, Pacific Place Site		Wastech, Inc., P.O. Box 4638, 1021 D Alvin Weinberg Drive, Oak Ridge, TN 37831	615-483-6515	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Stabilization/ Solidification				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 02 - Apr 93		Stabilization/Solidification Project, Pacific Place Site		Nevalta Corporation		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Stabilization/ Solidification				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 03 - Apr 93		Stabilization/Solidification Project, Pacific Place Site		Chemical Waste Management, Inc.		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Stabilization/ Solidification				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 08 - Apr 93		Stabilization/Solidification Project, Pacific Place Site		Ogden/ Chemfix Technologies, Inc.		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Stabilization/ Solidification				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 11 - Apr 93		Stabilization/Solidification Project, Pacific Place Site	Did Not Meet Standards	Bovar Environmental Services		Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Dynamic Underground Stripping	X			X			Gasoline Spill	Airfield	1994	UCRL-ID-120416		Summary of the LLNL Gasoline Spill Demonstration- Dynamic Underground Stripping Project		Lawrence Livermore National Laboratory, Earth Sciences Division, Livermore, CA 94550	510-422-3521	U.S. Department of Energy, Office of Technology Development, Washington, DC 20585	703-903-7289	


Technology							Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference	
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants													
SOIL, SLUDGE, AND SEDIMENT PROJECTS																			
<i>In-Situ Physical/Chemical</i>																			
Dynamic Underground Stripping		X		X			Gasoline	Industrial	1991	UCRL-ID-118187		Underground Stripping Demonstration, LLNL Gasoline Spill Site		Lawrence Livermore National Laboratory, Earth Sciences Division, Livermore, CA 94550	510-422-3521	U.S. Department of Energy, Office of Technology Development, Washington, DC 20585	703-903-7289		
Steam and Air Stripping	X	X	X	X			VOCs and SVOCs	Soil Blocks	1989	EPA/540/R-94/526 - Nov 94	100	Novaterra, Inc. (In Situ Steam and Air Stripping)		Novaterra, Inc., 1801 Avenue of the Stars, Suite 640, Los Angeles, CA 90067	310-843-3190	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X	
Steam and Hot-Air Stripping		X					VOCs	Fuel	1992	EPA/540/A-5-90/008 - Mar 91		Steam/ Hot-Air Stripping Technology. (Applications Analysis Report)		Peroxidation Systems, Inc., 151 Union Street, Suite 155, San Francisco, CA 94111	415-391-2113	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797		
Volatilization & Ventilation System	X	X					BTEX, PCE, TCE	Buchanan, Michigan Site	1994	EPA/540/R-94/526 - Nov 94	34	Billings & Assoc., Inc. (SVVS)	Treated Groundwater also	Billings & Associates, Inc., 3816 Academy Parkway N-NE, Albuquerque, NM 87109	505-345-1116	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X	
Vacuum Extraction	X						TCE	Groveland Wells, MA Site	1988	EPA/540/A-5-89/003		Terra Vac - Vacuum Extraction		Terra Vac, Corporation, 356 Fortaleza Street, P.O. Box 1591, San Juan, PR 00903	809-723-9171	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison, NJ 08837	908-321-6683	X	
Vapor Extraction		X					Jet Fuel (JP-4)	Fire Trng. Area, Luke Air Force Base	1992	EPA/542/B-93/009 - Oct 93	138	Soil Vapor Extraction (SVE)	Volatile Compounds				U.S. Army, Corps of Engineers, Brandeis Bldg, 6th Fl., 210 S. 16th St., Omaha, NE 68102		
Vapor Extraction	X	X					Fuels, PCE, VOCs	Sacramento Army Depot, CA	1993	EPA/542/B-93/009 - Oct 93	145	Vapor Extraction System		Terra Vac, Corporation, 14204 Doolittle Dr., San Leandro, CA 94577	510-351-8900	Division, Sacramento Army Depot, 8350 Fruitridge Road, M552, Sacramento, CA 95325	916-388-4344	X	
Vapor Extraction		X		X			Diesel Fuel	Huntington Beach, CA	1993	EPA/542/B-93/009 - Oct 93	139	Steam-Enhanced Recovery Process	Hydrocarbons	Hughes Environmental Systems, Inc., 1240 Rosecrans Ave, Manhattan Beach, CA 90266	714-375-6445	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7797		
Vapor Extraction		X		X			Gasoline	Lawrence Livermore Lab		EPA/542/B-93/009 - Oct 93	144	Vacuum-Induced Soil Venting		Lawrence Livermore Lab Univ. of California, P. O. Box 808, Livermore, CA 94550	510-422-3521	DOE Lawrence Livermore Lab, P. O. Box 808, Livermore, CA 94550	510-422-3521		


 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	SOIL, SLUDGE, AND SEDIMENT PROJECTS																	
<i>In-Situ Physical/Chemical</i>																		
Extraction/Steam Vacuum Stripping	X	X	X	X			VOCs, TCE	Aeronautical	1990	EPA/540/A-5-91/002 - Oct 91		AWD Technologies, Inc. - Integrated Vapor Extraction and Steam Vacuum Stripping	Treated Groundwater also	AWD Technologies, Inc., 49 Stevenson Street, Suite 600, San Francisco, CA 94105	415-227-0842	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	X
<i>Ex-Situ Thermal</i>																		
Flame Reactor					X		Metals	Smelting	1991	EPA/540/A-5-91/005		Horsehead Resource Development Co., Inc. - Flame Reactor		Development Co., Inc., 300 Frankfort Road, Monaca, PA 15061	412-773-2289	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7510	X
Incineration				X			PAHs	Acid Pit	1988	EPA/542/B-93/009 - Oct 93	243	PYRETRON (r) Thermal Destruction, Organics in Soil, Sludge, and Solid Waste				National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	413-569-7683	
Incineration	X	X	X	X	X		VOCs, Metals	McColl Superfund Site	1989	EPA/540/R-94/526 - Nov 94	70	General Atomics (Circulating Bed Combustor)		General Atomics, 3550 General Atomics Court, San Diego, CA 92121	619-455-4495	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7844	
Incineration		X		X			Hydrocarbons	Airfield (JP-4 Spill)	1993	EPA/540/M-R-93/524		Hrubetz Environmental Services, Inc. - Hrubetz Process	Thermally Enhanced Recovery	Hrubetz Environmental Services, Inc., 5949 Sherry Lane, Suite 525, Dallas, TX 75225	214-363-7833	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7684	X
Incineration				X	X		Heavy Metal, Pesticides	Ogden's Research Facility	1989	EPA/542/B-93/009 - Oct 93	237	Halogenated & Non-Halogenated Compounds and PCBs in Soil				National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7844	
Thermal Desorption	X						PCB	Surface Disposal Area	1992	EPA/542/R-95/001 - Mar 95	90	Outboard Marine Corporation Superfund Site, Waukegan, Illinois		SoilTech ATP System, Inc., 800 Canonic Drive, Porter, IN 46304	219-926-8651	U.S. EPA Region 5, 77 West Jackson Boulevard, Chicago, IL 60604	312-353-6316	X
Thermal Desorption				X			PCPs, Dioxins, Furans	Koppers Co. Superfund Site	1993	EPA/540/R-94/526 - Nov 94	106	Risk Reduction Engineering Laboratory (Base-Catalyzed Decomposition Process)	With Base-Catalyzed Decomp.	ETG Environmental, Inc., 660 Sentry Parkway, Blue Bell, PA 19422	610-832-0700	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7655	


												VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																													
<i>Ex-Situ Thermal</i>																													
Thermal Desorption			X				PCBs	Re-Solve Superfund Site	1992	EPA/540/R-94/526 - Nov 94	118	Rust Remedial Services, Inc. (X*TRAX Thermal Desorption)		Rust Remedial Services, Inc., 7250 West College Drive, Palos Heights, IL 60463	708-361-7520	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X											
Thermal Desorption				X			DDT, Dieldrin, Lindane	Industrial	1993	EPA/542/R-95/001 - Mar 95	96	H Agriculture & Nutrition Company Superfund Site, Albany, Georgia		Services, Inc., 2076 West Park Place, Stone Mountain, GA 30087	404-498-2020	U.S. EPA Region 4, 345 Courtland Street, N.E., Atlanta, GA 30365	404-347-3931												
Thermal Desorption	X	X	X	X			SVOCs, TPHs, PAHs	Lagoon Sludge	1991	EPA/540/A-R-92/019		Roy F. Weston, Inc. - Low Temperature Thermal Treatment (LT3) System		Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X											
Thermal Desorption	X	X		X			BTEX, PAH, TCE	Disposal Pit	1987	EPA/542/R-95/001 - Mar 95	88	Thermal Desorption at the, Mckin Company Superfund Site, Gray, Maine		Canonie Environmental Services Corp., 800 Canonie Drive, Porter, IN 46304	219-926-8651	U.S. EPA Region 1, John F. Kennedy Federal Bldg., Room 2203, Boston, MA 02203	617-573-5784	X											
Thermal Desorption	X			X	X		PAH, SVOC, HM	Waste Treatment Plant	1994	EPA/542/R-95/001 - Mar 95	94	Thermal Desorption at the, Prestine, Inc. Superfund Site, Reading, Ohio		SoiTech ATP Corporation, 800 Canonie Drive, Porter, IN 46304	219-926-8651	U.S. EPA Region 5, 230 South Dearborn Street, Chicago, IL 60604	312-886-7278	X											
Thermal Desorption		X		X	X		VOCs, PAHs, Coal Tars	Gas Plant	1993	EPA/540/R-94/526 - Nov 94	96	Maxymillian Technologies, Inc. (Mobile Thermal Desorption System)	Available Commercially	Maxymillian Technologies, Inc., Ten Post Office Square, Suite 600, Boston, MA 02109	617-695-9770	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7856												
Thermal Desorption			X	X			PCBs, PAHs, Dioxins	Landfill	1992	EPA/540/A-R-94/504		Thermal Desorption Unit - Eli Eco Logic International, Inc.		Eli Eco Logic International Inc., 143 Dennis Street, Rockwood, Ontario, Canada N0B 2K0	519-856-9591	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7684	X											
Thermal Desorption				X	X		PAHs, Metals, MBOCA	Impoundment Lagoon	1993	EPA/542/R-95/001 - Mar 95	84	Anderson Development Company Superfund Site, Adrian, Michigan		Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	U.S. EPA Region 5, 77 West Jackson Boulevard, Chicago, IL 60604	312-353-4253	X											
Anaerobic Thermal Desorption			X				PCB	Waugen Harbor, IL Site	1992	EPA/540/R-94/526 - Nov 94	124	SoiTech ATP Systems, Inc. (Anaerobic Thermal Processor)		SoiTech ATP Systems, Inc., 800 Canonie Drive, Porter, IN 46304	219-929-4343	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X											


Technology							VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	SOIL, SLUDGE, AND SEDIMENT PROJECTS																							
Ex-Situ Thermal																								
Anaerobic Thermal Desorption				X						PCBs	Brant, NY Site	1991	EPA/540/R-94/526 - Nov 94	124	SoilTech ATP Systems, Inc. (Anaerobic Thermal Processor)		SoilTech ATP Systems, Inc., 800 Canonie Drive, Porter, IN 46304	219-929-4344	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X			
Thermal Desorption/Dehalogenation	X									PCBs	Roadways	1991	EPA/542/R-95/001 - Mar 95	98	Dehalogenation at the, Wide Beach Development Superfund Site, Brant, NY		SoilTech ATP System, Inc., 800 Canonie Drive, Porter, IN 46304	219-926-8651	U.S. EPA Region 2, 26 Federal Plaza, New York, NY	212-264-1129	X			
Temperature Thermal Desorption				X						OCPs	Pesticide Site	1992	EPA/540/M-R-93/504		Aeration (LTTA) System, Canonie Environmental Services, Inc.	LTTA Has Remediated Six Sites	Canonie Environmental Services Corp., 800 Canonie Drive, Porter, IN 46304	219-926-8651	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X			
Thermal Destruction				X						PCBs	Four test sites	1987	EPA/540/A-5-89/010		Gruppo Italimprese (Infrared Thermal Destruction)		Gruppo Italimprese, Rome, Italy	06-8802001	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863				
Thermal Destruction	X			X						Halogenated Hydrocarbons	EPA Research Facility, Ark	1988	EPA/540/A-5-89/008		American Combustion - Oxygen Enhanced Incineration	Suitable for Aqueous Wastes	American Combustion, Inc., 4476 Park Drive, Norcross, GA 30093	404-564-4180	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863				
Thermal Extraction					X	X				PAH, HM, Cyanide	Railroad Equipment	1992	DESRT 06 - Apr 93		Thermal Extraction Project, Pacific Place Site		Newalta Corporation/UMATAC Industrial Processes		Technology Development Branch, Conservation & Protection, Environment Canada, Hull, Quebec K1A OH3	819-953-0962				
Thermal Treatment				X						Chlordane, SVOCs	Rockwell MSO Unit	1993	EPA/542/B-93/009 - Oct 93	102	Molten Salt Oxidation Process	SVOCs in Liquids and Solids	Rockwell International		U.S. Department of Energy, Office of Technology Development, Washington, DC 20585	301-903-8119				
Thermal Treatment				X	X					Hydrocarbons	Cannery Site		Demonstration Report Jun 91		Thermal Treatment of Petroleum Hydrocarbon-Contaminated Soil		Ogden Environmental Services, Inc.		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670				
Thermal Treatment				X	X					Hydrocarbons	Batch Plant		Demonstration Report Mar 90		Soil Detoxification Utiling an Existing Aggregate Drier		South Coast Asphalt Products Company		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670				


Technology							VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	SOIL, SLUDGE, AND SEDIMENT PROJECTS																							
<i>Ex-Situ Thermal</i>																								
Thermal Treatment				X	X							Hydrocarbons	Contaminated Soil Test		Demonstration Report Mar 90		Thermal Treatment Process for Fuel Contaminated Soil		U.S. Waste Thermal Processing		of Pollution Prevention & Technology Development, 400 P St., P.O. Box 806, Sacramento, CA 95812	916-322-3670		
Thermal Treatment	X				X							VOCs	Letterkenny Army Depot	1985	EPA/542/B-93/009 - Oct 93	97	Low Temperature Thermal Stripping		Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	215-430-7423	U.S. Army Environmental Center, SFIM-AEC-ETD, Aberdeen Proving Ground, MD 21010-5401	410-612-6840	X	
Thermal Treatment			X		X	X						Organics and Metals	Babcock & Wilcox Facility	1991	EPA/542/B-93/009 - Oct 93	82	Cyclone Furnace		Babcock and Wilcox Co., 1562 Beeson Street, Alliance, OH 44601	216-829-7576	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7757		
Vitrification			X		X							Metals, Hexachlorobenzene	DOE Test Facility	1991	EPA/540/A-R-91.007		Retech Plasma Centrifugal Furnace		Retech, Inc., P.O. Box 997, 100 Henry Station Road, Ukiah, CA 95482	707-462-6522	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	X	
<i>In-Situ Thermal</i>																								
Heating with Vapor Extraction	X											TCE & PCE	River	1993	EPA/542/K-94/009 - Apr 95	16	Savannah River, GA (DOE), Electrical Resistance Heating with SVE		Pacific Northwest Laboratory, Battelle Blvd., Richland, WA 99352	509-376-0554	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5178	X	
Heating with Vapor Extraction		X										BTEX	Test Site	1993	EPA/542/K-94/009 - Apr 95	16	Electrical Resistance Heating, Berkeley Environmental Restoration Cntr		Berkeley Environmental Restoration Center, 3112A Etch Hall, Berkeley, CA 94720	510-642-2928	Berkeley Environmental Restoration Center, 3112A Etch Hall, Berkeley, CA 94720	510-642-2928		
Heating with Vapor Extraction					X							Aldrin, Dieldrin, Endrin	Airfield	1992	EPA/542/K-94/009 - Apr 95	13	F, Radio Frequency Heating with SVE, IIT Research Institute		IIT Research Institute, 10 W. 35th Street, Chicago, IL 60616	312-567-4232	IIT Research Institute, 10 W. 35th Street, Chicago, IL 60616	312-567-4232		
Heating with Vapor Extraction	X				X							SVOCs & VOCs	Airfield	1992	EPA/542/K-94/009 - Apr 95	14	WI, Radio Frequency Heating with SVE, IIT Research Institute		IIT Research Institute, 10 W. 35th Street, Chicago, IL 60616	312-567-4232	IIT Research Institute, 10 W. 35th Street, Chicago, IL 60616	312-567-4232		


		Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
SOIL, SLUDGE, AND SEDIMENT PROJECTS																				
<i>In-Situ Thermal</i>																				
Heating with Vapor Extraction		X		X					Petroleum, Oil, Lubricants	Kelly Air Force Base, TX	1993	EPA/542/K-94/009 - Apr 95	9	Frequency Heating with SVE, KAI Technologies, Inc. and IIT Research Institute		KAI Technologies, Inc., 175 North New Boston Street, Woburn MA 01801	617-932-3328	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Bames Drive, Tyndall AFB, FL 32043	904-523-6022	X
Frequency/Electric Resist with Vapor		X		X					SVOCs & VOCs	Airfield	1995	EPA/542/K-94/009 - Apr 95	15	Kirkland AFB Radio Frequency/Electrical Resistance Heating with SVE IIT Research Institute		IIT Research Institute, 10 W. 35th Street, Chicago, IL 60616	312-567-4232	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Bames Drive, Tyndall AFB, FL 32043	904-523-6022	
Six Phase Soil Heating		X							TCE & PCE	Savannah River M Area	1994	DOE/EM-0272 Apr 95		Six Phase Soil Heating		Pacific Northwest Laboratory, Battelle Blvd., Richland, WA 99352	509-376-3638	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7289	X
Extraction/Radio Frequency Heating		X							TCE & PCE	Airfield	1993	EPA/542/K-94/009 - Apr 95	11	Savannah River, GA (DOE) Radio Frequency Heating with SVE, KAI Technologies, Inc.		KAI Technologies, Inc., 175 North New Boston Street, Woburn MA 01801	617-932-3328	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5189	X
Steam Heating with Vapor Extraction		X							BTEX	Huntington Beach Site	1993	EPA/542/K-94/009 - Apr 95	8	Heating with Soil Vapor Extraction, Hughes Environmental Systems		Hughes Environmental Systems, Inc., 1240 Rosecrans Ave, Manhattan Beach, CA 90266	714-375-6445	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7861	
Steam Heating with Vapor Extraction		X		X					VOCs & SVOCs	ANNEX Terminal	1989	EPA/542/K-94/009 - Apr 95	7	CA, Steam Heating with Soil Vapor Extraction, NOVATERRA, Inc.		Novaterra, Inc., 1801 Avenue of the Stars, Suite 640, Los Angeles, CA 90067	310-843-3190	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7861	X
Steam Heating with Vapor Extraction		X		X					VOCs & SVOCs	Berkeley CA	1988	EPA/542/K-94/009 - Apr 95	9	Steam Heating with SVE, Berkeley Environmental Restoration Center		Berkeley Environmental Restoration Center, 3112A Etch Hall, Berkeley, CA 94720	510-642-2928	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Bames Drive, Tyndall AFB, FL 32043	904-283-6187	
Thermal Enhanced Vapor Extraction		X		X					VOCs	Landfill Disposal Site	1994	DOE/EM-0248 - Jun 95	123	Thermal Enhanced Vapor Extraction System		Sandia National Laboratories, P.O. Box 5800, Albuquerque, NM 87185	505-845-9882	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7248	
Thermal Treatment		X		X					Volatile/Semi-Volatile Petroleum	Volk Field ANGB	1985	EPA/542/B-93/009 - Oct 93	107	Radio Frequency Thermal Soil Decontamination				USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Bames Drive, Tyndall AFB, FL 32043	904-523-6022	


 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	SOIL, SLUDGE, AND SEDIMENT PROJECTS																	
<i>In-Situ Thermal</i>																		
Thermal Treatment		X		X			Volatile/Semi-Volatile Petroleum	Volk Field ANGB	1989	EPA/542/B-93/009 - Oct 93	107	Radio Frequency Thermal Soil Decontamination				USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-523-6022	
Thermal Treatment		X		X			Volatile/Semi-Volatile Petroleum	Kelly Air Force Base, Texas	1993	EPA/542/B-93/009 - Oct 93	107	Radio Frequency Thermal Soil Decontamination				USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-523-6022	
Thermally Enhanced Recovery		X					TPH, BTEX	Diesel Fuel Spill	1993	EPA/540/H-R-94/510		Hughes Environmental Systems, Inc. (Enhanced Recovery Process)		Hughes Environmental Systems, Inc., 1240 Rosecrans Ave, Manhattan Beach, CA 90266	714-375-6445	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	
Thermally Enhanced Recovery	X	X	X	X			TPH, VOCs, SVOCs	Airfield	1993	EPA/540/M-R-94/527		Radio Frequency Heating - IIT Research Institute	With Soil Vapor Extraction	Brown and Root Environmental, 800 Oak Ridge Turnpike, Jackson Plaza, Oak Ridge, TN 37830	615-483-9900	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6187	
Thermally Enhanced Recovery	X	X	X	X			TPH, VOCs, SVOCs	Airfield	1994	EPA/540/R-94/528a - Feb 95		SITE Technology Capsule - KAI Radio Frequency Heating Technology	With Soil Vapor Extraction	Brown and Root Environmental, 800 Oak Ridge Turnpike, Jackson Plaza, Oak Ridge, TN 37830	615-483-9900	USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6187	
Vitrification			X		X		Metals, Dioxins, PCBs	Chemical Process	1994	EPA/540/M-R-94/520		In Situ Vitrification - Geosafe Corporation		Geosafe Corporation, 2950 George Washington Way, Richland, WA 99352	509-375-0710	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949	X
Vitrification				X	X		PAH, Heavy Metal	Drainage Site	1994	EPA/542/R-95/001 - Mar 95	92	Parsons Chemical/ETM Enterprises Superfund Site, Grand Ledge, MI		Geosafe Corporation, 2950 George Washington Way, Richland, WA 99352	509-375-0710	U.S. EPA Region 5, 77 West Jackson Boulevard, Chicago, IL 60604	312-886-4246	X


 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
GROUNDWATER PROJECTS																		
<i>Ex-Situ Biological</i>																		
Aerobic Biodegradation	X						TCE, PCE	Nuclear Production		EPA/542/B-93/009 - Oct 93	9	Aerobic Biodegradation				DOE Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5178	
Biodegradation	X	X	X	X			TCE, Organics	Groundwater Seep, DOE K-25 Site	1994	DOE/EM-0248 - Jun 95	169	Demonstration of Co-Metabolic Techniques		Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831	615-576-4853	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7920	
Biological Aqueous Treatment			X				PCP	Wood Preserving	1989	EPA/540/A-5-91/001		Biotrol - Biotreatment of Groundwater		Biotrol, Inc., 10300 Valley View Road, Suite 107, Eden Prairie, MN 55344	612-942-8032	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison, NJ 08837	908-321-6683	X
Bioremediation		X					BTEX	Fuel Spill Site		EPA/542/B-93/009 - Oct 93	29	Bioremediation of Aromatic Hydrocarbons	Treated Soil also			Naval Weapons Station, Seal Beach, Code 0923, Seal Beach, CA 90740	310-594-7273	
Bioremediation			X	X			PAHs, Phenolics	Creosote Works	1991	EPA/540/A-R-92/014		SBP Technologies - Membrane Filtration	With Membrane Filtration	SBP Technologies, Inc., 6149 North Shore Drive, Baton Rouge, LA 70817	504-753-5255	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7758	X
<i>In-Situ Biological</i>																		
Bio-Fix Beads					X		Heavy Metals	Acid Mine Drainage Waters		EPA/542/B-93/009 - Oct 93	19	BIO-FIX Beads	Sponsor No Longer in Existence			U.S. Bureau of Mines, Salt Lake Research Center, 729 Arapeen Drive, Salt Lake City, UT 84108		
Biodegradation		X		X			& Non-halogen Solvents	JP-4 at Kelly Air Force Base		EPA/542/B-93/009 - Oct 93	49	In Situ Biodegradation	Treated Soil also			USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6036	
Biodegradation		X		X			& Non-halogen Solvents	JP-4 at Eglin Air Force Base		EPA/542/B-93/009 - Oct 93	49	In Situ Biodegradation	Treated Soil also			USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6036	


Technology							Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference	
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants										Technical Comment Field
GROUNDWATER PROJECTS																
<i>In-Situ Biological</i>																
Biological Treatment	X							EPA/542/B-93/009 - Oct 93	47	In Situ and Above-Ground Biological Treatment of TCE			USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Barnes Drive, Tyndall AFB, FL 32043	904-283-6028		
Bioremediation	X							EPA/542/R-95/006 - May 95	25	In Situ Microbial Filters	Lawrence Livermore National Laboratory, Livermore, CA	510-423-3118	DOE Lawrence Livermore National Laboratory, Livermore, CA	510-423-3118		
Bioremediation	X							DOE/EM-0248 - Jun 95	183	In Situ Bioremediation of Groundwater	Pacific Northwest Laboratory, Battelle Blvd., Richland, WA 99352	509-376-3903	U.S. Department of Energy, Cloverleaf Building, 19901 Germantown Road, Germantown, MD 20874	301-903-7920	X	
Bioremediation		X						EPA/540/F-95/506D - Jul 95		Bioremediation Field Initiative Site Profile: Public Service Company of Colorado	EPA NRMRL/Univ. of Colorado, Denver, Colorado		U.S. EPA Region 8, 999 18th St., Denver, CO 80202-2466			
Bioremediation			X	X				EPA/540/F-95/506A - Jul 95		Bioremediation Field Initiative Site Profile: Libby Ground Water Superfund Site	EPA NRMRL/Utah State University, Utah		National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7861		
Augmented Subsurface Bioremediation		X		X				EPA/540/M-R-93/527		Augmented In-Situ Subsurface Bioremediation Process, Bio-Rem, Inc.	Treated Soil also	Bio-Rem, Inc., P.O. Box 116, Butler, IN 46721	219-868-5823	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7949	
Bioslurping		X								Bioslurping - Vacuum-Enhanced Free-Product Recovery Coupled With Bioventing: A Case Study	Treated Soil also	Battelle Columbus Laboratory, 505 King Avenue, Columbus, OH 43201	614-424-4698	U.S. Navy, Public Works Department, NAS Fallon, Fallon, NV 89406	702-426-2772	X
Bioventing		X		X				EPA/542/B-93/009 - Oct 93	35	Bioventing	Treated Soil also	Battelle Columbus Laboratory, 505 King Avenue, Columbus, OH 43201	614-424-4698	U.S. Navy, Public Works Department, NAS Fallon, Fallon, NV 89406	702-426-2772	X
UVB - Vacuum Vaporizing	X							EPA/540/R-94/526 - Nov 94	150	Roy F. Weston, Inc./IEG Technologies (UVB - Vacuum Vaporizing Well)	Biological Enhanced	Roy F. Weston, Inc., 6400 Canoga Ave., Suite 100, Woodland Hills, CA 91367	818-596-6900	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7469	X

 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/ Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
GROUNDWATER PROJECTS																		
Ex-Situ Physical/Chemical																		
Chemical Fixation/Solidification			X		X		PCPs, Metals	Wood Preserving	1990	EPA/540/A-92/010		Corporation - Solidification and Stabilization of Organic/Inorganic	Treated Soil also	STC Omega, Inc., 7655 East Gelding Drive, Suite B-2, Scottsdale, AZ 85260	602-948-7100	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7774	
Chemical Treatment					X		Heavy Metals	U.S. Army Engineer WES		EPA/542/B-93/009 - Oct 93	75	Xanthate Treatment		USAE Waterways Experiment Station, Vicksburg, MS 39180	601-634-3700	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7757	
Gas-Phase Chemical Reduction			X	X			PCBs, PAHs, Dioxins	Landfill	1992	EPA/540/R-94/526 - Nov 94	60	Eli Eco Logic International Inc. (Gas-Phase Chemical Reduction)		Eli Eco Logic International Inc., 143 Dennis Street, Rockwood, Ontario, Canada N0B 2K0	519-856-9591	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7684	X
Extraction Wells & Air Stripping	X						TCE, TCA, PCE	Surface Impoundment Site	1993	EPA/542/R-95/001 - Mar 95	56	Contaminated Groundwater, at U.S. DoE Savannah River Site, Aiken, S.C.		Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5178	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5178	
Groundwater Extraction & Oxidation	X						PCB, PCE, DCE	Industrial	1994	EPA/542/R-95/001 - Mar 95	54	Contaminated Groundwater at, U.S. DoE, Kansas City Plant, Kansas City, MO		Allied Signal, Inc.		DOE Environmental Restoration, DOE Kansas City Plant, Kansas City, MO		
Groundwater Extraction, & Air Stripping		X					BTEX	Underground Storage Tanks	1994	EPA/542/R-95/001 - Mar 95	44	Contaminated Groundwater at, Langley Air Force Base, Virginia				USAF, 1st Civil Engineering Squadron, Langley Air Force Base, Hampton, VA		
Groundwater Extraction, & Air Stripping	X						TCE, PCE, DCE, DCA	Disposal Pit, Dump Site	1992	EPA/542/R-95/001 - Mar 95	52	Pump/Treat of Contaminated Groundwater at, Twin Cities Army Ammunition Plant, MN				U.S. Army, Twin Cities Army Ammunition, Plant, New Brighton, MN		
Groundwater Extraction, & Air Stripping	X						TCE, PCE, DCE	Landfill, Disposal Pit, USTs	1993	EPA/542/R-95/001 - Mar 95	48	Contaminated Groundwater, at Operable Unit B/C, McClellan Air Force Base, CA				U.S. EPA Region 9, 75 Hawthorne Street, San Francisco, CA 94105	415-744-2280	
Groundwater Extraction, & Air Stripping	X						TCE, PCE, DCE	Disposal Pit	1993	EPA/542/R-95/001 - Mar 95	50	Contaminated Groundwater, at Operable Unit D, McClellan AFB, California				U.S. EPA Region 9, 75 Hawthorne Street, San Francisco, CA 94105	415-744-2280	

												Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Field	Site Activity/ Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
GROUNDWATER PROJECTS																														
<i>Ex-Situ Physical/Chemical</i>																														
Groundwater Extraction, & Air Stripping		X						BTEX	Underground Storage Tanks	1994	EPA/542/R-95/001 - Mar 95	42	Product, Fort Drum, Fuel Dispensing Area 1595, Watertown, New York				U.S.Army, Fort Drum Environmental Division, Fort Drum, Watertown, NY													
High-Energy Electron Irradiation	X		X					Chlorinated Solvents and Fuels	Savannah River Site	1994	EPA/540/R-94/526 - Nov 94	82	High Voltage Environmental Applications, Inc. (Electron Irradiation)	Savannah River Site	High Voltage Environmental Applications, Inc., 9562 Doral Blvd., Miami, FL 33178	305-593-5330	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7631	X											
Membrane Filtration						X		Hazardous Waste	Landfill	1994	EPA/540/R-94/526 - Nov 94	116	Rochem Separation Systems, Inc. (Rochem Disc Tube Module System)		Rochem Separation Systems, Inc., 3904 Del Amo Blvd, Suite 801, Torrance, CA 90503	310-370-3160	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7844												
Membrane Filtration						X		Metals	Zinc Superfund Site	1990	EPA/540/A-5-90/007 - Oct 91		E.I. Dupont De Nemours and Oberlin Filter Co. - Microfiltration Technology		E.I. Dupont De Nemours Co. & Oberlin Filter Co., 1007 Market Street, Wilmington, DE 19898	302-774-2277	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7758												
Photochemical Oxidation	X		X					TCE, VOCs, SVOCs	Airfield		EPA/542/R-95/006 - May 95	26	Phase Transfer Oxidation				USAF Armstrong Laboratory, Site Remediation Div., AL/EQW, 139 Bames Drive, Tyndall AFB, FL 32043	904-283-6126												
UV Oxidation	X							Halogenated VOCs	Barrel & Drum Company	1989	EPA/540/A-5-89/012		Ultrox International - Ultraviolet Ozone Treatment for Liquids		Environmental, 2435 South Anne Street, Santa Ana, CA 92704	714-545-5557	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7665												
UV Oxidation	X	X						TCE, BTEX	Airfield	1993	EPA/540/A-R-93/520		Magnum Water Technology - CAV-OX Ultraviolet Oxidation Process		Magnum Water Technology, 600 Lairport Street, El Segundo, CA 90245	310-322-4143	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7809												
Photochemical	X							TCE, PCE, DCA	Tracy, CA Site	1992	EPA/542/R-95/006 - May 95	24	Demonstration of Peroxidation Systems, Inc.				National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7877												
Polishing Filter						X		Metals, Radionuclides	Rocky Flats Plant	1993	EPA/540/M-R-94/501		Colloid Polishing Filter Method, Filter Flow Technology, Inc.		Filter Flow Technology, Inc., 22 Texas Avenue, League City, TX 77573	713-332-3438	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7697												

Technology						Technical Comment Field	Site Activity/ Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference	
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds													Explosives/Propellants
GROUNDWATER PROJECTS																		
<i>Ex-Situ Physical/Chemical</i>																		
Separator-Filter-Coalescer		X		X			Hydrocarbons	Petroleum Products	1994	EPA/540/R-94/526 - Nov 94	98	North American Technologies Group, Inc. (Oleophilic Amine-Coated Ceramic Chip)		North American Technologies Group, 3316 Corbin Way, Sacramento, CA 95827	916-366-7873	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	
Solar Detoxification	X	X					VOCs	Lawrence Livermore Lab	1987	EPA/542/B-93/009 - Oct 93	74	Solar Detoxification		Lawrence Livermore Lab, P. O. Box 808, MS L-207, Livermore, CA 94550	510-422-3521	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7757	
<i>In-Situ Physical/Chemical</i>																		
Air Sparging		X					BTEX	Gas Station	1991	EPA/600/R-95/040 - Dec 94		Lessons Learned About In Situ Air Sparging at the Denison Ave Site, Cleveland, Ohio		B.P. Exploration & Oil, Inc.; Engineering Science Co.		U.S. EPA Region 5, Office of Underground Storage Tanks	312-886-6143	
Air Stripping	X						TCE, PCE, TCA	Surface Impoundment Site	1993	EPA/542/R-95/001 - Mar 95	58	Contaminated Groundwater at, U.S. DOE, Savannah River Site, Aiken S.C.		Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5181	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5178	
Air Stripping Remediation	X						TEC, Tetrachloro-ethylene	Savannah River Site		MSSRC-MS-91-290		The Savannah River Integrated Demonstration Program	Treated Soil also	Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5181	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5178	
Air Stripping/Vapor Extraction	X						Chlorinated Solvents	Savannah River Site	1990	EPA/542/B-93/009 - Oct 93	120	In Situ Air Stripping with Horizontal Wells		Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A, Aiken, SC 29802	803-725-5181	DOE, Savannah River Oper. Office, Environmental Restoration Division, Aiken, S.C. 29802	803-725-5178	
Catalytic Decontamination	X						VOCs	Fort Dix New Jersey		EPA/542/B-93/009 - Oct 93	188	Catalytic Decontamination, Volatile Organic Compounds (VOCs) in Ground Water				U.S. Army Construction Engineering Research Laboratory, P.O. Box 4005, Champaign, IL 61820	217-373-6740	
Chemical Treatment				X			Metals	Lead Site	1994	EPA/540/R-94/522a - Feb 95		SITE Technology Capsule - Dynaphore, Inc., Forager Sponge Technology		Dynaphore, Inc., 2709 Willard Road, Richmond, VA 23294	804-288-7109	National Risk Management Research Laboratory - Edison, Bldg 10, MS-104, 2890 Woodbridge Ave, Edison, NJ 08837	908-906-6895	X

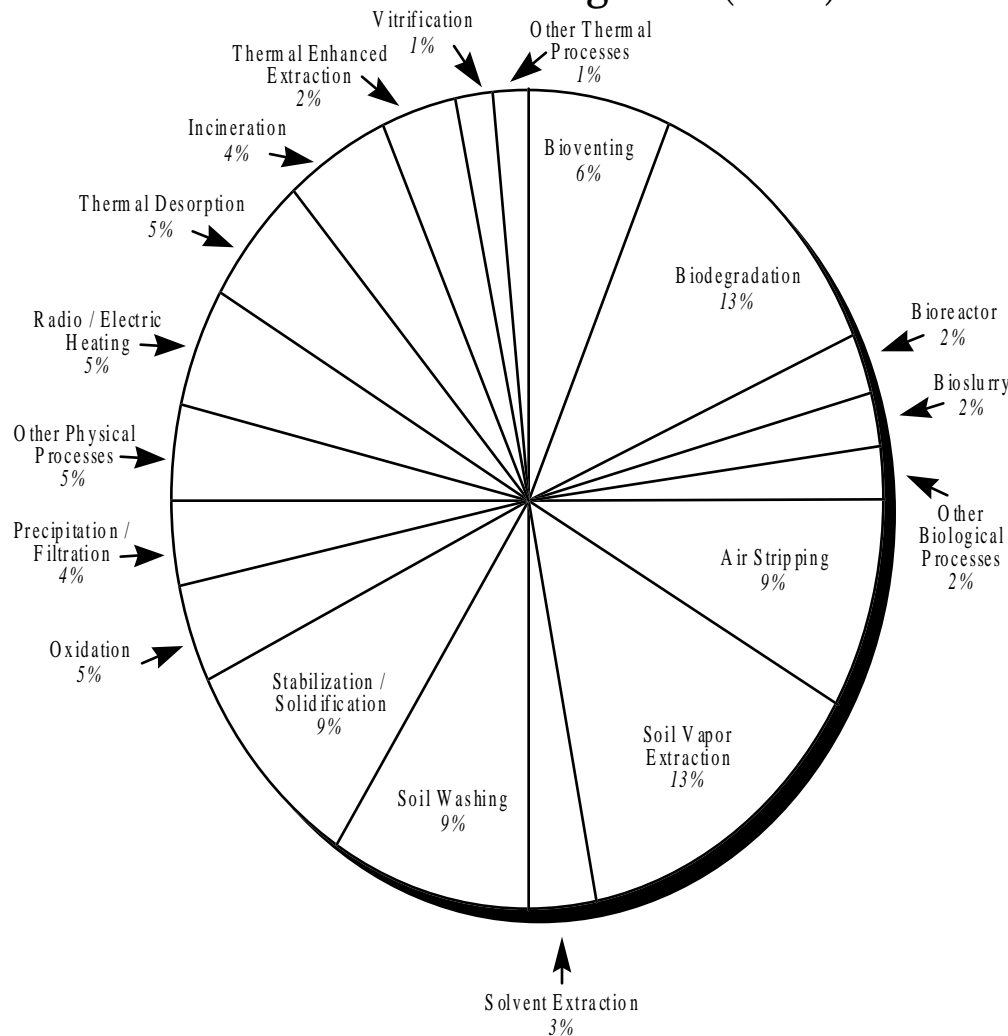
 Technology	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	GROUNDWATER PROJECTS																	
<i>In-Situ Physical/Chemical</i>																		
Cosolvent Flushing	X	X	X	X			BTEX, TCE, TCA, PCE, PAH	Test Site - Hill Air Force Base, Utah	1994	Evaluation Report		Field-Scale Evaluation of In Situ Cosolvent Flushing		University of Florida, Gainesville, FL 32611	904-392-3294	U.S. EPA, R.S. Kerr Environmental Research Laboratory, Ada, OK 74820	405-436-8552	
Electrochemical Reduction and Immobilization					X		Sodium Dichromate	Kerr-McGee Chemical Corp	1992	EPA/542/B-93/009 - Oct 93	197	Electrochemical Reduction and Immobilization		Andco Environmental, 595 Commerce Drive, Amherst, NY 14228	716-691-2100	National Risk Management Research Laboratory, 26 W. Martin Luther King Dr., Cincinnati, OH 45268	513-569-7697	
Oxidation	X						TCE	DOE Kansas City Plant		EPA/542/B-93/009 - Oct 93	230	Hydrogen Peroxide, and Ozone, Trichloroethylene in Ground Water		Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831-6317	615-574-8581	DOE Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37831-6317	615-574-8581	
Advanced Oxidation Process						X	TNT, RDX	Bangor SUBASE	1993	EPA/542/B-93/009 - Oct 93	183	Advanced Oxidation Process, VOCs in Ground Water		Oak Ridge National Laboratory, 560 Laboratory Drive, Port Hueneme, CA 93043-4328	805-982-1616	Naval Facilities Engineering Service Center, Code ESC 40, Port Hueneme, CA 93043-4370	805-982-1668	
Advanced Oxidation Process		X		X			Peroxide, Various fuels	Lakehurst, New Jersey	1991	EPA/542/B-93/009 - Oct 93	185	Advanced Oxidation Process, VOCs in Ground Water		Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820-7495	217-333-5905	Naval Facilities Engineering Service Center, Code ESC 40, Port Hueneme, CA 93043-4370	805-982-1668	
Chemical Oxidation	X	X					VOCs	Lawrence Livermore Site 300	1992	EPA/540/A-R-93/501 - Jul 93		Technology, Peroxidation Systems (Applications Analysis Report)		Vulcan Peroxidation Systems, Inc., 5151 East Broadway, Suite 600, Tucson, AZ 85711	602-790-8383	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7697	
Evaporation-Catalytic Oxidation	X	X	X	X	X		SVOCs, VOCs, Inorganics	Landfill leachate	1993	EPA/540/A-R-93/506 - Sep 93		Evaporation-Catalytic Oxidation Technology (Applications Analysis Report)		Chemical Waste Management		National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7620	
Permeable Reaction Wall	X						TCE, PCE and DCE	Canadian Forces Base	1993	EPA/542/K-94/004 - Apr 95	2	In Situ Permeable Reaction Wall, Waterloo Centre for Groundwater Research		Waterloo Centre for Groundwater Research, Univ. of Waterloo, Waterloo, Ontario, Canada	519-885-1211	Centre for Excellence, Ontario, Canada	416-323-4476	
Permeable Reaction Wall		X					BTEX (Benzene & Toluene)	Borden Aquifer	1994	EPA/542/K-94/004 - Apr 95	3	In Situ Permeable Reaction Wall, Waterloo Centre for Groundwater Research		Waterloo Centre for Groundwater Research, Univ. of Waterloo, Waterloo, Ontario, Canada	519-885-1211	Centre for Excellence, Ontario, Canada	416-323-4476	

Technology							Technical Comment Field	Site Activity/Waste Source	Demonstration Date	Technical Report Number	Page Number	Project Title	General Comment Field	Technology Developer/Vendor and Address	Technology Developer/Vendor Telephone Number	Sponsor and Address	Sponsor Telephone Number	VISIT Reference
	VOC - Halogenated	VOC - Nonhalogenated	SVOC - Halogenated	SVOC - Nonhalogenated	Inorganic Compounds	Explosives/Propellants												
GROUNDWATER PROJECTS																		
<i>In-Situ Physical/Chemical</i>																		
Pervaporation		X		X			Hydrocarbons	Experimental Field	1993	DESRT 20 - 93/009 - Apr 94		Pervaporation of Volatile Organic Compounds from Contaminated Groundwater		Zenon Environmental	905-639-6320	Directorate, Environmental Protection Service, Environment Canada, Hull, Quebec	819-953-0962	
Precipitation/Filtration					X		Naturally occurring radioactive material	Uranium Mine	1986	EPA/542/B-93/009 - Oct 93	214	Precipitation/Filtration, Radionuclides in Ground Water		TechTran, Inc., 5401 Mitchelldale, Suite A4, Houston, TX 77092	713-688-2390	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7697	
Groundwater Sparging and SVE		X		X			BTEX, TPH	Underground Storage Tanks	1993	EPA/542/R-95/001 - Mar 95	38	Density-Driven Groundwater Sparging at, Amcor Precast, Ogden, Utah		Wastach Env., Inc., 2251B West California Ave., Salt Lake City, UT 84104	801-972-8400	Utah Dept. of Environmental Quality, DERR, Salt Lake City, Utah	801-538-6146	
Seam Injection and Vacuum Extraction		X		X			JP-5 (Jet Fuel)	Airfield	1994	EPA/542/K-94/009 - Apr 95	17	California, SIVE, Naval Facilities Engineering Service Center		Udell Tech and OHM, Inc.		Naval Facilities Engineering Service Center, Code ESC 441, Port Hueneme, CA 93043-4370	805-982-4191	
Dynamic Underground Stripping	X	X					BTEX, FHC, Benzene	Underground Storage Tanks	1993	EPA/542/R-95/001 - Mar 95	46	Stripping, Demonstrated at LLNL, Gasoline Spill Site, Livermore, California		Lawrence Livermore National Laboratory, P.O. Box 508, Livermore, CA 94550	510-422-2646	Univ. of CA Office of Tech Transfer, 1320 Harbor Bay, Alameda, CA 94501	510-748-6595	
Volatilization & Ventilation System	X	X					BTEX, PCE, TCE	Buchanan, Michigan Site	1994	EPA/540/R-94/526 - Nov 94	34	Unterdruck-Verdampfer-Brunner Technology (UVB) Vacuum Vaporizing Well	Treated Soil also	Billings & Associates, Inc., 3816 Academy Parkway N-NE, Albuquerque, NM 87109	505-345-1116	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7797	X
UVB Vacuum Vaporizing Well	X	X					VOCs	March Air Force Base Site	1995	EPA/540/M-R-95/500		Unterdruck-Verdampfer-Brunner Technology (UVB) Vacuum Vaporizing Well		Roy F. Weston, Inc., One Weston Way, West Chester, PA 19380	610-701-7423	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7697	X
Vapor Extraction	X	X					VOCs, Volatile Fuel	NAS Seal Beach	1991	EPA/542/B-93/009 - Oct 93	119	Ground Water Vapor Recovery System		Remediation Service, International, P. O. Box 1601, Oxnard, CA 93032	805-644-5892	Naval Facilities Engineering Service Center, Code ESC 40, Port Hueneme, CA 93043-4370	805-982-1294	
Extraction/Steam Vacuum Stripping	X	X	X	X			VOCs, TCE	Aeronautical	1990	EPA/540/A-5-91/002 - Oct 91		AWD Technologies, Inc. - Integrated Vapor Extraction and Steam Vacuum Stripping	Treated Soil also	AWD Technologies, Inc., 49 Stevenson Street, Suite 600, San Francisco, CA 94105	415-227-0842	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive, Cincinnati, OH 45268	513-569-7863	X

APPENDIX A

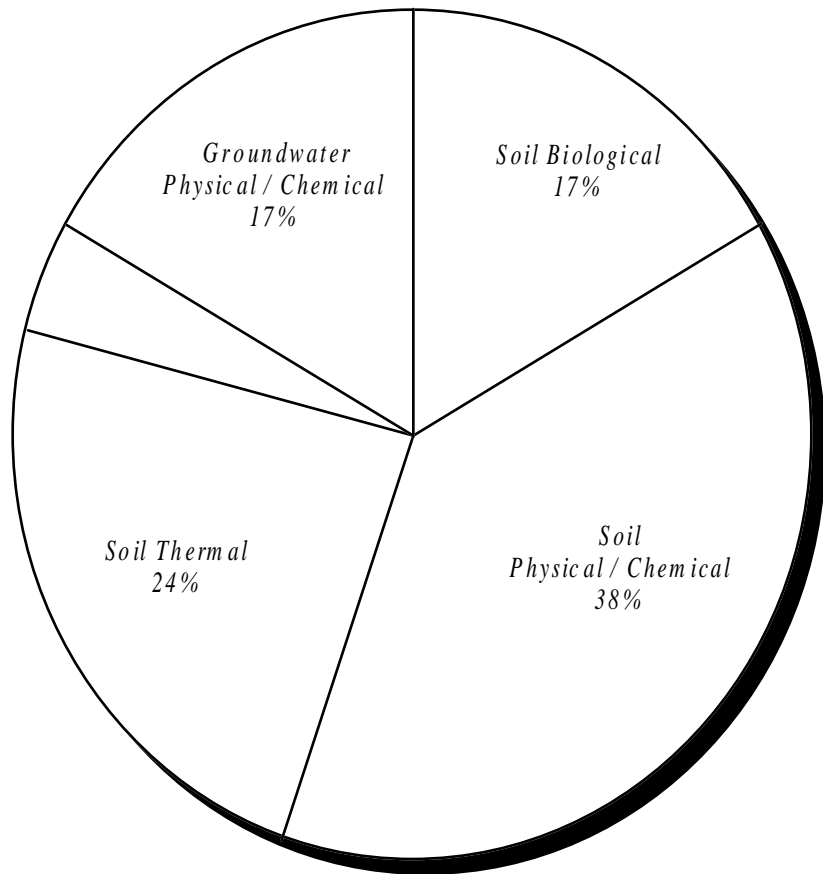
Summary of Completed Demonstration Projects

Total Technologies ¹ (259)

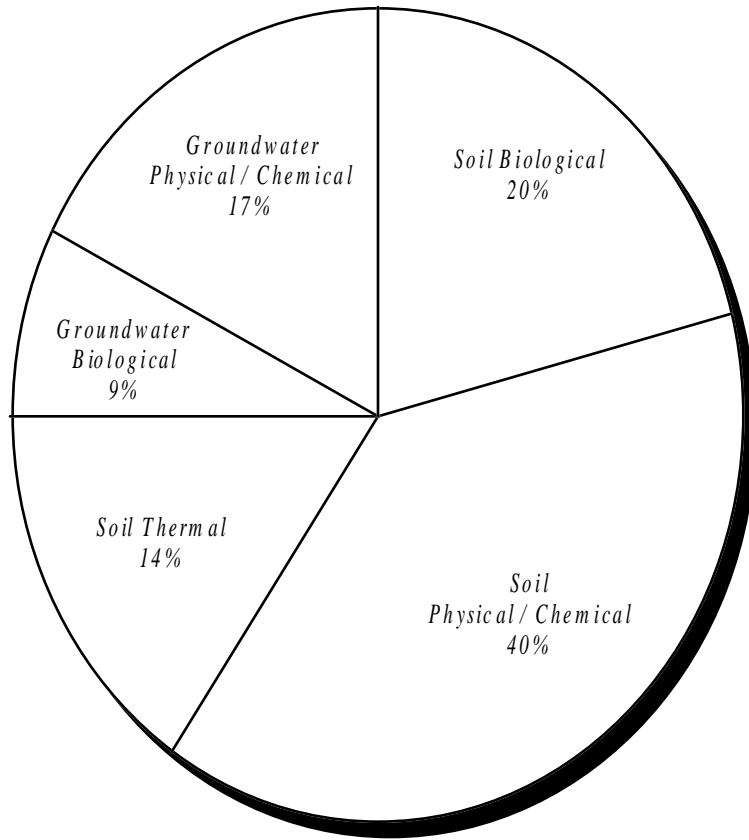


¹ = Exclusive of Air Force Bioventing and Bioslurping initiatives.

Task	5	10	15	20	25	30	Number of Projects	
Soil Vapor Extraction	5	10	15	20	25	30	29 Soil	13%
							5 Groundwater	
Biodegradation	5	10	15	20	25	30	23 Soil	13%
							10 Groundwater	
Stabilization / Solidification	5	10	15	20	25	30	23 Soil	9%
							1 Groundwater	
Soil Washing	5	10	15	20	25	30	23 Soil	9%
							0 Groundwater	
Air Stripping	5	10	15	20	25	30	9 Soil	9%
							14 Groundwater	
Bioventing	5	10	15	20	25	30	13 Soil	6%
							3 Groundwater	
Thermal Desorption	5	10	15	20	25	30	14 Soil	5%
							0 Groundwater	
Radio / Electric Heating	5	10	15	20	25	30	13 Soil	5%
							0 Groundwater	
Other Physical Processes	5	10	15	20	25	30	10 Soil	5%
							2 Groundwater	
Oxidation	5	10	15	20	25	30	0 Soil	5%
							12 Groundwater	
Incineration	5	10	15	20	25	30	10 Soil	4%
							0 Groundwater	
Precipitation / Filtration	5	10	15	20	25	30	2 Soil	4%
							8 Groundwater	
Solvent Extraction	5	10	15	20	25	30	5 Soil	3%
							2 Groundwater	
Bioreactor	5	10	15	20	25	30	4 Soil	2%
							2 Groundwater	
Other Biological Processes	5	10	15	20	25	30	4 Soil	2%
							2 Groundwater	
Thermal Enhanced Extraction	5	10	15	20	25	30	6 Soil	2%
							0 Groundwater	
Bioslurry	5	10	15	20	25	30	4 Soil	2%
							0 Groundwater	
Vitrification	5	10	15	20	25	30	3 Soil	1%
							0 Groundwater	
Other Thermal Processes	5	10	15	20	25	30	3 Soil	1%
							0 Groundwater	

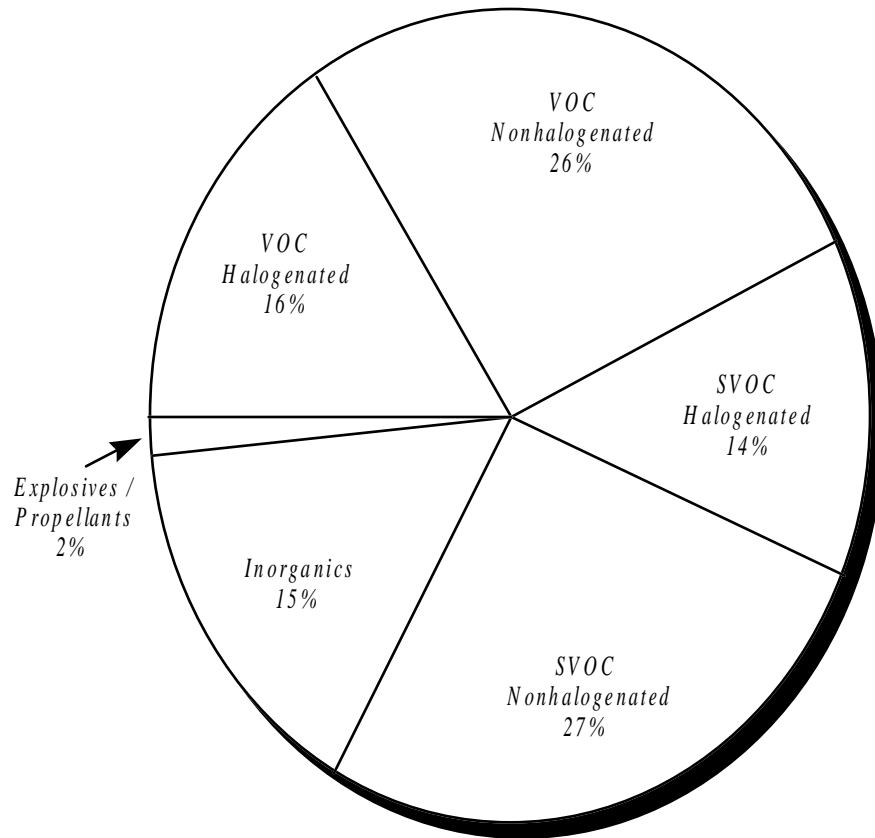


Task	10	20	30	40	50	Number of Projects	
Soil Physical / Chemical	█	█	█	█	█	46	38%
Soil Thermal	█	█	█			29	24%
Soil Biological	█	█				20	17%
Groundwater Physical / Chemical	█	█				20	17%
Groundwater Biological	█					5	4%



Task	10	20	30	40	50	Number of Projects	
Soil Physical/ Chemical	█	█	█	█	█	55	40%
Soil Biological	█	█	█			28	20%
Groundwater Physical/ Chemical	█	█	█			24	17%
Soil Thermal	█	█				20	14%
Groundwater Biological	█	█				12	9%

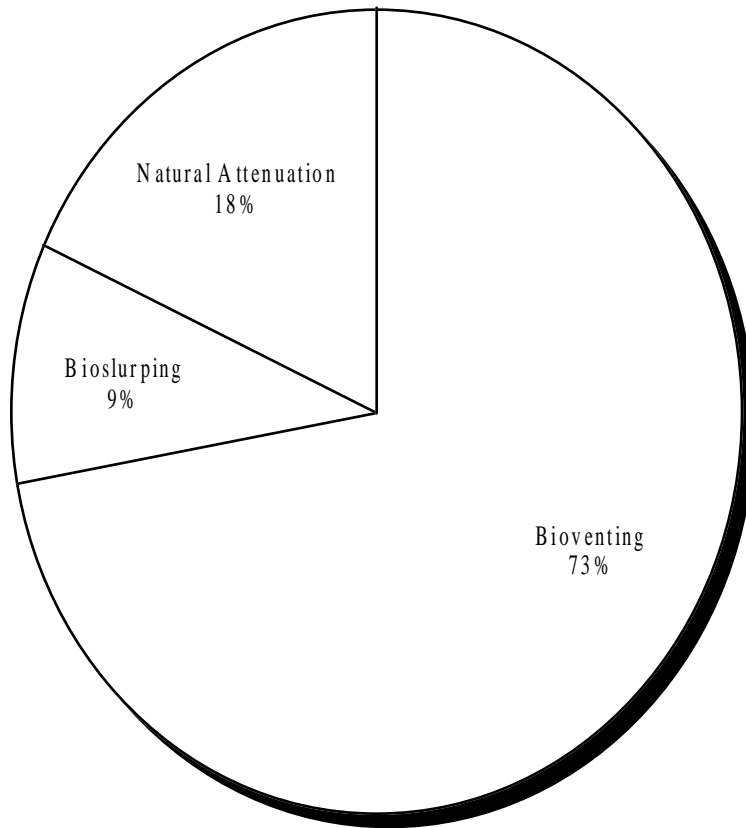
I = Exclusive of Air Force Bioventing and Bioslurping initiatives.



Task	16	32	48	64	80	96	Number of Projects	
SVOC Nonhalogenated	[Red bars]						108 Soil	27%
	[Blue bars]						16 Groundwater	
VOC Nonhalogenated	[Red bars]						92 Soil	26%
	[Blue bars]						27 Groundwater	
VOC Halogenated	[Red bars]						41 Soil	16%
	[Blue bars]						31 Groundwater	
Inorganics	[Red bars]						60 Soil	15%
	[Blue bars]						10 Groundwater	
SVOC Halogenated	[Red bars]						50 Soil	14%
	[Blue bars]						11 Groundwater	
Explosives / Propellants	[Red bars]						6 Soil	2%
	[Blue bars]						1 Groundwater	

1 = Exclusive of Air Force Bioventing and Bioslurping initiatives.

Completed USAF Demonstration Projects ¹



Task	25	50	75	100	125	Number of Projects	
Bioventing	█	█	█	█	█	123	73%
Natural Attenuation	█	█				30	18%
Bioslurping	█					16	9%

¹ = See Appendix B for locations of the Bioventing and Bioslurping projects.

Source: U.S. Air Force Center for Environmental Excellence, Technology Transfer Division, 8001 Arnold, Brooks AFB, TX.

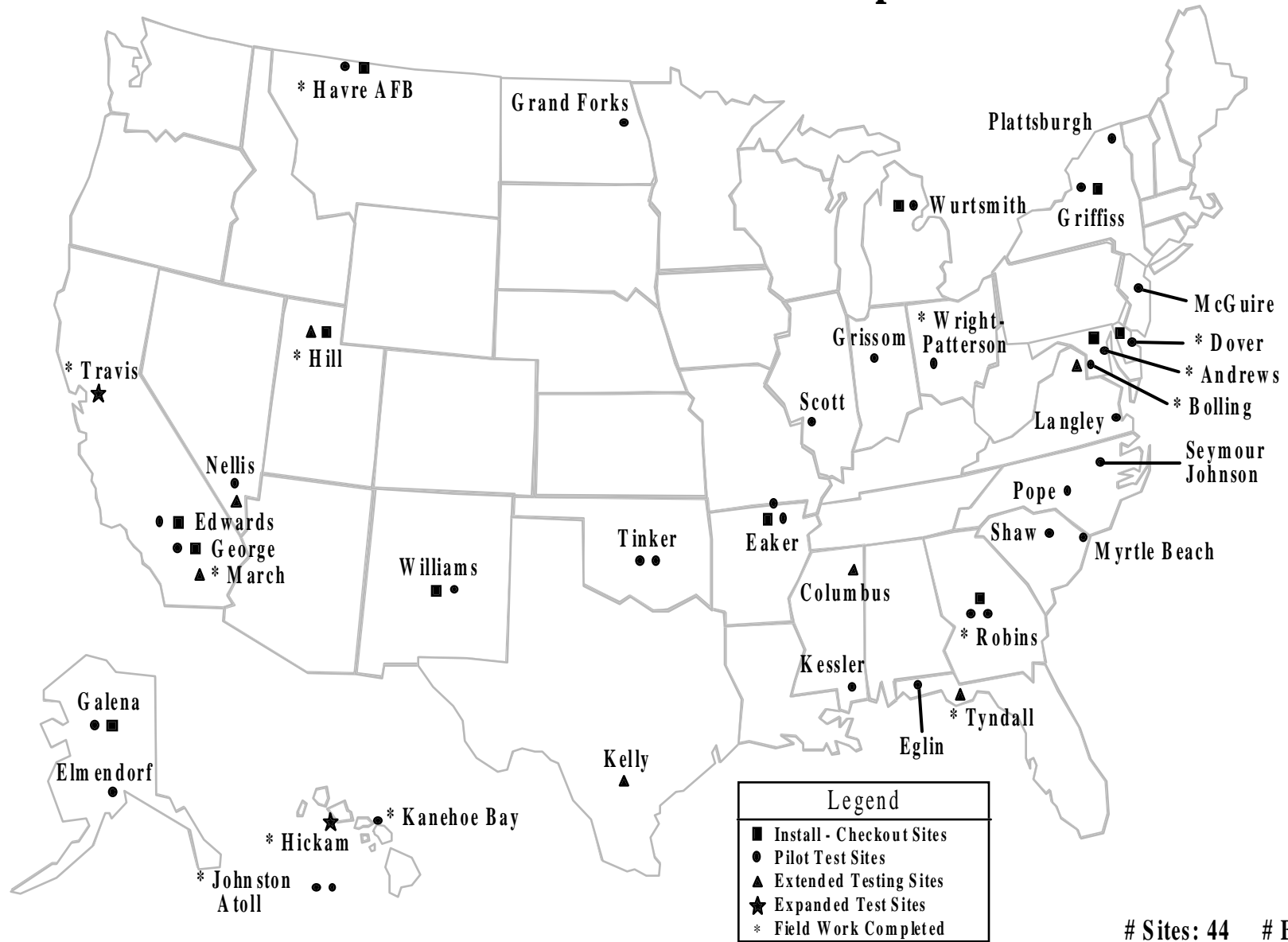
APPENDIX B

U.S. Air Force Bioventing and Bioslurping Sites

AFCEE Tech Transfer Bioventing Initiative Sites



AFCEE Tech Transfer Bioslurper Sites



Sites: 44 # Bases: 37

APPENDIX C

Description of Innovative Technology Demonstration Programs

INNOVATIVE REMEDIATION TECHNOLOGY DEMONSTRATION PROGRAMS

The following federal, provincial, and state government organizations have sponsored or conducted numerous innovative technology demonstration projects. Sponsoring agencies are presented below in the following order: foreign governments, state agencies, federal agencies, and other sponsoring organizations.

CANADA

Canadian Council of Ministers of the Environment

In 1989, the Canadian Council of Ministers of the Environment (CCME) initiated the National Contaminated Sites Remediation Program (NCSRP) to develop a consistent national approach to the establishment of priorities among and remediation of high-risk contaminated sites in Canada. The Development and Demonstration of Site Remediation Technology (DESRT) component of the NCSRP was established to work with industry to stimulate the development and demonstration of new and innovative technologies for assessing and remediating contaminated sites. The DESRT program has a central office from which information about the Canadian environmental program can be obtained and DESRT technical summary sheets ordered.

Technology Transfer Office (22 projects)
Environmental Technologies Advancement Directorate, Environment
Canada
425 St. Joseph Boulevard, 3rd Floor
Hull, PQ, Canada K1A-0H3
(819) 953-5921

Other Canadian organizations that have sponsored or conducted innovative technology demonstrations included in the matrix are:

Ontario Ministry of Environment and Energy (1 project)
Ontario, Canada
(416) 327-8327

Centre for Excellence (2 projects)
Ontario, Canada
(416)323-4476

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

California Environmental Protection Agency, Department of Toxic Substances Control

On July 17, 1991, the California Environmental Protection Agency (Cal EPA) officially came into existence, and the Toxic Substances Control Program became the Department of Toxic Substances Control under that agency. The Office of Pollution Prevention and Technology Development was established to demonstrate, test, and evaluate technologies for the remediation of contaminated sites in California. In addition, on January 6, 1993, Cal EPA, working with the California Trade and Commerce Agency, created the California Environmental Technology Partnership to promote the research, development, commercialization, and export of California-based environmental technology, goods, and services. Under that partnership, Cal EPA developed a pathway for regulatory predictability with the Environmental Technology Certification Program. The certification program provides one-time scientific and engineering evaluation of the efficacy and efficiency of an environmental remediation technology or process.

Department of Toxic Substances Control (9 projects)
Office of Pollution Prevention and Technology Development
400 P Street, 4th Floor
P.O. Box 806
Sacramento, CA 95812-0806
(916) 322-3670

U.S. DEPARTMENT OF DEFENSE

U.S. Department of Defense, Environmental Security Technology Certification Program

The Environmental Security Technology Certification Program (ESTCP) is an initiative of the Department of Defense (DoD) first undertaken in fiscal year 1995. The program is executed by the Deputy Under Secretary of Defense (Environmental Security) [DUSD(ES)]. The purpose of the ESTCP is to demonstrate and validate the most promising innovative environmental technologies that target DoD's most urgent environmental needs and are expected to pay back the investment through cost savings and improved efficiencies. ESTCP's strategy is to select laboratory-proven technologies for which there is broad DoD market application and aggressively move them to the field for rigorous trials that document their cost, performance, and market potential. Demonstrations are conducted at military facilities, with test and evaluation performed by DoD organizations.

Environmental Security Technology Certification Program
Office of the Deputy Under Secretary of Defense (Environmental Security)
Pentagon Room 3D768
Washington, DC 20301-3400
(703) 578-6157
e-mail estcp@walcoff.com, or website <http://www.acq.osd.mil/ens/ESTCP.html>

U.S. Department of Defense, The Advanced Technology Demonstration Facility for Environmental Technology for the Department of Defense

The DoD Advanced Applied Technology Demonstration Facility for Environmental Technology (DoD/AATDF) was established in May 1993. The mission of DoD/AATDF is to develop the quantitative performance and economic data required for commercial or government application of innovative technologies for the remediation of DoD sites. From among 170 technology offerings, 12 projects were chosen through a peer-review process. The demonstration projects are now well underway, with completion expected by late 1997. A portable experimental controlled release system also has been developed and will be used for two of the tests.

Department of Defense
Advanced Applied Technology Demonstration Facility
Rice University
Energy & Environmental Systems Institute (EESI)-MS-316
6100 S. Main Street
Houston, TX 77005
(713) 527-4700

U.S. Air Force Center for Environmental Excellence, Technology Transfer Division

The Air Force Center for Environmental Excellence (AFCEE) is responsible for identifying, developing, and testing technologies that may be useful in remediating contaminated sites under the Air Force's Installation Remediation Program. The Technology Transfer Division assists the effort through nationwide applications of the more promising technologies developed by Air Force and Environmental Protection Agency laboratories. Multisite technology demonstrations are conducted to assist AFCEE team chiefs and base remedial project managers in promoting a cost-effective, risk-based approach to the remediation of contaminated sites. The Air Force has completed 123 bioventing projects at 54 bases. In addition, 16 of 44

bioslurping projects have been completed, as have 30 of the 53 natural attenuation projects

U.S. Air Force Center for Environmental Excellence (2 projects)
Technology Transfer Division
8001 Arnold Avenue
Brooks Air Force Base, TX 78235
(210) 536-4331

Other Air Force organizations that have sponsored or conducted innovative technology demonstrations included in the matrix are:

United States Air Force (USAF) Armstrong Laboratory (17 projects)
Site Remediation Division, AL/EQW
139 Barnes Drive
Tyndall Air Force Base, FL 32043
904-283-6126

USAF, 354 Civil Engineering Squadron, CEVR (1 project)
2258 Central Ave., Suite 1
Elision Air Force Base, Alaska 99702

USAF OO-ACC/EMR (2 projects)
7274 Wardleigh Road
Hill Air Force Base, UT 84005

USAF, 1st Civil Engineering Squadron (1 project)
Langley Air Force Base
Hampton, VA

USAF, Environmental Management Directorate (1 project)
McClellan Air Force Base
Sacramento, CA

U.S. Army Environmental Center, Environmental Technology Division

The U.S. Army Environmental Center's Environmental Technology Division is responsible for the demonstration and evaluation of emerging technologies developed by the federal and private sectors for the Army. Environmental technologies for cleanup, compliance, pollution prevention, and conservation are demonstrated. Technologies are demonstrated at a large scale under actual working conditions so that valid performance and cost information can be gathered. After the initial demonstration, a technology can be left installed at the site to continue operations, or it can be moved to another site for demonstration of its capabilities under different conditions.

U.S. Army Environmental Center (8 projects)
Environmental Technology Division
Aberdeen Proving Ground, MD 21010-5401
(410) 671-2466

Other Army organizations that have sponsored or conducted innovative demonstrations included in the matrix are:

U.S. Army, Construction Engineering Research Laboratory (2 projects)
P.O. Box 4005
Champaign, IL 61820
(217) 352-6511

U.S. Army, DPW (1 project)
Building 358
Fort McPherson, GA 30330-5000

U.S. Army, Environmental Management Division (3 projects)
Sacramento Army Depot
8350 Fruitridge Road, M552
Sacramento, CA 95325
(916) 388-4344

U.S. Army, Fort Drum Environmental Division (1 project)
Fort Drum
Watertown, NY

U.S. Army, Rocky Mountain Arsenal (1 project)
AMCPM-RME
Commerce City, CO 80022-1749
(303) 289-0249

U.S. Army, Twin Cities Army Ammunition Plant (2 projects)
New Brighton, MN

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) provides comprehensive environmental restoration for the Army, DoD (including the Air Force and the Formerly Used Defense Sites [FUDS] Program), Environmental Protection Agency (EPA), the Department of Energy (DOE), and other federal agencies. In providing those services, USACE uses state-of-the-art technology, complies with existing environmental laws and regulations, and strives to be cost-effective and timely. USACE executes cleanups of hazardous, toxic, and radioactive waste sites from the earliest stages of investigation and study, through remedial design and remedial action, to site closeout and long-term monitoring.

U.S. Army Corps of Engineers
Headquarters, CEMP-RT
20 Massachusetts Ave., NW
Washington, DC 20314-1000
(202) 761-4335

USACE organizations that have sponsored or conducted innovative demonstrations included in the matrix are:

U.S. Army Corps of Engineers, Detroit District (1 project)
P.O. Box 1027
Detroit, MI 48231
(313) 226-6760

U.S. Army Corps of Engineers, Omaha District (2 projects)
Brandeis Building, 6th Floor
210 South 16th Street
Omaha, NE 68102

U.S. Army Corps of Engineers, Seattle District (1 project)
4735 East Marginal Way South
Seattle, WA 98134
(206) 764-3704

U.S. Navy, Naval Facilities Engineering Service Center

The Naval Facilities Engineering Service Center provides innovative environmental technologies and engineering services for assisting Navy and Marine Corps installations in cleanup of sites, activities related to the Base Realignment and Closure (BRAC) Program, environmental compliance, pollution prevention and management, training, and technology transfer and implementation.

Naval Facilities Engineering Service Center (8 projects)
Code ESC 40
1100 23rd Avenue
Port Hueneme, CA 93043-4370
(805) 982-1294/4839/3584

Other Navy organizations that have sponsored or conducted innovative demonstrations included in the matrix are:

Facilities Maintenance (1 project)
U.S. Marine Corps Base
Camp Pendleton, CA 92055
(619) 725-3868

Naval Weapons Station, Seal Beach (2 projects)
Code 0923
Seal Beach, Ca 90740
(310) 594-7273

U.S. Navy, Public Works Department (4 projects)
NAS Fallon
Fallon, NV 89406
(702) 426-2772

U.S. DEPARTMENT OF ENERGY

U.S. Department of Energy, Office of Technology Development

DOE's Office of Technology Development was established to identify technologies in the research, development, and demonstration (RD&D) stage and to demonstrate, test, and evaluate those technologies that will provide DOE with accelerated or improved methods of achieving its environmental goals.

Technology Integration Division (5 projects)
Environmental Restoration and Waste Management Technology
Development
U.S. Department of Energy
Washington, DC 20585
(301) 903-7917

U.S. Department of Energy, Office of Environmental Restoration

The objectives of DOE's Environmental Restoration (ER) Program are to stabilize radioactive waste or perform decontamination and decommissioning at contaminated DOE installations and sites and at nongovernment sites; conduct assessments and characterization of DOE sites to determine whether those sites have the potential to release radioactive or hazardous wastes; and protect human health and the environment. The goal of the ER program is to complete the cleanup of such contaminated sites within 30 years.

Technology Integration Division
Environmental Restoration and Waste Management Technology
Development
U.S. Department of Energy
Washington, DC 20585
(301) 903-7917

Other DOE organizations that have sponsored or conducted innovative demonstrations included in the matrix are:

DOE Center for Environmental Technology (1 project)
Oak Ridge, TN 37831
(423) 574-1907

DOE Environmental Restoration (1 project)
DOE Kansas City Plant
Kansas City, MO

DOE Fernald Environmental Remediation Management Corp.
(2 projects)
PO Box 39
Cincinnati, OH 45239-8704
(514) 648-6556

DOE Lawrence Livermore Laboratory (2 projects)
PO Box 808
Livermore, CA 94550
(510) 423-3118

DOE Oak Ridge National Laboratory (1 project)
PO Box 2008
Oak Ridge, TN 37831-6317
(615) 574-8581

DOE Savannah River Operations Office (7 projects)
Environmental Restoration Division
Aiken, SC 29802
(803) 725-5178

DOE Westinghouse Savannah River Company (2 projects)
PO Box 616, Building 773-42A
Aiken, SC 29802
(803) 725-5178

U.S. Department of Energy, Cloverleaf Building (7 projects)
19901 Germantown Road,
Germantown, MD 20874
(301) 903-8119

U.S. ENVIRONMENTAL PROTECTION AGENCY

U.S. Environmental Protection Agency, Office of Research and Development

The Office of Research and Development (ORD) is the scientific and technological component of the U.S. Environmental Protection Agency (EPA). Comprising three headquarters offices, three national research laboratories, and two national centers, ORD applies a basic strategy of risk assessment

and risk management to remediate environmental and human health problems. ORD focuses on the advancement of basic, peer-reviewed scientific research and the implementation of cost-effective technology. Part of ORD's mission is its partnership with the academic scientific community, through research grants and fellowships to help develop the sound environmental research necessary to ensure effective policy and regulatory decisions.

Superfund Innovative Technology Evaluation Program

The EPA's Superfund Innovative Technology Evaluation (SITE) Program supports development of technologies for assessing and treating waste from Superfund sites. The SITE program was authorized under the Superfund Amendments and Reauthorization Act of 1986, with the goal of identifying alternatives to land disposal for treating wastes from Superfund sites. The program provides the technology developer an opportunity to demonstrate the capability of its process. EPA evaluates the technology and provides an assessment of its potential for use in future cleanup actions under Superfund. The SITE program currently has evaluated or supported research efforts for more than 150 on-going and completed innovative treatment technologies. The SITE program is administered by EPA's National Risk Management Research Laboratory in Cincinnati, Ohio.

U.S. Environmental Protection Agency
National Risk Management Research Laboratory
26 West Martin Luther King Drive
Cincinnati, OH 45268
(513) 569-7861

Bioremediation Field Initiative

In 1990, the EPA established the Bioremediation Field Initiative (BFI) to provide EPA and state project managers, consulting engineers, and industry with timely information about new developments in the application of bioremediation at hazardous waste sites. The BFI evaluates the performance

of selected full-scale field applications, provides technical assistance, and has developed a database on the field application of bioremediation. The Bioremediation in the Field Search System (BFSS) is a PC-based software product that provides access to the database of information on waste sites in the United States and Canada at which bioremediation is being tested or implemented or has been completed. BFSS contains information about more than 450 sites that are being tracked under the initiative. Users can obtain information about site location, media, contaminants, treatment technologies, costs, and performance. BFSS is available on EPA's Alternative Treatment Technology Information Clearinghouse (ATTIC) (703-589-8366), Cleanup Information (CLU-IN) (301-589-8366) System, and ORD (513-569-7610) electronic bulletin board systems.

Bioremediation Field Initiative
U.S. Environmental Protection Agency
National Risk Management Research Laboratory
26 West Martin Luther King Drive
Cincinnati, OH 45268
(513) 569-7346

Remediation Technologies Development Forum

EPA established the Remediation Technologies Development Forum (RTDF) in 1992, after meeting with industry representatives to identify ways of working together to solve complex hazardous waste remediation problems. The purpose of the RTDF is to foster public-private partnerships to conduct laboratory and field research to develop, test, and evaluate innovative remediation technologies to address cleanup problems in the safest, most cost-effective manner. The RTDF establishes self-managed action teams that bring members together to work on priority problems, share research information, define research needs, participate in collaborative research efforts, and produce scientifically credible demonstration results. The EPA facilitates the operation of the action teams and provides funding for the research activities of the RTDF. Participants representing industry help set priorities based on remediation problems and offer both in-kind and monetary resources to support joint projects. Federal agencies provide to the RTDF the facilities

with contamination problems at which field-scale testing can be conducted. Information on the RTDF program can be obtained from:

U.S. Environmental Protection Agency
National Risk Management Research Laboratory
26 West Martin Luther King Drive
Cincinnati, OH 45268
(513) 569-7861

U.S. Environmental Protection Agency
Technology Innovation Office
401 M Street, SW
Mail Code 5102G
Washington, DC 20460
(703) 603-9910

RTDF has formed five action teams to address priority research areas, as follows:

- Bioremediation Consortium - Enhanced anaerobic biodegradation of chlorinated solvents in soils and groundwater
- Lasagna™ Consortium - Use of electroosmosis as a liquid pump for flushing contaminants from the soil into the treatment zones for degradation
- Permeable Barriers Action Team - Permeable barriers for remediation of organic and inorganic groundwater contaminants
- Sediments Remediation Action Team - Passive, in-situ techniques for sediment contamination remediation
- In-Place Inactivation and Natural Ecological Restoration (IINERT) Soils-Metals Action Team - Develop and demonstrate in-place inactivation and natural ecological restoration technologies that reduce and eliminate the risks of metals/metalloids in soil

U.S. Environmental Protection Agency, Technology Innovation Office

The mission of the Technology Innovation Office (TIO) is to increase application of innovative treatment technologies by government and industry at contaminated waste sites. TIO fosters the use of innovative techniques by removing regulatory and institutional impediments to their use. In addition, TIO provides extensive technology and market information to such audiences as federal agencies, states, consulting engineering firms, responsible parties, technology developers, and the investment community. The scope of TIO's mission extends to Superfund sites, corrective action sites under the Resource Conservation and Recovery Act (RCRA), and underground storage tank sites.

U.S. Environmental Protection Agency
Technology Innovation Office
401 M Street, SW
Mail Code 5102G
Washington, DC 20460
(703) 603-9910
website <http://clu-in.com>

Public-Private Partnership

Since 1991, TIO, in an effort to bring innovative treatment technologies to bear on hazardous waste cleanup challenges, has developed public-private partnerships at federal facilities. The partnerships between the private industry and the federal government are aimed at obtaining data on full-scale implementation of innovative hazardous waste treatment technologies. Numerous private partners are contributing resources and expertise to assist in gathering and evaluating cost and performance data from the new technologies. The partnership concept is to give regulators and communities evidence through demonstrations that the technologies will work. Information about the partnership program can be obtained from:

U.S. Environmental Protection Agency
Technology Innovation Office
401 M Street, SW
Mail Code 5102G
Washington, DC 20460
(703) 603-9910

Partnerships are currently underway at the following locations:

1. McClellan Air Force Base, Sacramento, CA - Two-phase extraction system to remove volatile organic compounds (VOCs) in groundwater
2. Joliet Army Ammunition Plant, Joliet, IL - Surfactant-enhanced biological treatment of explosives-contaminated soil
3. Mound, Miamisburg, OH - In-situ biological, chemical, and thermal technologies to remove low concentrations of VOCs in groundwater
4. Pinellas Project, Pinellas County, FL - Integrated suite of remedial technologies to remove VOCs from groundwater
5. Massachusetts Military Reservation, MA - Funnel-and-gate-reactive cell technology to dechlorinate solvents in groundwater
6. Naval Air Station North Island, San Diego, CA - Project is in the remediation selection process
7. Lasagna Technology, Paducah, KY - Low-voltage electric current to move contaminated groundwater through specialized treatment zones

EPA organizations that have sponsored or conducted innovative demonstrations (SITE, RDTF, BFI, public-private partnership, or other) included in the matrix are:

U.S. Environmental Protection Agency (92 projects)
National Risk Management Research Laboratory
26 West Martin Luther King Drive
Cincinnati, OH 45268
(513) 569-7861

National Risk Management Research Laboratory - Edison
(8 projects)
Bldg 10, MS-104
2890 Woodbridge Ave
Edison, NJ 08837

U.S. EPA Region 1 (1 project)
John Kennedy Federal Building, Room 2203
Boston, MA 02203
(617) 573-5784

U.S. EPA Region 2 (3 projects)
26 Federal Plaza
New York, NY 10278-0012
(212) 264-4706

U.S. EPA Region 4 (4 projects)
345 Courtland Street, NE
Atlanta, GA 30365
(404) 347-3016

U.S. EPA Region 5 (4 projects)
77 West Jackson Blvd
Chicago, IL 60604
(312) 353-6316

U.S. EPA Region 5 (1 project)
230 South Dearborn Street
Chicago, IL 60604

U.S. EPA Region 5, Office of Underground Storage Tanks
(2 projects)
Chicago, IL 60604
(312) 886-6143

U.S. EPA Region 6 (1 project)
1445 Ross Ave.
Dallas, TX 75202
(214) 665-6739

U.S. EPA Region 7 (1 project)
726 Minnesota Ave.
Kansas City, KS 66101
(913) 551-7797

U.S. EPA Region 7, Emergency Planning and Response Branch
(1 project)
25 Funston Road
Kansas City, KS 66115

U.S. EPA Region 8 (1 project)
301 South Park, Drawer 10096
Helena, MT 59626

U.S. EPA Region 8 (1 project)
999 18th Street
Denver, CO 80202-2466

U.S. EPA Region 9 (3 projects)
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2280

U.S. EPA, R.S. Kerr Environmental Research Laboratory
(1 project)
Ada, OK 74820
(405) 436-8552

IIT Research Institute (2 projects)
10 West 35th Street
Chicago, IL 60616
(312) 567-4232

The Center for Environmental Engineering and Science
(1 project)
New Jersey Institute of Technology
138 Warren Street
Newark, NJ 07102
(201) 642-7076

University at Buffalo, Dept of Geology (1 project)
772 Natural Services Complex
Buffalo, NY 14260

OTHER SPONSORING ORGANIZATIONS

Other organizations that have sponsored or conducted innovative demonstrations included in the matrix are:

Berkeley Environmental Restoration Center (1 project)
3112A Etch Hall
Berkeley, CA 94720
(510) 642-2928

Environment and Technology Services (1 project)
2081 15th Street
San Francisco, CA 94114
(415) 861-0810

General Motors, NAO R&D Center (1 project)
Warren, MI 48090-9055
(810) 986-1600

University of California, Office of Technology Transfer
(1 project)
1320 Harbor Bay
Alameda, CA 94501
(510) 748-6595

U.S. Bureau of Mines* (2 projects)
Salt Lake Research Center
729 Arapeen Drive
Salt Lake City, UT 84108

Utah Department of Environmental Quality (2 projects)
Salt Lake City, Utah
(801) 538-6146

* Agency no longer in existence.

APPENDIX D

Cross-Reference List of Technical Reports by Report Number

 Technical Report	Technical Report Title	Technical Report	Technical Report Title
Abstract	Bioremediation of Chlorinated Solvents and Diesel Soils	DESRT - Mar 95	Mobile Ex Situ Bioreactor Technology of the Remediation of Hydrocarbon Contaminated Soil
Abstract	Bioslurping - Vacuum-Enhanced Free-Product Recovery Coupled With Bioventing: A Case Study	DESRT - May 95	Near-Real-Time Monitoring Of Contaminated Soils
Abstract	Full-Scale Soil Washing/TERRAMET Soil Leaching	DESRT 02 - Apr 93	Stabilization/ Solidification Project, Pacific Place Site
Abstract	Integration of Pneumatic Fracturing with Bioremediation for the Enhanced Removal of BTEX	DESRT 03 - Apr 93	Stabilization/ Solidification Project, Pacific Place Site
Abstract	Minnesota Department of Transportation, Biomound Field Evaluation	DESRT 05 - Apr 93	Slurry-Phase Bioremediation Project, Pacific Place Site
Abstract	Pneumatic Fracturing Demonstration, Tinker Air Force Base, Oklahoma City, Oklahoma	DESRT 06 - Apr 93	Thermal Extraction Project, Pacific Place Site
Bioremediation Field Evaluation	Bioventing Petroleum Hydrocarbons, Cold Climate with Soil Warming : Field Study, Eielson AFB, AK	DESRT 07 - Apr 93	Bioremediation Project, Pacific Place Site
CET Newsletter, Vol. 1, No.1, Spring 1994	Soil Tech Environmental Systems Demonstrates Aqueous-Based Soil Wash System in Oak Ridge	DESRT 08 - Apr 93	Stabilization/ Solidification Project, Pacific Place Site
Demonstration Report Mar 90	A Silicate Stabilization Process for Heavy Metal Contaminated Soil at the Tamco Steel Site	DESRT 10 - Apr 93	Stabilization/ Solidification Project, Pacific Place Site
Demonstration Report Mar 90	Biological Remediation of a Fuel Contaminated Soil Site in Carson, California	DESRT 11 - Apr 93	Stabilization/ Solidification Project, Pacific Place Site
Demonstration Report Mar 90	Soil Detoxification Utilizing an Existing Aggregate Drier	DESRT 12 - Dec 93	Gravel Washing Project - Canada Creosote Site
Demonstration Report Mar 90	Thermal Treatment Process for Fuel Contaminated Soil	DESRT 13 - Apr 93	Bioremediation of Polyaromatic Hydrocarbon (PAH)-Contaminated Soils Using White Rot Fungi
Demonstration Report Nov 90	Bioremediation of Used Oil-contaminated Soil at Two Caltrans Maintenance Yards	DESRT 14 - Dec 93	Soil Washing and Bioslurry Reactor Treatments for PCB-Heavy Metal Contaminated Soils
Demonstration Report Nov 90	Sulfide Stabilization Technology for Copper-Contaminated Soil	DESRT 16 - Jun 94	In-Situ, On-Site Bioremediation of Wood Treatment Soil Containing Chlorinated Phenols and PAHs
Demonstration Report Jun 91	Chemical Reduction of Hexavalent Chromium Contaminated Soils for a Site in Bkersfield, CA	DESRT 17 - Aug 94	Field-Based Pilot Scale Remediation Trials for Industrially-Contaminated Hazardous Soils
Demonstration Report Jun 91	Portland Cement Stabilization Process for Lead-Contaminated Soil	DESRT 20 - Apr 94	Pervaporation of Volatile Organic Compounds from Contaminated Groundwater
Demonstration Report Jun 91	Thermal Treatment of Petroleum Hydrocarbon-Contaminated Soil	DESRT 21 - Aug 94	Bioremediation of Soil Contaminated by Transformer Oil and Diesel Fuel
DESRT - Apr 95	Field Validation of Test Methods for Solidified Waste Evaluation - Wastewater Technology Centre	DESRT 22 - Aug 94	Pyrovac Vacuum Pyrolysis Technology for the Remediation of Contaminated Soils
DESRT - Aug 94	Demonstration of Biotreatment Technology Using Biolysis™ and Dredging, Mansonville, Quebec	DESRT 23 - Aug 94	Application of Tallon Technology in the Dickson Remediation Project

 Technical Report	Technical Report Title	Technical Report	Technical Report Title
DCE/EM0248 - Jun 95	Technology Summary - Contaminant Plumes, Containment and Remediation Focus Area	EPA/540/A5-93/503	Bescorp Soil Washing System Battery Enterprises Site - Bice Environmental Services, Inc.
DCE/EM0269 - Apr 95	In Situ Air Stripping Using Horizontal Wells	EPA/540/AR-89/001	Funderburk & Associates (Dechlorination & Immobilization)
DCE/EM0270 - Apr 95	In Situ Bioremediation Using Horizontal Wells	EPA/540/AR-91/007	Retech Plasma Centrifugal Furnace
DCE/EM0272 - Apr 95	Six Phase Soil Heating	EPA/540/AR-92/002	Dehydro-Tech - Carver-Greenfield
EPA/540/A5-89/001	Hazon - Solidification	EPA/540/AR-92/010	Silicate Technology Corporation - Solidification and Stabilization of Organic/Inorganic Contaminants
EPA/540/A5-89/003	Terra Vac - Vacuum Extraction	EPA/540/AR-92/014	SBP Technologies - Membrane Filtration
EPA/540/A5-89/004	IWT/Geo-Con In-Situ Stabilization	EPA/540/AR-92/015	McColl Superfund Site - Demonstration of a Trial Excavation
EPA/540/A5-89/005 - Sep 90	Solidi-Tech, Inc. - Solidification/Stabilization Process	EPA/540/AR-92/017 - Aug 92	Babcock & Wilcox Co. - Cyclone Furnace Vitrification
EPA/540/A5-89/008	American Combustion - Oxygen Enhanced Incineration	EPA/540/AR-92/019	Roy F. Weston, Inc. - Low Temperature Thermal Treatment (LT3) System
EPA/540/A5-89/010	Gruppo Italmipresse (Infrared Thermal Destruction)	EPA/540/AR-92/079	Resources Conservation Company - Basic Extractive Sludge Treatment (B.E.S.T.)
EPA/540/A5-89/011	Chemfix Technologies, Inc. - Chemical Fixation/Stabilization	EPA/540/AR-93/501 - Jul 93	Perox-Pure Chemical Oxidation Technology, Peroxidation Systems (Applications Analysis Report)
EPA/540/A5-89/012	Ultrax International - Ultraviolet Ozone Treatment for Liquids	EPA/540/AR-93/506 - Sep 93	CWMPO®WW®ER™ Evaporation-Catalytic Oxidation Technology (Applications Analysis Report)
EPA/540/A5-90/002	CF Systems Corp. - Solvent Extraction	EPA/540/AR-93/508	U.S. EPA - Mobile Volume Reduction Unit
EPA/540/A5-90/007 - Oct 91	E.I. DuPont De Nemours and Oberlin Filter Co. - Microfiltration Technology	EPA/540/AR-93/509	Accutech Pneumatic Fracturing Extraction and Hot Gas Injection, Phase I
EPA/540/A5-90/008 - Mar 91	Toxic Treatments, In Situ, Steam/ Hot-Air Stripping Technology, (Applications Analysis Report)	EPA/540/AR-93/517	Toronto Harbor Commissioners - Soil Recycling Treatment Train
EPA/540/A5-91/001	Biotrol - Biotreatment of Groundwater	EPA/540/AR-93/520	Magnum Water Technology - CAVOX Ultraviolet Oxidation Process
EPA/540/A5-91/002 - Oct 91	AWD Technologies, Inc. - Integrated Vapor Extraction and Steam Vacuum Stripping	EPA/540/AR-94/504	Thermal Desorption Unit - Eli Eco Logic International, Inc.
EPA/540/A5-91/003	Biotrol - Soil Washing System	EPA/540F-95/506A - Jul 95	Bioremediation Field Initiative Site Profile: Libby Ground Water Superfund Site
EPA/540/A5-91/005	Horsehead Resource Development Co., Inc. - Flame Reactor	EPA/540F-95/506D - Jul 95	Bioremediation Field Initiative Site Profile: Public Service Company of Colorado

 Technical Report	Technical Report Title	Technical Report	Technical Report Title
EPA/540F-95/506G - Jul 95	Bioremediation Field Initiative Site Profile: Escambia Wood Preserving Site	EPA/542/B-93/009 - Oct 93	Synopses of Federal Demonstrations of Innovative Site Remediation Technologies, Federal Remediation Technologies Roundtable
EPA/540F-95/508H - Jun 95	Bioremediation Field Initiative Site Profile: Reilly Tar and Chemical Corporation Superfund Site	EPA/542/K-94/003 - Apr 95	In Situ Remediation Technology Status Report: Surfactant Enhancements
EPA/540HR-94/510	Hughes Environmental Systems, Inc. (Enhanced Recovery Process)	EPA/542/K-94/004 - Apr 95	In Situ Remediation Technology Status Report: Treatment Walls
EPA/540MR-92/075	Bergmann USA- Soil and Sediment Washing System	EPA/542/K-94/007 - Apr 95	In Situ Remediation Technology Status Report: Electrokinetics
EPA/540MR-93/504	Low Temperature Thermal Aeration (LTTA) System, Canonic Environmental Services, Inc.	EPA/542/K-94/009 - Apr 95	In Situ Remediation Technology Status Report: Thermal Enhancements
EPA/540MR-93/524	Hubetz Environmental Services, Inc. - Hrubetz Process	EPA/542/R-95/001 - Mar 95	Abstracts of Remediation Case Studies, Federal Remediation Technologies Roundtable
EPA/540MR-93/527	Augmented In-Situ Subsurface Bioremediation Process, Bio-Rem, Inc.	EPA/542/R-95/006 - May 95	NATOCMS Pilot Study, Evaluation of Demonstrated & Emerging Technologies, Interim Status Report, Number 203
EPA/540MR-94/501	Colloid Polishing Filter Method, Filter Flow Technology, Inc.	EPA/600R-95/040 - Dec 94	Lessons Learned About In Situ Air Sparging at the Denison Ave Site, Cleveland, Ohio
EPA/540MR-94/508	Ex-Situ Anaerobic Bioremediation System Dmoseb, J.R. Simplot Company	Evaluation Report	Field-Scale Evaluation of In Situ Cosolvent Flushing
EPA/540MR-94/514	Texaco Gasification Process - Texaco Inc.	MSSRC/MS-91-290	The Savannah River Integrated Demonstration Program
EPA/540MR-94/520	In Situ Vitrification - Geosafe Corporation	Performance Report - Apr 95	Performance Report/Cost Evaluation of Purus Padre System for the Treatment of Hydrocarbon Vapors
EPA/540MR-94/527	Radio Frequency Heating - IIT Research Institute	Performance Report - Dec 94	Performance/Cost Evaluation of Internal Combustion Engines for the Destruction of Hydrocarbon Vapors
EPA/540MR-95/500	Unterdruck-Verdampfer-Banner Technology (UVB) Vacuum Vaporizing Well	SFM-ABC-TS-CR-94/038 - Jul 9	Soil Slurry-Sequencing Batch Bioreactor
EPA/540R-93/510 - Sep 93	Biogenesis Soil Washing Technology	SFM-ABC-EI-CR-95/068	Evaluation of UV Methods for the Remediation of Explosives in Groundwater
EPA/540R-94/521a - Feb 95	SITE Technology Capsule - Terra Kleen Solvent Extraction Technology	UCRL-ID-118187	Summary of the Dynamic Underground Stripping Demonstration, LLNL Gasoline Spill Site
EPA/540R-94/522a - Feb 95	SITE Technology Capsule - Dynaphore, Inc., Forager Sponge Technology	UCRL-ID-120416	Summary of the LLNL Gasoline Spill Demonstration- Dynamic Underground Stripping Project
EPA/540R-94/526 - Nov 94	Superfund Innovative Technology Evaluation Program - Technology Profiles		
EPA/540R-94/528a - Feb 95	SITE Technology Capsule - KAI Radio Frequency Heating Technology		
EPA/540SR-93/505	Risk Reduction Engineering Laboratory, Univ. of Cincinnati, & FRX, Inc. (Hydraulic Fracturing)		