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Environmental Protection
Agency

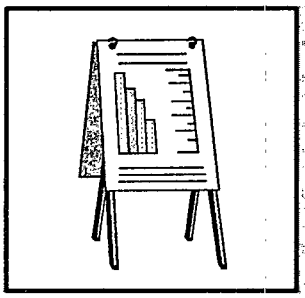
Office of
Solid Waste
and Emergency Response

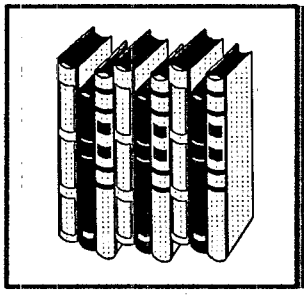
Technology Innovation Office
EPA 542-B-94-011a
September 1994

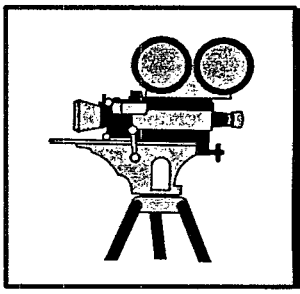
EPA

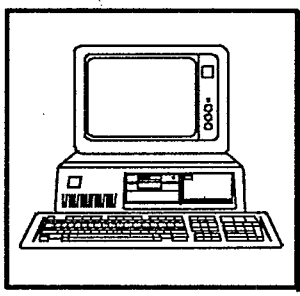
The OSWER Source Book, Volume I:

Training and Technology Transfer Resources 1994 - 1995









INTRODUCTION TO THE OSWER SOURCE BOOK

The OSWER Source Book, Volumes I and II provides a consolidated listing of training and technology transfer resources of potential interest to U.S. Environmental Protection Agency (EPA), State, and local government personnel concerned with solid and hazardous waste management. Resources listed in *The Source Book* were identified by offices within EPA's Office of Solid Waste and Emergency Response (OSWER), including the Technology Innovation Office (TIO), the Chemical Emergency Preparedness and Prevention Office (CEPPO), the Office of Emergency and Remedial Response (OERR), the Office of Solid Waste (OSW), and the Office of Underground Storage Tanks (OUST); as well as the Office of Enforcement and Compliance Assurance (CECA) and the Office of Research and Development (ORD).

The large number of materials identified as a result of the effort to provide a consolidated listing of technology transfer resources necessitated the printing of this edition in two volumes. Volume I contains information on OSWER training (including the CERCLA Education Center), publications, videotapes, information systems and software, and support programs. Volume II lists frequently-requested hazardous and solid waste documents released by OSW.

The Source Book is comprised of the following sections, each denoted by a particular icon:

Training — This section begins with a discussion on using the training section, a listing of training contacts, and a matrix that identifies courses by level within a particular subject category. Course descriptions are then organized by subject area and include information on course goals and content, target audiences, prerequisites, and contacts.

CERCLA Education Center (CEC) — This section provides an introduction to the CEC, a unique training initiative. The CEC provides an opportunity for environmental professionals to build a firm base of knowledge on the laws, regulations, policies, and sciences that make up the Superfund program. The section contains brief discussions on the CEC's structure, training path, courses, location, and registration.

Publications — This section provides information on publications issued by several OSWER offices concerning hazardous and solid waste issues. The section begins with a subject index. Publication descriptions are organized by subject area and list the title and number, identify target audiences, and provide ordering information. Volume II provides similar information for publications released by OSW.

Videotapes — This section provides descriptions of videotapes on treatment technologies, emergency response, underground storage tanks, and other issues. The section begins with a subject index. Videotape descriptions are organized by subject area and provide information on content, target audience, format, and how to order tapes.

Information Systems and Software — This section describes technology databases, expert systems, electronic bulletin boards, and software. The section begins with a subject index. Descriptions are organized by subject area and list each system's purpose and elements, software and hardware requirements, and access information.

Support Programs — This section provides information on two support resources: The On-Scene Coordinator/Remedial Project Manager (OSC/RPM) Support Program, and The Superfund Technical Support Project. Key components of each program are discussed and contacts provided for further information.

To locate any section, look for the appropriate icon on the heading of each page. In addition to the subject listings preceding the Training, Publications, Videotapes, and Information Systems and Software sections, alphabetical indices for all entries are located at the end of the document.

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U.S. Environmental Protection Agency

Office of Solid Waste and
Emergency Response
Technology Innovation Office
5102 W
Washington, DC 20460

Text Printed on Recycled Paper

FOREWORD

This edition of *The OSWER Source Book* builds on the previous versions and provides a descriptive listing of the numerous technology transfer resources available to EPA staff, State and local agencies, and others concerned with hazardous and solid waste management. The information contained in *The Source Book* was compiled by the Office of Solid Waste and Emergency Response's (OSWER) Technology Innovation Office (TIO). The primary objectives of TIO are to identify and enhance incentives to increase innovative technology application at hazardous waste sites and to advocate innovation through the removal of impediments. Dissemination of information also is a critical component of TIO's mission, and *The Source Book* has become a useful reference for this purpose.

This edition is comprised of two volumes. Volume I lists training courses, publications, videotapes, and information systems and software offered by OSWER and other Offices. New features include a brief introduction on using *The Source Book* as well as the addition of several publication order forms from various document distribution centers. The number of innovative technology transfer offerings also has increased, including interactive videos, computer-based training, and flexible training programs such as the CERCLA Education Center.

Volume II lists frequently requested publications issued by the Office of Solid Waste (OSW). Publications are listed in a number of ways — by title, document number, and subject area — to facilitate locating a particular item. Publication order forms also are provided at the conclusion of Volume II.

Both volumes reflect TIO's commitment to the design, implementation, and continual improvement of technology transfer and training programs. We hope you will find this version of *The OSWER Source Book* to be a valuable resource.

Walter W. Kovalick, Jr.

Walter W. Kovalick, Jr., Ph.D.
Director, Technology Innovation Office

How to Locate an Entry

Entries in *The OSWER Source Book* are classified into four types of technology transfer resources: training, publications, videotapes, and information systems and software. Each resource area is denoted by a particular icon that appears on the heading of each page. To locate a particular resource, look for the appropriate icon, consult the Table of Contents for Volume I on the following page, or use the tabbed index on the back cover.

The Source Book provides two means of locating specific entries within each of the four resource areas. First, for those users who do not know the title of a particular entry or who want to browse through entries pertaining to a given topic, each resource area begins with a subject matrix or index. The matrix or index lists entries alphabetically under all appropriate subject categories. Entries may then be located by consulting the specified page number. Entries appear alphabetically within a primary subject category, which is indicated in the heading of each page, opposite the icon. Cross-references to related entries presented under other headings are listed at the end of each subject category.

A second means of locating entries is provided for those users who know the title of a specific training course, publication, videotape, or information system/software. These users may prefer to use the alphabetical indices for each resource area that are located at the end of *The Source Book*. Each index lists all entries alphabetically by title with corresponding page numbers.

In addition to the entries in the four resource areas, *The Source Book* provides a detailed discussion on the CERCLA Education Center (CEC), a unique training forum implemented by EPA's Technology Innovation Office. The CEC's curriculum is aimed at providing On-Scene Coordinators (OSCs), Remedial Project Managers (RPMs), other Superfund staff, and Federal and State environmental professionals with basic as well as advanced training on the laws, regulations, and processes that make up the Superfund Program. *The Source Book* also contains discussions on two support programs, the OSC/RPM Support Program and the Superfund Technical Support Project. Each of these discussions can be located quickly using the tabbed index on the back cover or by consulting the Table of Contents for Volume I.

To Contribute to the Next Edition of *THE OSWER Source Book*

A major key to the success of *The Source Book* is the ability to convey current and complete information on available technology transfer resources. If you know of additional resources that may be appropriate or would like to update information on existing entries, please send all details to: Ms. Naomie Smith, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Technology Innovation Office (5102W), Washington, DC 20460.

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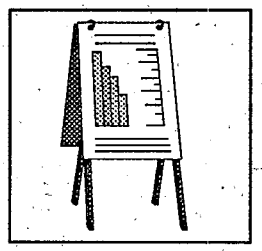
Training



This section of *The OSWER Source Book* provides descriptions of training courses that are currently available or are expected to be offered in the near future. The course descriptions include course title, content, and registration information. Descriptions are organized by subject area, for example, CERCLA-Related or RCRA-Related. Course descriptions are listed alphabetically within their primary subject area. A list of cross references to additional training is also provided at the conclusion of each subject area to identify courses listed under other subject areas that may cover relevant information.

Course descriptions indicate the course level as Beginner, Intermediate, or Advanced. Beginner-level courses have no prerequisites and are developed for individuals with a minimal technical background in a subject area. Intermediate-level courses may specify prerequisites and require a minimum level of technical proficiency or knowledge in a subject area. Advanced courses offer expert-level training for experienced staff. If you have a question as to which level of instruction is appropriate, contact the individual listed as the contact in the course description.

A Matrix of Training Courses (see page 9) lists courses by level within the subject areas to assist you in locating a particular course. Subject areas appear in the left margin next to a listing of all relevant training courses. Course levels and page numbers are indicated in the adjacent columns. As appropriate, an individual course may be listed under several subject areas to reflect multi-disciplinary content.

To determine the dates and locations of training courses listed in this section, consult the *Quarterly OSWER Training Calendar*. The *Calendar* is issued by the Technology Innovation Office (TIO) every three months and is distributed to all EPA Regions and to the Association for State and Territorial Solid Waste Management Officials (ASTSWMO) for subsequent distribution to States. To request the *Calendar*, contact the EPA Technology Innovation Office:

U.S. Environmental Protection Agency
Office of Solid Waste and Emergency Response
Technology Innovation Office (5102W)
Washington, DC 20460
FAX: (703) 308-8528

Scheduling information also can be obtained by calling the course contact provided for each description or the appropriate EPA Headquarters, Subject Area, or Regional Training Representative listed on pages 4-8. In addition, scheduling and other training information is available by accessing either of two computer bulletin boards: the Clean-Up Information Bulletin Board System (CLU-IN) and the Hazardous Materials Information Exchange (HMIX). See pages 161 and 188 of the Information Systems and Software section for more information on these computer bulletin boards.

Contact the training representatives from the U.S. EPA Headquarters Program Offices and EPA Regional Offices to obtain technical assistance and registration information on OSWER training courses:

Headquarters OSWER Program Contacts

Jeff Heimerman
Technology Users Support Program
Technology Innovation Office
U.S. EPA (5102W), 9th Floor
Washington, DC 20460
Phone: (703) 308-8806

Karen Argain
Technology Users Support Program
Technology Innovation Office
U.S. EPA (5102W), 9th Floor
Washington, DC 20460
Phone: (703) 308-8795

Naomie Smith
Technology Users Support Program
Technology Innovation Office
U.S. EPA (5102W), 9th Floor
Washington, DC 20460
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Ann Eleanor
Technology Users Support Program
Technology Innovation Office
U.S. EPA (5102W), 9th Floor
Washington, DC 20460
Phone: (703) 308-8826

Gary Turner
Technology Users Support Program
Technology Innovation Office
U.S. EPA (5102W), 9th Floor
Washington, DC 20460
Phone: (703) 308-7025

Debby Thomas
Office of Enforcement and
Compliance Assurance (CERCLA)
U.S. EPA (5502-G), 13th Floor
Washington, DC 20460
Phone: (703) 603-9007

Peg Rogers
Office of Underground Storage Tanks
U.S. EPA (OS-420W), 9th Floor
Washington, DC 20460
Phone: (703) 308-8890

Carolyn Dunston
Office of Solid Waste
U.S. EPA (OS-312), Room SE 264C
Washington, DC 20460
Phone: (202) 260-4501

Thea McManus
Office of Solid Waste
U.S. EPA (OS-305), Room SE 205
Washington, DC 20460
Phone: (202) 260-8818

Kim Fletcher
Chemical Emergency Preparedness
and Prevention Office
U.S. EPA (OS-120), Room 3603
Washington, DC 20460
Phone: (202) 260-4794

Barbara Vandermer
Office of Emergency and Remedial
Response (HSED)
U.S. EPA (5204G), 14th Floor
Washington, DC 20460
Phone: (703) 603-9018

Ron Rago
EPA Institute
U.S. EPA (3632)
Washington, DC 20460
Phone: (202) 260-2998

Region 1

Regional Representatives:
Pauline Callahan/Stephanie Carr
U.S. EPA, Region 1
Mail Code PHD
John F. Kennedy Federal Building
Boston, MA 02203-2211
Phone:
Pauline Callahan (617) 565-3624
Stephanie Carr (617) 565-3390

Subject Area Contacts:

CERCLA	Pauline Callahan (617) 565-3624
EPA Institute	Georgie Bishop (617) 565-3393
RCRA	Stephanie Carr (617) 565-3390
Risk Training	Clara Chow (617) 565-3599

Region 2

Regional Representatives:
Sandra Cohen/Cliff Ng
U.S. EPA, Region 2
26 Federal Plaza, Room 13-100
New York, NY 10278
Phone:
Sandra Cohen (212) 264-1784
Cliff Ng (212) 264-9579

Subject Area Contacts:

CERCLA	Sandra Cohen (212) 264-1784
EPA Institute	Lorraine Branda (212) 264-5857
RCRA	Cliff Ng (212) 264-9579 Margarite Halley (212) 264-5920
Risk Training	Kathy Moyik (212) 264-9213

Region 3

Regional Representatives:
Judy Lee/Donna Sutsko
U.S. EPA, Region 3
Mail Code 3 HW 01
841 Chestnut Street
Philadelphia, PA 19107
Phone:
Judy Lee (215) 597-7938
Donna Sutsko (215) 597-3172

Subject Area Contacts:

CERCLA	Donna Sutsko (215) 597-3172
EPA Institute	Jane Marie Freiheiter (215) 597-1876
RCRA	Judy Lee (215) 597-7938
Risk Training	Jeffrey Burke (215) 597-8327

Region 4

Regional Representatives:
Franklin Hill/Ralph Armstrong
U.S. EPA, Region 4
345 Courtland Street, NE
Atlanta, GA 30364
Phone:
Franklin Hill (404) 347-1591
Ralph Armstrong (404) 347-3486

Subject Area Contacts:

CERCLA	Thaddeus Taylor (404) 347-3486
EPA Institute	Ralph Armstrong (404) 347-3486
RCRA	Margaret Mears (404) 347-2234
Risk Training	Elmer Akin (404) 347-2234

Region 5

Regional Representatives:
Allen Lang
U.S. EPA, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590
Phone: (312) 886-2775

Subject Area Contacts:

CERCLA	Allen Lang (312) 886-2775
EPA Institute	Patricia Easley (312) 886-7535
RCRA	Allen Lang (312) 886-2775
Risk Training	Carol Braverman (312) 886-2910

Region 6

Regional Representatives:
Rosemary Henderson/Freda Lockhart
U.S. EPA, Region 6
First Interstate Bank Tower at Fountain Place
1445 Ross Avenue, Suite 1200
Dallas, TX 75292-2733
Phone:
Rosemary Henderson (214) 665-2293
Freda Lockhart (214) 665-8388

Subject Area Contacts:

CERCLA	Freda Lockhart (214) 665-8388
EPA Institute	Dana Doyle (214) 665-6547
Personal Protection	Rosemary Henderson (214) 665-2293
RCRA	Freda Lockhart (214) 665-8388
Risk Training	Jon Rauscher (214) 665-8513 Norman Dyer (214) 655-8349

Region 7

Regional Representatives:
Mary Jo Wallerstedt
U.S. EPA, Region 7
726 Minnesota Avenue
Kansas City, KS 66101
Phone: (913) 551-7648

Subject Area Contacts:

CERCLA	Mary Jo Wallerstedt (913) 551-7648
EPA Institute	Marian Hess (913) 551-7271
RCRA	Jim Lyddon (913) 551-7157
Risk Training	Bob Fenemore (913) 551-7745 Mary Williams (913) 551-7415

Region 8

Regional Representatives:
Barbara Fleming/Darrell Merten
U.S. EPA, Region 8
Mail Code 8H WM-RM
999 18th Street, Suite 500
Denver, CO 80202-2405
Phone:
Barbara Fleming (303) 294-7077
Darrell Merten (303) 294-7532

Subject Area Contacts:

CERCLA	Barbara Fleming (303) 294-7077
EPA Institute	Pam Shank (303) 293-1404
RCRA	Barbara Fleming (303) 294-7077
Risk Training	Sonya Pennock (303) 294-1137

Region 9

Regional Representatives:
Conte Guzman-Hoffman/R.C. Stevens
U.S. EPA, Region 9
Mail Code P-6-2
75 Hawthorne Street
San Francisco, CA 94105
Phone:
Conte Guzman-Hoffman (415) 744-2339
R.C. Stevens (415) 744-1548

Subject Area Contacts:

CERCLA	Conte Guzman-Hoffman (415) 744-2339
EPA Institute	Marla Lesley (415) 744-1545
RCRA	R.C. Stevens (415) 744-1548
Risk Training	Arnold Den (415) 744-1018

Region 10

Regional Representatives:
Loretta Hrin/Susan Hutcherson
U.S. EPA, Region 10
1200 Sixth Avenue
Seattle, WA 98101
Phone:
Loretta Hrin (206) 553-7154
Susan Hutcherson (206) 553-2852

Subject Area Contacts:

CERCLA	Loretta Hrin (206) 553-7154
EPA Institute	Pam Wright (206) 553-2952
RCRA	Susan Hutcherson (206) 553-2852
Risk Training	Pat Cirone (206) 553-1597

Risk Training

David Klauder
Office of Research and Development
U.S. EPA (H-8105), Room 604C WT
Washington, DC 20460
Phone: (202) 260-7667

Karen Burgan
Office of Solid Waste and Emergency Response
U.S. EPA (OS-100), Room SE 355
Washington, DC 20460
Phone: (202) 260-8716

Paul Rasmussen
Office of Air and Radiation
U.S. EPA (ANR-443), Room 947 WT
Washington, DC 20460
Phone: (202) 260-7430

Carol Franklin
Office of Administration and Resources Management
U.S. EPA (PM-3102), M 2632
Washington, DC 20460
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Office of Policy, Planning and Evaluation
U.S. EPA (WH-556), Room 1025 ET
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U.S. EPA (PM-219), Room 1013 WT
Washington, DC 20460
Phone: (202) 260-4332

Phil Ross
Office of Federal Activities
U.S. EPA (A-104), Room M 2115
Washington, DC 20460
Phone: (202) 260-2407

Hazardous Materials Training

Bruce Potoka
Emergency Response Division
U.S. EPA
26 W. Martin Luther King Drive
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Phone: (513) 569-7537

William Keffer
Emergency Removal/Hazmat
U.S. EPA, Region 7
726 Minnesota Avenue
Kansas City, KS 66101
Phone: (913) 551-5009

State Contacts

For information concerning State training programs, and for the names and phone numbers of individual State training coordinators, contact the Association of State and Territorial Solid Waste Management Officials (ASTSWMO):

Katrina Taylor
ASTSWMO
444 North Capitol Street, NW, Suite 388
Washington, DC 20001
Phone: (202) 624-5828

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○ = Beginner
■ = Intermediate
♦ = Advanced

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○ = Beginner
■ = Intermediate
♦ = Advanced

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○ = Beginner
■ = Intermediate
♦ = Advanced

	Course Name	Level	Page No.
Ground Water	Introduction to Ground-Water Investigations (165.7)	○	38
	Subsurface and Ground-Water Modeling	○	39
	CME/O&M Inspector Training	■	48
	Evaluating Cement Behind Casing	■	37
	Ground-Water Investigations	■	37
	Mechanical Integrity: Identifying Flow Behind Casing	■	38
	Statistical Analysis of RCRA Ground-Water Monitoring Data	■	39
	Subsurface Modeling	■	39
	SUTI at Rice University: Fate and Transport of Contaminants (OSC/RPM Support Program)	■	21
	Transport and Fate of Contaminants in the Subsurface	■	40
Health and Safety	Hazardous Materials Incident Response Operations (165.5)	○	20
	Health and Safety in EPA Field Activities: Basic Course	○	41
	Health and Safety Training: An Interactive Video Training Course for UST Inspectors and Workers	○	41
	Radiation Safety at Superfund Sites (165.11)	○	42
	Safety and Health Compliance for Managers (165.8)	○	43
	Chemical Safety Audit Workshop	■	19
	HASP Workshop	■	27
Quality Assurance	Data Quality Objectives (DQO)	○	45
	Orientation to Quality Assurance Management	○	46
	Superfund Quality Assurance Computer-Based Training	○	46
	Conducting On-Site Laboratory Evaluations	■	44
	Conducting On-Site Quality Assurance of Field Sampling and Analysis	■	44
	ICP-MS Data Audit Training	■	45
	Soil Sampling and Quality Assurance for Superfund	■	62
	Use of Performance Evaluation Materials	■	47
RCRA-Related	Basic Incinerator and BIF Permitting	○	48
	Basic Inspector Training (Fundamentals of Environmental Compliance Monitoring Inspections)	○	31
	Land Disposal Restrictions (LDR) Enforcement Training: Interactive Computer Program	○	32
	Subpart H: Financial Assurance Requirements	○	50
	CME/O&M Inspector Training	■	48
	Ground-Water Investigations	■	37
	How to Review Trial Burn Data and Set Permit Limits	■	49

(Continued)

○ = Beginner
■ = Intermediate
♦ = Advanced

	Course Name	Level	Page No.
RCRA-Related (Continued)	Mechanical Integrity: Identifying Flow Behind Casing	■	38
	RCRA Civil Penalty Policy Training	■	33
	RCRA Enforceability of Regulations	■	34
	RCRA Inspector Institute	■	34
	Resource Conservation and Recovery Information System (RCRIS) Technical Training	■	29
	Skills Development in Negotiation of RCRA/CERCLA Disputes	■	35
	Statistical Analysis of RCRA Ground-Water Monitoring Data	■	39
	Transport and Fate of Contaminants in the Subsurface	■	40
	Use of Performance Evaluation Materials	■	47
	Advanced RCRA Inspector Institute	♦	30
	State Authorization Workshop	♦	49
Response and Preparedness	Emergency Response to Hazardous Material Incidents (165.15)	O	52
	Hazardous Materials Incident Response Operations (165.5)	O	20
	Hazardous Materials: An Introduction for Public Officials and Emergency Managers (G300)	O	53
	Introduction to Hazardous Materials Preparedness (G301)	O	21
	Air Surveillance for Hazardous Materials (165.4)	■	58
	Chemical Emergency Preparedness and Prevention: An Introductory Training Course	■	51
	Chemical Safety Audit Workshop	■	19
	Complying with Federal Requirements for Reporting Releases of Hazardous Substances	■	19
	Environmental Release Reporting/EPCRA Requirements Workshop	■	53
	Hazardous Materials Contingency Planning — Train the Trainer (E499)	■	54
	Title III HazMat Planning Module A: Hazards Analysis in Preparing Title III Plans Module B: Conducting HazMat Exercises	■	54
Risk Assessment	Advanced GIS: Planning a GIS Project	O	58
	Risk and Decision Making	O	56
	Risk Assessment Guidance for Superfund (165.6)	O	56
	Chemical Safety Audit Workshop	■	19
	Transport and Fate of Contaminants in the Subsurface	■	40

(Continued)

O = Beginner
■ = Intermediate
♦ = Advanced

	Course Name	Level	Page No.
Site Assessment	Advanced GIS: Planning a GIS Project	○	58
	Introduction to Ground-Water Investigations (165.7)	○	38
	Introductory Preliminary Assessment (PA)	○	60
	Introductory Site Inspection (SI)	○	61
	Sampling for Hazardous Materials (165.9)	○	61
	Air Surveillance for Hazardous Materials (165.4)	■	58
	Ground-Water Investigations	■	37
	Hazard Ranking System (HRS) Training	■	59
	PREScore	■	28
	Soil Sampling and Quality Assurance for Superfund	■	62
	SUTI at University of Nevada, Las Vegas: Site Characterization (OSC/RPM Support Program)	■	22
	HRS Documentation Record	♦	60
Treatment Technologies	Treatment Technologies for Superfund (165.3)	○	63
	Remediation of Contaminated Soils	■	63

○ = Beginner
■ = Intermediate
♦ = Advanced

Basic Project Officer Training

Beginner

Course Goal	To provide a better understanding of the procurement process
Target Audience	Required for Project Officers, Work Assignment Managers, or Delivery Order Officers in accordance with Chapter 7 of the *Contracts Management Manual*
Description	The course reviews the Project Officer's critical role as part of the procurement team, from initiation through contract close-out.
Prerequisites	None
Duration	3½ days
Contact	Gwen James HQ EPA Institute (202) 260-2594

Contract Administration Training for Project Officers

Beginner

Course Goal	To provide an understanding of the contract administration process, and the duties and responsibilities of both government staff and contractors during the life of a contract
Target Audience	All EPA personnel who are currently serving, or will be assigned as Project Officers, Work Assignment Managers, or Delivery Order Officers on EPA contracts
Description	The course is presented through a combination of lecture, video presentation, and student participation. It concludes with an open book exam. The course, which equips the student with information on how to perform the duties of a Project Officer, Work Assignment Manager, or Delivery Order Officer during the contract administration phase, ensures that the student understands the limits of his/her authority in these positions; and fosters knowledge, understanding, and appreciation of the roles and authorities of other EPA personnel involved in contract administration.
Prerequisites	None
Duration	3 days
Contact	Gwen James HQ EPA Institute (202) 260-2594

Contract Administration Training for Supervisors and Managers

Intermediate

Course Goal	To provide an understanding of the contract administration process and the critical roles of Project Officers, Work Assignment Managers, and Delivery Order Officers in this area
Target Audience	EPA supervisors and managers of Project Officers, Work Assignment Managers, and Delivery Order Officers
Description	The course outlines the duties of these positions during the contract administration phase and provides a discussion of the Project Officer Certification Program.
Prerequisites	None
Duration	1 day
Contact	Gwen James HQ EPA Institute (202) 260-2594

Project Officer Training for Grants and Cooperative Agreements

Beginner

Course Goal	To enable adequate technical oversight of the assistance process and to provide a better understanding of the Project Officer's critical role as part of the assistance team, from inception of the process through close-out
Target Audience	Newly appointed Project Officers who administer EPA grants, cooperative agreements, and/or assistance agreements
Description	The program has been designed by the Grants Administration Division to inform participants of the assistance cycle and the responsibilities, duties, and authority of the Project Officer.
Prerequisites	None
Duration	2 days
Contact	Gwen James HQ EPA Institute (202) 260-2594

Warrant Authority for OSCs

Beginner

Course Goal	To enhance the accuracy and consistency with which procurement procedures are implemented
Target Audience	On-Scene Coordinators (OSCs)
Description	Specialized procurement training is provided for Superfund OSCs.
Prerequisites	None
Duration	3 days
Contact	(202) 260-3155

Additional Training Courses: Administrative and Management

Course Title	Page Number
HRS Documentation Record	60
Orientation to Quality Assurance Management	46

CERCLA Education Center (CEC)

Beginner to Advanced

Course Goal	To provide basic as well as advanced training on the laws, regulations and processes that make up the Superfund program
Target Audience	OSCs, Remedial Project Managers (RPMs), other Superfund staff, and Federal and State environmental professionals
Description	The basic training course in the CEC is *Fundamentals of Superfund.* More comprehensive coverage of the response authorities under CERCLA is provided in the *Removal Process, Remedial Process, and Enforcement Process* courses. Two advanced training courses that address other aspects of a CERCLA response are *Innovative Treatment Technologies* and *Federal Facility Remediation.* The CEC also offers topic-specific courses such as *Community Relations in Superfund: Basic Concepts and Skills.* See pages 67-72 for a more complete description of CEC offerings and a registration form.
Prerequisites	Varies depending upon course selected
Duration	2 to 5 days, depending upon course selected
Contact	Karen Argain (703) 308-8795

CERCLA Orientation

Beginner

Course Goal	To provide an overview of the Superfund Program
Target Audience	Any individual requiring basic knowledge of Superfund law, regulations, and programs
Description	The course covers an overview of Superfund legislation; the National Contingency Plan; program implementation; the removal, remedial, and enforcement programs; and policy and regulations. This course is being updated and revised to hand-off to Regional staff, States, and other Federal agencies to deliver the course with their own personnel as many times as needed.
Prerequisites	None
Duration	2½ days
Contact	Naomie Smith (703) 308-8848 or Regional Representative (see pages 5-7)

Chemical Safety Audit Workshop

Intermediate

Course Goal To provide knowledge of the elements of chemical process safety and develop expertise for conducting effective audits

Target Audience EPA Regional personnel, contractors, AARP, and State and local government personnel who are or will be involved in chemical accident prevention

Description The course covers basic chemical systems and processes, chemical process hazards, hazard mitigation, process safety systems, process safety management, maintenance and training requirements, chemical hazard evaluation, hazard evaluation techniques, incident investigation, and emergency response requirements. Interviewing techniques, computer modeling, and report writing also are covered.

Prerequisites None, but background and experience in process safety management is helpful

Duration 4 days

Contact David Chung (202) 260-8942 or Kim Fletcher (202) 260-4794

Complying with Federal Requirements for Reporting Releases of Hazardous Substances

Intermediate

Course Goal To provide up-to-date training on release notification requirements under CERCLA and SARA Title III

Target Audience EPA Regional personnel; Federal, State, and local emergency response officials; and industry representatives

Description This special, half-day workshop will explain the far-reaching requirements under Superfund for reporting releases of hazardous substances. EPA Headquarters experts will present an overview of the mechanics of reporting releases of hazardous substances under CERCLA and SARA Title III, including the kinds of releases that must be reported; who must report them; and how, when, and where to report the releases. A question-and-answer session will enable participants to interact with the EPA authorities.

Prerequisites None

Duration 1/2 day

Contact Gerain H. Perry (703) 603-8732

Hazardous Materials Incident Response Operations (165.5)

Beginner

Course Goal To enable proper selection and utilization of respiratory protection apparatus, clothing, and field monitoring equipment; and provide an understanding of the use and limitations of appropriate site entry, control, and decontamination procedures, and response organization and management

Target Audience Regional and State Superfund staff who respond to emergencies and investigate and clean up hazardous waste sites

Description This course provides attendees with practical knowledge concerning incident response operations. The course emphasizes response team functions, methods, and procedures to employ in responding to hazardous substance spills or investigations at abandoned hazardous waste sites. This course includes several topics: respiratory protection; protective clothing; field monitoring instruments; hazards analysis; toxicology; response organization; and standard operating safety guides. Approximately one-third of the course is classroom instruction. The remaining time is hands-on use of air monitoring instruments, personnel protective equipment, and other practical applications of classroom topics. Segments of the course require the wearing of respiratory equipment which precludes the use of glasses. Students who are severely restricted without their glasses should be aware that their participation may be limited unless they have their own spectacle kit or spectacle-equipped respirator facepiece. Some exercises require the wearing of chemical protective clothing and may be stressful to certain individuals. Participation is not required in these exercises, but attendance is required. The course meets the Occupational Safety and Health Administration's requirement for 40 hours of classroom safety training for hazardous waste site workers (29 CFR 1910.120).

Prerequisites None

Course Credit
- Continuing Education Units: 2.1
- American Board of Industrial Hygiene (ABIH) Certification Maintenance Credits: 2.0
- American Council on Education (ACE) Recommended College Credit Hours: 2.0 Semester Hours Upper-Division Baccalaureate Degree (UDB)

Duration 5 days

Contact Registrar
(513) 251-7669

Introduction to Hazardous Materials Preparedness (G301)

Beginner

Course Goal To provide an introduction to hazmat concepts and practices

Target Audience State and local personnel with a responsibility for hazardous materials

Description This 2-module course goes beyond the content of the G300 *Public Officials* course (see page 53) and is predicated on students' mastery of the hazmat home study course (IS-5) prior to enrollment. It covers basic principles of preparedness, the role of local communities, and the hazards presented by chemicals in transportation or fixed-site threats. Each student must be familiar with IS-5 principles before enrolling in this class.

Prerequisites Completion of IS-5 — *Hazardous Materials: A Citizen's Orientation*

Duration 1 day

Contact Ray Chevalier
FEMA/Emergency Management Institute
(301) 447-1187

SUTI at Rice University: Fate and Transport of Contaminants (OSC/RPM Support Program)

Intermediate

Course Goal To enhance students' ability to make informed decisions regarding the control of ground-water contamination, risk assessments and appropriate subsurface remediation technologies

Target Audience OSCs and RPMs

Description The course, offered through the Superfund University Training Institute at Rice University (SUTI at Rice), in association with the EPA Office of Research and Development's (ORD's) Kerr Laboratory, provides specialized instruction in the factors that influence transport and fate of contaminants in the subsurface. It is conducted by university faculty and other technical experts. Sessions feature lectures as well as problem-solving exercises and computer model demonstrations. Topics include controlling sources of ground-water contamination, conducting risk assessments, and selecting subsurface remediation technologies.

The SUTI at Rice is affiliated with the National Center for Ground-Water Research, a joint operation with ORD's Kerr Laboratory, Oklahoma University, Oklahoma State University, and the University of Texas.

Prerequisites The equivalent of one to three years of Superfund experience

Duration 2 to 3 days

Contact Jerry T. Thornhill
(405) 436-8604

SUTI at University of Nevada, Las Vegas: Site Characterization (OSC/RPM Support Program)

Intermediate

Course Goal	To enable participants to more accurately define problems at hazardous waste sites and design monitoring networks and remediation strategies
Target Audience	Federal, State, local, and private employees
Description	The course, "Hydrogeologic Site Characterization," offered by the Superfund University Training Institute at the University of Nevada, Las Vegas - Harry Reid Center for Environmental Studies ("HYDRO" SUTI at UNLV), in association with ORD's Environmental Monitoring Systems Laboratory - Las Vegas, covers topic areas of Quality Assurance, Hydrology, Geology, Conceptual Modeling, Statistics, and Advanced Field Technology; and encompasses the information necessary to perform a thorough site characterization as it pertains to ground water. Courses offered through UNLV-HRC are intended to provide comprehensive training, on an intermediate to advanced level, to Site Managers and provide them with specialized competencies needed for effective decision making.
Prerequisites	The equivalent of one to three years of Superfund experience
Duration	4 days
Contact	Kenneth Brown (702) 798-2270

Additional Training Courses: CERCLA-Related

Course Title	Page Number
Advanced GIS: Planning a GIS Project	58
Advanced Removal Enforcement Workshop	30
Air Surveillance for Hazardous Materials (165.4)	58
Basic Inspector Training (Fundamentals of Environmental Compliance Monitoring Inspections)	31
CERCLIS Enforcement Overview	25
CERCLIS/WasteLAN Case Budget Overview	25
Community Relations in Superfund: Concepts and Skills for Response Staff	24
Computer-Aided Data Review and Evaluation	26
Conducting On-Site Laboratory Evaluations	44
Conducting On-Site Quality Assurance of Field Sampling and Analysis	44
Customized CERCLIS Reporting	26
Emergency Response to Hazardous Material Incidents (165.15)	52
Environmental Release Reporting/EPCRA Requirements Workshop	53
Ground-Water Investigations	37
HASP Workshop	27
Hazard Ranking System (HRS) Training	59
HRS Documentation Record	60
ICP-MS Data Audit Training	45
Introduction to Superfund: A Public Awareness Workshop	24
Introduction to the Superfund Enforcement Program	31

Additional Training Courses: CERCLA-Related (Cont'd)

An Introduction to Using the Contract Lab Program Analytical Results Database (CARD) System 27
Introductory Preliminary Assessment (PA) 60
Introductory Site Inspection (SI) 61
Lawyers and Technical Staff: Making the Case for Superfund 32
PREScore 28
PRP Search Orientation 33
Radiation Safety at Superfund Sites (165.11) 42
Removal Cost Management System (165.17) 28
Risk Assessment Guidance for Superfund (165.6) 56
Safety and Health Compliance for Managers (165.8) 43
Sampling for Hazardous Materials (165.9) 61
SCAP/STARS 29
Skills Development in Negotiation of RCRA/CERCLA Disputes 35
Soil Sampling and Quality Assurance for Superfund 62
Subsurface and Ground-Water Modeling 39
Subsurface Modeling 39
Superfund Attorney Orientation 35
Superfund Quality Assurance Computer-Based Training 46
Transport and Fate of Contaminants in the Subsurface 40
Treatment Technologies for Superfund (165.3) 63
Use of Performance Evaluation Materials 47
Warrant Authority for OSCs 17
Workshop on Enforcement Issues in Superfund 36

Community Relations in Superfund: Concepts and Skills for Response Staff

Beginner

Course Goal	To introduce remedial and removal program staff to community relations requirements and enable successful implementation of program activities with a team approach
Target Audience	Regional and State RPMs, OSCs, Community Relations Coordinators, Regional Counsel for Superfund, and enforcement and program staff
Description	This course covers concepts and skills to use when working with citizens, local elected officials, the media, responsible parties, and other members of the public. These skills can be useful in holding public meetings, building good media relations, and enhancing conflict management. Practical exercises are used to inform trainees and elicit discussion. Interactive group exercises and videotaping allow participants to combine "survival skills" with the strategic planning and teamwork that are required by actual situations. This course is also offered by the CERCLA Education Center (see page 18 for more information).
Prerequisites	Basic knowledge of the remedial and/or removal processes is helpful.
Duration	2 days
Contact	Ann Eleanor (703) 308-8826 or Peter Redmond (703) 603-8751

Introduction to Superfund: A Public Awareness Workshop

Beginner

Course Goal	To educate the public, news media, local government, and others interested in Superfund about the process and how to become involved in the cleanup of a site
Target Audience	Citizens living near sites, local media and governments, interested EPA employees
Description	This course will provide an overview, in clear language, of Superfund topics including the process, issues, dilemmas, and different viewpoints surrounding hazardous waste sites. Interactive learning activities will be used.
Prerequisites	Interest in Superfund
Duration	4 hours
Contact	Nancy Cronin (703) 603-9097

Additional Training Courses: Community Relations

Course Title	Page Number
Chemical Safety Audit Workshop	19

CERCLIS Enforcement Overview

Beginner

Course Goal	To provide participants with an understanding of the CERCLIS database structure and major enforcement activities
Target Audience	Headquarters and Regional information management staff; RPMs and OSCs
Description	This course addresses how the enforcement program affects CERCLIS. The components of the enforcement program are presented, highlighting those components that affect CERCLIS, and the structure of the CERCLIS database. Major enforcement activities and the corresponding data elements that are required to enter those events into CERCLIS/WasteLAN also are presented.
Prerequisites	None
Duration	1/2 day
Contact	Chris Nugent (202) 260-6127

CERCLIS/WasteLAN Case Budget Overview

Intermediate

Course Goal	To familiarize participants with the case budget process, the importance of budget planning, and the process of entering data into CERCLIS/WasteLAN
Target Audience	RPMs, Headquarters and Regional Superfund personnel
Description	This course explains the case budget process, provides instruction on how to plan and track budgets for sites, and demonstrates how to enter the appropriate data into CERCLIS/WasteLAN.
Prerequisites	Knowledge of the Superfund enforcement program
Duration	1 day
Contact	Dave Reynolds (703) 603-9001

Computer-Aided Data Review and Evaluation

Intermediate

Course Goal To train chemical analytical data validation personnel in the use of microcomputer software tools for semi-automated data validation, using the Computer-Aided Data Review and Evaluation (CADRE) system

Target Audience CERCLA, EPA, State, Department of Energy (DOE), and contractor data validators

Description This course provides the fundamental background, necessary knowledge, and hands-on training for chemical analytical results validation with the use of the Computer-Aided Data Review and Evaluation (CADRE) system. CADRE is an environmental software application that performs semi-automated validation of data in Superfund Contract Laboratory Program (CLP) format, both for CLP and non-CLP generated data. The system has different versions to handle organic, inorganic, and CLP Quick Turnaround Method analytical results. Through hands-on training with real-world data and classroom interaction, attendees can gain an understanding of CADRE and a practical approach to its use in typical data evaluation (see page 162 for more information on CADRE).

Prerequisites Working knowledge of data validation procedures and basic proficiency in the use of microcomputers

Duration 2 days

Contact David Eng (703) 603-8827 or Dona Brock (702) 892-2539

Customized CERCLIS Reporting

Intermediate

Course Goal To enable participants to enhance their skills in utilizing the IBM 3090, TSO, Genius, and SYSTEM 2000 Natural Language to develop customized CERCLIS reports

Target Audience Headquarters and Regional information management staff; RPMs and OSCs

Description This course provides individuals with the functional knowledge necessary to generate customized CERCLIS reports. Interactive system 2000 (S2K) queries are presented, as well as instructions for generating simple reports using Genius.

Prerequisites *CERCLIS Enforcement Overview, Introduction to the Superfund Enforcement Program*, and *WasteLAN User Training*

Duration 2 days

Contact Chris Nugent (202) 260-6127

HASP Workshop

Intermediate

Course Goal To provide training on the EPA, Office of Emergency and Remedial Response, Emergency Response Team's (ERT's) Health and Safety Planner (HASP) — computer-assisted development of site-specific health and safety plans

Target Audience OSCs, RPMs, or anyone else who is required to generate, review, or audit site-specific plans under 29 CFR 1910.120 or 40 CFR 311

Description This course gives training on the use of ERT's HASP, which provides computer-assisted development of site-specific health and safety plans (see page 182 for more information on HASP).

Prerequisites None

Duration 1/2 day or full day (full day includes 1910.120 overview)

Contact Sella Burchette
(908) 321-6726

An Introduction to Using the Contract Lab Program Analytical Results Database (CARD) System

Beginner

Course Goal To enable users to interactively access the CARD system in order to report or retrieve Contract Lab Program (CLP) analytical results data

Target Audience EPA OSWER, AOB, SMO, EMSL-LV, and Regional staff; and any other authorized users needing access to CLP analytical results data

Description The training begins with an introduction to the CARD system and the data in CARD. A discussion then follows on how databases work, why security is necessary for CARD, and the rationale behind the organization of CARD's data. The course also employs the customized user's guide and interactive terminal access for hands-on training in using CARD. The class concludes with a question and answer period.

Prerequisites Users should have an IBM user ID, and know the accounting information pertaining to their accounts and the type of hardware they will be using

Duration 1 day

Contact David Eng
(703) 603-8827

or

Dona Brock
(702) 892-2539

PREScore

Intermediate

Course Goal To provide participants with the tools needed to prepare site inspection reports using PREScore and PREPrint

Target Audience Personnel from EPA Regional offices, State programs, contractors, and others who are responsible for preparing site inspection reports (primary audience) or HRS documentation records (secondary audience)

Description Case studies, group discussions, and lectures will teach participants to prepare and review site inspection reports and HRS documentation records. Major topics include the purpose, capabilities, and limitations of the PREScore program; a systematic approach to the entry of data; preparation of site scores and evaluation of different scoring scenarios using PREScore; and the use and application of PREPrint.

Prerequisites Completion of the HRS course (see page 59) and familiarity with the PREScore software

Duration 1½ days

Contact Patricia Gowland (703) 603-9017 or Regional Site Assessment Training Coordinator

Removal Cost Management System (165.17)*

Beginner

Course Goal To enable EPA staff to utilize EPA's computerized removal cost management system for tracking costs of removal or remedial actions

Target Audience OSCs, RPMs, comptroller personnel and EPA contractor personnel involved with cost management at abandoned or uncontrolled waste sites

Description This course will provide instruction on the concepts of cost management; EPA's cost management system; cost tracking, recovery, and documentation; and cost projection and invoicing. Instructional methods include lectures interspersed with hands-on use of computers to input cost data and prepare various reports. Exercises include inputting basic information about the site, data from contractor cost reports and daily cost summaries; editing and archiving data; and producing site summary and cost projection reports.

Prerequisites Working knowledge of personal computers

Duration 2 days

Contact Registrar
(513) 251-7669

* This course is given only upon the request of an EPA Regional Office or by special arrangement with other organizations.

Resource Conservation and Recovery Information System (RCRIS) Technical Training

Intermediate

Course Goal To strengthen the technical abilities of EPA Regional and State Database Administrators in managing the flow of data by enabling participants to perform complex system operations related to the joining of information from multiple sources (Regions and States), and the transfer of extracted information to the National Oversight database

Target Audience RCRIS State and Regional Database Administrators

Description Participants will learn how to execute merge procedures from both the PC and IBM mainframe environments. Participants will be progressively led through all the steps from the creation, transfer, and loading of extracted files to verifying a successful merge transaction. The course also offers discussion on security as it relates to RCRIS and Simultaneous Usage (SU) FOCUS.

This training is not available on a regularly scheduled basis, but is presented periodically in conjunction with other EPA training to support system managers. Copies of the RCRIS Merged Database Administrator's Guide, however, can be obtained by calling RCRIS User Support (1-800-767-7274).

Prerequisites Attendance at RCRIS Phase 1 training or viewing of RCRIS Instructional Series videotapes; basic knowledge of IBM Mainframe (3090) operating system; familiarity with ISPF, TSO, MVS, JCL and (Mainframe) FOCUS

Duration 2 to 3 days

Contact Carolyn Dunston
(202) 260-4501

SCAP/STARS

Intermediate

Course Goal To provide participants with an understanding of the purpose of the SCAP/STARS (Superfund Comprehensive Accomplishments Plan/Strategic Targeted Activities for Results System) process and CERCLIS/WasteLAN interaction with SCAP/STARS

Target Audience Headquarters and Regional information management staff; RPMs and OSCs

Description This course describes the SCAP/STARS process and how it relates to CERCLIS and WasteLAN. The SCAP/STARS schedules and Regional and Headquarters responsibilities are presented along with a full description of each target and the report select logic for each target.

Prerequisites *CERCLIS Enforcement Overview*

Duration 1/2 day

Contact Dave Reynolds
(703) 603-9001

Advanced RCRA Inspector Institute

Advanced

Course Goal	To provide a forum for experienced EPA and State RCRA inspectors to share ideas and receive training on advanced RCRA enforcement issues and activities
Target Audience	EPA and State RCRA enforcement personnel
Description	The Advanced RCRA Inspector Institute is designed to expand upon the format and content of the RCRA Inspector Institute. It will be an intensive workshop demanding the participants to apply their experience in RCRA enforcement to new concepts and perspectives. It will be designed to encourage new approaches to RCRA enforcement and facilitate exchanges between the participants and the faculty. This course will provide 24 of the total 150 hours of program-specific training required of all RCRA inspectors. The Institute will be offered twice a year, one presentation in the east focusing on Regions I-V and the States therein; the other in the west focusing on Regions VI-X.
Prerequisites	At least one year experience in RCRA enforcement and participation in the RCRA Inspector Institute; or, 18 months experience and service as a lead inspector on 20 inspections; or, two years experience in RCRA enforcement
Duration	4 days; noon Monday through noon Friday
Contact	Jeff Kelly (202) 260-2809

Advanced Removal Enforcement Workshop

Advanced

Course Goal	To identify problems or questions specific to the removal enforcement topics of potentially responsible party (PRP) search, information request, financial assessment, and access; and to share strategies for resolving them
Target Audience	Experienced OSCs, enforcement specialists and other Regional removal enforcement personnel. This is an advanced-level training course, designed for staff with a minimum of one year's experience in removal enforcement
Description	The course is designed as an informal workshop for discussion, question and answer, and case studies, with a minimum of lecture. Participants are expected to actively participate in identifying issues, analyzing problems, and offering suggestions and/or information on their approach.
Prerequisites	None
Duration	2½ days
Contact	Debby Thomas (703) 603-9007

Basic Inspector Training (Fundamentals of Environmental Compliance Monitoring Inspections)

Beginner

Course Goal To enable EPA compliance inspectors and investigators to lead or conduct inspections independently

Target Audience All EPA compliance inspectors and investigators, regardless of program area, and including both RCRA and CERCLA staff

Description This basic course covers fundamental legal, technical, administrative, and communications aspects of environmental compliance inspections as required for basic inspection training under EPA Order 3500.1.

Prerequisites None

Duration 4 days

Contact

Headquarters Paul Jean (202) 260-3348	Region IV Ralph Armstrong (404) 347-3486	Region VIII Bill Warner (303) 236-5064
Region I Stephanie Carr (617) 565-3390	Region V Bob Richardson (312) 886-7935	Region IX Marla Lesley (415) 744-1544
Region II Sam Ezekwo (212) 264-2638	Region VI Bob Clark (214) 665-6487	Region X Diane Ruthruff (206) 553-5139
Region III Donna Sutsko (215) 597-3172	Region VII Marian Hess (913) 551-7271	

Introduction to the Superfund Enforcement Program

Beginner

Course Goal To familiarize participants with the objectives of the Superfund Enforcement program and to provide an overview of the major components of the program

Target Audience Site Assessment Managers (SAMs), Cost Recovery Specialists, Community Relations Coordinators, other site team support personnel, Headquarters staff, and State and Indian Tribal staff involved in Superfund issues with limited or no knowledge of enforcement

Description This course provides an overview of the entire CERCLA Enforcement program, emphasizing planning and management for each of the major activities. The course will cover the enforcement tools available under SARA, and the roles and responsibilities of various offices and agencies involved in enforcement.

Prerequisites Participants should have a general understanding of the Superfund program

Duration 2 days

Contact Monica Gardner
(703) 603-9081

Land Disposal Restrictions (LDR) Enforcement Training: Interactive Computer Program

Beginner

Course Goal	To provide EPA and State RCRA enforcement personnel with a knowledge of the LDR program and enforcement problems encountered in the field
Target Audience	Regional and State RCRA inspectors
Description	This interactive computer program includes a discussion of the regulations promulgated to date: solvents/dioxins; California List wastes; and First, Second, and Third wastes; as well as the procedures and problems associated with enforcing the regulations. The course uses graphics animation and motion video to teach inspectors of hazardous waste generators and treatment, storage, or disposal facilities how to conduct inspections under the LDR regulations.
Prerequisites	4 months experience as an EPA RCRA inspector
Duration	Course is self-paced; it lasts approximately 8 hours
Contact	Gary Turner (703) 308-7025 or Jim Thompson (202) 260-2265

Lawyers and Technical Staff: Making the Case for Superfund

Intermediate

Course Goal	To enable attendees to identify common issues that arise in complex Superfund cases between attorneys and technical staff due to their different professional orientations; to address institutionalized conflicts; and to learn interpersonal skills that can be used to improve working relationships
Target Audience	Attorneys and technical staff working with the Superfund program (course materials can easily be adapted for other programs)
Description	This course is designed for attendees with at least one year of programmatic experience. Participants are provided with an overview on videotape of a complex Superfund case from the perspectives of the RPM, the Regional attorney, and the Department of Justice (DOJ) attorney. Attendees participate in modules that develop their understanding of how attorneys and technical professionals interact, why conflicts arise, and how those conflicts may be resolved successfully. Programmatic-based exercises provide participants an opportunity to practice these skills. The Regional forum portion of the course provides an opportunity to take ideas from the main part of the course and apply them to solving institutionalized problems on a Regional basis. This optional half-day portion of the course involves Regional management as instructors/leaders of problem-solving sessions. The forum is based on a team-building model that facilitates problem identification, analysis, and solution-building.
Prerequisites	None
Duration	1½ days
Contact	Candace Wingfield (703) 603-8975

PRP Search Orientation

Beginner

Course Goal	To familiarize participants with the goals of the PRP Search and the procedures necessary to ensure a timely and thorough search
Target Audience	Civil Investigators, OSCs, RPMs, SAMs, attorneys, and contractors who are new to the process
Description	This is an introductory course describing the PRP Search process and how the evidence collected is used in preparing the case. Several small group seminars cover new Superfund initiatives that relate to the PRP Search process.
Prerequisites	None
Duration	2½ days
Contact	Monica Gardner (703) 603-9081

RCRA Civil Penalty Policy Training

Intermediate

Course Goal	To enable participants to understand the RCRA Civil Penalty Policy (RCPP), learn how to apply the RCPP, document penalty calculations, and to understand how the RCPP fits into the Agency's overall enforcement program
Target Audience	Regional Program Office personnel, Office of Regional Counsel (ORC) attorneys, Office of Enforcement and Compliance Assurance (OECA) and Office of Enforcement (OE) staff, State personnel, and DOJ attorneys
Description	The course, offered on request, will train enforcement personnel how to calculate and document RCRA civil penalties in accordance with the revised 1990 RCPP. The course will use a variety of teaching methods: lectures, slides, class participation, and an extensive role play exercise. Students will work in groups as enforcement teams to calculate penalties in the initial, intermediate, and settlement stages of an enforcement action.
Prerequisites	None
Duration	1 day
Contact	Jon Silberman (202) 564-4006

RCRA Enforceability of Regulations

Intermediate

Course Goal	At the completion of the workshop, participants will be able to recognize enforcement issues and apply those considerations when developing regulatory language and strategies
Target Audience	Office of Solid Waste regulation writers
Description	Strong and effective enforcement of environmental regulations is a top priority for the Agency. The enforceability of a regulation can be enhanced by consideration of enforcement issues early on and throughout the regulatory development process. This course describes the enforceability analysis approach, with emphasis on the tools available to encourage compliance and maximize deterrence, and communication with enforcement staff. Examples, both of model and problematic provisions, are provided.
Prerequisites	Experience in regulation writing
Duration	1 day
Contact	Ann Kline (202) 564-4007

RCRA Inspector Institute

Intermediate

Course Goal	To provide a forum for EPA and State RCRA inspectors that encourages interaction on the topic of current and future RCRA enforcement activities
Target Audience	Regional and State RCRA enforcement personnel
Description	The RCRA Inspector Institute is an intensive workshop that presents RCRA inspectors and enforcement personnel with a wide range of topics: enforcement attitude; hazardous waste generation; generator requirements; inspection procedures; enforcement authorities; environmental crime; and HSWA amendments. The workshop is designed to promote interaction between participants and faculty members through the use of videotapes, lectures, and case studies. This course may provide 24 of the total 150 hours of program-specific training required for all RCRA inspectors.
Prerequisites	One year of RCRA inspection experience or previous training (*RCRA Core Curriculum*)
Course Credit	Continuing Education Units: 2
Duration	3 days
Contact	Davis Jones (202) 260-5033

Skills Development in Negotiation of RCRA/CERCLA Disputes

Intermediate

Course Goal	To enhance the development of negotiation skills in handling RCRA/CERCLA disputes
Target Audience	Regional, State, and Headquarters technical enforcement staff and attorneys with responsibility for negotiating hazardous waste cleanups
Description	This is an intermediate-level course that includes lectures on the phases of the negotiation process, the role of the government negotiator, and countering tactics. The majority of course time is spent on a three-part simulation exercise. A two-day version of the course has been incorporated into the Enforcement Process Course of the CERCLA Education Center (see page 18).
Prerequisites	Knowledge of CERCLA and/or RCRA
Duration	2½ days
Contact	Arthene Pugh (202) 260-8785

Superfund Attorney Orientation

Beginner

Course Goal	To provide a thorough overview of the components of the Superfund program and the role of the Superfund attorney in these cases
Target Audience	New Superfund attorneys and program staff (on a space available basis)
Description	The course includes lectures and panel discussions on the Superfund Enforcement Program, the roles and responsibility of the Superfund attorney, the National Contingency Plan, response selection and removal actions, remedy selection and remedial action, settlement issues, settlement from the PRP's perspective, bankruptcy issues in settlement and litigation, Sections 106 and 107, the Administrative Record, and claiming natural resource damages.
Prerequisites	None
Duration	4½ days
Contact	Debby Thomas (703) 603-9007

Workshop on Enforcement Issues in Superfund

Advanced

Course Goal	To provide a forum for experienced RPMs and OSCs to discuss complex legal issues in the Superfund program
Target Audience	Experienced RPMs, OSCs, and State personnel
Description	This course will review key CERCLA legal concepts, recent case law development, and new enforcement policies and initiatives to outline their relationship with key concepts and program goals. Each course participant is required to submit an issue paper prior to the course. During the course, participants will present papers for group discussion of potential strategies and solutions.
Prerequisites	A minimum of 2 years of enforcement experience in the Superfund program. Individuals with less experience may be eligible to attend if they have substantial experience in a given topic (e.g., Superfund Accelerated Cleanup Model (SACM) issues, CERCLA liability, or use of consent decrees vs. Unilateral Administrative Orders).
Duration	2 days
Contact	Debby Thomas (703) 603-9007

Additional Training Courses: Enforcement

Course Title	Page Number
CERCLA Education Center, Enforcement Process	18
CERCLIS Enforcement Overview	25
CERCLIS/WasteLAN Case Budget Overview	25
Chemical Safety Audit Workshop	19
CME/O&M Inspector Training	48
Customized CERCLIS Reporting	26

Evaluating Cement Behind Casing

Intermediate

Course Goal	To provide students with a basic knowledge of the methods for evaluating cement behind casing in injection wells
Target Audience	Federal and State regulators, including Project Managers, permit writers, or compliance personnel who deal with the use of injection wells for disposal of waste into the subsurface (RCRA and UIC)
Description	The course includes lectures on methods for evaluating cement behind casing and demonstrations in the field of cement bond logging techniques, including set up at the well site, calibrating the tool, running the log, and evaluating the results.
Prerequisites	None
Duration	2 days
Contact	Jerry T. Thornhill (405) 436-8604

Ground-Water Investigations

Intermediate

Course Goal	To acquaint students with the basics of ground-water hydrology, methods for investigating ground-water contamination, and the types and results of ground-water remediation efforts
Target Audience	Federal and State regulators, including Project Managers, permit writers, or compliance personnel who deal with contamination of ground water from surface sources (RCRA and CERCLA)
Description	The course covers basic hydrogeology, ground-water quality, transport and fate of contaminants in the subsurface, monitoring of the unsaturated zone, ground-water investigations, and ground-water remediation. The course includes a take-home final examination.
Prerequisites	None
Duration	2½ days
Contact	Jerry T. Thornhill (405) 436-8604

Introduction to Ground-Water Investigations (165.7)

Beginner

Course Goal	To provide an overview of hydrogeological processes and the elements necessary to conduct an adequate ground-water site investigation
Target Audience	Regional and State personnel with little prior hydrogeological experience who are concerned with, or evaluate, contaminated aquifers
Description	This course covers several topics: hydrogeological definitions; geology; geochemistry; drilling, construction, and placement of monitoring wells; ground-water sampling considerations; treatment and plume control measures; and ground-water modeling. Instruction methods include lectures, group discussions, case studies, and class problem-solving. After completing the course, attendees will be more knowledgeable about basic hydrogeology, mass transport processes, ground-water sampling methods, well construction, and ground-water modeling.
Prerequisites	None
Course Credit	▪ Continuing Education Units: 1.8 ▪ American Council on Education (ACE) Recommended College Credit Hours: 1.0 Semester Hour UDB
Duration	3 days
Contact	Registrar (513) 251-7669

Mechanical Integrity: Identifying Flow Behind Casing

Intermediate

Course Goal	To provide students with a basic knowledge of methods for locating flow behind casing in injection wells
Target Audience	Federal and State regulators, including Project Managers, permit writers, or compliance personnel who deal with the use of injection wells for disposal of waste into the subsurface (RCRA and UIC)
Description	The course includes lectures on methods for locating flow behind casing and demonstrations in the field of oxygen activation and temperature and noise logging techniques, including set up at the well site, calibrating the tools, running the log, and evaluating the results.
Prerequisites	None
Duration	2 days
Contact	Jerry T. Thornhill (405) 436-8604

Statistical Analysis of RCRA Ground-Water Monitoring Data

Intermediate

Course Goal	To facilitate the proper analysis of RCRA ground-water monitoring data through the appropriate selection and use of statistical analysis procedures
Target Audience	Regional and State RCRA personnel
Description	Participants will learn how to select and apply statistical analysis procedures to RCRA ground-water monitoring data. Software specifically developed for analysis of ground-water data will be demonstrated and distributed. The course includes a mixture of lectures, exercises, and case studies.
Prerequisites	Basic knowledge of statistics (1 college course)
Duration	2 days
Contact	Jim Brown (202) 260-3240

Subsurface and Ground-Water Modeling

Beginner

Course Goal	To provide RPMs and OSCs with training on modeling principles and hands-on experience in terms of how modeling is done, and what results are to be expected
Target Audience	Federal and State regulators who deal with contamination of ground water
Description	The course is a three-day, hands-on workshop dealing with modeling principles, analytical methods, numerical methods, saturated zone models, and other models such as RITZ.
Prerequisites	None
Duration	3 days
Contact	Jerry T. Thornhill (405) 436-8604

Subsurface Modeling

Intermediate

Course Goal	To provide training on the application of models to ground-water flow and subsurface contaminant transport
Target Audience	Federal and State regulators
Description	The course will focus on the application of models to site-specific ground-water flow and contaminant transport problems drawn from wellhead protection, Superfund, and underground storage tank (UST) sites. The models presented will include the Wellhead Analytical Element Model and the Hydrocarbon Spill Screening Model.
Prerequisites	None
Duration	3½ days
Contact	Jim Weaver (405) 436-8545

Transport and Fate of Contaminants in the Subsurface

Intermediate

Course Goal	To provide students with a basic knowledge of factors that influence the transport and fate of contaminants in the subsurface to permit informed decisions for controlling sources of ground-water contamination, and for making risk assessments and decisions on subsurface remediation technology
Target Audience	Federal and State regulators, including Project Managers, permit writers, or compliance personnel who deal with the contamination of ground water from surface sources (RCRA and CERCLA)
Description	The course covers the chemical, physical, and biological factors that influence the mobility and fate of contaminants after they are introduced into the subsurface.
Prerequisites	None
Duration	3 days
Contact	Jerry T. Thornhill (405) 436-8604

Additional Training Courses: Ground Water

Course Title	Page Number
CME/O&M Inspector Training	48
SUTI at Rice University: Fate and Transport of Contaminants (OSC/RPM Support Program)	21

Health and Safety in EPA Field Activities: Basic Course

Beginner

Course Goal To enable recognition of potential hazards and to provide the information and skills necessary to perform job tasks with minimal risk to personal health and safety, and that of others

Target Audience All EPA employees and their supervisors who routinely perform field work in support of EPA programs. Fulfills requirements of EPA Order Number 1440.2, *Health and Safety Requirements for Employees Engaged in Field Activities.*

Description This is an overview course which covers employee rights and responsibilities, preparation for field work, hazard recognition, basic toxicology, and selection of safe work procedures. The course also describes the use and care of protective equipment and clothing.

Prerequisites The course is geared for those with little or no previous formal training in health and safety

Duration 3 days

Contact Leah Henry
Health and Safety Office
(202) 260-6340

Health and Safety Training: An Interactive Video Training Course for UST Inspectors and Workers

Beginner

Course Goal To help satisfy EPA and OSHA training requirements. The course teaches workers to recognize, evaluate, and control hazards at UST work sites. It also details safe work practices

Target Audience UST inspectors and workers

Description This course emphasizes the principal hazards at UST sites and outlines what workers can do to protect themselves and others. Specific areas that this course covers are: chronic and toxic effects of petroleum products, ways to control the fire and explosion hazards of petroleum products, heavy equipment and construction hazards at tank sites, use of personal protective equipment and monitoring instruments, problems of confined space hazards and oxygen depletion, and site safety planning.

Prerequisites None

Duration Course is self-paced; refresher course lasts approximately 10 hours, the full course requires at least 26 hours

Contact Industrial Training Corporation
1-800-638-3757

Radiation Safety at Superfund Sites (165.11)

Beginner

Course Goal	To provide instruction on the methods and procedures used to monitor a site for radioactivity, determine radiation levels, establish radiation safety criteria in the site safety plan, and dispose of radioactive wastes
Target Audience	Federal and State OSCs, RPMs, and clean-up program contractors who supervise and/or conduct clean-up operations at hazardous waste sites containing, or suspected of containing, radioactive materials
Description	Several topics will be discussed: basic principles of radioactivity; biological effects of radiation; radiation exposure, dose, and protection criteria; radiation surveillance techniques; selection of radiation monitoring and air sampling instruments and equipment; personnel protection; decontamination; packaging, labeling, and shipping of radioactive materials; and remedial options for radioactive cleanup.
Prerequisites	Participants should have an educational background in the biological or physical sciences with work experience at abandoned hazardous waste sites
Course Credit	▪ Continuing Education Units: 2.0 ▪ American Council on Education (ACE) Recommended College Credit Hours: To Be Determined
Duration	5 days
Contact	Registrar (513) 251-7669

Safety and Health Compliance for Managers (165.8)

Beginner

Course Goal To promote a better understanding of OSHA's and EPA's regulations for protecting the health and safety of hazardous waste workers; to improve development, implementation, and management of safety programs for chemical emergencies or investigations; and to facilitate adequate control of activities at abandoned hazardous waste sites

Target Audience Regional and State Superfund supervisory staff who develop, supervise, or manage Health and Safety Programs for chemical emergencies or investigations

Description Topics to be discussed include elements required in a health and safety program: medical surveillance, safety and health training, generic and site-specific safety plans, comprehensive work plans, standard operating safety procedures, personnel protective equipment, and monitoring. Training methods include lectures, group problem-solving, and classroom discussion. This course meets and exceeds OSHA's requirement for eight hours of additional specialized training for supervisors of hazardous waste workers.

Prerequisites Participants are expected to be knowledgeable in basic personnel protection, safety, and response operations. At a minimum, applicants must have attended *Personnel Protection and Safety (165.2)* or *Hazardous Materials Incident Response Operations (165.5)*, similar courses, or have experience in response safety.

Course Credit

- Continuing Education Units: 1.5
- American Board of Industrial Hygiene (ABIH) Certification Maintenance Credits: 1.0
- American Council on Education (ACE) Recommended College Credit Hours: 1.5 Semester Hours Upper-Division Baccalaureate Degree (UDB)

Duration 4 days

Contact Registrar
(513) 251-7669

Additional Training Courses: Health and Safety

Course Title	Page Number
Chemical Safety Audit Workshop	19
HASP Workshop	27
Hazardous Materials Incident Response Operations (165.5)	20

Conducting On-Site Laboratory Evaluations

Intermediate

Course Goal	To provide training in the procedures and protocols involved in preparing and conducting laboratory on-site evaluations
Target Audience	Regional and other EPA personnel, personnel from other Federal agencies, and State agency personnel interested in on-site laboratory visit evaluations
Description	This course presents instruction on all aspects of the preparation necessary for an on-site visit to a laboratory, including sample preparation and analysis, and maintenance of procedure logs. The course is comprised of two sections. Part 1 is a classroom section in which the paperwork requirements of an on-site visit to a laboratory are discussed. Part 2 is a "hands-on" walk through of a fictitious laboratory. The course is specific to Superfund Quality Assurance (QA) guidelines; however, it is applicable to anyone conducting on-site laboratory visits. The course may also be tailored to a specific audience upon request.
Prerequisites	None
Duration	3 days
Contact	Larry Butler (702) 798-2114

Conducting On-Site Quality Assurance of Field Sampling and Analysis

Intermediate

Course Goal	To provide training in the procedures involved in preparing and implementing field on-site evaluations, with an emphasis on proper field sampling and field chemical technologies, and the related paperwork
Target Audience	Regional and other EPA personnel, personnel from other Federal agencies, and State agency personnel who perform field on-site visit evaluations
Description	A properly designed field program can be objectively reviewed for effective implementation. This course provides training in the procedures involved in preparing and implementing field on-site evaluations, with an emphasis on proper field sampling and field chemical technologies and the related paperwork. Included are: classroom discussions of the paperwork component of field on-site visits, field-deployable alternatives to laboratory sample analyses, quality control (QC) associated with field equipment, and auditing techniques.
Prerequisites	None
Duration	3 days
Contact	Larry Butler (702) 798-2114

Data Quality Objectives (DQO)

Beginner

Course Goal To provide a general understanding of the DQO concept and its value to EPA, and to ensure an awareness of the key stages and roles in the DQO process

Target Audience EPA managers, program staff, and technical staff involved in the design or oversight of environmental data collection activities

Description The workshop is designed to introduce participants to the DQO concept and process. The course consists of a combination of lectures, group discussions, and exercises. The emphasis is on management issues associated with DQOs rather than on detailed, "how to" technical information.

Prerequisites None

Duration 1 day

Contact Quality Assurance Division
(202) 260-4346

ICP-MS Data Audit Training

Intermediate

Course Goal To train personnel in the interpretation and auditing of ICP-MS data

Target Audience EPA Regional QA auditors affiliated with CERCLA and the low concentration water inorganics protocol, other EPA personnel, personnel from other Federal agencies, and State agency personnel

Description This course provides an overview of the fundamentals of ICP-MS and Method 6020. The QA/QC requirements specific to ICP-MS and the differences between ICP-MS and ICP-AES will also be discussed. The course will address the use of the new QA/QC forms for ICP-MS. Since the potential for molecular interferences exists at many masses, much of the course is devoted to recognition and correction of these interferences with elemental equations and higher level equations. Discussion will also focus on the use of ICP-MS specific parameters that can be used to further assess data quality and usability over and above usual QA/QC methods. These checks include: isotope ratios, internal standard behavior and memory tests. The student will also receive "hands-on" experience auditing and validating ICP-MS data packages.

Prerequisites Prior experience in auditing inductively coupled plasma-atomic emission spectroscopy data packages is desired but not mandatory

Duration 3 days

Contact Larry Butler
(702) 798-2114

Orientation to Quality Assurance Management

Beginner

Course Goal	To provide a systematic, non-technical introduction to the primary elements and concepts of Quality Assurance
Target Audience	EPA managers and staff who would benefit from a systematic introduction to EPA's QA program, especially employees newly assigned to QA responsibilities
Description	This workshop serves as an orientation to the basic management issues associated with EPA's QA program for environmental data collection. By the end of the course, participants will be able to understand the value and benefits of an effective QA program; identify the basic tools of QA management at EPA; evaluate the strengths and weaknesses of particular QA programs; and understand the QA roles of EPA managers and their staff.
Prerequisites	None
Duration	1 day
Contact	Quality Assurance Division (202) 260-4346

Superfund Quality Assurance Computer-Based Training

Beginner

Course Goal — To provide basic information on planning and implementing data collection activities related to quality assurance for the Superfund and related programs

Target Audience — RPMs and OSCs; Regional staff with QA oversight responsibilities

Description — Seven modules are available:

- **Field Sampling Equipment** — discusses the uses and limitations of equipment that is used in data collection at Superfund and other sites;
- **Decontamination Procedures** — discusses decontamination procedures for equipment and personnel in the field;
- **Chain of Custody** — focuses on documentation and procedures to establish a chain of custody for all samples collected at Superfund and related sites;
- **Sample Preparation, Preservation, and Packaging** — focuses on the purposes and methods for preparing, preserving, and packaging samples;
- **Field Audits** — describes a field audit and how it can assist RPMs or OSCs.
- **Introduction to Data Quality Objectives** — describes the DQO process which enables management and technical staff to define data requirements before carrying out a data collection activity;
- **Quality Assurance in the Laboratory** — focuses on how QA management principles are applied in the laboratory, specifically outlining the Project Manager's role in laboratory QA and identifying the basic components of a laboratory QA strategy.

Prerequisites	None
Duration	Each module is 15-35 minutes
Contact	EPA QA Management Staff (202) 260-5763

Use of Performance Evaluation Materials

Intermediate

Course Goal To instruct personnel to design, prepare, and use performance evaluation materials (PEMs) on a case-by-case basis for hazardous waste laboratories with emphasis on the CLP

Target Audience Regional EPA personnel with CERCLA and RCRA affiliation charged with laboratory and data package evaluation, other EPA personnel, personnel from other Federal agencies, and State agency personnel

Description This course will provide instruction in the design, preparation, and use of PEMs on a case-by-case basis for CLP and non-CLP laboratories. The course will encourage the use of PEMs. Specific topics to be covered: determination of PEMs; needs suitability of PEMs for specific cases or sites; suitability of PE sample recipes for specific sites and problems; how to make PEMs; advantages and disadvantages of single blind versus double blind PEMs; PEM introduction into the case or sample delivery group; and interpretation, use, and coordination of results with EMSL-LV/AOB. This course, while specific to Superfund, may be useful to anyone who uses, designs or prepares PEMs.

Prerequisites Previous experience with laboratory and data evaluation, and a fundamental understanding of the use of PE materials

Duration 3 days

Contact Larry Butler
(702) 798-2114

Additional Training Courses: Quality Assurance

Course Title **Page Number**

Soil Sampling and Quality Assurance for Superfund 62

Basic Incinerator and BIF Permitting

Beginner

Course Goal	To enable adequate technical and policy review of incinerator permit applications
Target Audience	Regional and State incinerator permit writers who are new to the job
Description	This two-day course trains new permit writers in the basics of incineration and boiler and industrial furnace (BIF) technology and permitting. It covers basic combustion concepts, incineration design, incineration regulations, monitoring, trial burn planning and observation, and test result review. Class size is limited to 50.
Prerequisites	None
Duration	2 days
Contact	Karen Randolph (703) 308-8651

CME/O&M Inspector Training

Intermediate

Course Goal	To enable participants to plan, conduct, and document RCRA ground-water inspections
Target Audience	Regional and State enforcement personnel
Description	This course is a guide for planning, conducting, and documenting RCRA ground-water inspections. It emphasizes policy, planning, and documentation rather than the technical aspects of investigations. This course may provide 24 hours of the 150 hours of program-specific training required for all RCRA inspectors.
Prerequisites	One year of RCRA inspector experience
Duration	Course delivered on a CD-ROM. Will run on a PC with Windows, sound card, and CD-ROM drive
Contact	Ellen Epstein (703) 603-8954

How to Review Trial Burn Data and Set Permit Limits

Intermediate

Course Goal	To demonstrate how to set permit limits based on results obtained during the trial burn
Target Audience	Regional and State RCRA Incinerator Permit Writers
Description	This 3-day course covers how to review hazardous waste incinerator trial burn data and translate the data results into permit conditions. Basics of the RCRA incinerator and BIF regulations and incinerator operation are covered as they pertain to the course topic as well as elements of the 1993 Draft Combustion Strategy. These elements include: dioxin formation and control, risk assessment guidance, trial burn guidance, and trial burn failure guidance. Example cases will be included, so attendees are advised to bring a calculator.
Prerequisites	Basic Incinerator Training is recommended but not required
Duration	3 days
Contact	Karen Randolph (703) 308-8651

State Authorization Workshop

Advanced

Course Goal	To ensure accuracy and consistency when applying for RCRA Subtitle C authorizations and to discuss and resolve contemporary authorization problems
Target Audience	Regional and State authorization staff and supervisors, Regional Counsel, and State Attorney General office staff
Description	This workshop will discuss and present important contemporary authorization topics as well as state capability issues.
Prerequisites	Introductory Authorization Workshop
Duration	3 days
Contact	Keely Clifford (703) 308-8763

Subpart H: Financial Assurance Requirements

Beginner

Course Goal	To provide a basic understanding of financial assurance under Subtitle C and of the financial assurance mechanisms allowed under Subpart H
Target Audience	RCRA State and Regional Permit Writers, and to a lesser extent, enforcement officials
Description	This course will discuss financial responsibility requirements under Subtitle C of RCRA as well as the roles and responsibilities of owners/operators and State and Regional staff in implementing these requirements. The course is a mixture of lecture and case studies, and is divided into 8 modules: 1) Closure/Post-Closure Overview; 2) Cost Estimating; 3) Financial Responsibility Overview; 4) Financial Instruments Allowed for Demonstrating Financial Responsibility for Closure/Post-Closure Care; 5) Third-Party Liability Coverage Overview; 6) Financial Instruments Allowed for Demonstrating Financial Responsibility for Third-Party Liability Coverage; 7) Financial Assurance for Corrective Action; and 8) Upcoming Financial Responsibility Activities.
Prerequisites	None
Duration	2 days
Contact	Ed Coe (202) 260-6259

Additional Training Courses: RCRA-Related

Course Title	Page Number
Advanced RCRA Inspector Institute	30
Basic Inspector Training (Fundamentals of Environmental Compliance Monitoring Inspections)	31
Ground-Water Investigations	37
Land Disposal Restrictions (LDR) Enforcement Training: Interactive Computer Program	32
Mechanical Integrity: Identifying Flow Behind Casing	37
RCRA Civil Penalty Policy Training	33
RCRA Enforceability of Regulations Training	34
RCRA Inspector Institute	34
Resource Conservation and Recovery Information System (RCRIS) Technical Training	29
Skills Development in Negotiation of RCRA/CERCLA Disputes	35
Statistical Analysis of RCRA Ground-Water Monitoring Data	39
Transport and Fate of Contaminants in the Subsurface	40
Use of Performance Evaluation Materials	47

Chemical Emergency Preparedness and Prevention: An Introductory Training Course

Intermediate

Course Goal

To introduce the three major components of a comprehensive chemical safety program: emergency preparedness, accident prevention, and emergency response

Target Audience

Public officials at the national, State and local levels; chemical industry representatives; emergency preparedness specialists; emergency responders

Description

The course focuses on emergency preparedness and accident prevention. Through a series of lessons and exercises, participants learn the basic elements of the safety continuum before focusing on emergency planning as part of preparedness. Participants concentrate on organizing planning groups and conducting community hazards analysis through hazards identification, vulnerability analysis, and risk analysis. The course includes a sample tabletop test of current planning.

Chemical accident prevention activities complement the preparedness program by reducing risks and making the need for response less likely. The course emphasizes a strong commitment from industry management as part of a prevention program. Participants are introduced to chemical process safety management and its 12 key elements. Good process safety management results in safer operations, greater efficiency, increased product, and better overall acceptance by the community.

The course will not make participants experts in chemical process safety, but rather help them understand how prevention reduces risk to the community.

Prerequisites

Participants will be expected to bring basic information about chemical hazards in their community, as well as a map of the area for which they might be conducting planning activities.

Duration

3 or 4 days

Contact

Bill Finan
(202) 260-0030

Emergency Response to Hazardous Material Incidents (165.15)

Beginner

Course Goal
To improve recognition, evaluation, and control of an incident involving the release or potential release of hazardous materials

Target Audience
Members of a hazardous materials response team or teams that are being formed, or others who may be called upon to respond to a chemical emergency

Description
The focus of the course is on recognizing and evaluating a hazardous materials incident, organizing the response team, protecting response personnel, identifying and using response resources, implementing basic control measures, decision making, and protecting the public. Firefighting techniques are not part of the course. This course discusses several topics: chemical and physical properties of hazardous materials, toxicology, recognition and identification of hazardous materials, direct-reading instruments, standard operating guides, personnel protection and safety, and sources of information. Instructional methods used are lectures, class problem-solving, and exercises. The course emphasizes the hands-on use of equipment and includes exercises for practical application of lecture information. Participants will wear fully encapsulating suits and chemical splash gear. Attendees will participate in two simulations designed to apply and test the lessons learned during the week.

This course meets and exceeds OSHA's requirement for a minimum of 24 hours of annual training for a Hazardous Materials Technician. It also meets the training requirements of the National Fire Protection Association's Standard No. 472 for a Hazardous Materials Technician.

Prerequisites
None

Alternate Courses Available
Persons who have attended the courses *Hazardous Materials Incident Response Operations (165.5)* and/or *Personnel Protection and Safety (165.2)*, should consult with the Registrar before applying for this course.

Course Credit
Continuing Education Units: 2.1
American Board of Industrial Hygiene (ABIH) Certification Maintenance Credits: 4.5
American Council on Education (ACE) Recommended College Credit Hours: 2.0 Semester Hours Vocational Certificate/Associate Degree/Lower-Division Baccalaureate Degree (VC/AD/LDB)

Duration
5 days

Contact
Registrar
(513) 251-7669

Environmental Release Reporting/EPCRA Requirements Workshop

Intermediate

Course Goal To provide up-to-date training on release notification requirements under CERCLA and SARA Title III

Target Audience EPA Regional personnel, DOE facilities operators, and others as space permits

Description This special, 2-day workshop will explain the far-reaching requirements under Superfund for reporting releases of hazardous substances. EPA Headquarters experts will present an overview of the mechanics of reporting releases of hazardous substances under CERCLA and SARA Title III, including the kinds of releases that must be reported; who must report them; and how, when, and where to report the releases. The workshop will focus on the continuous releases and radionuclides final rules, including an overview of the reporting requirements for continuous releases and radionuclides, and a demonstration of the tools for reporting continuous releases of hazardous substances. In addition, the workshop will provide an update on reporting and liability issues associated with Federally permitted releases of hazardous substances, with an overview of Emergency Planning and Community Right-to-Know Act (EPCRA) requirements. Two question-and-answer sessions will enable participants to interact with the EPA authorities. The workshop will also discuss DOE emergency management requirements for reporting releases at DOE facilities.

Prerequisites None

Duration 2 days

Contact Bill Curtis
(202) 233-9374

Hazardous Materials: An Introduction for Public Officials and Emergency Managers (G300)

Beginner

Course Goal To increase decision maker support and understanding of planning response efforts at the local level

Target Audience Decision makers in either the private or public sectors who need a basic understanding of the subject

Description This is an introductory course covering the basic concepts and terminology of hazardous materials planning and response.

Prerequisites None

Duration 1/2 day

Contact Ray Chevalier
FEMA/Emergency Management Institute
(301) 447-1187

Hazardous Materials Contingency Planning — Train the Trainer (E499)

Intermediate

Course Goal	To ensure adequate development of contingency plans for chemical emergencies
Target Audience	Regional, State and local employees who intend to instruct or assist in the instruction of the contingency planning course
Description	The course is co-sponsored by the EPA, the Federal Emergency Management Agency (FEMA), and the Department of Transportation (DOT), and is designed to qualify instructors to conduct the field course *Hazardous Materials Contingency Planning*. The course covers factors affecting hazmat emergencies including transportation, use, storage, and disposal of hazardous materials, and episodic releases of air toxic chemicals from fixed-site facilities. The course is also available in a content-only format.
Prerequisites	None
Duration	4½ days (Resident course)
Contact	Ray Chevalier FEMA (301) 447-1187

Title III HazMat Planning
Module A: Hazards Analysis in Preparing Title III Plans
Module B: Conducting HazMat Exercises

Intermediate

Course Goal	To provide training to State and local emergency planning and response officials in the conduct of hazards analyses as part of the planning process
Target Audience	State, local and Regional emergency, environmental health, and transportation officials involved in planning for, and responding to, chemical emergencies
Description	This course is designed to enable State and local preparedness response officials to acquire skills in developing a hazard analysis using manual and computer methodologies. The course also includes an optional table-top exercise module which will enable State and local officials to conduct periodic exercises to test and evaluate Title III plans.
Prerequisites	None
Duration	A: 1½ days B: 1 day
Contact	William Finan (202) 260-0030

Additional Training Courses: Response and Preparedness

Course Title	Page Number
Air Surveillance for Hazardous Materials (165.4)	56
Chemical Safety Audit Workshop	19
Complying with Federal Requirements for Reporting Releases of Hazardous Substances	19
Hazardous Materials Incident Response Operations (165.5)	20
Introduction to Hazardous Materials Preparedness	21

Risk and Decision Making

Beginner

Course Goal	To provide a basic understanding of the concepts and elements of risk assessment, risk management, and risk communication
Target Audience	EPA technical/professional staff and supervisors involved in or needing an understanding of risk-based decision making
Description	The course includes limited lectures on the principles of risk assessment and risk communication, as well as on IRIS and the Risk Assessment Guidelines. The course emphasizes small group discussions based on a hypothetical case study. The case study was designed to raise multi-media issues and has application to all programs and all staff.
Prerequisites	None
Duration	2 days
Contact	Jim Cole (202) 260-2747

Risk Assessment Guidance for Superfund (165.6)

Beginner

Course Goal	To provide participants with the fundamentals of environmental and human health assessment as applied to the Superfund cleanup process
Target Audience	Regional and State Superfund staff who supervise and/or perform risk assessments in the Superfund program
Description	The course is based on the Risk Assessment Guidance for Superfund which is composed of two documents: *The Environmental Evaluation Manual* and the *Human Health Evaluation Manual*. The course will cover several topics: applicable statutes, regulations and guidance, data quality objectives, exposure pathways, sampling and analytical issues, principles of toxicology and ecology, risk characterization, and interpretation and presentation of data and risk communication. Both qualitative and quantitative approaches to risk assessment will be discussed where applicable. The course will emphasize the importance of planning risk assessments, determining data needs early in the process, and obtaining quality data. Current technical and information resources will also be discussed. Instructional methods include lectures, problem-solving, class discussions, and case studies. Participants should bring a calculator to the class.
Prerequisites	None
Course Credit	▪ American Board of Industrial Hygiene (ABIH) Certification Maintenance Credits: 2.0 ▪ American Council on Education (ACE) Recommended College Credit Hours: 1.0 Semester Hours Upper-Division Baccalaureate Degree (UDB)
Duration	5 days
Contact	Registrar (513) 251-7669

Additional Training Courses: Risk Assessment

Course Title	Page Number
Advanced GIS: Planning a GIS Project	58
Chemical Safety Audit Workshop	19
Transport and Fate of Contaminants in the Subsurface	40

Advanced GIS: Planning a GIS Project

Beginner

Course Goal	To acquaint potential Geographic Information System (GIS) Project Managers with the recommended steps to be taken in developing a GIS application
Target Audience	EPA managers, SAMs, and RPMs
Description	GIS uses database information and data on site characteristics to develop a site-specific map used to forecast the extent and effects of hazardous waste contamination. This course will cover five topics: 1) delineation of decisions to be covered with GIS analysis; 2) how to conduct a user needs assessment to define the scope of the GIS project; 3) how to task a contractor to provide GIS support activities; 4) how to estimate the cost of developing a GIS; and 5) resources available within EPA to assist with GIS project planning, development, and technical support.
Prerequisites	None
Duration	1 day
Contact	Mason Hewitt (702) 798-2377

Air Surveillance for Hazardous Materials (165.4)

Intermediate

Course Goal	To enable adequate utilization of air monitoring instruments, air sampling equipment, and the resulting data when evaluating airborne hazardous materials, in order to ensure the safety of response personnel and the public
Target Audience	Personnel involved in emergency response to hazardous substance accidents or those who investigate uncontrolled hazardous waste sites
Description	This course discusses several topics: the design of air surveillance programs; air monitoring and sampling techniques and equipment; radiation detection instruments; instrument calibration; quality control; exposure guidelines; and health and safety considerations. The course will include operating procedures for specific air monitoring and sampling equipment, as well as strategies for air surveillance at both abandoned hazardous waste sites and accidental releases of hazardous chemicals. Instruction methods used are a combination of lectures, group discussion, problem-solving sessions, and laboratory and field exercises with hands-on use of equipment and instruments. Participants should bring a calculator to the class.
Prerequisites	None
Duration	5 days
Course Credit	▪ Continuing Education Units: 1.7 ▪ American Board of Industrial Hygiene (ABIH) Certification Maintenance Credits: 2.0 ▪ American Council on Education (ACE) Recommended College Credit Hours: 2.0 Semester Hours Upper-Division Baccalaureate Degree (UDB)
Contact	Registrar (513) 251-7669

Hazard Ranking System (HRS) Training

Intermediate

Course Goal To enable staff to compile and review Hazard Ranking System (HRS) packages

Target Audience Superfund site assessment personnel including EPA Regional and State staff, contractors, Federal facility staff, and others required to compile and review HRS packages submitted to propose sites for inclusion on the National Priorities List (NPL)

Description The course provides details of the structure and application of the revised HRS. The course includes in-depth, pathway-by-pathway presentations and exercises. The first day's modules cover source characterization, observed releases, actual contamination, and data quality. The second day includes instruction on the ground-water pathway, geology, likelihood of release, waste characteristics, and targets, followed by a module on documentation and referencing. The second day concludes with the surface water pathway potential to release and the drinking water threat. The third day finishes instruction on the surface water pathway, and covers the food chain threat, environmental threat, and addresses the ground-water to surface-water component, the air pathway, potential to release, waste characteristics and targets. The fourth day covers radionuclides, the soil exposure pathway, and concludes with the scoring dynamics with an emphasis on targets. Trainees will participate in exercises using information on a fictional candidate NPL site to obtain practice on HRS application.

Prerequisites None

Duration 4 days

Contact Barbara Vandermer (703) 603-9018 or Regional Site Assessment Training Coordinator

HRS Documentation Record

Advanced

Course Goal	To teach participants how to prepare and review HRS documentation records
Target Audience	Personnel from EPA Regional offices, State programs, contractors, and others who are required to compile, draft, and review HRS documentation records
Description	Case studies, group discussions, and lectures will provide participants with the tools needed to prepare and review HRS documentation records. Major topics include informational and procedural requirements for documentation records; common errors in documentation record preparation and how to avoid them; an efficient approach to collecting and organizing site information; preliminary HRS scoring, reference tracking, and documentation record drafting; the relationship between data requirements and site-specific informational needs; available resource materials such as the HRS Guidance Manual, the Regional QC Guidance Manual, PREScore, and the WordPerfect documentation record boilerplate format.
Prerequisites	Completion of the HRS course (see page 59) and/or at least one year of direct work experience preparing or reviewing HRS documentation records
Duration	1½ days
Contact	Barbara Vandermer (703) 603-9018 or Regional Site Assessment Training Coordinator

Introductory Preliminary Assessment (PA)

Beginner

Course Goal	To explain the importance of preliminary assessments in the overall context of Superfund site assessment and teach participants how to efficiently conduct PAs
Target Audience	Personnel from EPA Regional offices, State programs, contractors, and others who are required to conduct preliminary assessments under Superfund and have little or no experience in conducting site assessments under the revised HRS
Description	Case studies, group discussions, and lectures will prepare participants to conduct preliminary assessments under Superfund. Major topics include collection of PA data, development of a site-specific hypothesis using criteria lists and score sheets, and unique characteristics for evaluating all four exposure pathways: ground water, surface water, soil exposure, and air.
Prerequisites	Participants should read the HRS rule (40 CFR 300) before attending the course
Duration	2 days
Contact	Barbara Vandermer (703) 603-9018 or Regional Site Assessment Training Coordinator

Introductory Site Inspection (SI)

Beginner

Course Goal To provide participants with the tools necessary to conduct site inspections and to teach how to test site hypotheses

Target Audience Personnel from EPA Regional offices, State programs, contractors, and others who conduct site inspections under Superfund

Description Case studies, group discussions, and lectures will prepare participants to conduct site inspections under Superfund. The course is offered immediately after each PA course (see page 60) so participants who wish can complete four days of site assessment training. Major topics include design of an SI sampling strategy to test the hypotheses generated during the PA, sampling strategies for all four exposure pathways, HRS requirements driving the structure of an SI, and evaluation of analytical data and some aspects of SI scoring.

Prerequisites Completion of the Introductory Preliminary Assessment course

Duration 2 days

Contact Barbara Vandermer (703) 603-9018 or Regional Site Assessment Training Coordinator

Sampling for Hazardous Materials (165.9)

Beginner

Course Goal To enable effective sampling of hazardous materials

Target Audience Personnel with minimal or no sampling experience who are responsible for inspections, investigations, and remedial actions at Superfund sites

Description The course focuses on the development of sampling plans, the types of equipment suitable for hazardous materials sampling, and procedures for safely collecting samples. Several topics are discussed: sampling planning and development; equipment needs and procedures for sampling containerized materials, surface water/lagoons, sediments/sludges and soil/ground water; shipping samples; soil gas sampling; geophysical techniques; and quality assurance considerations. Instructional methods used are lectures, group discussions, demonstrations, and field exercises. The hands-on use of multi-media sampling equipment is emphasized. The course is consistent with the EPA protocol and guidance documents, *A Compendium of Superfund Field Operations Methods* and *Data Quality Objectives for Remedial Response Activities.*

Prerequisites None

Course Credit
- Continuing Education Units: 2.0
- American Council on Education (ACE) Recommended College Credit Hours: 1.0 Semester Hour Upper-Division Baccalaureate Degree (UDB)

Duration 3 days

Contact Registrar (513) 251-7669

Soil Sampling and Quality Assurance for Superfund

Intermediate

Course Goal	To enable participants to collect adequate and technically defensible environmental sampling data and to use appropriate assurance elements
Target Audience	EPA, contractor, and State personnel involved with soil sampling and quality assurance in site investigations. The course is offered to large groups upon request.
Description	This short course identifies and stresses the importance of QA/QC elements that must be addressed and incorporated into soil sampling/monitoring programs. Case studies that illustrate monitoring design approach, training, auditing, and interpreting and utilizing QA/QC data are used.
Prerequisites	Basic knowledge of soil science, statistics, and EPA's sampling/analytical quality assurance requirements
Duration	2 days
Contact	Jeff van Ee (702) 798-2367

Additional Training Courses: Site Assessment

Course Title	Page Number
Ground-Water Investigations	37
Introduction to Ground-Water Investigations (165.7)	38
PREScore	28
SUTI at University of Nevada, Las Vegas: Site Characterization (OSC/RPM Support Program)	22

Remediation of Contaminated Soils

Intermediate

Course Goal To acquaint students with soil process fundamentals and their application in the selection and implementation of technologies for remediation of contaminated soils

Target Audience Federal and State regulators, including project managers, permit writers, or compliance personnel who deal with contamination of soil from surface sources

Description The course covers soil process fundamentals and waste-soil interactions that influence fate, transport, and remediation of hazardous chemicals in soil systems. The course emphasizes fundamentals of vadose zone processes and soil-waste interactions; behavior, transport, and fate of contaminants in the vadose zone; and integration and application of soil process fundamentals to remediation selection.

Prerequisites None

Duration 2½ days

Contact Jerry T. Thornhill
(405) 436-8604

Treatment Technologies for Superfund (165.3)

Beginner

Course Goal To enable attendees to identify treatability study screening resources, identify the processes and explain the limitations of the most frequently used treatment technologies, explain the principles and applications of biological technology, describe incinerator designs, and identify references that describe emerging treatment technologies

Target Audience New OSCs, RPMs, waste site managers, and all others interested in treatment technologies

Description This introductory-level course provides participants with an overview of the treatment technologies most frequently used for cleanups at uncontrolled waste sites. The emphasis of the course is on the selection of appropriate treatment technologies rather than the design of such systems. Topics to be discussed include: field categorization, waste treatability, bulking, groundwater containment, product recovery, soil vapor extraction, air and stream stripping, carbon adsorption, inorganic treatment, biological treatment units, thermal treatment units, disposal options, and advanced treatment technologies. Training methods include lectures and group problem solving. Case studies are used to demonstrate applications of the technologies.

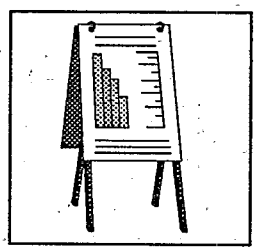
Prerequisites None

Course Credit
- Continuing Education Units: 3.7
- ACE Recommended Credit: To Be Determined

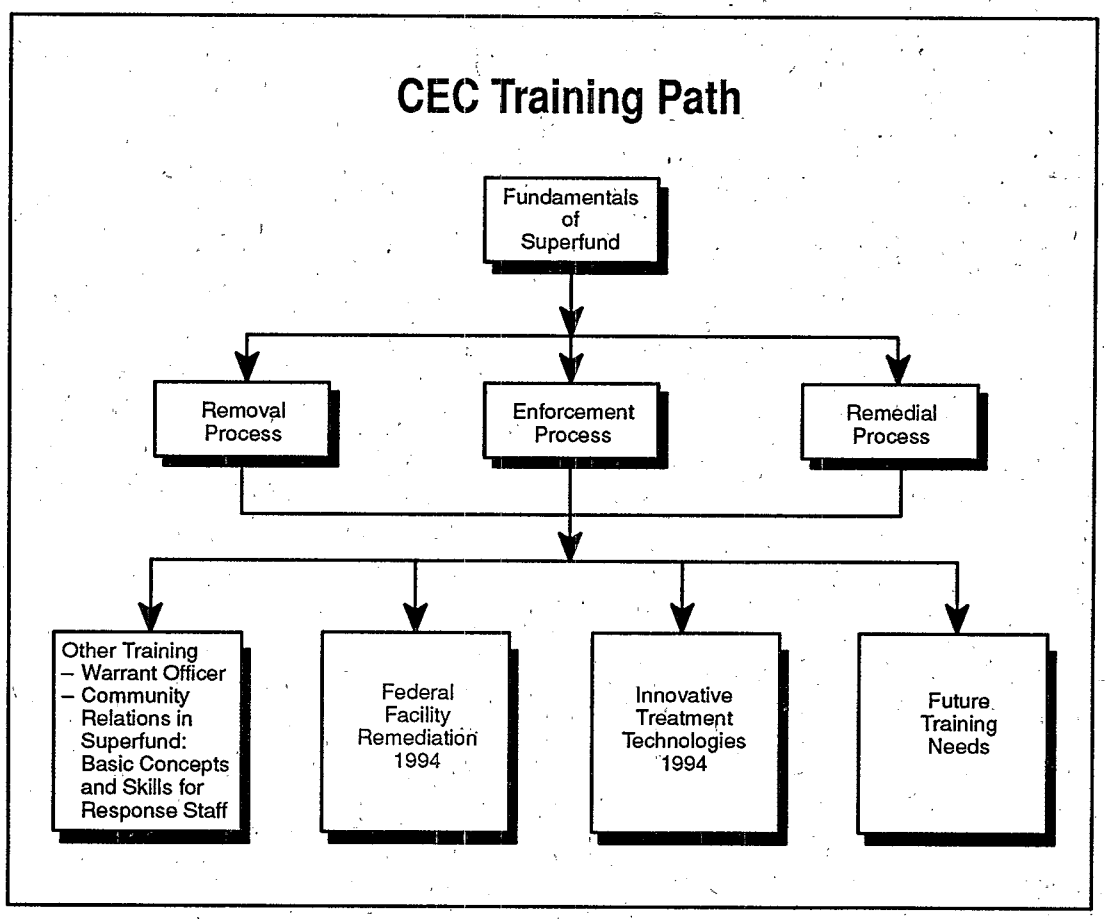
Duration 4 days

Contact Registrar
(513) 251-7669

CERCLA Education Center



The CERCLA Education Center (CEC) is a unique training forum implemented by the Environmental Protection Agency's (EPA), Office of Solid Waste and Emergency Response (OSWER), Technology Innovation Office (TIO). The CEC's curriculum is aimed at providing On-Scene Coordinators (OSCs), Remedial Project Managers (RPMs), other Superfund staff, and Federal and State environmental professionals with basic as well as advanced training on the laws, regulations, and processes that make up the Superfund Program.



The explosion of information, rapidly changing technology, and complex environmental problems are challenging many employers of environmental management professionals today, and labor force projections indicate that such challenges will increase in the future.

STRUCTURE

The CEC offers a structured, but flexible curriculum aimed at providing a basic foundation of Superfund knowledge, as well as providing comprehensive training on the CERCLA response authorities — removal, remedial, and enforcement. Two new advanced courses, *Innovative Treatment Technologies* and *Federal Facility Remediation*, were developed and delivered in 1994.

The CEC allows participants, who have varying degrees of experience in the Superfund Program, the flexibility to schedule the training that is of particular interest to them and most appropriate to their projects and workload. The structured curriculum of the CEC enables participants to meet specific mandatory training requirements. (Please refer to the section entitled "Meeting Other Training Requirements" for further information.)

CEC TRAINING PATH

As illustrated in the diagram "CEC Training Path," the CEC provides different levels of training for participants.

The basic training course in the CEC is *Fundamentals of Superfund*. The course provides a general introduction and overview of the Superfund Program. It also provides a discussion on CERCLA response activities and responsibilities.

More comprehensive coverage of the response authorities under CERCLA is provided in the *Removal Process, Remedial Process*, and *Enforcement Process* courses.

Two advanced training courses that address other aspects of a CERCLA response were developed and delivered in 1994. These courses are *Innovative Treatment Technologies* and *Federal Facility Remediation*.

The CEC structure also allows for future curriculum development in response to any changes in CERCLA or the Superfund Program.

CEC COURSES AND THEIR INTENDED AUDIENCE

Fundamentals of Superfund

This 5-day course provides an overview of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Contingency Plan (NCP), and the Superfund Accelerated Cleanup Model (SACM). Other topics discussed include response (removal, remedial, and enforcement) activities and responsibilities. An overview of enforcement topics is presented including: CERCLA liability, identifying potentially responsible parties (PRP), settlement tools, ensuring adequate PRP response, and authorities and liabilities.

Audience: *This basic course is designed for newly hired EPA OSCs and RPMs with less than 1 year experience in the Superfund Program. Other course participants should have 1-2 years experience in a hazardous waste program.*

Removal Process

This 4-day course provides a more comprehensive discussion on removal response activities and responsibilities under CERCLA and SACM. The primary focus of the course is on removal site management and enforcement topics. Removal site management focuses on site assessment, applicable or relevant and appropriate requirements (ARAR), documentation and closeout. The course also discusses waste treatment and disposal options, and transporting wastes. Enforcement topics discussed include access, PRP notification, criminal enforcement, depositions and testimony, compliance monitoring, and cost recovery. The course concludes with an overview of the Oil Pollution Act and a simulated response to a major inland oil spill.

Audience: *This course is designed for OSCs and RPMs who have completed the Fundamentals of Superfund course; or OSCs and RPMs with 1-2 years experience in the Superfund Program. Other course participants should have at least 2 years experience in a hazardous waste program.*

Remedial Process

Remedial Process is a thorough 4-day course on remedial response activities and responsibilities under CERCLA and SACM. Topics discussed include site characterization strategies, remedy selection policies, and remedial design/remedial action (RD/RA) implementation. Enforcement issues presented include PRP oversight, and non-compliance and penalties. The course also includes a comprehensive discussion on ARARs.

Audience: *This course is designed for OSCs and RPMs who have completed the Fundamentals of Superfund course; or OSCs and RPMs with 1-2 years experience in the Superfund Program. Other course participants should have at least 2 years experience in a hazardous waste program.*

Enforcement Process

This 4-day course discusses enforcement activities and responsibilities under CERCLA and SACM in detail. Two days are dedicated to an enforcement overview and review of Superfund liability, PRP search activities, administrative and judicial law involvement, settlement tools, and cost recovery. The course concludes with an in-depth, 2-day negotiation skills workshop.

The *Enforcement Process* course is structured to offer participants a variety of options. Participants can elect to attend the entire 4-day course, or they can elect to attend either the 2-day enforcement overview portion or the 2-day negotiation skills workshop.

Audience: *Newly hired RPMs and OSCs must complete the Fundamentals of Superfund course prior to attending this course. Newly hired RPMs must attend the entire 4-day course. OSCs or RPMs who need to meet Agency inspector training requirements (see section entitled "Meeting Other Training Requirements") or who need negotiation skills training should also take this course. Other participants should have at least 1-2 years experience in a hazardous waste program.*

Federal Facility Remediation

A pilot delivery of an advanced course on Federal facility remediation will be delivered in December 1994. The course discusses roles for RPMs at Federal sites, stake holders involvement, integrating regulatory/statutory requirements, base realignment and closure and approaches to site management. The course also will discuss funding issues, interagency agreements, and community involvement.

Audience: *This course is designed for OSCs and RPMs with a minimum of 2 years experience in the Superfund Program. Other participants should have at least 3 years experience in a hazardous waste program and be involved in environmental clean-up at Federal facilities.*

Innovative Treatment Technologies

In 1994, an advanced workshop on innovative treatment technologies was added to the CEC curriculum. The workshop addresses innovative treatment technology resources, screening of innovative treatment technologies, and identifying and overcoming procurement barriers to the selection of innovative treatment technologies. The technologies discussed in depth include: soil vapor extraction (SVE)/thermal enhancement; SVE/bioventing; soil washing; thermal desorption; solid phase biological treatment; slurry phase biological treatment; and innovative application of conventional ground water technologies. Other innovative technologies are addressed briefly.

Audience: *This course is designed for OSCs and RPMs with a minimum of 2 years experience in the Superfund Program. Other course participants should have a minimum of 3 years experience in a hazardous waste program.*

MEETING OTHER TRAINING REQUIREMENTS

Inspector Training Requirements

EPA Order 3500.1 requires all EPA inspectors to meet mandatory training requirements. Under this Order, CERCLA OSCs and RPMs are considered to be inspectors. OSCs and RPMs meet inspector training requirements by:

1) completing 40-hour health and safety training offered in all Regions; and
2) attending program specific CEC courses.

All newly hired OSCs and RPMs must complete the CEC's *Fundamentals of Superfund* course. Additionally, RPMs must complete the CEC's *Remedial Process* and the 4-day version of the *Enforcement Process* courses and OSCs must complete the CEC's *Removal Process* course.

Federal facility RPMs must complete the 40-hour Health and Safety Training course; the CEC's *Fundamentals of Superfund* course, and the *Federal Facility Remediation* course.

Community Relations

OSWER Directive #9285.9-06 formally announced "Mandatory Community Relations Training" for OSCs, RPMs and any EPA representative who participates in public meetings or interacts with the public. EPA has developed a course entitled "Community Relations in Superfund: Basic Concepts and Skills for Response Staff." The course covers concepts and skills to use when working with citizens, local elected officials, the media, PRPs, and other members of the public. Regional offices and State agencies can access the "Community Relations" training materials to deliver the course as needed in their respective offices.

STATE OF THE ART TRAINING (CONTINUOUS IMPROVEMENT)

Innovative and alternative presentation techniques are used to maximize the CEC learning experience. Training techniques range from workshops, to panel (or open discussions) that foster group interaction, to problem-solving exercises utilizing real world situations, to simulation exercises. The CEC uses multi-media delivery

methods such as interactive videos, computer-based training, and satellite transmission. There are still some areas that will require training courses, but the CEC's flexible structure will allow for improvement and growth as needs arise.

LOCATION

CEC courses are held at North Carolina State University's (NCSU) Jane S. McKimmon Center for Adult Education in Raleigh, North Carolina and the National Enforcement Training Institute-West in Denver, Colorado. Hotel accommodations are available for CEC participants at the Brownestone Hotel, 1707 Hillsborough Street, Raleigh, NC 27605. Lodging, transportation, and other information is provided to participants prior to individual course deliveries.

REGISTRATION

To register for any of the CEC courses, complete the attached Registration Form and FAX it to (301) 589-8487 or mail it to the address below. If you have any questions concerning registration, please call the Technology Innovation Office/CERCLA Education Center at (703) 308-8802.

FOR MORE INFORMATION

To obtain more information about the CEC, please write to:

CERCLA Education Center
Technology Innovation Office (5102W)
U.S. Environmental Protection Agency
Washington, DC 20460

EPA

United States
Environmental Protection
Agency

CERCLA EPA Education Center

Registration Form

The following courses are offered at the CERCLA Education Center (CEC), located in Raleigh, North Carolina, and the National Enforcement Training Institute (NETI) in Denver, Colorado. Contact the Technology Innovation Office (TIO) at (703) 308-8802 for information on the CEC.

Community Relations in Superfund
- March 28-29, 1995–CO

Enforcement Process

Enforcement Overview:
- March 13-14, 1995–NC
- June 12-13, 1995–CO
- October 16-17, 1995–CO

Enforcement Negotiations:
- March 15-16, 1995–NC
- June 14-15, 1995–CO
- October 18-19, 1995–CO

Federal Facility Remediation
- December 13-15, 1994 *(Pilot)*–NC
- April 4-6, 1995–CO
- November 6-8, 1995–NC

Fundamentals of Superfund
- Nov. 28-Dec. 2, 1994–NC
- February 6-10, 1995–NC
- July 24-28, 1995–CO

Innovative Treatment Technologies
- November 1-3, 1994–NC
- March 20-23, 1995–CO
- August 14-17, 1995–NC

Remedial Process
- January 23-26, 1995–NC
- May 22-25, 1995–CO

Removal Process
- December 12-15, 1994–NC
- April 17-20, 1995–CO
- December 11-14, 1995–NC

To register for these CEC courses, please complete the registration form provided below and FAX or mail to: CERCLA Education Center, Technology Innovation Office (5102W), U.S. Environmental Protection Agency, 401 M. Street, S.W., Washington, DC 20460 **FAX:** (301) 589-8487

Please print clearly when completing the registration form. Incomplete or illegible registration forms, or forms that are not signed by a supervisor, cannot be processed. Limit one registrant per form.

Name: _____

EPA Region/Organization: _____ Mail Code: _____

Address: _____

Phone: _____ FAX: _____

Name of Course(s) for which you are registering:

_____ Date: _____ Location: _____

_____ Date: _____ Location: _____

_____ Date: _____ Location: _____

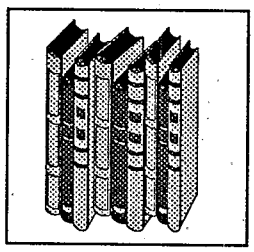
Job Title/Position: (circle) OSC RPM SAM Other (specify): _____

Date Hired into the Superfund Program (if applicable): ____ /____ /____

Supervisor's Name: _____ Supervisor's Number: _____

Supervisor's Signature: _____

Publications



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Bioremediation of Contaminated Surface Soils 103
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CERCLA Education Center: Enforcement Process 82
CERCLA Education Center: Fundamentals of Superfund 82
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Note: Volume 1 contains only a small portion of OSWER's hazardous and solid waste publications. Please refer to Volume II for publications released by OSW. Publication order forms are located at the back of both volumes.

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Computer Systems for Chemical Emergency Planning (Technical Assistance Bulletin 5) 94
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Digest of Federal Training in Hazardous Materials 94
Emergency Management Institute 1994/1995 Catalog of Activities 95
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Hazardous Materials Emergency Planning Guide 95
It's Not Over in October!: A Guide for Local Emergency Planning Committees; Implementing the Emergency Planning and Community Right-to-Know Act 96
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Treatment Technologies

Abstract Proceedings: Second Forum on Innovative Hazardous Waste Treatment Technologies: Domestic and International 101
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Approaches for Remediation of Uncontrolled Wood Preserving Sites 102
Basics of Pump-and-Treat Ground-Water Remediation Technology 88
Bioremediation in the Field: An Information Update on Applying Bioremediation to Site Cleanup 103
Bioremediation of Contaminated Surface Soils 103
Bioremediation Using The Land Treatment Concept 103
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Superfund Innovative Technology Evaluation Program: Technology Profiles (Sixth Edition) 112
Synopses of Federal Demonstrations of Innovative Site Remediation Technologies (Third Edition) 112

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Volumetric Leak Detection in Large Underground Storage Tanks, Volume 1 122
Volumetric Tank Testing: An Overview 123
What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure 123

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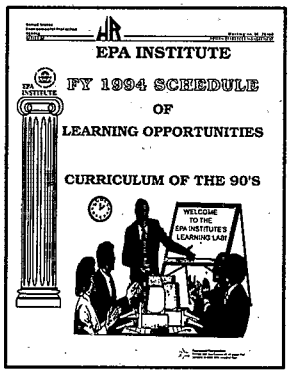
Learning Opportunities

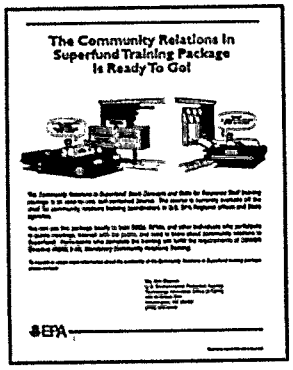
OHRM



Audience	EPA Headquarters personnel
Charge for Publication	Free
Publication Number	None (published yearly)
Where to Order	HQ EPA Institute (202) 260-6678

CERCLA Education Center: Community Relations

TIO



Audience	Superfund staff
Charge for Publication	Free
Publication Number	None
Where to Order	Ann Eleanor Technology Innovation Office U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-8826

CERCLA Education Center: Enforcement Process

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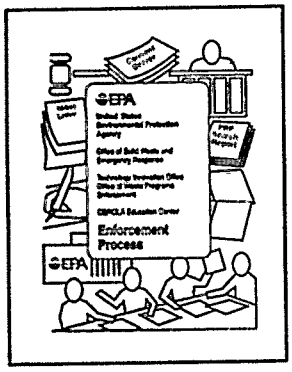
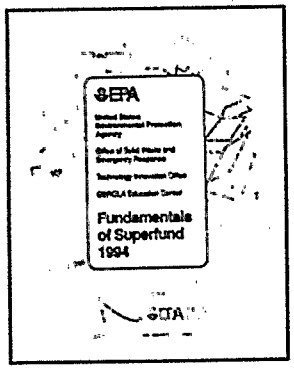


Audience	Superfund staff
Charge for Publication	Free
Publication Number	None
Where to Order	Ann Eleanor Technology Innovation Office U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-8826

CERCLA Education Center: Fundamentals of Superfund

TIO



Audience	Superfund staff
Charge for Publication	Free
Publication Number	None
Where to Order	Naomie Smith Technology Innovation Office U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-8848

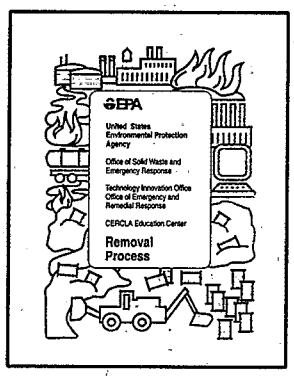
CERCLA Education Center: Remedial Process

TIO

Audience	Superfund staff
Charge for Publication	Free
Publication Number	None
Where to Order	Karen Argain/Ann Eleanor Technology Innovation Office U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-8795/308-8826

CERCLA Education Center: Removal Process

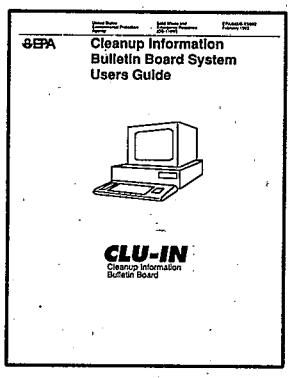
TIO



Audience	Superfund staff
Charge for Publication	Free
Publication Number	None
Where to Order	Gary Turner Technology Innovation Office U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-7025

CLU-IN (Cleanup Information Bulletin Board) — Supporting Documentation

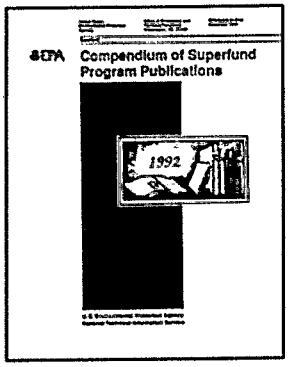
TIO



Audience	Superfund and RCRA staff, other Federal agencies, State personnel, private industry (consultants, vendors, etc.), researchers, and private citizens
Charge for Publication	Free
Publication Number	Fact Sheet: EPA/542/F-93/001 Users Guide: EPA/542/B-93/002 On-Line Guided Tour: EPA/542/B-93/003
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Compendium of Superfund Program Publications

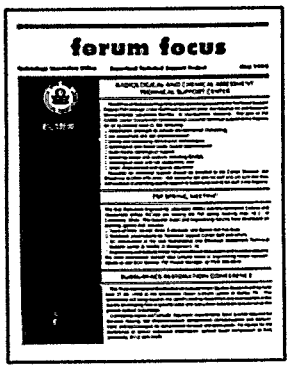
OERR



Audience	A variety of users, both expert and non-expert in the Superfund program
Charge for Publication	Free
Publication Number	EPA: EPA/540/8-91/014 NTIS: PR881 (Update: PR881E)
Where to Order	National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 (703) 487-4650 or (800) 553-NTIS Fax: (703) 321-8547 or (703) 321-9038

Forum Focus (Newsletter)

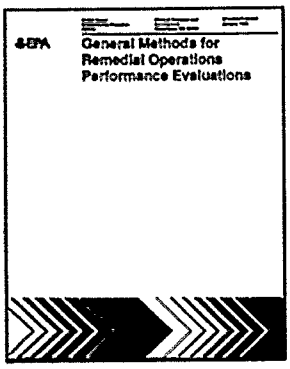
TIO



Audience	Remedial Project Managers, On-Scene Coordinators, CERCLA and RCRA technical staff
Charge for Publication	Free
Publication Number	None
Where to Order	Rich Steimle Superfund Technical Support Project U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-8846

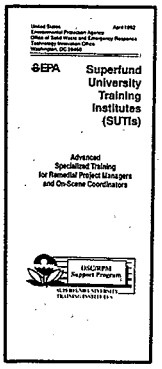
General Methods for Remedial Operations Performance Evaluations

ORD



Audience	Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection
Charge for Publication	Free
Publication Number	EPA/600/R-92/002
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

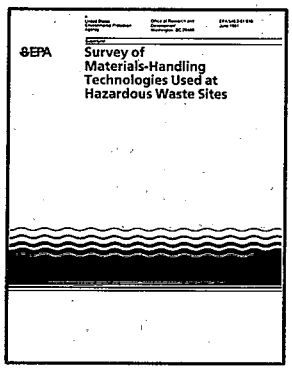
Superfund University Training Institutes (SUTIs): Intermediate and Advanced Specialized Training for Remedial Project Managers and On-Scene Coordinators



TIO

Audience	Remedial Project Managers and On-Scene Coordinators
Charge for Publication	Free
Publication Number	None
Where to Order	Naomie Smith Technology Innovation Office U.S. Environmental Protection Agency Mail Code 5102W Washington, DC 20460 (703) 308-8848

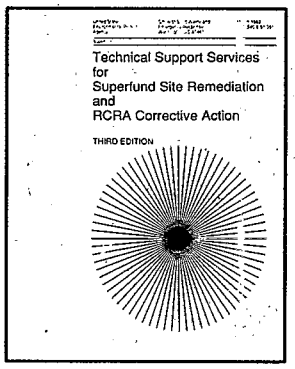
Survey of Materials-Handling Technologies Used at Hazardous Waste Sites



ORD

Audience	Remedial Project Managers, On-Scene Coordinators, and other response personnel
Charge for Publication	Free
Publication Number	EPA/540/2-91/010 (June 1991)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Technical Support Services for Superfund Site Remediation and RCRA Corrective Action



TIO

Audience	EPA field staff in Superfund and RCRA programs
Charge for Publication	Free
Publication Number	EPA/540/8-91/091
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

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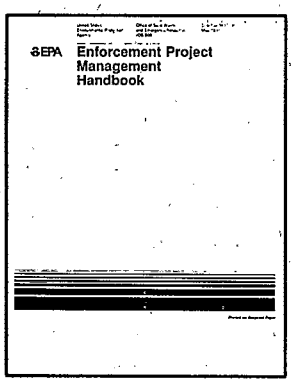
Synopses of Federal Demonstrations of Innovative Site Remediation Technologies (Third Edition)	112
Tech Trends: The Applied Technologies Journal for Superfund Removals and Remedial Actions and RCRA Corrective Actions	113

Enforcement Project Management Handbook



OECA

Audience	Remedial Project Managers, On-Scene Coordinators, and other EPA field personnel involved in the technical, enforcement and management tasks associated with remediating a PRP-lead site. The handbook is updated biennially.
Charge for Publication	$58 (includes shipping and handling)
Publication Number	EPA: OSWER Directive 9837.2B (May 1993) NTIS: PB93-963602
Where to Order	National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 (703) 487-4650 or (800) 553-NTIS Fax: (703) 321-8547 or (703) 321-9038

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Basics of Pump-and-Treat Ground-Water Remediation Technology

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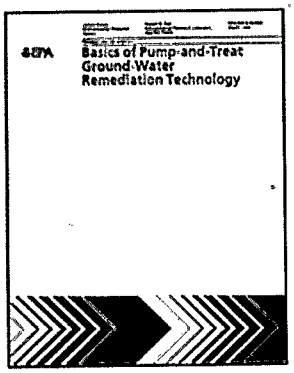

Audience	Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection
Charge for Publication	Free
Publication Number	EPA/600/8-90/003
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

Colloidal-Facilitated Transport of Inorganic Contaminants in Ground Water: Part I. Sampling Considerations

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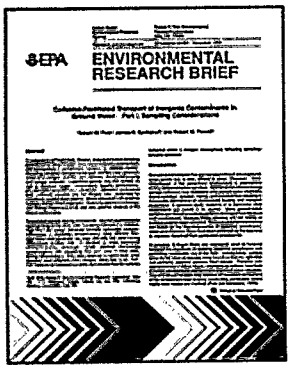

Audience	Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection
Charge for Publication	Free
Publication Number	EPA/600/M-90/023
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

Dense Nonaqueous Phase Liquids — A Workshop Summary

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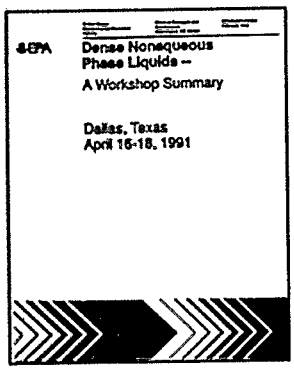

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Charge for Publication	Free
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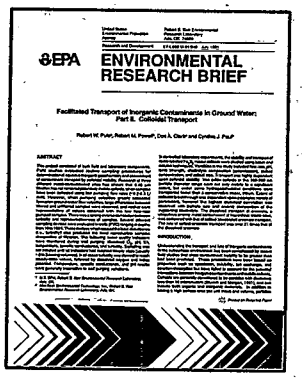
Facilitated Transport of Inorganic Contaminants in Ground Water: Part II. Colloidal Transport



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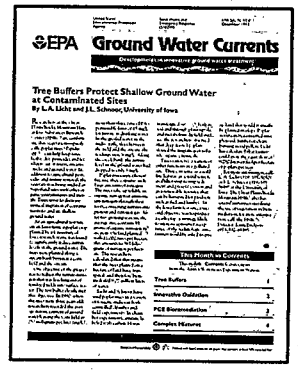
Charge for Publication	Free
Publication Number	EPA/600/M-91/040
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

Ground Water Currents



TIO

Audience	Regional staff and their State and local counterparts, and contractors and firms involved in hazardous waste remediation
Charge for Publication	Free
Publication Number	EPA/542/N-94/005 (June 1994) EPA/542/N-93/011 (December 1993) EPA/542/N-93/008 (September 1993) EPA/542/N-93/006 (June 1993) EPA/542/N-93/003 (March 1993) EPA/542/N-92/006 (December 1992) EPA/542/N-92/005 (September 1992)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Ground Water Issue Papers

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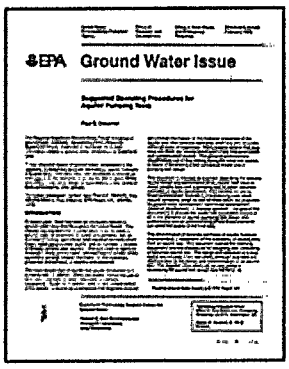

Audience Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection

Charge for Publication Free

Publication Number

Accuracy of Depth to Water Measurements: EPA/540/4-89/002
Basic Concepts of Contaminant Sorption at Hazardous Waste Sites: EPA/540/4-90/053
Behavior of Metals in the Soil Environment: EPA/540/S-92/018
Characterizing Soils for Hazardous Waste Site Assessments: EPA/540/4-91/003
Chemical Enhancements to Pump-and-Treat Remediation: EPA/540/S-92/001
Contaminant Transport in Fractured Media: Models for Decision Makers: EPA/540/4-89/004
Dense Nonaqueous Phase Liquids: EPA/540/4-91/002
Evaluation of Soil Venting Application: EPA/540/S-92/004
Facilitated Transport: EPA/540/4-89/003
Fundamentals of Ground Water Modeling: EPA/540/S-92/005
Ground Water Sampling for Metals Analysis: EPA/540/4-89/001
In-Situ Bioremediation of Contaminated Ground Water: EPA/540/S-92/003
Performance Evaluations of Pump-and-Treat Remediations: EPA/540/4-89/005
Reductive Dehalogenation of Organic Contaminants in Soil and Ground Water: EPA/540/4-90/054
Suggested Operating Procedures for Aquifer Pumping Tests: EPA/540/S-93/503
TCE Removal from Contaminated Soil and Ground Water: EPA/540/S-92/002

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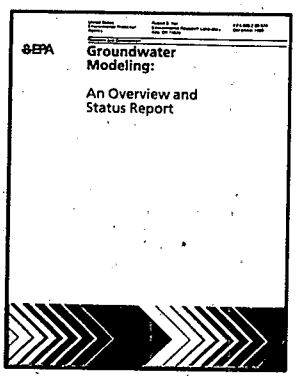
P.O. Box 1198
Ada, OK 74820
(405) 436-8651

Groundwater Modeling: An Overview and Status Report



ORD

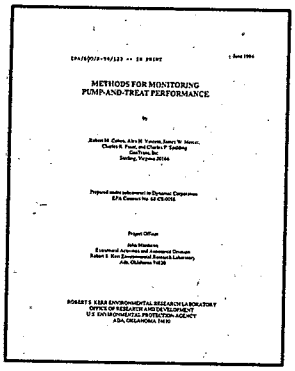
Audience	Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection
Charge for Publication	Free
Publication Number	EPA/600/2-89/028
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells

ORD

Audience	Owners and operators of facilities, government officials, and consultants
Charge for Publication	$52.00 (plus $6 handling fee)
Publication Number	PB90-159807 (February 1990)
Where to Order	National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 (703) 487-4650 or (800) 553-NTIS Fax: (703) 321-8547 or (703) 321-9038

Methods for Monitoring Pump-and-Treat Performance



ORD

Audience	Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection
Charge for Publication	Free
Publication Number	EPA/600/R-94/123
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

Additional Publications: Ground Water

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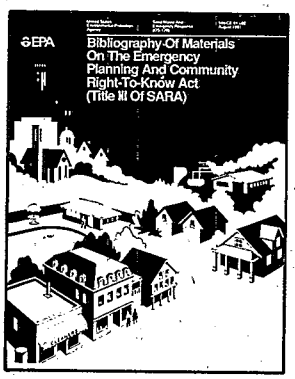
Bioremediation Using the Land Treatment Concept	103
General Methods for Remedial Operations Performance Evaluations	84

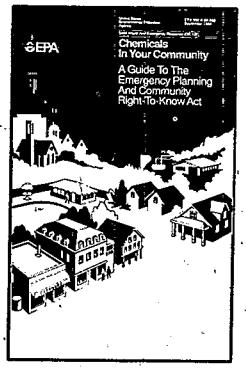
Bibliography of Materials on the Emergency Planning and Community Right-to-Know Act (Title III of SARA)



CEPPO

Audience	Local Emergency Planning Committees, State Emergency Response Commissions, local officials, emergency responders, industry, and private citizens
Charge for Publication	Free
Publication Number	580/CE 91-002 (August 1991)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

Chemicals in Your Community, A Citizen's Guide to the Emergency Planning and Community Right-to-Know Act

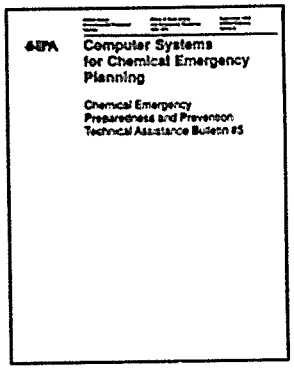


CEPPO

Audience	Private citizens, community organizations, and local officials
Charge for Publication	Free
Publication Number	OSWER-90-002 (September 1988)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

Computer Systems for Chemical Emergency Planning (Technical Assistance Bulletin 5)

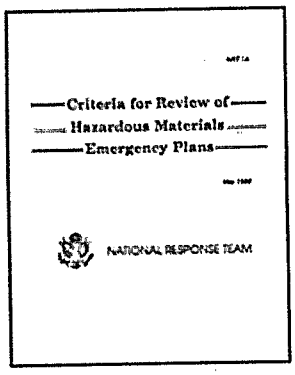
CEPPO



Audience	State Emergency Response Commissions, Local Emergency Planning Committees, and other local planners
Charge for Publication	Free
Publication Number	OSWER-89-005 (September 1989)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

Criteria for Review of Hazardous Materials Emergency Plans

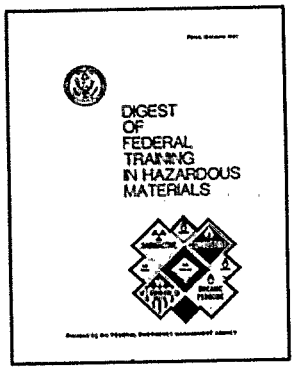
CEPPO



Audience	Regional Response Teams
Charge for Publication	Free
Publication Number	OSWER-NRT-1A (May 1988)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

Digest of Federal Training in Hazardous Materials

FEMA



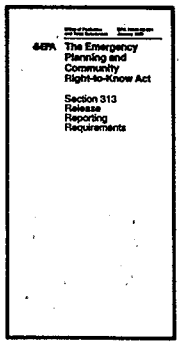
Audience	State and local officials; response personnel including health, police, fire and others from Federal, State, and local agencies; and private industry personnel
Charge for Publication	Free
Publication Number	FEMA 134 (April 1991)
Where to Order	State Emergency Management Offices

Emergency Management Institute 1994/1995 Catalog of Activities

FEMA

Audience	State and local civil defense/emergency management professionals; public officials including mayors and city managers; and private sector emergency decision makers
Charge for Publication	Free
Publication Number	None
Where to Order	State Emergency Management Offices

The Emergency Planning and Community Right-to-Know Act Section 313 Release Reporting Requirements



CEPPO

Audience	Employers and managers of businesses and manufacturing facilities
Charge for Publication	Free
Publication Number	EPA/700/K-92/001 (January 1992)
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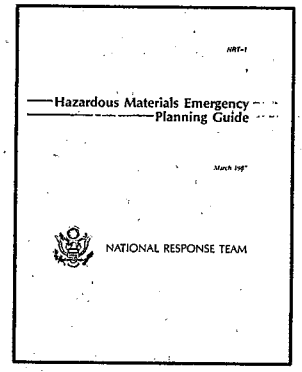
Hazardous Materials Emergency Planning Guide

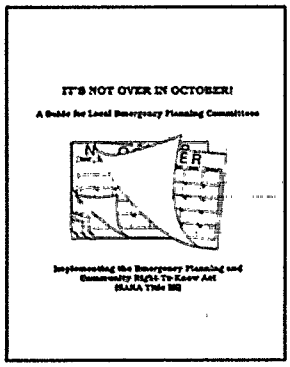


CEPPO

Audience	Local Emergency Planning Committees
Charge for Publication	Free
Publication Number	OSWER-NRT-1 (March 1987)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

It's Not Over in October!: A Guide for Local Emergency Planning Committees; Implementing the Emergency Planning and Community Right-to-Know Act

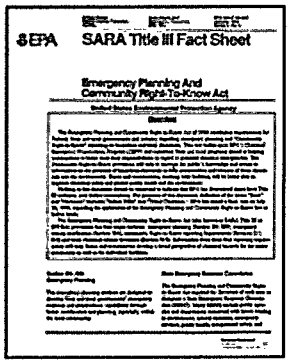
CEPPO



Audience	Local Emergency Planning Committees
Charge for Publication	Free
Publication Number	OSWER-90-004 (September 1988)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

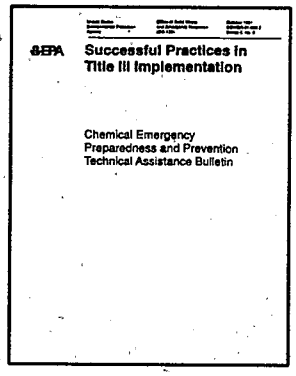
SARA Title III Fact Sheet — Emergency Planning and Community Right-to-Know Act

CEPPO



Audience	Local Emergency Planning Committees, State Emergency Response Commissions, local officials, emergency responders, business and industry employers and managers, and private citizens
Charge for Publication	Free
Publication Number	EPA 550-F-93-002 (January 1993)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

Successful Practices in Title III Implementation (Series)


EPA Successful Practices in Title III Implementation

Chemical Emergency Preparedness and Prevention Technical Assistance Bulletin

CEPPO

Audience	Local Emergency Planning Committees, State Emergency Response Commissions, fire departments, and Title III implementing agencies
Charge for Publication	Free
Publication Number	OSWER-90-006.3 (September 1990) OSWER-90-006.2 (June 1990) OSWER-90-006.1 (March 1990) OSWER-88-006.1 (January 1989) OSWER-89-006.2 (August 1989) OSWER-89-006.3 (December 1989)
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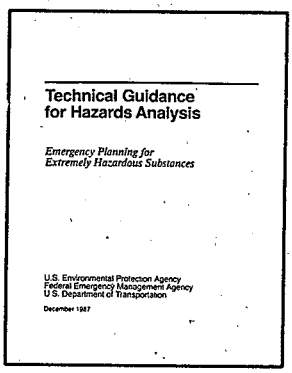
Technical Guidance for Hazards Analysis


Technical Guidance for Hazards Analysis

Emergency Planning for Extremely Hazardous Substances

U.S. Environmental Protection Agency
Federal Emergency Management Agency
U.S. Department of Transportation

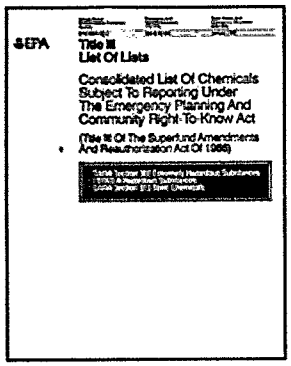
December 1987

CEPPO

Audience	Local Emergency Planning Committees
Charge for Publication	Free
Publication Number	OSWER-88-001 (December 1987)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

Title III List of Lists (Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right-to-Know Act)

CEPPO



Audience	Local Emergency Planning Committees, State Emergency Response Commissions, and business and industry employers and managers
Charge for Publication	Free
Publication Number	EPA/560/4-92/011 (January 1992)
Where to Order	Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

The Toxics-Release Inventory: Executive Summary

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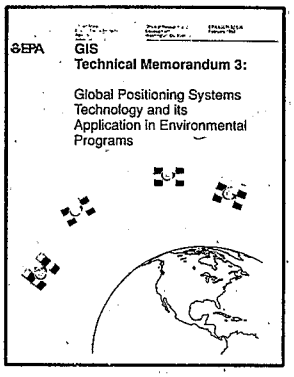
Audience	Local Emergency Planning Committees, State Emergency Response Commissions, local officials and planners, emergency responders, business and industry employers and managers, and private citizens
Charge for Publication	$1.50
Publication Number	EPA: EPA/560/4-89/006 (June 1989) GPO: 055-000-00289-4
Where to Order	Superintendent of Documents U.S. Government Printing Office Washington, DC 20402-9325 (202) 783-3238 or Emergency Planning and Community Right-to-Know Information Hotline U.S. Environmental Protection Agency Mail Code 5101 Washington, DC 20460 1-800-535-0202

GIS Technical Memoranda



ORD

Audience	EPA, State and contractor staff interested in GIS project planning
Charge for Publication	Free
Publication Number	GIS Project Planning and Data Set Collection: None Global Positioning Systems Technology and its Application in Environmental Programs: EPA/600/R-92/036 (February 1992)
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Course Title	Page Number
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Detecting Leaks: Successful Methods Step-by-Step (Release Detection Handbook)	117
Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells	91
A Rationale for the Assessment of Errors in the Sampling of Soils	100
Soil Gas Sensing for Detection and Mapping of Volatile Organics	120
Soil Sampling Quality Assurance User's Guide, Second Edition	100
Tank Issues: Site Characterization for External Leak Monitoring	122
What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure	123

A Rationale for the Assessment of Errors in the Sampling of Soils

ORD

Audience	EPA staff and contractors, and State personnel involved with monitoring/sampling site characterization
Charge for Publication	$19.00
Publication Number	EPA/600/4-90/013 (May 1990)
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Soil Sampling Quality Assurance User's Guide, Second Edition

ORD

Audience	EPA staff and contractors, and State personnel involved with monitoring/sampling site characterization
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Publication Number	PB89-189864 (March 1989)
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Course Title	Page Number
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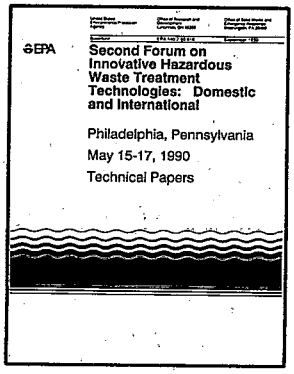
Decision-Support Software for Soil Vapor Extraction Technology Application: HyperVentilate	116
Ground Water Issue Papers	90
HyperVentilate Users Manual (v1.01 and v2.0): A Software Guidance System Created for Vapor Extraction Systems	119
Superfund Engineering Issue Papers	111

Abstract Proceedings: Second Forum on Innovative Hazardous Waste Treatment Technologies: Domestic and International

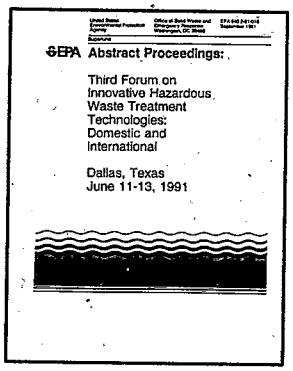

EPA
Second Forum on Innovative Hazardous Waste Treatment Technologies: Domestic and International

Philadelphia, Pennsylvania
May 15-17, 1990
Technical Papers

TIO

Audience	Remedial Project Managers, On-Scene Coordinators, State project managers, private industry, EPA contractors, university researchers, and vendors and developers of technologies
Charge for Publication	Free
Publication Number	EPA/540/2-90/009 (Abstracts: September 1990) EPA/540/2-90/010 (Technical Papers: September 1990)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Abstract Proceedings: Third Forum on Innovative Hazardous Waste Treatment Technologies: Domestic and International


EPA Abstract Proceedings:

Third Forum on Innovative Hazardous Waste Treatment Technologies: Domestic and International

Dallas, Texas
June 11-13, 1991

TIO

Audience	Remedial Project Managers, On-Scene Coordinators, State project managers, private industry, EPA contractors, vendors and developers of technologies
Charge for Publication	Free
Publication Number	EPA/540/2-91/016 (Abstracts: September 1991) EPA/540/2-91/015 (Technical Papers: September 1991)
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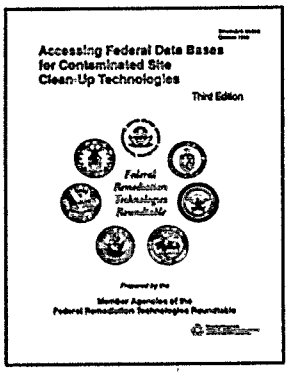

Audience	Federal staff involved in hazardous waste remediation (site managers, scientists, etc.), and private industry (e.g., technology developers and vendors), as well as others interested in hazardous waste remediation issues
Charge for Publication	Free
Publication Number	EPA/542/B-93/008
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Approaches for Remediation of Uncontrolled Wood Preserving Sites

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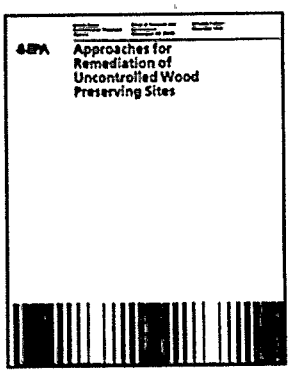
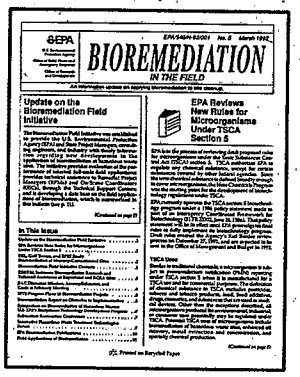


Audience	Superfund Remedial Project Managers or RCRA Corrective Action permit writers and contractors involved with remediation of wood preserving sites
Charge for Publication	Free
Publication Number	EPA/625/7-90/011
Where to Order	Center for Environmental Research Information Office of Research and Development Publications U.S. Environmental Protection Agency Room G-72 26 West Martin Luther King Drive Cincinnati, OH 45268 (513) 569-7562

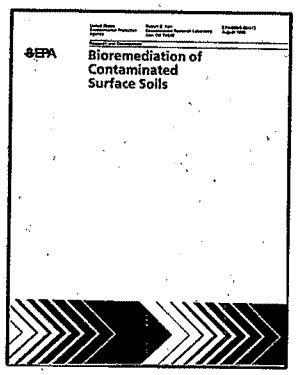
Bioremediation in the Field: An Information Update on Applying Bioremediation to Site Cleanup


EPA
BIOREMEDIATION
IN THE FIELD
An information update on applying bioremediation to site cleanup.
Update on the Bioremediation Field Initiative
EPA Reviews New Rules for Microorganisms Under TSCA Section 5
In This Issue

TIO

Audience	EPA and State project managers, consulting engineers, and industry
Charge for Publication	Free
Publication Number	EPA/540/N-92/001 No. 5 (March 1992) EPA/540/2-90/004
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

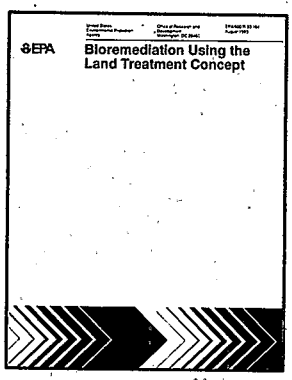
Bioremediation of Contaminated Surface Soils


EPA
Bioremediation of Contaminated Surface Soils

ORD

Audience	Remedial Project Managers, On-Scene Coordinators, and their managers; technical staff concerned with ground-water protection
Charge for Publication	Free
Publication Number	EPA/600/9-89/073
Where to Order	Robert S. Kerr Environmental Research Laboratory P.O. Box 1198 Ada, OK 74820 (405) 436-8651

Bioremediation Using the Land Treatment Concept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Bioremediation Using the Land Treatment Concept

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Charge for Publication	Free
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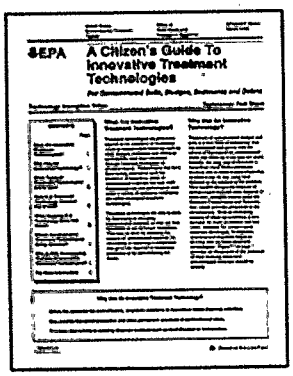
A Citizen's Guide to Innovative Treatment Technologies (Series)

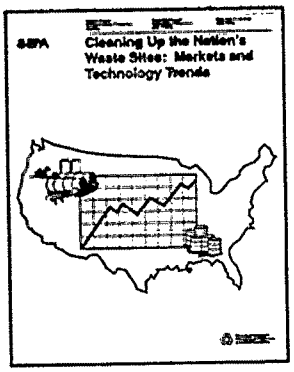
TIO



Audience	Public
Charge for Publication	Free
Publication Number	EPA/542/F-92/001-010 Also available in Spanish
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Cleaning Up the Nation's Waste Sites: Markets and Technology Trends

TIO



Audience	Remediation technology developers, vendors and investors
Charge for Publication	$17.50 (plus $3 handling)
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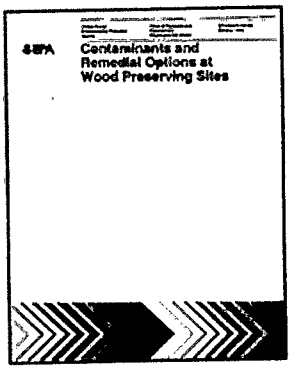
Contaminants and Remedial Options at Wood Preserving Sites

ORD



Audience	Superfund and RCRA Technical Staff
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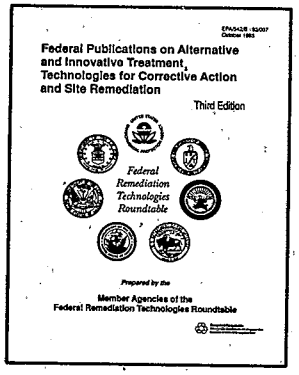
Publication Number	EPA/600/R-92/182
Where to Order	Center for Environmental Research Information Office of Research and Development Publications U.S. Environmental Protection Agency Room G-72 26 West Martin Luther King Street Cincinnati, OH 45268 (513) 569-7562

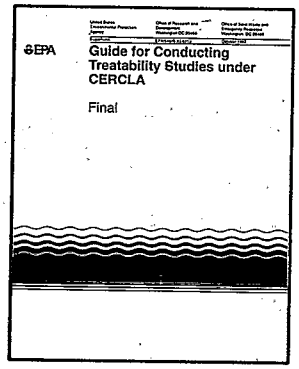
Federal Publications on Alternative and Innovative Treatment Technologies for Corrective Action and Site Remediation (Third Edition)



TIO

Audience	Federal staff involved in hazardous waste remediation (site managers, scientists, etc.), private industry (e.g., technology developers and vendors), as well as others interested in hazardous waste remediation issues
Charge for Publication	Free
Publication Number	EPA/542/B-93/007
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Guide for Conducting Treatability Studies Under CERCLA: Final



ORD

Audience	Superfund and RCRA Staff
Charge for Publication	Free
Publication Number	EPA/540/R-92/071a (October 1992)
Where to Order	Center for Environmental Research Information Office of Research and Development Publications U.S. Environmental Protection Agency Room G-72 26 West Martin Luther King Drive Cincinnati, OH 45268 (513) 569-7562

Guides for Conducting Treatability Studies Under CERCLA

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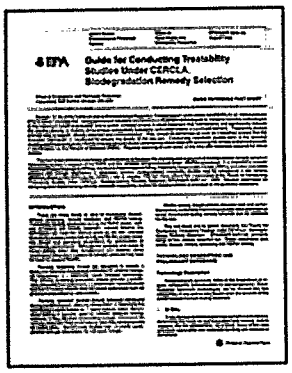
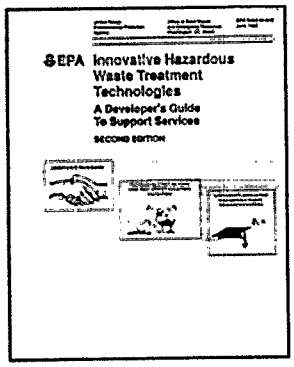


Audience	Superfund and RCRA Technical Staff
Charge for Publication	Free
Publication Number	Aerobic Biodegradation Remedy Screening: EPA/540/2-91/013A and B Biodegradation Remedy Selection: EPA/540/R-93/519a&b Chemical Dehalogenation: EPA/540/R-92/013A and B Soil Vapor Extraction: EPA/540/2-91/019A and B Soil Washing: EPA/540/2-91/020A and B Solvent Extraction: EPA/540/R-92/016a&b Thermal Desorption: EPA/540/R-92/074a&b
Where to Order	Office of Research and Development Publications U.S. Environmental Protection Agency Room G-72 26 West Martin Luther King Drive Cincinnati, OH 45268 (513) 569-7562

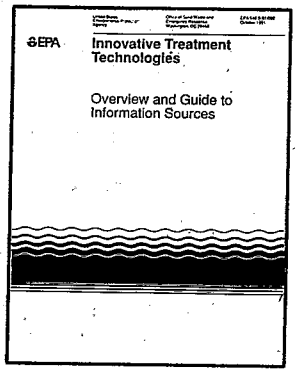
Innovative Hazardous Waste Treatment Technologies: A Developer's Guide to Support Services

TIO



Audience	Remediation technology developers
Charge for Publication	Free
Publication Number	EPA/540/2-91/012
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

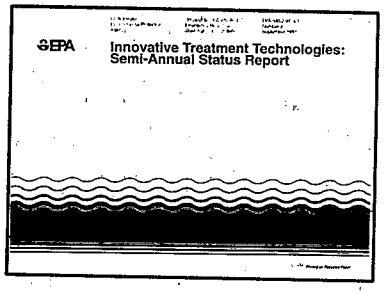
Innovative Treatment Technologies: Overview and Guide to Information Sources



TIO

Audience	Remedial Project Managers, On-Scene Coordinators, remedial contractors, State project managers, technology developers and waste consultants
Charge for Publication	Free
Publication Number	EPA/540/9-91/002 (October 1991)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Innovative Treatment Technologies: Semi-Annual Status Report

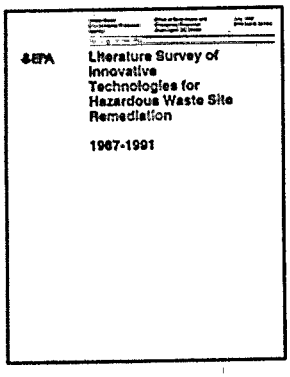


TIO

Audience	Federal, State, and private hazardous waste remediation professionals, and innovative technology vendors
Charge for Publication	Free to Federal and State employees $19.00 if obtained from NTIS
Publication Number	EPA: EPA/540/2-91/001 NTIS: PB92-173210
Where to Order	Limited copies available to Federal and State employees from: National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 42242 Fax: (513) 891-6685 Public must order from: National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 (703) 487-4650 or (800) 553-NTIS Fax: (703) 321-8547 or (703) 321-9038

Literature Survey of Innovative Technologies for Hazardous Waste Site Remediation (1987-1991)

TIO


EPA Literature Survey of Innovative Technologies for Hazardous Waste Site Remediation

1987-1991

Audience	Remedial Project Managers; On-Scene Coordinators; Federal/private site cleanup managers; technology developers and investors; academic community
Charge for Publication	Free
Publication Number	EPA/542/B-92/004 (July 1992)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Procuring Innovative Technologies at Remedial Sites: Q's and A's and Case Studies

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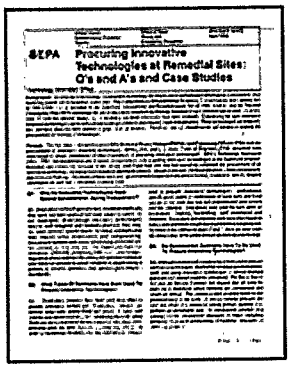
EPA Procuring Innovative Technologies at Remedial Sites: Q's and A's and Case Studies

Audience	Remedial Project Managers, On-Scene Coordinators, Contracting Officers, Project Officers, ARCs contractors, and U.S. Army Corps of Engineers
Charge for Publication	Free
Publication Number	EPA/542/F-92/012 (April 1992)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Remediation of Contaminated Sediments

ORD

Audience	Remedial Project Managers, permit writers, and consulting engineers involved with a contaminated sediment problem
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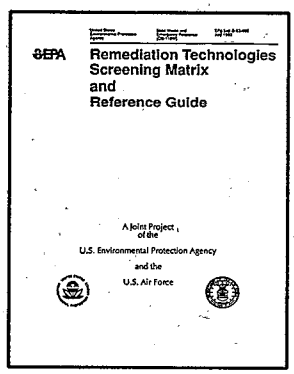
Publication Number	EPA/625/6-91/028
Where to Order	Center for Environmental Research Information Office of Research and Development Publications U.S. Environmental Protection Agency Room G-72 26 West Martin Luther King Drive Cincinnati, OH 45268 (513) 569-7562

Remediation Technologies Screening Matrix and Reference Guide

TIO


EPA Remediation Technologies Screening Matrix and Reference Guide

A Joint Project of the U.S. Environmental Protection Agency and the U.S. Air Force

Audience	Remedial Project Managers, On-Scene Coordinators, Federal/private site managers
Charge for Publication	Free
Publication Number	EPA 542-B-93-005 (July 1993)
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RREL Engineering Bulletins

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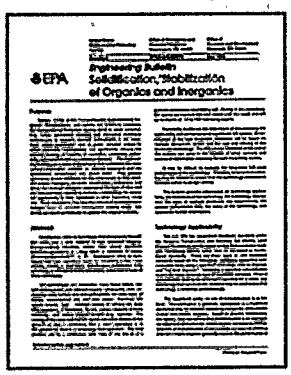

Audience Superfund and RCRA Staff

Charge for Publication Free

Publication Number

Air Pathway Analysis: EPA/540/S-92/013
Design Considerations for Ambient Air Monitoring at Superfund Sites: EPA/540/S-92/013
In Situ Biodegradation: EPA/540/S-94/502
In Situ Vitrification Treatment: EPA/540/S-94/504
Landfill Covers: EPA/540/S-92/500
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Rotating Biological Contacts: EPA/540/S-92/007
Selection Control Technologies for Remediation of Lead Battery Recycling Sites: EPA/540/S-92/011
Slurry Walls: EPA/540/S-92/008
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Solvent Extraction: EPA/540/S-94/503
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Technology Preselection Data Requirements: EPA/540/S-92/009
Thermal Desorption II: EPA/540/S-94/501

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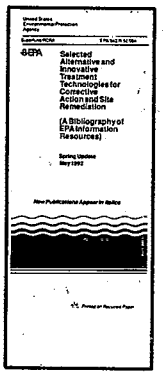
Selected Alternative and Innovative Treatment Technologies for Corrective Action and Site Remediation (A Bibliography of EPA Information Resources) Fall 1993 Update



TIO

Audience	Remedial Project Managers, On-Scene Coordinators, State project managers, private industry, EPA contractors, and university researchers
Charge for Publication	Free
Publication Number	EPA/542/B-93/010 (November 1993)
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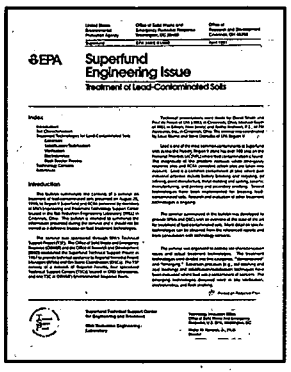

ORD

Audience	Superfund and RCRA Technical Staff
Charge for Publication	Free
Publication Number	Considerations in Deciding to Treat Contaminated Unsaturated Soils In Situ: EPA/540/S-94/500 Considerations for Evaluating the Impact of Metals Partitioning During the Incineration of Contaminated Soils from Superfund Sites: EPA/540/S-92/014 Technology Alternatives for the Remediation of PCB-Contaminated Soil and Sediment: EPA/540/S-93/506
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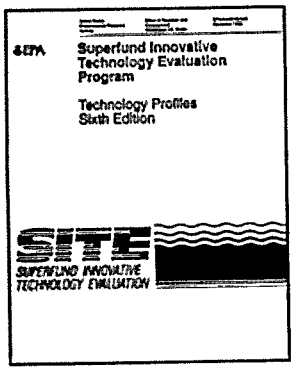

Audience	Remedial Project Managers, On-Scene Coordinators, remedial contractors, State project managers, technology developers, researchers, vendors and consultants
Charge for Publication	Free
Publication Number	EPA/540/R-93/526 (November 1993) See order form for SITE program documents for additional publications
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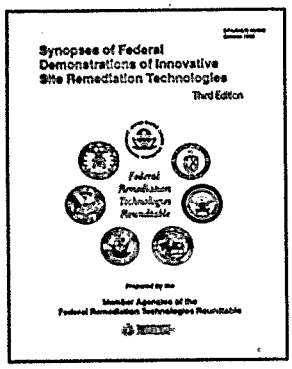

Audience	Federal staff involved in hazardous waste remediation (site managers, scientists, etc.), private industry (e.g., technology developers and vendors), as well as others interested in hazardous waste remediation issues
Charge for Publication	Free
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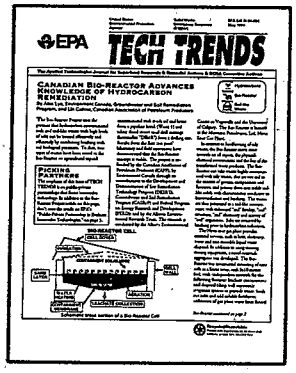

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EPA/540/M-91/001 (March 1991, No. 4)
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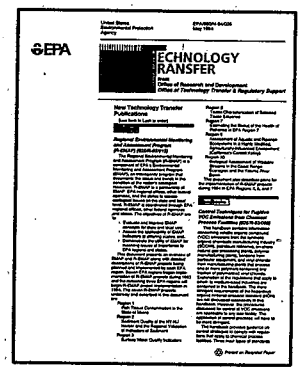

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Audience Federal, State and local agency staff involved in hazardous waste remediation, and private industry

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Publication Number EPA/600/N-94/005 (May 1994)

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Course Title	Page Number
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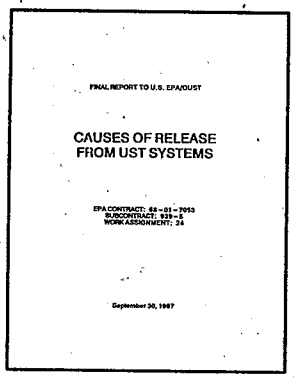
Cleanup of Releases from Petroleum USTs: Selected Technologies	116
CLU-IN (Cleanup Information Bulletin Board) — Supporting Documentation	83
Forum Focus (Newsletter)	84
Technical Support Services for Superfund Site Remediation and RCRA Corrective Action	85
Technologies and Options for UST Corrective Actions: Overview of Current Practice	122

Causes of Release from UST Systems


FINAL REPORT TO U.S. EPA/OUST

CAUSES OF RELEASE FROM UST SYSTEMS

September 30, 1987

OUST

Audience	EPA rule development personnel
Charge for Publication	Free
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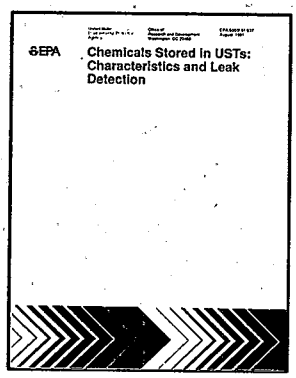
Chemicals Stored in USTs: Characteristics and Leak Detection



OUST

Audience	Owners and operators; contractors and consultants; state and local UST program officials; leak detection system manufacturers
Charge for Publication	Free
Publication Number	EPA/600/2-91/037 (August 1991)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

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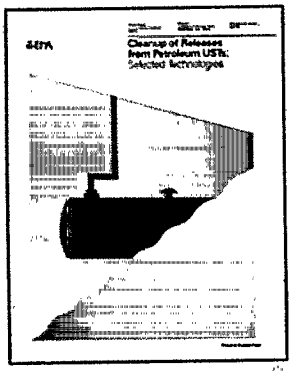

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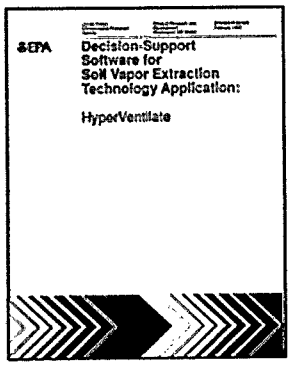

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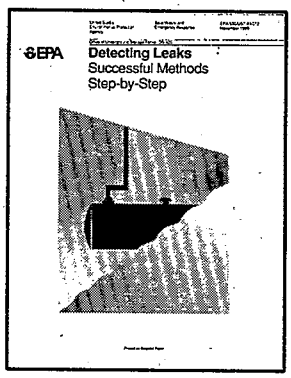

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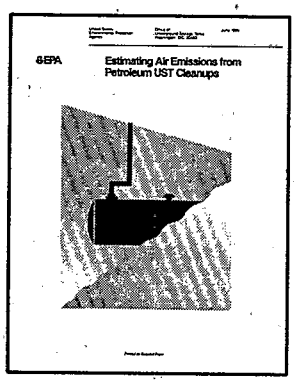

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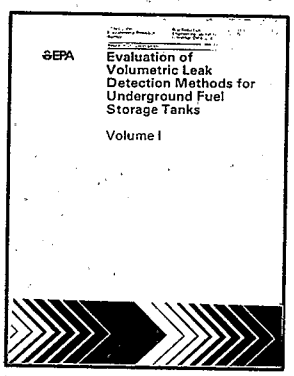

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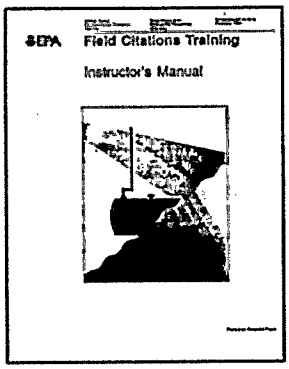

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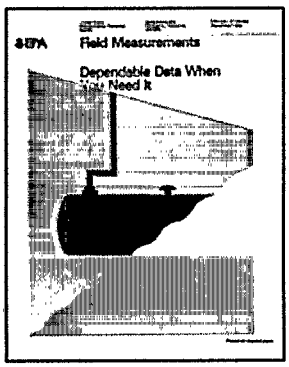

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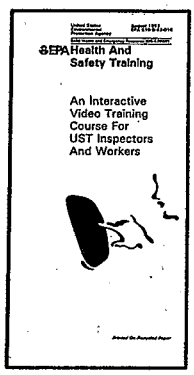

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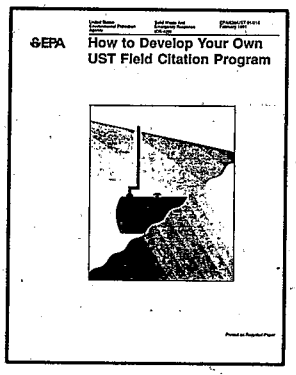

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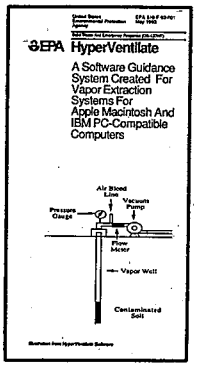

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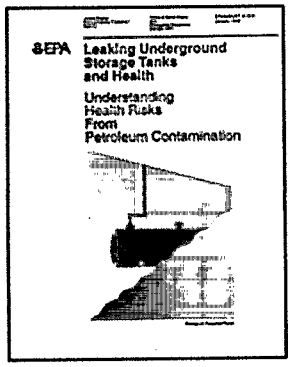

Audience	UST field staff responsible for assessing health risks at cleanup sites
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Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

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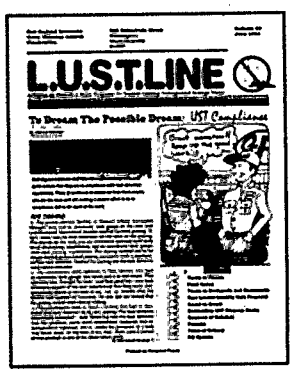

Audience	State regulators; tank owners and operators
Charge for Publication	Free
Publication Number	Order by title
Where to Order	New England Interstate Environmental Training Center (NEIETC) 2 Fort Road South Portland, ME 04106 (207) 767-2539

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OUST

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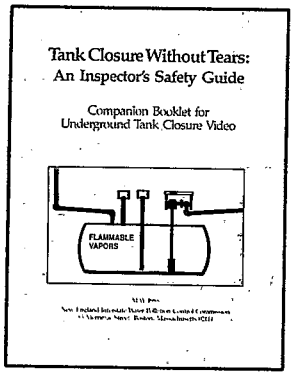
Where to Order	National Ground Water Association P.O. Box 182039 Dept. 017 Columbus, OH 43218 (614) 761-1711

Tank Closure Without Tears: An Inspector's Safety Guide



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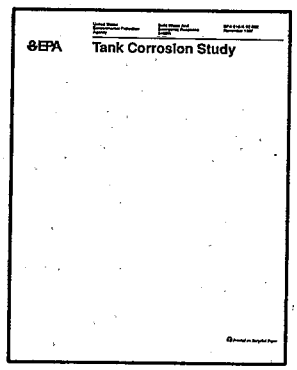
Audience	UST inspectors
Charge for Publication	Free if ordered from OUST $5.00 ($30.00 with video) if ordered from NEIETC This booklet accompanies the videotape *Tank Closure Without Tears: An Inspector's Safety Guide* (see page 153)
Publication Number	Video: EPA 510V-92-817 Book: EPA 510K-92-817
Where to Order	New England Interstate Environmental Training Center (NEIETC) Attn: Videos 2 Fort Road South Portland, ME 04106 (207) 767-2539

Tank Corrosion Study



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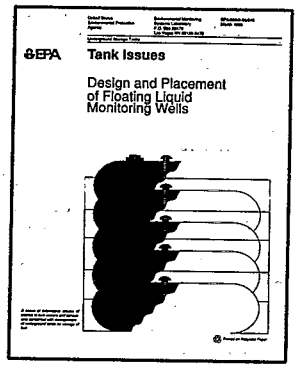

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Charge for Publication	Free
Publication Number	EPA/600/9-90/045 (March 1993)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

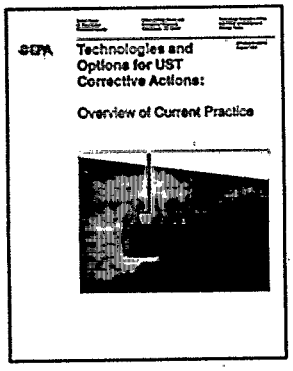
Tank Issues: Site Characterization for External Leak Monitoring

OUST

Audience	State and local UST program officials; owners and operators; contractors and consultants
Charge for Publication	Free
Publication Number	EPA/600/9-90/046 (February 1993)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

Technologies and Options for UST Corrective Actions: Overview of Current Practice

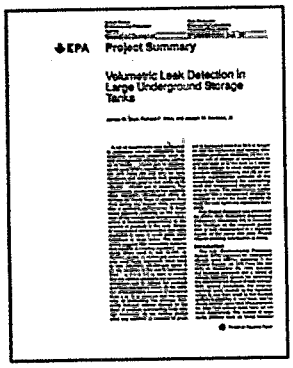
TIO



Audience	State and local UST program officials; contractors and consultants; owners and operators
Charge for Publication	Free
Publication Number	EPA/542/R-92/010 (August 1992)
Where to Order	Superfund Hotline (800) 424-9346

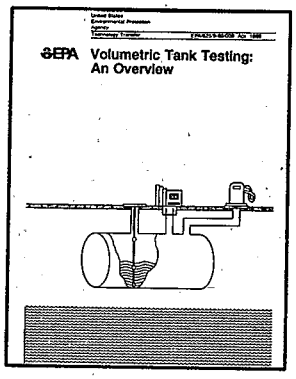
Volumetric Leak Detection in Large Underground Storage Tanks, Volume 1

OUST



Audience	Owners and operators; contractors and consultants
Charge for Publication	Free
Publication Number	EPA/600/2-91/044a (August 1991)
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

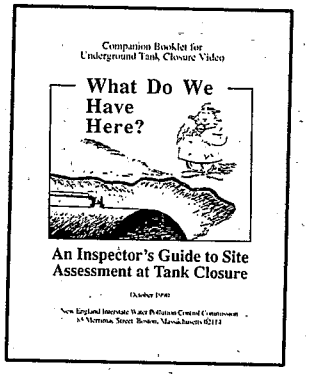
Volumetric Tank Testing: An Overview



OUST

Audience	State and local regulators; owners of small tanks
Charge for Publication	Free
Publication Number	EPA/625-989-009
Where to Order	National Center for Environmental Publications and Information (NCEPI) P.O. Box 42419 Cincinnati, OH 45242-2419 Fax: (513) 891-6685

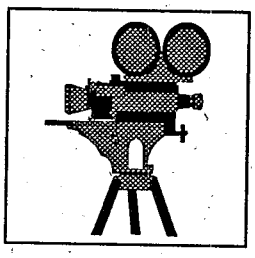
What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure



OUST

Audience	State and local agency staff, fire inspectors
Charge for Publication	Free if ordered from OUST $5.00 ($45.00 with video) if ordered from NEIETC This booklet accompanies the videotape *What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure* (see p. 153)
Publication Number	Video: EPA 510V-92-006 Booklet: EPA 510K-92-006
Where to Order	New England Interstate Environmental Training Center (NEIETC) Attn: Videos 2 Fort Road South Portland, ME 04106 (207) 767-2539

Videotapes



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LRT: The Liquid Release Test

OSW

Description	This videotape is an effective training tool for Method 9096, and presents a clear and thorough demonstration of the liquid release test (LRT). The videotape contains a computer-animated simulation of the test, and provides viewers with an understanding of the LRT's inner workings.
Audience	Lab technicians and others who would like to become familiar with the LRT
Length of Videotape	14 minutes, 28 seconds
Format	VHS
Charge for Videotape	$30.00 (plus $3.00 shipping and handling)
Where to Order	Technical Video Productions 4405 River Bluff Rd. Tobaccoville, NC 27050 (910) 922-3861

Toxicity Characteristic Leaching Procedure (TCLP)

OSW

Description	This videotape demonstrates the performance of Method 1311. The first half of the videotape covers the "Bottle TCLP," the procedure for non-volatile analyses such as metals. The second half demonstrates the use of the Zero-Headspace Extractor, which is needed when volatiles are of concern. Both sections pay close attention to the variations in the procedure based upon waste composition — whether it is 100% solid, 50% solid, and/or multiphasic.
Audience	Lab technicians and others who would like to become familiar with the toxicity characteristic leaching procedure
Length of Videotape	34 minutes
Format	VHS
Charge for Videotape	$30.00 (plus $3.00 shipping and handling)
Where to Order	Technical Video Productions 4405 River Bluff Rd. Tobaccoville, NC 27050 (910) 922-3861

Toxicity Characteristic Leaching Procedure/Difficult to Filter Wastes (TCLP/DTFW)

OSW

Description	This is a documentary-style videotape that chronicles research on the analysis of DTFW for mobility and leachability. Oily wastes, for example, have been known to clog filters in Method 1311 evaluations. This videotape shows the development and use of soil column tests to model the behavior of these wastes in a landfill environment. It further documents efforts to modify the TCLP to better predict that behavior. Finally, the videotape provides instruction on how to perform the modified method. This videotape complements the videotape for Method 1311, but can be viewed by itself.
Audience	Lab technicians, lab managers, and others who would like to become familiar with the TCLP/DTFW
Length of Videotape	28 minutes
Format	VHS
Charge for Videotape	$30.00 (plus $3.00 shipping and handling)
Where to Order	Technical Video Productions 4405 River Bluff Rd. Tobaccoville, NC 27050 (910) 922-3861

Additional Videotapes: Analytical Methods

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Superfund Seniors

OERR

Description	The learning experiences of 12 students from Washington, DC's Duke Ellington School for the Gifted and Talented are chronicled in this videotape which highlights the students' experiences during a six-week internship at U.S. EPA Headquarters. It shows the seniors in both classroom and field trip settings (Coast Guard National Response Center, a Superfund site, a laboratory, and an emergency response team location).
Audience	Educators, and government and technical personnel interested in promoting environmental and/or scientific interests among teenagers via internships
Length of Videotape	15 minutes
Format	VHS
Charge for Videotape	None
Where to Order	Robert W. Cibulskis REAC-GSA Depot 2890 Woodbridge Ave. Building 209 Annex Edison, NJ 08837 (908) 321-6746

This Is Superfund

OERR

Description	This videotape provides a clear introduction to the Superfund program and the process of cleaning up hazardous waste sites.
Audience	General public and citizens living near a Superfund site
Length of Videotape	11 minutes
Format	VHS
Charge for Videotape	To be determined
Where to Order	National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 (703) 487-4650 or (800) 553-NTIS Fax: (703) 321-8547 or (703) 321-9038

Additional Videotapes: CERCLA-Related

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eData Overview: Electronic Data Transfer and Validation System

OERR

Description	This production highlights eData, or Electronic Data Transfer and Validation System, a PC-based system developed by EPA to assist in the validation, management and communication of hazardous waste sample information. The videotape stresses eData's advantages and applications with particular emphasis on how the system is used at each of the three key waste management locations — the site, laboratory, and office.
Audience	Regional On-Scene Coordinators (OSCs) and remediation personnel
Length of Videotape	6 minutes, 30 seconds
Format	VHS
Charge for Videotape	None
Where to Order	Robert W. Cibulskis REAC-GSA Depot 2890 Woodbridge Ave. Building 209 Annex Edison, NJ 08837 (908) 321-6746

Additional Videotapes: Computer Systems and Tools

Course Title	Page Number
Use of GIS for Hazardous Waste Site Characterization	143

Construction of RCRA Ground-Water Monitoring Wells

OSW

Description	This 12-minute videotape provides a cursory overview of the construction of RCRA ground-water monitoring wells. In addition to coverage of the Technical Enforcement Guidance Document (TEGD), the videotape includes information about purging and sampling equipment.
Audience	RCRA enforcement personnel and permit writers in the States and Regions involved with ground-water monitoring activities
Length of Videotape	12 minutes
Format	VHS
Charge for Videotape	None
Where to Order	Ellen Epstein U.S. Environmental Protection Agency Mail Code 5502G Washington, DC 20460 (202) 260-4849 (703) 603-8954

Fundamental Hydrology

ORD

Description	This videotape presents some of the fundamental concepts of ground-water flow and its interrelations with other parts of the hydrologic cycle.
Audience	Anyone working in various aspects of ground water
Length of Videotape	22 minutes
Format	VHS
Charge for Videotape	None (videotape is availabale for loan and may be duplicated)
Where to Order	John Rapp U.S. Environmental Protection Agency Mail Code 5303W Washington, DC 20460 (703) 308-8615

Monitoring Well Installation

OSW

Description	This videotape presents the basic concepts involved in the installation of wells in a ground-water monitoring system.
Audience	Anyone involved in site activities, particularly in well installation and monitoring. Also useful for State and Regional Superfund staff.
Length of Videotape	22 minutes
Format	VHS
Charge for Videotape	None (videotape is available for loan and may be duplicated)
Where to Order	John Rapp U.S. Environmental Protection Agency Mail Code 5303W Washington, DC 20460 (703) 308-8615

Worker Protection Standards

OERR

Description	When Superfund was reauthorized in 1986, Congress required OSHA to develop regulations that would protect the health and safety of workers engaged in certain hazardous materials activities. This regulation is referred to as the HAZ-WHOPER. This videotape focuses on the emergency planning, training, and medical monitoring requirements of the HAZ-WHOPER.
Audience	Employers and supervisors of individuals involved in hazardous materials operations, and anyone else covered under 29 CFR 1910.120 or 40 CFR 311
Length of Videotape	21 minutes
Format	VHS
Charge for Videotape	None
Where to Order	Emergency Response Team U.S. Environmental Protection Agency 2890 Woodbridge Ave. Building 18 (MS 101) Edison, NJ 08837-3679 (908) 494-4067

Additional Videotapes: Health and Safety

Videotape Title	Page Number
Tank Closure Without Tears: An Inspector's Safety Guide	153

BIF Enforcement Satellite Training Videotapes

OECA

Description	These videotapes cover a brief overview of the boiler and industrial furnace (BIF) regulations, a general technology overview, and an enforcement/ inspection section. For EPA personnel, the Office of Enforcement-sponsored basic inspector training curriculum or its equivalent is recommended as a prerequisite and basic inspection experience is encouraged. Viewers should have read the February 21, 1991 *Federal Register* on the BIF rule and be somewhat familiar with it.
Audience	Regional and State RCRA inspectors
Length of Videotape	4 hours and 15 minutes (there are 3 tapes)
Format	VHS
Charge for Videotape	None (videotapes are available for loan and may be duplicated)
Where to Order	EPA Regional RCRA Training Coordinators (see pages 5-7)

Hazardous Waste Incinerator Inspection Training

OSW

Description	These videotapes have been distributed to all of the Regions. States may request the videotape of an individual module or request that the entire course be delivered in their office. The videotape covers the technical and enforcement aspects of the inspection of hazardous waste incinerators. Topics to be discussed include incinerator design and operation, air pollution control devices, process and emissions monitoring, regulations and permitting, inspection procedures, interim status incinerators, and exempt incinerators.
Audience	Regional and State RCRA inspectors
Length of Videotape	3 hours, 30 minutes
Format	VHS
Charge for Videotape	None (videotapes are available for loan)
Where to Order	Emily Chow U.S. Environmental Protection Agency Mail Code 5503 Washington, DC 20460 (202) 260-9329 or EPA Regional RCRA Training Coordinators (see pages 5-7)

Land Disposal Restrictions: Containment Buildings

OSW

Description	This videotape describes the treatment technologies for containment buildings under the June 30, 1992 Land Disposal Restrictions Rule for newly listed wastes and hazardous debris.
Audience	Regional and State RCRA permit writers
Length of Videotape	13 minutes
Format	VHS
Charge for Videotape	$35.00
Where to Order	National Archives and Records Administration National Audiovisual Center, Customer Service Department 8700 Edgeworth Drive Capitol Heights, MD 20743-3701 Phone: (301) 763-1891 (between 8am and 4pm) Fax: (301) 763-6025 (24 hours, 7 days a week) Item #: A19502

Land Disposal Restrictions: Treatment Technologies for Hazardous Waste Debris

OSW

Description	This videotape describes the treatment technologies for hazardous waste debris under the June 30, 1992 Land Disposal Restrictions Rule for newly listed wastes and hazardous debris.
Audience	Regional and State RCRA permit writers
Length of Videotape	24 minutes
Format	VHS
Charge for Videotape	$45.00
Where to Order	National Archives and Records Administration National Audiovisual Center, Customer Service Department 8700 Edgeworth Drive Capitol Heights, MD 20743-3701 Phone: (301) 763-1891 (between 8am and 4pm) Fax: (301) 763-6025 (24 hours, 7 days a week) Item #: A19501

RCRA Inspector Workshop

Description	This videotape is produced by the Association of American State and Territorial Solid Waste Management Officials (ASTSWMO) and is an entry-level introduction to RCRA inspections.
Audience	Regional and State RCRA personnel
Length of Videotape	8 hours
Format	VHS
Charge for Videotape	$25.00
Where to Order	Katrina Taylor ASTSWMO 444 North Capitol Street, NW Washington, DC 20001 (202) 624-5828

RCRA Orientation Course

OSW

Description	This videotape provides an introduction to the various programs established by RCRA (Hazardous Waste, Solid Waste, Underground Storage Tanks, Medical Waste, etc.), including legislative history, implementation, and enforcement. The videotape was designed to accompany the 1990 RCRA Orientation Manual for training new RCRA employees.
Audience	Newly hired EPA and State staff in the RCRA program
Length of Videotape	47 minutes
Format	VHS
Charge for Videotape	$155.00
Where to Order	National Archives and Records Administration National Audiovisual Center, Customer Service Department 8700 Edgeworth Drive Capitol Heights, MD 20743-3701 Phone: (301) 763-1891 (between 8am and 4pm) Fax: (301) 763-6025 (24 hours, 7 days a week)

Additional Videotapes: RCRA-Related

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Use of GIS for Hazardous Waste Site Characterization	143

Operation Wildfire — A Hazardous Materials Response Simulation

OERR

Description The Operation Wildfire videotape allows the viewer to watch a step-by-step simulation of a HazMat incident. Emergency response personnel from three California communities, U.S. EPA Region IX and the U.S. EPA/ERT joined forces to participate in the simulation of a toxic chemical spill. The simulated response gives special attention to evacuation practices, emergency response setup, and rescue techniques.

Audience First responders (police/fire/EMS/HazMat team personnel); health and safety personnel; community leaders and emergency planning personnel; State Departments of Environmental Protection (DEPs); and training personnel

Length of Videotape 13 minutes

Format VHS

Charge for Videotape None

Where to Order Robert W. Cibulskis
REAC-GSA Depot
2890 Woodbridge Ave.
Building 209 Annex
Edison, NJ 08837
(908) 321-6746

What It Means to You

CEPPO

Description This videotape, produced by EPA, provides a straightforward, non-technical introduction to the Emergency Planning and Community Right-to-Know law. It tells businesses and community members about actions they can take to learn about chemicals in the community and steps they can take to plan for the possibility of chemical accidents. Viewers also learn how to obtain information about any routine releases of toxic chemicals that may take place. The videotape also outlines the far-reaching scope of the law and touches on a number of key provisions.

Audience Businesses and community members

Length of Videotape 15 minutes

Format 3/4 inch, Beta, and VHS

Charge for Videotape $28.95, $20.65, and $21.50 respectively

Where to Order Color Film Corporation
Video Division
770 Connecticut Avenue
Norwalk, CT 06854
(203) 866-2711

Conceptual Approach for Characterizing Problems at Hazardous Waste Sites

OSW

Description	This video emphasizes the use of a chemical mass balance approach for characterizing releases from hazardous waste sites. In contrast to fully quantifying all contaminants in a media at a facility, the chemical mass balance approach provides a rationale for focusing data gathering by asking specific questions that are necessary for determining site-specific contaminant fate, and for evaluating and selecting treatment options.
Audience	Regional and State personnel, owners/operators of hazardous waste sites
Length of Videotape	48 minutes
Format	VHS
Charge for Videotape	None (videotape is available for loan and may be duplicated)
Where to Order	John Rapp U.S. Environmental Protection Agency Mail Code 5303W Washington, DC 20460 (703) 308-8615

Investigation and Cleanup of Abandoned Wood Treatment Sites

OERR

Description	Abandoned wood treatment sites present a unique backdrop for this ERTV production which delves into the cleanup efforts that are currently underway at 90 sites in the northwestern and southeastern United States. The difficulties of treatability studies and treatments are also mentioned.
Audience	Regional OSCs and remediation personnel
Length of Videotape	7 minutes
Format	VHS
Charge for Videotape	None
Where to Order	Robert W. Cibulskis REAC-GSA Depot 2890 Woodbridge Ave. Building 209 Annex Edison, NJ 08837 (908) 321-6746

Soil Gas Monitoring

OSW

Description	This videotape describes the equipment used in soil gas monitoring, as well as case studies that demonstrate the use of the equipment.
Audience	Anyone involved in soil gas monitoring activities
Length of Videotape	60 minutes
Format	VHS
Charge for Videotape	None (videotape is available for loan and may be duplicated)
Where to Order	John Rapp U.S. Environmental Protection Agency Mail Code 5303W Washington, DC 20460 (703) 308-8615

Superfund Site Assessment Screening: A National Priority

OERR

Description	This videotape was developed to introduce new members of Superfund's site assessment community to the site assessment process and the revised Hazard Ranking System (HRS)
Audience	EPA contractors, Regional offices, State programs, Native American organizations, and other Federal agencies that will be working with Superfund's site assessment program
Length of Videotape	42 minutes
Format	VHS
Charge for Videotape	$80.00
Where to Order	Environmental Media Center P.O. Box 30212 Bethesda, MD 20814 (301) 229-1944 or (800) 522-0362

Use of GIS for Hazardous Waste Site Characterization

ORD

Description The Geographic Information System (GIS) uses database information and data on site characteristics to develop a site-specific map used to forecast the extent and effects of hazardous waste contamination. This videotape describes how GIS project planning and implementation is carried out for the characterization of a hazardous waste site. Examples of GIS graphics and analysis are shown.

Audience Federal and State staff and contractors involved in the geographic assessment of hazardous waste sites

Length of Videotape 20 minutes

Format VHS

Charge for Videotape None (videotape is available for loan and may be duplicated)

Where to Order Mason J. Hewitt
U.S. Environmental Protection Agency, EMSL-LV
P.O. Box 93478
Las Vegas, NV 89193-3478
(702) 798-2270

X-Ray Fluorescence Method for Superfund Site Screening

ORD

Description This videotape provides an overview of procedures used in taking in-situ soil measurements with a portable x-ray fluorimeter (XRF); describes the collection and preparation of soil samples for analysis by a portable XRF; and interprets the data to develop isopleth maps that yield a preliminary assessment of inorganic contaminant locations and concentrations.

Audience Federal and State staff and contractors involved in the assessment of inorganic (metals) contamination at hazardous waste sites (such as battery breaking and mining sites)

Length of Videotape 20 minutes

Format VHS

Charge for Videotape None (videotape is available for loan and may be duplicated)

Where to Order Mason J. Hewitt
U.S. Environmental Protection Agency, EMSL-LV
P.O. Box 93478
Las Vegas, NV 89193-3478
(702) 798-2270

Additional Videotapes: Site Assessment

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What Do We Have Here? (An Inspector's Guide to Site Assessment at Tank Closure)	153

Bioremediation of Contaminated Soil

OSW

Description This videotape describes the biodegradation process that involves microorganisms to biodegrade and detoxify chemicals within the environment at a contaminated site.

Audience OSCs, Remedial Project Managers (RPMs), and other remediation personnel

Length of Videotape 41 minutes

Format VHS

Charge for Videotape None (videotape is available for loan and may be duplicated)

Where to Order John Rapp
U.S. Environmental Protection Agency
Mail Code 5303W
Washington, DC 20460
(703) 308-8615

CRV Cleanup at Chemical Control

OERR

Description An explosion at an Elizabeth, NJ site had resulted in a 5-year Superfund cleanup effort, but 182 unmarked cylinders were left untouched due to lack of any safe and legal means for their cleanup. A new technology, the Cylinder Recovery Vessel (CRV), which uses pressure and atmospheric protection, successfully cleaned up the site in three months. This videotape demonstrates the step-by-step cylinder cleanup using the CRV.

Audience Regional OSCs and remediation personnel

Length of Videotape 12 minutes

Format VHS

Charge for Videotape None

Where to Order Robert W. Cibulskis
REAC-GSA Depot
2890 Woodbridge Avenue
Building 209 Annex
Edison, NJ 08837
(908) 321-6746

RREL/SITE SUPERFUND VIDEOTAPE LIBRARY

SITE VIDEOTAPES

These composite videotapes contain a number of EPA-produced documentaries on specific Superfund Innovative Technology Evaluation (SITE) Program demonstrations.

S1 SITE PROGRAM
(6 technology demonstrations)

ECOVA (SHIRCO) Infrared Incineration System, Brandon, FL - 8/87

ECOVA (SHIRCO) Infrared Incineration System, Rose Twp., MI - 3/89

EMTECH (HAZCON) Solidification Process, Douglassville, PA - 10/87

IWT/GEO-CON In Situ Stabilization/Solidification, Hialeah, FL - 4/88

TERRA VAC Vacuum Extraction System, Groveland, MA - 1/88

CF SYSTEMS Solvent Extraction Unit, New Bedford, MA - 3/89

S2 SITE PROGRAM
(4 technology temonstrations):

ULTROX Ultraviolet Radiation and Oxidation, San Jose, CA - 3/89

BIOTROL Biological Aqueous Treatment, New Brighton, MN 9/89

BIOTROL Soil Washing System, New Brighton, MN 9/89

IT/RREL Debris Washing System, Hopkinsville, KY - 12/89

S3 SITE PROGRAM
(4 technology temonstrations):

SOLIDITECH Solidification and Stabilization, Morganville, NJ - 12/88

continued on opposite side

ORDERING INSTRUCTIONS

To obtain your choice of tapes, complete the order form on the opposite side of this page. Enclose the form with your check in prepayment of the order made out to **Foster Wheeler Environmental Services**, and mail to the following address:

Foster Wheeler
Environmental Services
Division
Foster Wheeler USA
Attn: Ms. Marilyn Avery
8 Peach Tree Hill Road
Livingston, NJ 07039

ONLY ***PREPAID*** ORDERS WILL BE ACCEPTED.

For further information, contact Ms. Avery at (201) 535-2219.

RREL/SITE
SUPERFUND VIDEOTAPE LIBRARY

CHEMFIX Solidification and Stabilization, Clackamas, OR - 3/89

NOVATERRA (TTUSA) In Situ Steam and Air Stripping, San Pedro, CA - 9/89

AWD Integrated Vapor Extraction/Steam Vacuum Stripping, Burbank, CA - 9/90

S4 SITE PROGRAM
(4 technology temonstrations):

E.I. DUPONT/OBERLIN FILER Membrane Microfiltration, Palmerton, PA - 5/90

HORSEHEAD Flame Reactor, Atlanta, GA - 3/91

RETECH Plasma Centrifugal Furnace, Butte, MT - 7/91

BABCOCK & WILCOX Cyclone Furnace, Alliance, OH - 11/91

S5 SITE PROGRAM
(4 technology temonstrations):

STC Immobilization of Organic/Inorganic Contaminants in Soils, Selma, CA - 11/90

THC Soil Recycle Treatment Train at Toronto Harbor, Toronto, Ont., Canada - 5/92

R.C.C. Basic Extractive Sludge Treatment (B.E.S.T.), Grand Calumet River, Gary, IN - 7/92

Peroxidation Systems, Inc. Purox-Pure Chemical Oxidation Treatment, Altamont Hills, CA - 9/92

S6 SITE PROGRAM
(4 technology temonstrations):

Bergmann Soil/Sediment Washing Technology, Saginaw Bay, MI - 2/93

BESCORP Soil Washing System, Fairbanks, AK - 8/92

ELI Eco Logic International Inc. Hydrogen Reduction Gas-Phase Chemical Reduction Process, Bay City, MI - 11/93

Magnum Water Technology CAV-OX Ultraviolet Oxidation Process, Edwards AFB, CA - 1/94

R1 RREL/RCB RESEARCH PROGRAMS

This composite videotape contains five documentaries on research projects conducted under the auspices of the Risk Reduction Engineering Laboratory's Releases Control Branch:

Synthetic Soils Matrix (SSM) Program

Dioxin and the Mobile Incineration System

Mobile Carbon Regeneration System

Mobile Soils WashingSystem

Mobile In Situ Containment/Treatment Unit

Mail this form (with check) to

Foster Wheeler Environmental Services
A Division of Foster Wheeler USA Corp.
Attn: Ms. Marilyn Avery
8 Peach Tree Hill Road
Livingston, NJ 07039

VIDEOTAPE REQUEST FORM

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Tire Fires

OERR

Description	In the past 40 years, tire fires have become a serious, growing environmental problem throughout the country. This videotape identifies and discusses the health and environmental threats that result from tire fires and offers practical suggestions on how to combat tire-infested landfills, the advantages and disadvantages of the various extinguishing methods, and what can be done on a community level to safeguard against local occurrences.
Audience	First responders (police/fire/EMS/HazMat team personnel); health and safety personnel; community leaders and emergency planning personnel; and State Departments of Environmental Protection (DEPs)
Length of Videotape	15 minutes
Format	VHS
Charge for Videotape	None
Where to Order	Robert W. Cibulskis REAC-GSA Depot 2890 Woodbridge Ave. Building 209 Annex Edison, NJ 08837 (908) 321-6746

Additional Videotapes: Treatment Technologies

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Doing It Right! Proper Installation of Underground Tanks and Piping

OUST

Description	This videotape shows the proper techniques for installing underground tanks and piping. It discusses burial depth, backfill materials, anchoring, corrosion protection, and piping slope and components.
Audience	Underground storage tank (UST) installation contractors, owners, and inspectors; engineering/consulting firm staff
Length of Videotape	40 minutes
Format	VHS and BETA
Charge for Videotape	$16.00
Where to Order	American Petroleum Institute 1220 L Street, NW Washington, DC 20005 (202) 682-8375 or Petroleum Equipment Institute Box 2380 Tulsa, OK 74101 (918) 494-9696

Keeping It Clean: Making Safe and Spill-Free Motor Fuel Deliveries

OUST

Description Drivers of motor fuel delivery trucks are the most important factor in assuring pollution-free fuel deliveries to underground storage tanks. Today's drivers face many types of equipment required to prevent air pollution and soil and ground-water contamination. This videotape illustrates the key steps of a safe, clean delivery and the variety of equipment drivers will find at various motor fuel facilities. Specifically, the video describes Stage One vapor recovery, overfill prevention, and spill containment.

Audience Although directed primarily at petroleum tank drivers, the program also has important information for tank owners and operators who must select, label, and maintain a variety of pollution control equipment

Length of Videotape 25 minutes

Format VHS

Charge for Videotape $59.95

Where to Order

U.S. Environmental Protection Agency
RCRA/Superfund Hotline
(800) 424-9346

American Petroleum Institute
Publications Department
1220 L Street, NW
Washington, DC 20005
(202) 682-8375

Environmental Media Center
P.O. Box 30212
Bethesda, MD 20814
(800) 522-0362 or (301) 654-7141

Petroleum Equipment Institute
Publications Department
Box 2380
Tulsa, OK 74101
(918) 494-9696

Petroleum Marketers Association of America
1901 Fort Myer Drive, Suite 1200
Arlington, VA 22209-1604
(703) 351-9160

Managing Underground Storage Tanks (slide show)

OUST

Description	This slide show features segments on all phases of tank management from inventory and installation to leak detection and cleanup. It provides excellent graphics of several leak scenarios and cleanup procedures.
Audience	Owners and operators, concerned citizens, consulting firms, and college university instructors
Length of Videotape	185 slides, 27-page script, and 103 pages of graphics
Format	35mm slides
Charge for Videotape	$120.00 (includes hard copy of slide graphics)
Where to Order	National Archives and Records Administration National Audiovisual Center, Customer Service Department 8700 Edgeworth Drive Capitol Heights, MD 20743-3701 Phone: (301) 763-1891 (between 8am and 4pm) Fax: (301) 763-6025 (24 hours, 7 days a week)

Petroleum Leaks Underground

OUST

Description	This two-part videotape shows how liquids (Part 1) and vapors (Part 2) move in the subsurface and why early response to leaked petroleum is so important.
Audience	State staff and contractors involved in site assessment and cleanup
Length of Videotape	29 minutes
Format	VHS
Charge for Videotape	$75.00 (includes shipping and handling)
Where to Order	Environmental Media Center P.O. Box 30212 Bethesda, MD 20814 (800) 522-0362

A Question of When: Tank Installation for Inspectors

OUST

Description	This videotape provides an overview of tank and piping installation with a checklist of key items to help inspectors catch mistakes and guard against future leaks.
Audience	States, local governments
Length of Videotape	36 minutes
Format	VHS
Charge for Videotape	$30.00 plus $2.85 shipping and handling
Where to Order	T2 Communications P.O. Box 332 Holbrook, MA 02343

Straight Talk on Leak Detection with Joe Thursday, Leak Detective

OUST

Description	This videotape provides owners and operators with an overview of their options for choosing a leak detection system, and describes tanks and piping leak detection methods.
Audience	Owners and operators, consultants, equipment vendors, UST inspectors
Length of Videotape	20 minutes
Format	VHS
Charge for Videotape	$40.00
Where to Order	Environmental Media Center Box 30212 Bethesda, MD 20814 (800) 522-0362

Tank Closure Without Tears: An Inspector's Safety Guide

OUST

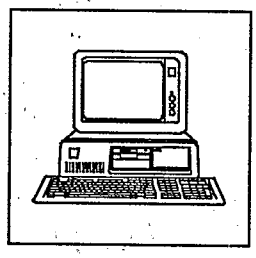
Description	This videotape focuses on personal safety regarding tank removal and closure, explaining various methods of handling explosive vapors and other concerns of safe closure.
Audience	States, local governments, tank removal contractors, engineering consulting firms
Length of Videotape	30 minutes
Format	VHS
Charge for Videotape	$35.00 for videotape and booklet Also available on loan for 5 days at $10.00
Where to Order	New England Interstate Environmental Training Center (NEIETC) 2 Fort Road South Portland, ME 04106 (207) 767-2539

What Do We Have Here? (An Inspector's Guide to Site Assessment at Tank Closure)

OUST

Description	A three-part videotape on inspecting sites for contamination where tanks have been removed. This videotape provides a site assessment overview, an overview of field instruments, and a brief discussion of soil and water sampling.
Audience	States, local governments, environmental consultants, cleanup contractors
Length of Videotape	51 minutes
Format	VHS
Charge for Videotape	$45.00 videotape, $5.00 booklet Also available on loan for 5 days at $10.00
Where to Order	New England Interstate Environmental Training Center (NEIETC) 2 Fort Road South Portland, ME 04106 (207) 767-2539

Information Systems and Software



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CERCLA Information System (CERCLIS)

OERR

SYSTEM DESCRIPTION

System Type Database

System Purpose CERCLIS is a database that helps EPA Headquarters and Regional personnel with site and program management by assisting the process of planning, budgeting, and tracking site assessment, remedial, removal, and enforcement steps. Regions use uploads from WasteLAN to report through CERCLIS to Headquarters on the status of major stages of cleanup at sites. CERCLIS information is available to members of the public through the FOIA process or from the National Technical Information Service.

SYSTEM ELEMENTS

Types of Data or Records CERCLIS maintains an inventory of abandoned, inactive, or uncontrolled hazardous waste sites. CERCLIS contains information summarizing evaluations, cleanup steps, and negotiation and cost recovery enforcement activities taken at each site. CERCLIS includes data on operable units, events, subevents, some technical and chemical information, enforcement activities, milestones, remedies, and financial information.

ACCESSIBILITY

How to Access the System CERCLIS is an on-line system that is menu-driven. A mainframe account and CERCLIS authorization are required. Access is restricted to EPA Superfund personnel.

Software CERCLIS is implemented on EPA's mainframe under System 2000 (S2K) and data are accessed through COBOL, SAS, FOCUS, and S2K reports. The mainframe can be accessed through a dedicated line or dial-up, and a variety of communications packages support these alternatives.

Hardware A terminal or personal computer may be used to connect to the mainframe via a modem dial-up or a dedicated line incorporating either a controller or an SNA gateway.

CONTACTS

To Register or Obtain a Copy Maja Lee
(703) 603-8904

For More Information Jalania Ellis
(703) 603-8884

CleanLAN

OERR

SYSTEM DESCRIPTION

System Type Database

System Purpose CleanLAN was developed to automate data sharing between the U.S. Army Corps of Engineers (USACE) and EPA for Superfund sites. CleanLAN assists the process of planning and tracking remedial cleanups. EPA data applicable to CleanLAN are entered in WasteLAN, uploaded to CERCLIS, and downloaded to CleanLAN. USACE data applicable to EPA are uploaded from CleanLAN through CERCLIS to the appropriate Region's WasteLAN.

The CleanLAN audience includes EPA Regional Superfund managers and USACE managers for sites where EPA has assigned remedial cleanup responsibility to USACE.

SYSTEM ELEMENTS

Types of Data or Records CleanLAN contains USACE project level data such as project type and key, District and Division name, and project narrative and milestone data related to the RI/FS, ROD, RD, and RA. In addition, CleanLAN contains data provided by EPA such as site description, location, remedial event data, and milestone data. The structure of CleanLAN is similar to the WasteLAN structure, and includes operable units, events, subevents, and milestone information.

ACCESSIBILITY

How to Access the System CleanLAN is an on-line system that is menu-driven. The prospective user must obtain a CleanLAN account. Access is restricted to USACE project managers.

Software CleanLAN is implemented using FoxPro under MS-DOS 3.3.

Hardware Currently, CleanLAN is maintained in a local area network (LAN), ideally with an entire file server reserved exclusively for CleanLAN and providing at least 20M of hard disk space. Workstations should be 100% IBM-compatible with at least a monochrome or CGA monitor, and a minimum of 640K RAM.

CONTACTS

To Register or Obtain a Copy USACE Project Managers should see the System Administrators in their respective District/Division for CleanLAN access. EPA Superfund staff should see the Regional WasteLAN System Administrator to obtain access to the USACE information in WasteLAN.

For More Information Maja Lee
(703) 603-8904

Clean-Up Information Bulletin Board (CLU-IN)

TIO

SYSTEM DESCRIPTION

System Type Bulletin Board

System Purpose CLU-IN fosters communications and technology information transfer among Regional and Headquarters staff, other Federal and State agencies, universities, private firms involved in the clean-up of hazardous waste sites, and citizens.

SYSTEM ELEMENTS

Types of Data or Records News, information bulletins, message exchange, file exchange, databases, training schedules, and access to other information systems related to hazardous waste clean-up and clean-up technologies.

ACCESSIBILITY

How to Access the System CLU-IN is an on-line system that is available to the individual user. Access CLU-IN by setting your modem to call (301) 589-8366 and setting your parameters to eight data bits, no parity, and one stop bit.

EPA users may access CLU-IN through the X.25 network using the address "CLUBBS." See your LAN administrator for instructions on X.25 access.

The CLU-IN Users Manual describes how to access CLU-IN and provides an introduction to the most important features and commands of the system. The Users' Manual is available for download from CLU-IN in the file MANUAL.ZIP or can be ordered from the National Center for Environmental Publications and Information (see page 83).

Software This system works with a variety of communication software packages.

Hardware A personal computer with a 1200, 2400 or 9600 baud modem is needed.

CONTACTS

System Operator Beth Ann Kyle
EMS, Inc.
8601 Georgia Ave., Suite 500
Silver Spring, MD 20910
(301) 589-8368

For More Information Gary Turner
(703) 308-7025

Computer-Aided Data Review and Evaluation (CADRE)

OECA

SYSTEM DESCRIPTION

System Type Software

System Purpose To perform computer-aided data validation on contract laboratory program (CLP) data

SYSTEM ELEMENTS

Types of Data or Records Uses CLP data from the CARD database or Agency standard diskette deliverable format.

ACCESSIBILITY

How to Access the System System will be available for EPA Regional use, beginning in early FY 93.

Software This is a menu-driven system.

Hardware IBM or IBM-compatible personal computer, 286 or higher, 640K RAM, and a minimum of 5M available hard disk space.

CONTACTS

To Register or Obtain a Copy

David Eng (703) 603-8827	or	Dona Brock (702) 892-2539

Cost of Remedial Action Model (CORA)

OERR

SYSTEM DESCRIPTION

System Type Expert system

System Purpose CORA is used to determine recommendations for remedial actions at Superfund sites and estimate their costs.

SYSTEM ELEMENTS

Types of Data or Records CORA contains two subsystems: an expert system to determine potential remedial actions and a cost system which can develop remediation cost estimates.

ACCESSIBILITY

How to Access the System This is a stand-alone system.

Software No additional software is required.

Hardware IBM or IBM-compatible personal computer (MS-DOS environment, 640K RAM, and 3M of available hard disk space) is needed.

CONTACTS

To Register or Obtain a Copy CORA Hotline
(703) 471-1441 x. 2165

For More Information Sam Gianti
CH2M Hill
(703) 471-1441 x. 4311

Hazardous Waste Superfund Database (HWSFD)

ORD

SYSTEM DESCRIPTION

System Type Database

System Purpose To provide bibliographic access to the Hazardous Waste Superfund Collection (HWSFC) located at EPA's Headquarters Library. The Collection meets the information needs of EPA OSWER staff by making key documents accessible in hard copy.

SYSTEM ELEMENTS

Types of Data or Records Annotated bibliographic records of Federal agency documents, EPA reports, including OSWER Directives, Records of Decision, health documents and toxicological profiles, and videos. As of January 1994, over 6,500 documents are in the Collection.

ACCESSIBILITY

How to Access the System HWSFD is available as an on-line and stand-alone system. The on-line version is available on EPA's mainframe through the Online Library System (OLS) which can be dialed into using a personal computer (PC) and a modem. The dial-in number is (919) 549-0720. (Parameters are: 7,1,E). The stand-alone system is a hypertext PC-based system that contains related information in addition to the database. Files to set it up can be downloaded from EPA's CLU-IN Bulletin Board. The dial-in number is (301) 589-8366. (Parameters are: 8,1,N). The PC-based system and a CD-ROM version are on display at EPA's Headquarters Library and several Regional Libraries.

Software For on-line access, a communications software is required. For the stand-alone version, only DOS is needed to operate the system. To retrieve the files for setting up the PC version, communications software is also needed.

Hardware A personal computer with a hard disk drive is needed. A modem is required for accessing the database on-line or retrieving the database files from the CLU-IN Bulletin Board. Approximately 9M of available hard disk space is needed for the PC version.

CONTACTS

To Register or Obtain a Copy Felice Sacks, Head Librarian of the HWSFC; Fabienne McGovern, Reference Librarian of the HWSFC. Phone: (202) 260-5934. Also, please contact contractor librarians at the Regional libraries.

For More Information OLS User Guide and other system documentation is available by calling (919) 541-2777.

PREScore

OERR

SYSTEM DESCRIPTION

System Type Expert system

System Purpose PREScore provides users with an automated form of Hazard Ranking System (HRS) scoring.

SYSTEM ELEMENTS

Types of Data or Records Individual site HRS scoring information is available for EPA Regional and State staff and contractors involved in evaluating sites with the HRS.

ACCESSIBILITY

How to Access the System PREScore is a stand-alone system that is menu-driven.

Software No additional software is required.

Hardware IBM or IBM-compatible personal computer is needed.

CONTACTS

To Register or Obtain a Copy Camile Fields
(703) 603-8917

Records of Decisions System (RODS)

OERR

SYSTEM DESCRIPTION

System Type Database

System Purpose This database provides clean-up information for Superfund sites.

SYSTEM ELEMENTS

Types of Data or Records The database contains Records of Decisions for Superfund sites nationwide. Data include the action taken, the history of the site, the rationale for the chosen cleanup method, and public comments.

ACCESSIBILITY

How to Access the System RODS is an on-line system.

Software This system works with a variety of communication software packages.

Hardware IBM or IBM-compatible personal computer with modem is needed.

CONTACTS

To Register or Obtain a Copy Please contact your EPA Regional librarian.

For More Information RODS Staff
(703) 416-0703

Removal Cost Management System (RCMS)

OERR

SYSTEM DESCRIPTION

System Type Integrated system

System Purpose RCMS provides EPA OSCs and RPMs with a system to track both government contractor and government costs, project future costs, generate reports, and verify contractor invoices for Superfund field activities.

SYSTEM ELEMENTS

Types of Data or Records This system contains comprehensive fiscal information, contractor personnel and equipment costs, and time and materials costs generated from Superfund site operations. The Site Summary module of RCMS accesses archived information to generate reports, including U.S. EPA/TAT reports and contractor-specific reports, as well as Project Cost Summaries.

ACCESSIBILITY

How to Access the System This is a stand-alone system that is menu-driven.

Software No additional software is required.

Hardware IBM or IBM-compatible personal computer with MS-DOS 3.0 or higher, 640K RAM, and 560K of available hard disk space is needed.

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Environmental Response Team
Environmental Response Center
Building 18
2890 Woodbridge Ave.
Edison, NJ 08837

RCMS Toll-Free Support Line
(800) 999-6990

For More Information

Robert Cibulskis
(908) 321-6746

WasteLAN

OERR

SYSTEM DESCRIPTION

System Type Database

System Purpose WasteLAN is a database that helps EPA Regional personnel with site and program management by assisting the process of planning, budgeting, and tracking site assessment, remedial, removal, and enforcement steps. Regions use uploads from WasteLAN to report through CERCLIS to Headquarters on the status of major stages of clean-up at sites. CERCLIS information is available on tape or paper reports through the FOIA process, or from NTIS.

SYSTEM ELEMENTS

Types of Data or Records WasteLAN maintains an inventory of abandoned, inactive, or uncontrolled hazardous waste sites. WasteLAN contains information summarizing evaluation, clean-up steps, and negotiation and cost recovery enforcement activities taken at each site. WasteLAN includes data on operable units, events, subevents, some technical and chemical information, enforcement activities, milestones, remedies, and financial information.

ACCESSIBILITY

How to Access the System WasteLAN is a Regional on-line system. The user must have access to a Regional Superfund Local Area Network (LAN) and must obtain a LAN account and WasteLAN user ID. Access is restricted to EPA Superfund personnel.

Software WasteLAN is implemented on each Region's Local Area Network (LAN) using FoxBase under Novell Netware.

Hardware A Superfund LAN workstation is used to access WasteLAN.

CONTACTS

To Register or Obtain a Copy EPA Regional Superfund staff should contact the Superfund Information Management Coordinator in their Regional offices for WasteLAN access. HQ Superfund staff should contact Mary Curtis.

For More Information Mary Curtis
(703) 603-8882

Additional Information Systems and Software: CERCLA-Related

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Site Enforcement Tracking System (SETS)

OECA

SYSTEM DESCRIPTION

System Type Database

System Purpose SETS is an automated system which tracks name and address information about potentially responsible parties (PRPs) at CERCLA sites. Information is used for planning enforcement strategies across the Regions, for determining potential conflicts of interests, and for responding to frequent public inquiries about PRP identification.

SYSTEM ELEMENTS

Types of Data or Records Site name, 12-digit site ID, NPL status, PRP contact, PRP address, and date(s) general and/or special notice letters were issued.

ACCESSIBILITY

How to Access the System SETS is a stand-alone system managed by Headquarters. Headquarters and the Regions share responsibility for data collection and entry.

Software FOCUS, Clist

Hardware ES 9000

CONTACTS

To Register or Obtain a Copy Alicia Corley
(202) 260-8717

Additional Information Systems and Software: Enforcement

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BIOPLUME II: Two-Dimensional Contaminant Transport Under the Influence of Oxygen-Limited Biodegradation in Ground Water

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose BIOPLUME II is designed to aid environmental managers, regulators, and planners in evaluating the movement of a hydrocarbon plume in the saturated zone. BIOPLUME II predicts changes in the contaminant plume due to convection, dispersion, mixing, and biodegradation.

SYSTEM ELEMENTS

Types of Data or Records The model requires input parameters that define the hydrogeologic and chemical conditions. The hydrogeologic parameters include potentiometric elevation, transmissivity, thickness, effective porosity, recharge, leakance, and pumping/injection rates. Chemical parameters include contaminant and oxygen concentrations, half-life of solute, anaerobic decay, and reaeration.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware IBM PC-AT, PS/2 or compatible computer, minimum 640K RAM, 80287 or 80386 coprocessors, and MS-DOS 2.0 or later. A graphics card and SURFER graphics software from Golden Software are recommended.

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

CHEMFLO: One-Dimensional Water and Chemical Movement In Unsaturated Soils

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose The software was developed to assist regulators, environmental managers, consultants, scientists, and students in understanding unsaturated flow and transport processes.

SYSTEM ELEMENTS

Types of Data or Records From the main menu, the user selects the desired simulation: water movement or both water and solute movement. Four different soils are included in the model to run the simulation, but additional soil types and properties can also be entered. The model can simulate both drainage and drying of a soil. General assumptions in the model include homogeneous soil properties, negligible hysteresis in the wetting and drying process, and that chemical partitioning is instantaneous and reversible.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware IBM PC-AT, PS/2 or compatible computer; minimum 640K RAM; two floppy disk drives or one floppy disk drive and one fixed disk; a graphics card compatible with IBM, CGA, EGA, or VGA graphics, and a compatible monitor; and MS-DOS or PC-DOS 2.01 or later. An 80 x 87 math coprocessor is highly recommended.

CONTACTS

To Register or Obtain a Copy
U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information
Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

GEOPACK: Geostatistics for Water Management

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose The software conducts both statistical and geostatistical analyses.

SYSTEM ELEMENTS

Types of Data or Records Basic statistics such as mean, median, variance, standard deviation, skewness, kurtosis, linear regression, polynomial regression, and the Kolomogorov-Smirnov test can be calculated. Semivariograms and cross-semivariograms for combined random functions for two-dimensional spatially dependent random functions can be determined. In addition, linear and nonlinear estimations can be calculated using kriging and cokriging estimators as well as disjunctive kriging and disjunctive cokriging techniques.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software Two pre-formatted, high-density, 3.5 inch diskettes are needed for the disk exchange program.

Hardware IBM PC-AT, PS/2 or compatible computer; minimum 640K RAM; hard disk storage of about 4 MB; a graphics card compatible with CGA, EGA, VGA or Hercules graphics and a compatible monitor; and MS-DOS 3.30 or later. A math coprocessor is not required but will be used by the model if available.

CONTACTS

To Register or Obtain a Copy
U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information
Joe R. Williams (405) 436-8608 or David S. Burden (405) 436-8606

Hydrocarbon Spill Screening Model (HSSM)

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose The computer model is designed to simulate flow of the LNAPL phase and transport of a chemical constituent of the LNAPL from the surface to the water table; radial spreading of the LNAPL phase at the water table; and dissolution and aquifer transport of the chemical constituent.

SYSTEM ELEMENTS

Types of Data or Records HSSM is composed of three modules: the KOPT (vadose zone), OILENS (water table), and TSGPLUME (aquifer). The first two modules address the vadose zone flow and transport of the LNAPL. The TSGPLUME takes the dissolution mass flux from the OILENS and calculates the expected concentrations at a number of downgradient receptor points.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 diskette is needed to obtain the DOS or Windows version through the disk exchange program.

Hardware For 386 enhanced mode, an 80386 processor (or higher) and 2 MB memory. For standard mode, an 80286 processor (or higher) and 1MB memory. For real mode, an 8086 or 8088 processor (or higher) and 640K conventional memory. Windows 3.1 and later do not support real mode. A hard disk and at least one floppy disk drive, and a video monitor supported by Windows (EGA or better resolution).

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

Modular Three-Dimensional Transport Model (MT3D)

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose MT3D is useful in simulating advection, dispersion, and chemical reactions of dissolved constituents in ground-water systems in either two or three dimensions.

SYSTEM ELEMENTS

Types of Data or Records When using MT3D, the advection term in the contaminant transport problem has to be evaluated using a flow model. The MT3D transport model can be used with any block-centered finite-difference flow model (for example, MODFLOW). As a result, after a flow modeling simulation has been conducted and calibrated, the data, such as heads and flow terms, can be saved in a binary file and retrieved by MT3D.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software Two pre-formatted, high-density, 3.5 diskettes are needed for the disk exchange program.

Hardware IBM PC-AT, PS/2 or compatible computer, minimum 3.5 MB Extended Memory, an 80386 or 80486 math coprocessor, and PC-DOS or MS-DOS version 2.0 or greater. A graphics card is highly recommended if commercial plotting programs are to be used.

CONTACTS

To Register or Obtain a Copy U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information Joe R. Williams (405) 436-8608 or David S. Burden (405) 436-8606

OASIS: Parameter Estimation System for Aquifer Restoration Models

ORD

SYSTEM DESCRIPTION

System Type Database and decision support system software

System Purpose To assess and analyze ground-water contamination problems.

SYSTEM ELEMENTS

Types of Data or Records Contaminant source by industry, contaminant sources by zone, remediation techniques, ground-water modeling parameters, chemical data (specific gravity, vapor pressure, water solubility) for 130 components, hydrologic database from over 400 sites, ODAST and BIOPLUME software.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software Six pre-formatted, double-density (low), 3.5 inch diskettes are needed for the disk exchange program.

Hardware Apple Macintosh II, IIx, IIc, SE/30, or SE with a minimum of 1MB RAM and 9M available hard disk space.

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

PESTAN: Pesticide Analytical Model

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose PESTAN is a computer code for estimating the transport of organic solutes through soil to ground water. It is a one-dimensional, unsaturated flow and transport model that is based on a closed-form analytical solution of the advective-dispersive-reactive transport equation.

SYSTEM ELEMENTS

Types of Data or Records The model requires input parameters describing the pollutant properties, soil character, and environmental conditions.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware IBM-PC or compatible computer, minimum 256K RAM, CGA board, one floppy disk drive, and DOS 2.0 or higher.

CONTACTS

To Register or Obtain a Copy
U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information
Joe R. Williams (405) 436-8608 or David S. Burden (405) 436-8606

RETC: The Retention Curve Computer Code

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose RETC provides an alternative to direct measurements of the soil water retention curve and the hydraulic conductivity curve by using theoretical methods to predict these properties from more easily measured and available soil water retention data.

SYSTEM ELEMENTS

Types of Data or Records To use RETC, either hydraulic properties of the soil or the analytical model parameters are entered as inputs into the program. The user can then select the desired analytical method from a menu screen to derive the output.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware IBM-PC or compatible computer, minimum 256K RAM, one floppy drive, and DOS 2.0 or greater. An 8087 or 80287 math coprocessor is recommended.

CONTACTS

To Register or Obtain a Copy
U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information
Joe R. Williams (405) 436-8608 or David S. Burden (405) 436-8606

Wellhead Analytical Element Model (WhAEM)

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose Captures zone delineation for pumping wells in simple hydrogeologic settings, including the influence of ground water and surface water interactions. Application to wellhead protection, pump-and-treat.

SYSTEM ELEMENTS

Types of Data or Records WhAEM consists of two executables: the GAEP (Geographic Analytic Element Preprocessor) and CZAEM (Capture Zone Analytic Element Model). The preprocessor puts spatial (e.g., map features) and point (e.g., aquifer parameters) data into electronic form, and interactively creates a script file for the CZAEM. Sophisticated capture zones are solved for using CZAEM, including the capture zone envelop, time zones, and source zones.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware 80386 with math coprocessor, 4 MB RAM, VGA graphics or better, 15 MB hard disk storage, mouse, and digitizer (recommended, but optional).

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams (405) 436-8608 or David S. Burden (405) 436-8606

WHPA: A Modular Semi-Analytical Model for the Delineation of Wellhead Protection Areas

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose A computer model for the delineation of capture zones and contaminant fronts.

SYSTEM ELEMENTS

Types of Data or Records WHPA consists of four different particle-tracking modules: RESSQC, MWCAP, GPTRAC, and MONTEC. The general parameters required are: transmissivity, porosity, saturated thickness and the rates of recharge or discharge from the simulated injection or pumping well.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software Two pre-formatted, high-density, 3.5 inch diskettes are needed for the disk exchange program.

Hardware IBM PC, XT, AT (or compatible); minimum 640K RAM; hard disk drive; and MS-DOS 2.1 or later.

CONTACTS

To Register or Obtain a Copy
U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information
Joe R. Williams (405) 436-8608 or David S. Burden (405) 436-8606

Additional Information Systems and Software: Ground Water

System/Software Title	Page Number
Regulatory and Investigative Treatment Zone Model (RITZ)	195
STF: Soil Transport and Fate Database and Model Management System	196
VLEACH: A Vadose Zone Leaching Model	193

Field Certification Tracking System (FCTS)

OERR

SYSTEM DESCRIPTION

System Type Software

System Purpose FCTS allows easy tracking, manipulation, and planning for all training and medical requirements related to the Worker Protection Standards and other health- and safety-related requirements. The target audience are owners and operators of facilities subject to Worker Protection Standards.

SYSTEM ELEMENTS

Types of Data or Records Not applicable.

ACCESSIBILITY

How to Access the System This is a stand-alone system that is menu-driven.

Software No additional software is required.

Hardware IBM or IBM-compatible personal computer is needed.

CONTACTS

To Register or Obtain a Copy Sella Burchette
(908) 321-6726

Health and Safety Plan (HASP)

OERR

SYSTEM DESCRIPTION

System Type Software

System Purpose HASP (version 3.06) assists users in developing a site-specific health and safety plan. The software is designed to assist anyone needing to develop site-specific health and safety plans under the Worker Protection Standards.

SYSTEM ELEMENTS

Types of Data or Records Database containing various chemical information, EPA Air Methods Database, EPA Guidelines for the Selection of Chemical Protective Clothing, and other health and safety information.

ACCESSIBILITY

How to Access the System This is a stand-alone system that is menu-driven.

Software No additional software is required.

Hardware IBM or IBM-compatible personal computer is needed.

CONTACTS

To Register or Obtain a Copy Sella Burchette
(908) 321-6726

Biennial Reporting System (BRS)

OSW

SYSTEM DESCRIPTION

System Type Database

System Purpose BRS is the information system created by EPA Headquarters to assist in the collection and management of data collected through the Biennial Report. The Biennial Report is a data collection activity required of all treatment, storage, and disposal facilities as well as all hazardous waste large quantity generators. The database is used to collect the data by the EPA Regions and States. The data are then uploaded to the BRS National Oversight database for use by EPA Headquarters in the production of the Biennial Report to Congress.

SYSTEM ELEMENTS

Types of Data or Records BRS is the national system that collects data on the generation, management and minimization of hazardous waste. BRS captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. These data are collected every other year and provide the ability to perform trend analysis.

ACCESSIBILITY

How to Access the System BRS is an on-line system that is menu-driven. A mainframe account and BRS authorization are required. On-line access is restricted to RCRA personnel. Copies of the Report to Congress are available through NTIS. Standard Reports are available to the public upon request through the FOIA process. A tape of the data is available through the National Technical Information Service (NTIS).

Software BRS is written in FOCUS, a database application program chosen because of its compatibility on both IBM-compatible personal computers and the EPA mainframe.

Hardware BRS was written for use on both personal computers and the EPA mainframe to accommodate the States' needs for various platforms. The National Oversight Database is on the EPA IBM Mainframe.

CONTACTS

To Register or Obtain a Copy John Fogarty
(202) 260-4697

For More Information Liza Hearns
(202) 260-3393

RCRA Administrative Action Tracking System (RAATS)

OECA

SYSTEM DESCRIPTION

System Type	Database
System Purpose	To track issuance of RCRA administrative actions and associated penalties to RCRA regulatory program violators.

SYSTEM ELEMENTS

Types of Data or Records	Printouts available showing such information as date action taken, type of action, amount of penalties assessed, violations addressed by action, etc.

ACCESSIBILITY

How to Access the System	Contact RCRA Enforcement Division for printouts. RAATS is on a personal computer dedicated to the management of this database.
Software	FOCUS
Hardware	IBM or IBM-compatible personal computer is needed.

CONTACTS

To Register or Obtain a Copy	Not applicable (currently discussing the possibility of making disks available through NTIS).
For More Information	Carolyn Carr (202) 260-2810

Resource Conservation and Recovery Information System (RCRIS)

OSW

SYSTEM DESCRIPTION

System Type Database

System Purpose RCRIS is an information system that helps EPA Regions and States in the daily operations and implementation of the RCRA program. Core data from the Regions and States are uploaded to the RCRIS National Oversight database monthly for use by EPA Headquarters in their oversight of the RCRA program.

SYSTEM ELEMENTS

Types of Data or Records RCRIS is the computerized information system for managing the hazardous waste program mandated by RCRA. RCRIS is both a program management and inventory system of RCRA hazardous waste handlers. RCRIS captures identification and location data for all handlers of hazardous waste and a wide range of information on the hazardous waste treatment, storage and disposal facilities regarding permit and closure status, and compliance with Federal and State regulations and clean-up (corrective action) activities.

ACCESSIBILITY

How to Access the System RCRIS is an on-line system that is menu-driven. A mainframe account and RCRIS authorization are required. On-line access is restricted to RCRA personnel.

Standard Reports are available to the public upon request through the FOIA process, and to EPA/State personnel upon request to RCRIS staff. An extract of the data is available through the National Technical Information Service (NTIS).

Software RCRIS is written in FOCUS, a database application program chosen because of its compatibility on both IBM-compatible personal computers and the EPA mainframe.

Hardware RCRIS was written for use on both personal computers and the EPA mainframe to accommodate the States' needs for various platforms. The National Oversight Database is on the EPA IBM Mainframe.

CONTACTS

To Register or Obtain a Copy Kevin Phelps
(202) 260-4697

For More Information Liza Hearns
(202) 260-3393

Additional Information Systems and Software: RCRA-Related

System/Software Title	Page Number
Clean-Up Information Bulletin Board (CLU-IN)	161
Hazardous Materials Information Exchange (HMIX)	188
Hazardous Waste Superfund Database (HWSFD)	164

Computer-Aided Management of Emergency Operations (CAMEO)

CEPPO

SYSTEM DESCRIPTION

System Type Expert system

System Purpose CAMEO is designed to assist local, State and Federal government emergency planning agencies, fire departments, and facilities managers in implementing their responsibilities under the Emergency Planning and Community Right-to-Know Act.

SYSTEM ELEMENTS

Types of Data or Records CAMEO consists of four major components:

1. Menu driven, multiple, integrated databases and programs which are ready for entering local information and area maps. The databases are designed to manage information on facilities, transportation routes, special populations, and response resources.

2. A comprehensive hazardous chemical database with over 4,000 entries. Identification as well as emergency response information is included.

3. A mapping module, MARPLOT, which uses digitized mapping data from the U.S. Bureau of the Census (TIGER/Line). MARPLOT allows searching and displaying of roadways, waterways, railroads, and political boundaries.

4. The latest version of CAMEO's air dispersion model, ALOHA, permits sophisticated modeling by estimating a gas plume's area and concentration, over time, given various environmental conditions.

ACCESSIBILITY

How to Access the System This is a stand-alone system which is menu-driven.

Software CAMEO MAC v.4.0 and ALOHA v.5.1 require Hypercard 2.1.

Hardware CAMEO MAC v.4.0 and ALOHA v.5.1 require System 7.x, 5MB RAM, 40MB hard disk space, math co-processor. CAMEO DOS v.1.0 requires an IBM AT or IBM compatible personal computer with a 386 processor, MS DOS 3.3 or higher, 640K RAM, EGA or VGA color monitor, one high-density floppy drive, a minimum of 40MB available diskspace, and Windows 3.1 .

CONTACTS

To Register or Obtain a Copy

National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611
(312) 527-4800 x. 6900

Hazardous Materials Information Exchange (HMIX)

DOT/FEMA

SYSTEM DESCRIPTION

System Type Bulletin Board

System Purpose An information clearinghouse designed to provide Federal, State, local, and private-sector organizations with a means of sharing information regarding hazardous materials emergency preparedness, prevention and response. It is not, however, designed to provide assistance during an actual emergency. This bulletin board is sponsored by the Federal Emergency Management Agency (FEMA) and the U.S. Department of Transportation (DOT).

SYSTEM ELEMENTS

Types of Data or Records Comprehensive listing of current hazmat and oil legislation and regulations, training courses, educational materials, and contacts relating to the prevention of, preparedness for, and response to hazardous materials emergencies.

ACCESSIBILITY

How to Access the System HMIX is an on-line system that is available to the individual user. Access HMIX by calling (708) 972-3275. A toll-free number has been established for State, local, and first responder system users. Communication software should be set at no parity, 8 data bits, and one stop. Caller pays long-distance phone charges only and is allowed 60 minutes of access time per session. There are a total of 6 access nodes into the HMIX — three commercial and three toll-free.

Software This system works with a variety of communication software packages in both the MS-DOS and MAC environments.

Hardware Any personal computer with a 300, 1200, 2400 or 9600 baud modem is needed.

CONTACTS

To Register or Obtain a Copy System Operator
1-800-PLANFOR (752-6367)
1-800-367-9592 (Illinois residents)

For More Information

Bill Holt
Department of Transportation
(202) 366-4900

or

Diana M. Wade
Federal Emergency Management Agency
(202) 646-2571

Risk*Assistant

OERR

SYSTEM DESCRIPTION

System Type Software

System Purpose Risk*Assistant is a microcomputer-based software system that provides an array of analytical tools, databases, and information-handling capabilities for individuals who wish to assess the health risks posed by chemicals.

SYSTEM ELEMENTS

Types of Data or Records Risk*Assistant contains analytical programs to facilitate exposure and risk assessments.

ACCESSIBILITY

How to Access the System Risk*Assistant is available free of charge to all EPA staff via 20 master packages which may be copied for EPA staff use.

Software MS-DOS 2.0 or higher is required.

Hardware IBM or fully IBM-compatible personal computer with at least 512K RAM and a minimum of 6.6M available hard disk space, and a printer capable of printing 80 characters per line.

CONTACTS

To Register or Obtain a Copy	Available to EPA from: Gershon Bergeisen (703) 603-8816	Available to the public from: Thistle Publications (703) 684-5203
For More Information	OSWER Staff should call: Gershon Bergeisen (703) 603-8816	All others call: John Schaum (202) 260-5988

Geophysics Advisor Expert Systems

ORD

SYSTEM DESCRIPTION

System Type Expert system

System Purpose This system assists Remedial Project Managers (RPMs) in evaluating potentially successful techniques for detecting and delineating contaminants.

SYSTEM ELEMENTS

Types of Data or Records This information contains 93 questions to which the users must respond.

ACCESSIBILITY

How to Access the System This is a stand-alone system that is menu-driven. The current publication number of the Geophysics Advisor Expert System, Version 2.0, is: EPA/600/R92/200. There is no charge for the manual.

Software No additional software is required.

Hardware IBM or IBM-compatible personal computer in an MS-DOS environment is needed.

CONTACTS

To Register or Obtain a Copy

Aldo T. Mazzella
(702) 798-2254

or

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650 or (800) 553-NTIS
Fax: (703) 321-8547 or (703) 321-9038

Accession No. PB93-505162

Geostatistical Environmental Assessment Software (Geo-EAS)

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose A package of 13 programs is supplied in an interactive shell to perform two-dimensional geostatistical analyses of spatially distributed data. Examples of environmental applications include lead and cadmium concentrations in soils surrounding smelters and sulfate deposition in rainfall.

SYSTEM ELEMENTS

Types of Data or Records The Geo-EAS programs use an ASCII file structure for input. The files contain a header record, the number of variables, a list of variable names and units, and a numeric data table. Kriging and the drawing of contour maps are two key operations performed by this software.

ACCESSIBILITY

How to Access the System The contacts listed below distribute the Geo-EAS software package.

Software MS-DOS 3.3 or higher is required.

Hardware IBM or IBM-compatible personal computer with Hercules, CGA or EGA graphics. The computer needs a minimum of 640K RAM and 3M available hard disk space; a math co-processor chip is also recommended.

CONTACTS

To Register or Obtain a Copy

GeoApplications
P.O. Box 41082
Tucson, AZ 85717-1082
Fax: (602) 327-7752

IGWMC (attn: Monique Franzisz)
Colorado School of Mines
Golden, CO 80401-1887
(303) 273-3103

COGS
P.O. Box 370246
Denver, CO 80237
(303) 751-8553

National Technical Information Service (NTIS)
Springfield, VA 22162
(703) 487-4650 or (800) 553-NTIS
Fax: (703) 321-8547 or (703) 321-9038

For More Information Evan Englund
(702) 798-2248

SCOUT 1.33

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose SCOUT is a program developed to identify multivariate or univariate outliers, to test variables for lack of normality, to graph raw data and principal component scores, and to provide output of the results of principal component analysis.

SYSTEM ELEMENTS

Types of Data or Records SCOUT reads ASCII data files that are in Geo-EAS format.

ACCESSIBILITY

How to Access the System Send to CERI one pre-formatted, high-density diskette to obtain the software. SCOUT can be used to analyze any data set, provided the data are in the proper format.

Software MS-DOS 3.3 or higher is required.

Hardware IBM or IBM-compatible personal computer with an EGA, VGA or Hercules Graphics system. The computer needs a minimum of 640K RAM. A math co-processor chip is recommended but not required.

CONTACTS

To Register or Obtain a Copy
Center for Environmental Research Information (CERI)
U.S. Environmental Protection Agency
Software Distribution Center
Cincinnati, OH 45268
(513) 569-7562

For More Information
John M. Nocerino
(702) 798-2110

VLEACH: A Vadose Zone Leaching Model

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose VLEACH can be used to simulate the transport of any non-reactive chemical that displays linear partitioning behavior. In particular, VLEACH simulates four transport-related processes: (1) liquid-phase advection, (2) solid-phase sorption, (3) vapor phase diffusion, and (4) three-phase equilibrium.

SYSTEM ELEMENTS

Types of Data or Records The input data include information regarding chemical, soil, and site conditions.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware IBM-PC or compatible computer, minimum 256K RAM, one floppy drive, an 8087 or 80287 math coprocessor, and MS-DOS 2.0 or greater.

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

Additional Information Systems and Software: Site Assessment

System/Software Title	Page Number
BIOPLUME II: Two-Dimensional Contaminant Transport Under the Influence of Oxygen-Limited Biodegradation in Ground Water	171
CHEMFLO: One-Dimensional Water and Chemical Movement in Unsaturated Soils	172
GEOPACK: Geostatistics for Water Management	173
Hydrocarbon Spill Screening Model (HSSM)	174
Modular Three-Dimensional Transport Model (MT3D)	175
OASIS: Parameter Estimation System for Aquifer Restoration Models	176
PESTAN: Pesticide Analytical Model	177
PREScore	165
RETC: The Retention Curve Computer Code	178
WHPA: A Modular Semi-Analytical Model for the Delineation of Wellhead Protection Areas	180

Regulatory and Investigative Treatment Zone Model (RITZ)

ORD

SYSTEM DESCRIPTION

System Type Software

System Purpose RITZ is a useful tool for predicting fate and transport potentials of hazardous organic constituents contained in contaminated soils.

SYSTEM ELEMENTS

Types of Data or Records The model requires input parameters describing the soil character, oil and pollutant properties, and operational and environmental factors.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software One pre-formatted, high-density, 3.5 inch diskette is needed for the disk exchange program.

Hardware IBM-PC or compatible computer, minimum 256K RAM, one floppy drive, MS-DOS 2.0 or greater, an 8087 or 80287 math coprocessor, and an IBM color/graphics board and compatible monitor.

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

STF: Soil Transport and Fate Database and Model Management System

ORD

SYSTEM DESCRIPTION

System Type Database and software

System Purpose Provides users with recent information on chemical properties, toxicity, transformation and bioaccumulation for hundreds of chemical compounds.

SYSTEM ELEMENTS

Types of Data or Records The software consists of three major components: The STF Database; the Vadose Zone Interactive Processes (VIP) and Regulator and Investigative Treatment Zone (RITZ) models; and the VIP and RITZ model editors.

ACCESSIBILITY

How to Access the System The manual and software can be obtained through the U.S. EPA's Center for Subsurface Modeling Support.

Software Two pre-formatted, high-density, 3.5 inch diskettes are needed for the disk exchange program.

Hardware IBM XT compatible (AT or better is recommended), 640K RAM memory, math coprocessor, and hard disk with 12.5 MB free. Supports any display standard (MDA, CGA, EGA).

CONTACTS

To Register or Obtain a Copy

U.S. Environmental Protection Agency
Center for Subsurface Modeling Support (CSMoS)
Robert S. Kerr Environmental Research Laboratory
P.O. Box 1198
Ada, OK 74820
(405) 436-8586

For More Information

Joe R. Williams
(405) 436-8608

or

David S. Burden
(405) 436-8606

Alternative Treatment Technology Information Center (ATTIC)

ORD

SYSTEM DESCRIPTION

System Type On-line computer information system

System Purpose ATTIC is an information retrieval network that provides site managers with information on alternative treatment technologies for hazardous wastes.

SYSTEM ELEMENTS

Types of Data or Records The ATTIC system provides access to databases through an electronic bulletin board. The ATTIC database contains abstracts of technical references. The other databases are the RREL Treatability Database, Technical Assistance Directory, and Calendar of Events.

ACCESSIBILITY

How to Access the System Direct access to the ATTIC computer is obtained by dialing (301) 670-3808. Users without a computer may call EPA at (908) 321-6677.

Software The system works with a variety of communication software packages.

Hardware IBM, IBM-compatible personal computer, or Macintosh with modem is needed.

CONTACTS

For More Information Daniel Sullivan
(908) 321-6677

RREL Treatability Database

ORD

SYSTEM DESCRIPTION

System Type Database

System Purpose To provide a review of remedial treatment technology data based on specific compounds. The database contains treatability information that includes destruction or removal percent of specific compounds by various remediation techniques in both aqueous and solid matrices.

SYSTEM ELEMENTS

Types of Data or Records Records include: physical/chemical properties, Freundlich Isotherm, scale (bench, pilot, field), concentrations of influent and effluent, percent removal, and reference citations.

ACCESSIBILITY

How to Access the System This is a stand-alone system. Disks (3½-inch) are available at no cost.

Software No additional software is required. The software is programmed using dBase III+ and compiled with Clipper.

Hardware IBM or IBM-compatible personal computer with MS-DOS 2.0 to 6.0, 640K RAM, 8M of available hard disk space, and a 12 pitch printer.

CONTACTS

To Register or Obtain a Copy Glenn Shaul
(513) 569-7408

Vendor Information System for Innovative Treatment Technologies (VISITT)

TIO

SYSTEM DESCRIPTION

System Type Database

System Purpose This database captures current information on the availability, performance, and cost of innovative treatment to remediate contaminated hazardous waste sites. It can be used to screen innovative technologies for application to specific sites. It also gives companies an opportunity to market their capabilities.

SYSTEM ELEMENTS

Types of Data or Records Basic information on each technology includes the vendor name, address, and phone number; technology description, highlights, and limitations; and the contaminant and waste/media treated. Many of the vendors with pilot- or full-scale technologies also provide a summary of performance data, project names and contacts, available hardware and capacity, unit price information, treatability study capabilities, and literature references.

ACCESSIBILITY

How to Access the System VISITT (EPA-542/R-93/001) is available free of charge on 5-1/4 inch or 3-1/2 inch floppy diskettes, accompanied by a user manual.

Software This system works on any IBM or IBM-compatible personal computer with an operating system of MS-DOS 3.3 or higher. The database is compiled, and requires no other software to operate.

Hardware The system requires an IBM or IBM-compatible personal computer with a minimum of 640K RAM and 4MB of hard disk space. It also works on most local area networks (LANs). It is not compatible with Macintosh computers.

CONTACTS

To Register or Obtain a Copy
National Center for Environmental Publications and Information (NCEPI)
P.O. Box 42419
Cincinnati, OH 45242-2419
FAX (513) 891-6685

Additional Information Systems and Software: Treatment Technologies

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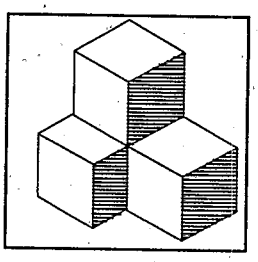
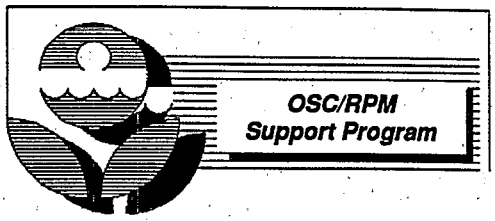
Support Programs



OVERVIEW

The workforces at the Federal, State and local levels have been faced with an increasing demand for personnel who are skilled in the various disciplines encompassing environmental science and management. Managers of the Environmental Protection Agency's (EPA) Superfund Program, encountering the impact of these demands, recognized that continued Program success would require special attention be directed towards the recruitment, training, and retention



of the Agency's hazardous waste site/incident managers. EPA was facing personnel shortages in key technical areas and high turnover among its *On-Scene Coordinators* (OSCs) and *Remedial Project Managers* (RPMs). OSCs respond to immediate threats to public health and the environment and RPMs manage the long-term cleanup of contaminated waste sites. EPA's Office of Solid Waste and Emergency Response (OSWER) subsequently developed the *On-Scene Coordinator (OSC)/Remedial Project Manager (RPM) Support Program (Support Program)*, which was designed to improve the recruitment, training, and retention of these individuals.

To ensure that the Support Program would accurately address recruitment, retention and training issues, key EPA employees were involved both in setting objectives and participating in the strategic planning of activities that would meet those objectives. A group of advisors who could clearly define the needs of OSCs and RPMs as well as contribute to identifying ways to meet those needs was convened. Those advisors — consisting of representative OSCs and RPMs from each Region — worked with Headquarters staff focusing on training needs; initiatives that would provide recognition for professional skills and accomplishments; rewards for outstanding efforts OSCs and RPMs make on behalf of Superfund; and a career ladder that would encourage OSCs and RPMs to remain with Superfund.

Teamwork was integral to the design and development of the Support Program. The internal coordination of efforts that occurred among OSWER staff, Regional Superfund managers and staff, and the Office of Human Resources Management (OHRM) provided a solid beginning to a dynamic, flexible program for OSCs and RPMs.

The Support Program consists of the following components, each designed to address some aspect of OSC/RPM recruitment, training or retention.

CAREER LEVEL UPGRADE

Much of the Support Program's success is attributable to the broad range of issues its components have addressed. For example, one of the first major accomplishments of the OSC/RPM Support Program was improving the career track

for OSCs and RPMs. OSWER, working with OHRM, successfully obtained the GS-13 career level. OSCs and RPMs now have the opportunity for promotion to Grade 13 based on the complexity of their technical responsibility. In the past, this level was available only to employees with supervisory responsibility. By working to provide OSCs and RPMs with this opportunity for career advancement, the Support Program has provided a significant contribution to Superfund's personnel retention efforts.

SPECIAL RECOGNITION AWARDS

The OSCs' and RPMs' outstanding achievements are recognized and rewarded through the *Special Recognition Awards*. This occurs at two levels: regionally, through the Regional Notable Achievement Awards, and nationally, through the National Notable Achievement Awards. Recipients receive recognition through cash awards, certificates and ceremonies.

For the Regional Notable Achievement Awards, OSCs and RPMs are nominated and selected by their Regions. The Regional awards include seven categories:

- Regional OSC of the Year
- Regional OSC Peer of the Year
- Regional RPM of the Year
- Regional RPM Peer of the Year
- Regional SAM of the Year
- Regional SAM Peer of the Year
- Regional Superfund Teams of the Year (two teams per Region).

Recipients of Regional awards are honored in a special ceremony within the Region.

National Notable Achievement Awards occur at the national level, where each Region's nominees are reviewed by a National Awards Panel. The Panel selects the "best of the best" in each of the National Notable Achievement Awards categories:

- National OSC of the Year
- National RPM of the Year
- National SAM of the Year
- National OSC Supervisor of the Year
- National RPM Supervisor of the Year
- National Superfund Team of the Year (two awards are presented).

Recipients of the National Notable Achievement Awards are invited to EPA Headquarters where they are honored in a special ceremony with the EPA Administrator.

The Regional and National Notable Achievement Awards are awarded exclusively to OSCs, RPMs, and SAMs <u>except</u> for the Superfund Team of the Year awards. Superfund Team awards provide Regional and National recognition of the exemplary efforts of additional staff involved in Superfund activities. These team members may include attorneys, paralegals and clerical personnel from EPA.

PROFESSIONAL DEVELOPMENT

The most recently developed Support Program component concentrates on providing OSCs and RPMs with information on opportunities for continuing their professional growth through rotations, assignments, and/or attending courses offered by universities and other learning centers. For those OSCs and RPMs interested in rotations or assignments, *The Guide to Professional Development* provides highlights of Federal regulations to be aware of before pursuing an assignment. The Guide also

provides a continuing education course listing on a variety of hazardous waste courses available through universities and other resources across the United States. Another unique facet of this component is the development of an OSC/RPM skills database. The database will provide EPA managers and other staff with a resource of technical expertise in the many areas of hazardous waste management.

The Support Program also provides support for OSCs' and RPMs' professional organizations — the National On-Scene Coordinators Association (NOSCA) and the National Association of Remedial Project Managers (NARPM).

SUTIs

Advanced-level training is offered to OSCs and RPMs through the Superfund University Training Institutes (SUTIs). Courses are developed through the combined technical and academic expertise of the EPA Office of Research and Development laboratories and specific universities. OSCs and RPMs with topic-specific expertise also are encouraged to participate in the development and instruction of the SUTIs. SUTIs offer courses on emergency response issues, treatment technologies, transport and fate of contaminants in ground water, and site characterization. The courses run from 2½ to 5 days in length. For additional information, contact the individual SUTI directors listed below.

UNLV SUTI

The SUTI at the University of Nevada, Las Vegas (UNLV), working with the EPA Office of Research and Development's Environmental Monitoring Systems Laboratory, provides specialized training in aspects of geologic and hydrologic requirements needed to adequately define a Superfund site. Special emphasis is given to field demonstrations of site investigation techniques, geophysical methods, and sampling.

Contact: Ken Brown, UNLV SUTI Technical Director
Office of Research and Development
Environmental Monitoring Systems Laboratory
P.O. Box 93478
Las Vegas, Nevada 89193-3478
(702) 798-2270

Rice SUTI

The SUTI at Rice University, Houston, Texas, works with the EPA Office of Research and Development's Robert S. Kerr Environmental Research Laboratory located in Ada, Oklahoma. The Rice SUTI offers a variety of workshops including "Solvent Transport Modeling", "Ground-Water Investigations", and "Transport and Fate of Contaminants in the Subsurface." Participants gain knowledge that helps them make informed decisions for controlling sources of ground-water contamination, conducting risk assessments, and deciding on subsurface remediation technology.

Contact: Jerry Thornhill
Rice SUTI Technical Director
Office of Research and Development
Robert S. Kerr Environmental Research Laboratory
KERR Lab Road
Ada, Oklahoma 74820
(405) 436-8604

FUTURE OPPORTUNITIES

During the five years that the OSC/RPM Support Program has been operational, hundreds of Superfund professionals have participated in the various training and career enhancement opportunities offered. The Support Program has evolved from a concept to an independent, successful program. The goals established in 1987-88 have been met, as evidenced by an increase in the average number of years that OSCs and RPMs have been in their positions and a decrease in the annual turnover rate. At the root of the Program's past success and future directions is a firm commitment to actively seeking and incorporating the input of OSCs and RPMs. This input is necessary to help ensure that Program components continue to provide effective and meaningful support. As other needs and innovative outreach and management methods are identified, the OSC/RPM Support Program will be updated accordingly.

If you are interested in learning more about the OSC/RPM Support Program, please contact:

OSC/RPM Support Program
Technology Innovation Office (5102W)
U.S. Environmental Protection Agency
Washington, DC 20460
(703) 308-8802

DIRECT TECHNICAL ASSISTANCE FOR RPMS AND OSCS

The Office of Solid Waste and Emergency Response (OSWER), Regional Superfund Offices, and the Office of Research and Development (ORD) established the Superfund Technical Support Project (TSP) in 1987 to provide technology-based assistance to Regional Remedial Project Managers (RPMs) and On-Scene Coordinators (OSCs) through ORD laboratories. The Project consists of a network of Regional Forums, five specialized Technical Support Centers (TSCs) located in ORD laboratories, one TSC in the Office of Radiation Programs, and one TSC at OSWER's Environmental Response Team. The objectives of the TSP are to:

- Provide the opportunity for Headquarters, Labs, and Regions to address specific needs of Regional technical staff by providing them with state-of-the-science technical assistance
- Improve communications among Regions and ORD and Office of Air and Radiation (OAR) laboratories
- Ensure coordination and consistency in the application of remedial technologies
- Furnish high-technology demonstrations, workshops and state-of-the-science information for RPMs and OSCs
- Facilitate the evaluation and application of alternative investigatory and remedial techniques at Superfund sites.

TECHNICAL SUPPORT CENTERS

Technical Support Centers provide support and assistance to Regional staff through telephone communications, site visits, document review, technology evaluation, information clearinghouses, the OSWER Cleanup Information Bulletin Board, demonstration projects, publication of reports and journal articles, and technical workshops. There are seven TSCs providing these services to OSCs and RPMs through the TSP. The Centers provide technology-based assistance in the areas of:

- Monitoring and Site Characterization
- Ground-Water Fate and Transport
- Engineering and Treatment
- Exposure and Ecorisk Assessment
- Emergency Response, Remedial and Removal Technologies
- Health and Risk Assessment
- Radiological and Chemical Assessment.

TECHNICAL SUPPORT FORUMS

Technical Support Forums are comprised of one or more technical specialists, RPMs, or OSCs from each of EPA's ten Regions. Two Forums have been established to date: *Ground-Water Fate and Transport* and *Engineering*. Forum members provide information to OSCs/RPMs in their Regions regarding TSP efforts, research undertaken by the Centers, and problems and successes experienced by other Regions including the application of remedial technologies at Superfund sites. Forum representatives:

- Channel communications among the Regions, TSCs, Headquarters personnel, and existing EPA technical programs
- Identify specific technical issues and needs, and work with the Centers to address these issues in order to facilitate successful completion of Superfund site remediation
- Act as a technical resource to the Regions and the Centers
- Route technical assistance information to Regional colleagues.

PROJECT ACCOMPLISHMENTS

The Technical Support Centers have provided technical assistance on over 1,800 projects in response to Regional requests, as well as responded to hundreds of telephone inquiries. These projects have included various types of technical assistance such as:

- Reviews of contractor workplans and reports (e.g., risk assessments, models, RIs, FSs, and RDs)
- Treatability studies (e.g., bioremediation, S/S, soil washing, incineration)
- Selection and evaluation of remedial technologies
- Development and review of sampling plans, application of models, interpretation of data
- Application of innovative technologies and field studies
- Development of technical workshops and training
- Preparation of "Issue Papers" to address specific Regional technical needs identified by the Forums.

PROJECT INQUIRIES

The TSP is accessed by a telephone call or letter to one of the Center Directors. Any Regional staff member involved in the Superfund program can contact the Centers directly or with the assistance of a Forum member in their Region. The Center Director will discuss your problem, and if substantial assistance is needed to solve the problem (e.g., more than two person-days of effort), he or she will initiate a TSP project. All such projects must be formally requested by the Regional recipient in writing.

PROJECT FUNDING

Each site is limited to a ceiling of $50,000 in extramural support through the TSP, unless special written approval is granted from the TSP Project Manager.[1]

[1] To determine the current TSP funding status of a specific site, contact your Forum member or the TSP Project Manager. This information also is available through the OSWER Cleanup Information Bulletin Board.

Additional funding from the Regions is encouraged using site-specific Regional funds that have been allocated through the Superfund Comprehensive Accomplishments Plan (SCAP).

The TSCs are responsible for establishing budgets and tracking expenditures for each request and each site. This is important information for determining the level of potential cost recovery for each site and ensuring that the limited resources available under the TSP are equitably distributed among the Regions.

PROJECT BROCHURE

A Superfund Technical Support Project Guide is available which contains more detailed information on initiating a technical assistance request, project tracking, follow-up, and special procedures. This Guide is available from any TSC, Forum member or support project contact listed on the following pages.

SELECTING A TECHNICAL SUPPORT CENTER

Projects implemented under the Superfund program require a vast array of technical knowledge and expertise. This expertise is made available by the Technical Support Centers to all RPMs and OSCs in support of their Superfund projects. Prior to initiating a technical assistance request, the appropriate receiving TSC should be determined. The following table lists seven broad areas of technical expertise and the corresponding Centers that provide this expertise through the TSP.

Technical Expertise	Technical Support Center
Ground-Water Fate and Transport	Robert S. Kerr Environmental Research Laboratory (RSKERL), Ada, OK
Engineering and Treatment	Risk Reduction Engineering Laboratory (RREL), Cincinnati, OH
Monitoring and Site Characterization	Environmental Monitoring Systems Laboratory (EMSL-LV), Las Vegas, NV
Ecological Assessment	Environmental Monitoring Systems Laboratory (EMSL), Cincinnati, OH
Emergency Response and Remedial Project Experience	Environmental Response Team (ERT), Edison, NJ
Health and Risk Assessment	Environmental Criteria and Assessment Office (ECAO), Cincinnati, OH
Radiological and Chemical Assessment	National Air and Radiation Environmental Laboratory (NAREL), Montgomery, AL

The following subsections provide examples of a few of the technical resources available through the TSCs.

RSKERL

The Ground-Water Fate and Transport Technical Support Center at the Robert S. Kerr Environmental Research Laboratory (RSKERL) in Ada, Oklahoma, is EPA's center for fate and transport research, focusing its efforts on transport and fate of contaminants in the vadose and saturated zones of the subsurface, methodologies relevant to protection and restoration of ground-water quality, and evaluation of subsurface processes for the treatment of hazardous waste. The Center provides technical assistance in:

- Pump and treat aquifer remediation
- Bioremediation of soils and ground water
- Subsurface geochemistry
- Contaminant transport modeling
- Subsurface contaminant transformation
- *In situ* treatment processes
- Soil vapor extraction.

Contact: *Don Draper*
RSKERL
Kerr Lab Road
P.O. Box 1198
Ada, Oklahoma 74820
(405) 332-8800

RREL

The Engineering and Treatment Technical Support Center at the Risk Reduction Engineering Laboratory (RREL) in Cincinnati, Ohio, plans and conducts engineering, research, and development related to treatment of solid and hazardous wastes. RREL personnel provide technical services involving specific treatment technologies and Superfund response processes including:

- Treatability studies
- Remedial design/remedy selection review
- Construction QA/QC methods
- Source control and geotechnical test methods
- Remedial cost evaluation.

Contact: *Ben Blaney or Joan Colson*
RREL
26 West Martin Luther King Drive
Cincinnati, Ohio 45268
(513) 569-7406

EMSL-LV

The Monitoring and Site Characterization Technical Support Center at the Environmental Monitoring Systems Laboratory, Las Vegas (EMSL-LV), Nevada, provides scientific and technical assistance in contaminant detection, hydrologic monitoring, site characterization, data interpretation and geophysics. Services include:

- Saturated and unsaturated zone monitoring
- Remote sensing, mapping, and geostatistics
- Analytical methods and quality assurance
- Bore-hole and surface geophysics
- X-ray fluorescence field survey methods
- Sampling and monitoring design assistance
- Mixed waste assistance
- Radiological analysis.

Contact: *Ken Brown*
EMSL-LV
P.O. Box 93478
Las Vegas, Nevada 89193-3478
(702) 798-2270

EMSL CINCINNATI

The Center for Ecological Assessment (EMSL - Cincinnati) provides technical reviews and conducts and interprets aquatic ecological assessment studies and ecotoxicity testing. Ecological assessments consist of biological collection and assessment of fish macroinvertebrates, periphyton, benthic metabolism and physical habitat assessment. Current technical assistance activities include:

- On-site ecological assessments and ecotoxicity testing of water and sediments from mining waste sites
- Review of work plans, quality assessment plans, and interpretation of ecological impact on aquatic biota
- Ecotoxicity testing and data interpretation of water and sediment samples
- Development of sediment and water column short-term chronic toxicity tests.

Contact: *Jim Lazorchak*
EMSL
26 Martin Luther King Drive
Cincinnati, Ohio 45268
(513) 533-8114

ERT

The Environmental Response Team (ERT) Technical Support Center in Edison, New Jersey, provides support in responding to releases of hazardous waste, chemicals and oil. ERT also provides support in risk assessment, multi-media sampling and analysis, health and safety, cleanup techniques, and training for response personnel. Services include:

- Response techniques for emergency hazardous chemical releases
- Treatment technologies, sampling plans, and contaminant assessment
- Technical review for remedial and removal technology, safety, and preparedness
- Hazardous Materials Incident Response Training Program
- Site-safety plans, personnel protection, and safety
- Environmental/ecological risk assessment.

Contact: *Joseph Lafornara*
ERT
Woodbridge Avenue, Mail Stop 101
Edison, New Jersey 08837
(908) 321-6740

ECAO

The Health Risk Technical Support Center of the Environmental Criteria and Assessment Office (ECAO) in Cincinnati, Ohio, functions as the focal point within the Office of Health and Environmental Assessment (OHEA) to coordinate Agency-wide assistance in the area of human health risk assessment. This assistance is conducted in conjunction with OERR's Toxics Integration Branch to identify future research issues and to ensure consistent dissemination and use of risk assessment toxicity values and other guidance. A hotline has also been established (513/569-7300). The support services available include:

- Chemical-specific and chemical mixture toxicity information
- Development of interim or default recommendations for risk assessment
- Development and support for the Health Effects Assessment Summary Tables (HEAST)
- Answers to questions on the *Risk Assessment Guidance for Superfund (RAGS): Human Health Evaluation Manual*
- Provide review and comment for site-specific Superfund risk assessments.

Contact: *Joan Dollarhide*
ECAO-Cincinnati
26 West Martin Luther King Drive
Cincinnati, Ohio 45268
(513) 569-7539

NAREL

The Radiological and Chemical Assessment Technical Support Center at the National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, Alabama, is a comprehensive environmental radiation laboratory offering remediation oversight, site assessment and soil characterization, analytical support, sampling design and statistical analysis, dose and risk assessment, and radon measurement and quality assurance. Services include:

- Radiologic assessment of contaminated sites
- Evaluation of remediation technologies
- Analysis of air, water, soil, vegetation, human tissue, and food samples for radionuclides
- Development of analytical procedures for radioactive and toxic chemicals
- Demonstration of remedial technologies to minimize volume of radioactively contaminated media
- A nuclear emergency response team trained and equipped to respond to nuclear emergencies.

Contact: *Vicki Lloyd*
NAREL
1504 Avenue A
Montgomery, Alabama 36115-2601
(205) 270-3467

REGIONAL FORUM REPRESENTATIVES

Region	Ground-Water Forum	Engineering Forum
1	Yoon-Jean Choi Dave Guest Matt Hoagland Dick Willey	Chet Janowski Regina Snyder
2	Alison Hess Ruth Izraeli John Nevius Kevin Willis	Richard Ho
3	Nancy Cichowicz Kathy Davies Dave Kargbo Dave Toth	Mary Beck Paul Leonard Frank Vavra
4	Tony Best Diane Guthrie Ralph Howard Kay Wischkaemper	Martha Berry Jon Bornholm
5	Steve Mangion Thad Slaughter Luanne Vanderpool Carol Witt-Smith Doug Yeskis	Sherri Bianchin Anthony H. Holoska Kaushal Khanna David Petrovski
6	Bert Gorrod Vince Malott	Deborah Griswold Bob Wilkenson
7	Bill Pedicino Dave Drake	Mark Doolin Steve Kinser
8	Tom Aalto Darcy Campbell Paul Osborne	Desiree Campbell William Rothenmeyer Henry Schroeder
9	Richard Freitas Matthew Hagemann Herb Levine	Ken Erickson Steve Linder
10	Marcia Bailey Curt Black Rene Fuentes Howard Orlean Bernard Zavala	Bob Stamnes Neil Thompson

For more information on any of the Superfund Technical Support Project components, please contact:

Rich Steimle
Technology Innovation Office (5102W)
U.S. Environmental Protection Agency
Washington, DC 20460
(703) 308-8846

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- ❑ Survey of Materials Handling Technologies Used at Hazardous Waste Sites (EPA/540/2-91/010) PB91-186924[2]

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Accutech Pneumatic Fracturing Extraction and Hot Gas Injection, Phase I

- ❑ Technology Evaluation (EPA/540/R-93/509) PB93-216596
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- ❑ Applications Analysis (EPA/540/AR-93/509)

American Combustion—Oxygen Enhanced Incineration

- ❑ Technology Evaluation (EPA/540/5-89/008)
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- ❑ Technology Demo. Summary (EPA/540/S5-89/008)
- ❑ Demonstration Bulletin (EPA/540/M5-89/008)[3]

Augmented In-Situ Subsurface Bioremediation Process, Bio-Rem, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-93/527)

AWD Technologies, Inc.—Integrated Vapor Extraction and Steam Vacuum Stripping

- ❑ Applications Analysis (EPA/540/A5-91/002) PB92-218379
- ❑ Demonstration Bulletin (EPA/540/M5-91/002)

Babcock and Wilcox—Cyclone Furnace Vitrification

- ❑ Technology Evaluation Vol. I (EPA/540/R-92/017A) PB92-222215
- ❑ Technology Evaluation Vol. II (EPA/540/R-92/017B) PB92-222223
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- ❑ Demonstration Bulletin (EPA/540/MR-92/011)

Bergmann USA—Soil/Sediment Washing System

- ❑ Demonstration Bulletin (EPA/540/MR-92/075)

Bescorp Soil Washing System Battery Enterprises Site—Brice Environmental Services, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-93/503)

Biogenesis Soil Washing Technology

- ❑ Demonstration Bulletin (EPA/540/MR-93/510)
- ❑ Innovative Technology Evaluation Report (EPA/540/R-93/510) PB94-120045
- ❑ Site Technology Capsule (EPA/540/SR-93/510)

Biotrol—Biotreatment of Groundwater

- ❑ Technology Evaluation (EPA/540/5-91/001) PB92-110048
- ❑ Applications Analysis (EPA/540/A5-91/001)
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Biotrol—Soil Washing System

- ❑ Technology Evaluation Vol. I (EPA/540/5-91/003a) PB92-115310
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- ❑ Technology Evaluation Vol. II Part B (EPA/540/5-91/003c) PB92-115336
- ❑ Applications Analysis (EPA/540/A5-91/003)
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Cav-Ox Ultraviolet/Oxidation Process Magnum Water Technology

- ❑ Demonstration Bulletin (EPA/540/MR-93/520)
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CF Systems Corp.—Solvent Extraction

- ❑ Technology Evaluation Vol. I (EPA/540/5-90/002)
- ❑ Technology Evaluation Vol. II (EPA/540/5-90/002a) PB90-186503
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Colloid Polishing Filter Method Filter Flow Technology, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-94/501)[3]

Dehydro-Tech—Carver-Greenfield

- ❑ Technology Evaluation (EPA/540/R-92/002) PB92-217462
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Dupont/Oberlin—Microfiltration System

- ❑ Technology Evaluation (EPA/540/5-90/007) PB92-153410
- ❑ Applications Analysis (EPA/540/A5-90/007)
- ❑ Technology Demo. Summary (EPA/540/S5-90/007)
- ❑ Demonstration Bulletin (EPA/540/M5-90/007)

Ex-Situ Anaerobic Bioremediation System, Dinoseb, J.R. Simplot Company

- ❑ Demonstration Bulletin (EPA/540/MR-94/508)

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Gas-Phase Chemical Reduction EcoLogic International, Inc

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Hazcon—Solidification

- ❑ Technology Evaluation Vol. I (EPA/540/5-89/001a) PB89-158810
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- ❑ Technology Evaluation Vol I (EPA/540/5-91/005) PB92-205855
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- ❑ Demonstration Bulletin (EPA/540/MR-93/524)

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- ❑ Technology Evaluation and Applications Analysis Combined (EPA/540/R-93/505) PB94-100161
- ❑ Technology Demo. Summary (EPA/540/SR-93/505)

In-Situ Steam Enhanced Recovery System—Hughes Environmental Systems, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-94/510)

International Technology Corporation—Slurry Biodegradation

- ❑ Demonstration Bulletin (EPA/540/MR-94/510)

IWT/GeoCon In-Situ Stabilization

- ❑ Technology Evaluation Vol. I (EPA/540/5-89/004a)
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- ❑ Technology Demo. Summary., Update Report (EPA/540/S5-89/004a)
- ❑ Demonstration Bulletin (EPA/540/M5-89/004)[3]

Low Temperature Thermal Aeration (LTTA) System, Canonie Environmental Services, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-93/504)

Magnum Water Technology—CAV-OX Ultraviolet Oxidation Process

- ❑ Demonstration Bulletin (EPA/540/MR-93/520)

McColl Superfund Site—Demonstration of a Trial Excavation

- ❑ Technology Evaluation (EPA/540/R-92/015) PB92-226448
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- ❑ Technology Demo. Summary (EPA/540/S5-91/009)
- ❑ Technology Evaluation Vol. I (EPA/540/5-91/009) PB93-205532
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- ❑ Technology Demo. Summary (EPA/540/SR-93/506)[3]

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- ❑ Technology Evaluation Vol. II, Part 3 (EPA/540/R-92/079d) PB93-227155
- ❑ Technology Demo. Summary (EPA/540/SR-92/079)[3]

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- ❑ Technology Evaluation Vol. I (EPA/540/5-91/007a) PB 92-216035
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- ❑ Technology Demo. Summary (EPA/540/S5-91/007)
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Roy F. Weston, Inc.—Low Temperature Thermal Treatment (LT3) System
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- ❑ Applications Analysis (EPA/540/AR-92/019) PB94-124047

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- ❑ Demonstration Bulletin (EPA/540/MR-92/014)
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- ❑ Technology Evaluation—Rose Township Vol. II (EPA/540/5-89/007b), PB89-167910
- ❑ Applications Analysis (EPA/540/A5-89/010)
- ❑ Technology Demo. Summary (EPA/540/S5-89/007)[3]
- ❑ Demonstration Bulletin (EPA/540/M5-88/002)[3]
- ❑ Technology Evaluation Report—Peake Oil Vol. II (EPA/540/5-88/002B) PB89-116024

Silicate Technology Corporation—Solidification/Stabilization of Organic/Inorganic Contaminants
- ❑ Demonstration Bulletin (EPA/540/MR-92/010)
- ❑ Applications Analysis (EPA/540/AR-92/010) PB93-172948

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- ❑ Demonstration Bulletin (EPA/540/MR-92/008)

Soliditech, Inc.—Solidification

- ❑ Technology Evaluation Vol. I (EPA/540/5-89/005a)
- ❑ Technology Evaluation Vol. II (EPA/540/5-89/005b) PB90-191768
- ❑ Applications Analysis (EPA/540/A5-89/005)
- ❑ Technology Demo. Summary (EPA/540/S5-89/005)[3]
- ❑ Demonstration Bulletin (EPA/540/M5-89/005)

Terra Vac—Vacuum Extraction

- ❑ Technology Evaluation Vol. I (EPA/540/5-89/003a) PB89-192025
- ❑ Technology Evaluation Vol. II (EPA/540/5-89/003b) PB89-192033
- ❑ Applications Analysis (EPA/540/A5-89/003)
- ❑ Technology Demo. Summary (EPA/540/S5-89/003)
- ❑ Demonstration Bulletin (EPA/540/M5-89/003)[3]

Thermal Desorption System, Clean Berkshires, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-94/507)

Thermal Desorption Unit Eco Logic International, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-94/504)

Thorneco, Inc.—Enzyme-Activated Cellulose Technology

- ❑ Treatability Study Bulletin (EPA/540/MR-92/018)[3]

Toronto Harbour Commissioners—Soil Recycling Treatment Train

- ❑ Demonstration Bulletin (EPA/540/MR-92/015)
- ❑ Applications Analysis (EPA/540/AR-93/517)
- ❑ Technology Evaluation (EPA/540/R-93/517) PB93-216067
- ❑ Technology Demo. Summary (EPA/540/SR-93/517)

Toxic Treatments (USA)—In-Situ Steam/Hot Air Stripping

- ❑ Applications Analysis (EPA/540/A5-90/008)
- ❑ Demonstration Bulletin (EPA/540/M5-90/003)

Ultrox International—UV Ozone Treatment for Liquids

- ❑ Technology Evaluation (EPA/540/5-89/012) PB90-198177
- ❑ Applications Analysis (EPA/540/A5-89/012)
- ❑ Technology Demo. Summary (EPA/540/S5-89/012)
- ❑ Demonstration Bulletin (EPA/540/M5-89/012)

U.S. EPA—Design and Development of a Pilot-Scale Debris Decontamination System

- ❑ Technical Evaluation (EPA/540/5-91/006a)
- ❑ Technical Evaluation Vol. II (EPA/540/5-91/006b) PB91-231464
- ❑ Technology Demo. Summary (EPA/540/S5-91/006)

U.S. EPA—Mobile Volume Reduction Unit

- ❑ Demonstration Bulletin (EPA/540/MR-93/508)
- ❑ Applications Analysis (EPA/540/AR-93/508) PB94-130275
- ❑ Technology Evaluation (EPA/540/R-93/508) PB94-136264
- ❑ Technology Demo. Summary (EPA/540/SR-93/508)

X-TRAX Model 100 Thermal Desorption System Chemical Waste Management

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- ❑ Emerging Tech. Bulletin (EPA/540/F-93/503)
- ❑ Emerging Tech. Report (EPA/540/R-94/512) PB94-170230
- ❑ Emerging Tech. Summary (EPA/540/SR-94/512)

Atomic Energy of Canada Limited—Chemical Treatment and Ultrafiltration

- ❑ Emerging Tech. Bulletin (EPA/540/F-92/002)

Babcock and Wilcox—Cyclone Furnace Soil Vitrification

- ❑ Emerging Tech. Bulletin (EPA/540/F-92/010)
- ❑ Emerging Tech. Report (EPA/540/R-93/507) PB93-163038
- ❑ Emerging Tech. Summary (EPA/540/SR-93/507)

Battelle Memorial Institute—Development of Electro-Acoustic Soil Decontamination (ESD) Process for In Situ Applications

- ❑ Emerging Technology (EPA/540/5-90/004) PB90-204728
- ❑ Emerging Tech. Summary (EPA/540/S5-90/004)[3]

Bio-Recovery Systems—Removal and Recovery of Metal Ions from Groundwater

- ❑ Emerging Technology (EPA/540/5-90/005a)
- ❑ Emerging Tech.—Appendices (EPA/540/5-90/005b) PB90-252602
- ❑ Emerging Tech. Summary (EPA/540/S5-90/005)
- ❑ Emerging Tech. Bulletin (EPA/540/F-92/003)

Bioscrubber for Removing Hazardous Organic Emission from Soil, Water, and Air Decontamination Process

- ❑ Emerging Tech. Report (EPA/540/R-93/521) PB93-227205
- ❑ Emerging Tech. Bulletin (EPA/540/F-93/507)
- ❑ Emerging Tech. Summary (EPA/540/SR-93/521)

Biotrol, Inc.—Methanotrophic Bioreactor System

- ❑ Emerging Tech. Bulletin (EPA/540/F-93/506)
- ❑ Emerging Tech. Summary (EPA/540/SR-93/505)

Colorado School of Mines

— ***Constructed Wetlands Receiving Acid Mine Drainage***

- ❑ Emerging Tech. Summary (EPA/540/SR-93/523)
- ❑ Emerging Tech. Report (EPA/540/R-93/523) PB93-233914

— ***Constructed Wetlands Treatment for Toxic Metal Contaminated Waters***

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- ❑ Emerging Tech. Bulletin (EPA/540/F-92/011)
- ❑ Emerging Tech. Summary (EPA/540/S-93/504)

Energy and Environmental Engineering—Laser-Induced Photochemical Oxidative Destruction

- ❑ Emerging Tech. Bulletin (EPA/540/F-92/004)
- ❑ Emerging Tech. Summary (EPA/540/SR-92/080)
- ❑ Emerging Tech. Report (EPA/540/R-92/080) PB93-131431

Energy and Environmental Research Corporation

- ❑ Emerging Tech. Bulletin (EPA/540/F-93/508)

Florida International University

— ***Electron Beam Treatment for Removal of Benzene and Toluene from Aqueous Streams and Sludge***

- ❑ Emerging Tech. Bulletin (EPA/540/F-93/502)

— ***Electron Beam Treatment for the Trichloroethylene and Tetrachloroethylene from Aqueous Stream***

- ❑ Emerging Tech. Bulletin (EPA/540/F-92/009)

— ***Removal of Phenol from Aqueous Solutions Using High Energy Electron Beam Irradiation***

- ❑ Emerging Tech. Bulletin (EPA/540/F-93/509)

Institute of Gas Technology (CBT-Chemical and Biological Treatment)

- ❑ Emerging Tech. Bulletin (EPA/540/F-94/504)

Institute of Gas Technology Fluid Extraction—Biological Degradation Process

- ❑ Emerging Tech. Bulletin (EPA/540/F-94/501)[3]

IT Corporation—Photolysis/Biodegradation of PCB and PCDD/PCDF Contaminated Soils

- ❑ Emerging Tech. Bulletin (EPA/540/F-94/502)

Metals Treatment at Superfund Sites by Adsorptive Filtration

- ❑ Emerging Tech. Bulletin (EPA/540/F-92/008)
- ❑ Emerging Tech. Report (EPA/540/R-93/515) PB93-231165
- ❑ Emerging Tech. Summary (EPA/540/SR-93/515)

PURUS, Inc.—Destruction of Organic Contaminants in Air Using Advanced Ultraviolet Flashlamps

- ❑ Emerging Tech. Bulletin (EPA/540/F-93/501)
- ❑ Emerging Tech. Summary (EPA/540/SR-93/516)
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- ❑ Emerging Tech. Summary (EPA/540/SR-92/080

Superfund Innovative Technology Evaluation Program: Innovation Making a Difference

- ❑ Emerging Tech. Bulletin (EPA/540/F-94/505)

Superfund Innovative Technology Evaluation Program: Technology with an Impact

- ❑ Emerging Tech. Bulletin (EPA/540/F-93/500)

University of Washington—Metals Treatment at Superfund Sites by Adsorptive Filtration

- ❑ Emerging Tech. Bulletin (EPA/540/F-92/008)
- ❑ Emerging Tech. Report (EPA/540/R-93/515) PB93-231165
- ❑ Emerging Tech. Summary (EPA/540/SR-93/515)

Volatile Organic Compound Removal from Air Streams by Membrane Separation

- ❑ Emerging Tech. Bulletin (EPA/540/F-94/503)

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Documents Available from the U.S. EPA Risk Reduction Engineering Laboratory Superfund Technology Demonstration Division[1]

General Publications

- ❑ SITE Program: Annual Report to Congress 1992 (EPA/540/R-93/525)
- ❑ SITE Profiles, Sixth Edition (EPA/540/R-93/526)
- ❑ Survey of Materials Handling Technologies Used at Hazardous Waste Sites (EPA/540/2-91/010) PB91-186924[2]

Demonstration Project Results

Accutech Pneumatic Fracturing Extraction and Hot Gas Injection, Phase I

- ❑ Technology Evaluation (EPA/540/R-93/509) PB93-216596
- ❑ Technology Demo. Summary (EPA/540/SR-93/509)
- ❑ Demonstration Bulletin (EPA/540/MR-93/509)
- ❑ Applications Analysis (EPA/540/AR-93/509)

American Combustion—Oxygen Enhanced Incineration

- ❑ Technology Evaluation (EPA/540/5-89/008)
- ❑ Applications Analysis (EPA/540/A5-89/008)
- ❑ Technology Demo. Summary (EPA/540/S5-89/008)
- ❑ Demonstration Bulletin (EPA/540/M5-89/008)[3]

Augmented In-Situ Subsurface Bioremediation Process, Bio-Rem, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-93/527)

AWD Technologies, Inc.—Integrated Vapor Extraction and Steam Vacuum Stripping

- ❑ Applications Analysis (EPA/540/A5-91/002) PB92-218379
- ❑ Demonstration Bulletin (EPA/540/M5-91/002)

Babcock and Wilcox—Cyclone Furnace Vitrification

- ❑ Technology Evaluation Vol. I (EPA/540/R-92/017A) PB92-222215
- ❑ Technology Evaluation Vol. II (EPA/540/R-92/017B) PB92-222223
- ❑ Applications Analysis (EPA/540/AR-92/017) PB93-122315
- ❑ Technology Demo. Summary (EPA/540/SR-92/017)
- ❑ Demonstration Bulletin (EPA/540/MR-92/011)

Bergmann USA—Soil/Sediment Washing System

- ❑ Demonstration Bulletin (EPA/540/MR-92/075)

Bescorp Soil Washing System Battery Enterprises Site—Brice Environmental Services, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-93/503)

Biogenesis Soil Washing Technology

- ❑ Demonstration Bulletin (EPA/540/MR-93/510)
- ❑ Innovative Technology Evaluation Report (EPA/540/R-93/510) PB94-120045
- ❑ Site Technology Capsule (EPA/540/SR-93/510)

Biotrol—Biotreatment of Groundwater

- ❑ Technology Evaluation (EPA/540/5-91/001) PB92-110048
- ❑ Applications Analysis (EPA/540/A5-91/001)
- ❑ Technology Demo. Summary (EPA/540/S5-91/001)
- ❑ Demonstration Bulletin (EPA/540/M5-91/001)

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- ❑ Technology Evaluation Vol. II Part B (EPA/540/5-91/003c) PB92-115336
- ❑ Applications Analysis (EPA/540/A5-91/003)
- ❑ Technology Demo. Summary (EPA/540/S5-91/003)
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CF Systems Corp.—Solvent Extraction

- ❑ Technology Evaluation Vol. I (EPA/540/5-90/002)
- ❑ Technology Evaluation Vol. II (EPA/540/5-90/002a) PB90-186503
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- ❑ Technology Evaluation Vol. II (EPA/540/5-89/011b) PB90-274127
- ❑ Applications Analysis (EPA/540/A5-89/011)
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- ❑ Demonstration Bulletin (EPA/540/M5-89/011)[3]

Colloid Polishing Filter Method Filter Flow Technology, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-94/501)[3]

Dehydro-Tech—Carver-Greenfield

- ❑ Technology Evaluation (EPA/540/R-92/002) PB92-217462
- ❑ Applications Analysis (EPA/540/AR-92/002)
- ❑ Technology Demo. Summary (EPA/540/SR-92/002)
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Dupont/Oberlin—Microfiltration System

- ❑ Technology Evaluation (EPA/540/5-90/007) PB92-153410
- ❑ Applications Analysis (EPA/540/A5-90/007)
- ❑ Technology Demo. Summary (EPA/540/S5-90/007)
- ❑ Demonstration Bulletin (EPA/540/M5-90/007)

Ex-Situ Anaerobic Bioremediation System, Dinoseb, J.R. Simplot Company

- ❑ Demonstration Bulletin (EPA/540/MR-94/508)

Fungal Treatment Technology

- ❑ Demonstration Bulletin (EPA/540/MR-93/514)

Gas-Phase Chemical Reduction EcoLogic International, Inc

- ❑ Demonstration Bulletin (EPA/540/MR-93/522)

GIS/KEY Environmental Data Management System

- ❑ Demonstration Bulletin (EPA/540/MR-94/505)
- ❑ Innovative Technology Evaluation Report (EPA/540/R-94/505)
- ❑ SITE Technology Capsule (EPA/540/SR-94/505)

Hazcon—Solidification

- ❑ Technology Evaluation Vol. I (EPA/540/5-89/001a) PB89-158810
- ❑ Technology Evaluation Vol. II EPA/540/5-89/001b) PB89-158828
- ❑ Applications Analysis (EPA/540/A5-89/001)
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Horsehead Resource Development

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Hrubetz Environmental Services, Site Demonstration Program

- ❑ Demonstration Bulletin (EPA/540/MR-93/524)

Hydraulic Fracturing of Contaminated Soil

- ❑ Demonstration Bulletin (EPA/540/MR-93/505)
- ❑ Technology Evaluation and Applications Analysis Combined (EPA/540/R-93/505) PB94-100161
- ❑ Technology Demo. Summary (EPA/540/SR-93/505)

In-Situ Steam Enhanced Recovery System—Hughes Environmental Systems, Inc.

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International Technology Corporation—Slurry Biodegradation

- ❑ Demonstration Bulletin (EPA/540/MR-94/510)

IWT/GeoCon In-Situ Stabilization

- ❑ Technology Evaluation Vol. I (EPA/540/5-89/004a)
- ❑ Technology Evaluation Vol. II (EPA/540/5-89/004b) PB89-194179
- ❑ Technology Evaluation Vol. III (EPA/540/5-89/004c) PB90-269069
- ❑ Technology Evaluation Vol. IV (EPA/540/5-89/004d) PB90-269077
- ❑ Applications Analysis (EPA/540/A5-89/004)
- ❑ Technology Demo. Summary (EPA/540/S5-89/004)
- ❑ Technology Demo. Summary., Update Report (EPA/540/S5-89/004a)
- ❑ Demonstration Bulletin (EPA/540/M5-89/004)[3]

Low Temperature Thermal Aeration (LTTA) System, Canonie Environmental Services, Inc.

- ❑ Demonstration Bulletin (EPA/540/MR-93/504)

Magnum Water Technology—CAV-OX Ultraviolet Oxidation Process

- ❑ Demonstration Bulletin (EPA/540/MR-93/520)

McColl Superfund Site—Demonstration of a Trial Excavation

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- ❑ Treatability Study Bulletin (EPA/540/MR-93/511)

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Outboard Marine Corporation Site—Soiltech Anaerobic Thermal Processor
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Perox-Pure™ Chemical Oxidation Treatment
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- ❑ Technology Evaluation (EPA/540/R-93/501) PB93-213528
- ❑ Technology Demo. Summary (EPA/540/SR-93/501)

Pilot-Scale Demonstration of Slurry-Phase Biological Reactor for Creosote-Contaminated Wastewater
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- ❑ Technology Evaluation Vol. II, Part 2 (EPA/540/R-92/079c) PB93-227148
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- ❑ Applications Analysis (EPA/540/AR-92/019) PB94-124047

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- ❑ Demonstration Bulletin (EPA/540/M5-88/002)[3]
- ❑ Technology Evaluation Report—Peake Oil Vol. II (EPA/540/5-88/002B) PB89-116024

Silicate Technology Corporation—Solidification/Stabilization of Organic/Inorganic Contaminants
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- ❑ Applications Analysis (EPA/540/AR-92/010) PB93-172948

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