



TECHNOLOGY TRANSFER

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New Technology Transfer Publications

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Seminar Publications

Nonpoint Source Watershed Workshop (625/4-91/027)

This document provides examples of tools and approaches that have been used across the country in successfully developing and implementing nonpoint source pollution control projects that focus on the restoration and protection of water quality on a watershed scale. This publication contains the technical information exchanged during the Nonpoint Source Watershed Workshop held in New Orleans, Louisiana, on January 29-31, 1991.

The 33 papers presented and the case study work group sessions addressed specific aspects of effective watershed management in both urban and rural watersheds. Topics covered were: 1) identifying water quality problems, 2) developing goals and objectives for watershed projects, 3) designing institutional arrangements that work, 4) developing a watershed management plan, 5) site planning and selecting nonpoint source controls, 6) developing a monitoring system, 7) building successful technology transfer, 8) planning and implementing an effective information and education program, 9) evaluating a nonpoint source watershed implementation project, and 10) supporting local nonpoint source projects with innovative state and local regulatory programs.

Design and Construction of RCRA/ CERCLA Final Covers (625/4-91/025)

This document provides an overview of the design, construction, and evaluation requirements for cover systems for waste management

facilities addressed by Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations.

Cover systems are an essential component of all land disposal facilities, including landfills and surface impoundments. Covers control moisture infiltration from the surface into closed facilities, thus limiting the formation of leachate and its migration to ground water.

This publication is based upon presentations given during the seminar series, "Design and Construction of RCRA/CERCLA Final Covers," conducted during July and August 1990. The document contains 12 chapters, namely: 1) Overview of Cover Systems for Waste Management Facilities, 2) Soils Used in Cover Systems, 3) Geosynthetic Design for Landfill Covers, 4) Durability and Aging of Geomembranes, 5) Alternative Cover Designs, 6) Construction Quality Assurance for Soils, 7) Construction Quality Control for Geomembranes, 8) Hydrologic Evaluation of Landfill Performance (HELP) Model for Design and Evaluation of Liquids Management Systems, 9) Sensitivity Analysis of HELP Model Parameters, 10) Gas Management Systems, 11) Case Studies - RCRA/CERCLA Closures, and 12) Postclosure Monitoring.

Medical and Institutional Waste Incineration: Regulations, Management, Technology, Emissions, and Operations (625/4-91/030)

The need for medical waste management has increased in the public eye since the summer of 1988 when an unusual amount of syringes and other medical paraphernalia washed ashore on the East Coast. As a result, Congress passed the Medical Waste Tracking Act of 1988 to track and study the life-cycle of such waste. EPA in turn spon-

sored a series of five seminars to provide interested persons, such as hospital administrators, plant engineers, consultants, government regulatory officials, and research and clinical facility operators, information on how to manage increasing amounts of medical waste. The seminars contained information on the advantages, disadvantages, and limitations of the various on- and off-site treatment and disposal options for these wastes.

The information addressed at these seminars, including basic information on combustion theory, air pollution control options, and operator informational needs, is summarized in this document. An overview of the Medical Waste Tracking Act and other regulations applicable to medical and infectious wastes was given. Other topics discussed included steps in developing waste management plans; selecting appropriate waste management options, including incineration; and determining data collection needs.

This publication is intended for those who were unable to attend the seminar series but who need a ready reference of general technical information for future use. It could also serve as a useful reference to those who attended. A copy may be obtained by completing the order form at the back of this newsletter.

Handbooks

Handbook: Sewer System Infrastructure Analysis and Rehabilitation (625/6-91/030)

This *Handbook* provides guidance on evaluating and rehabilitating existing sewers. It presents information on typical problems, procedures, and methods for rehabilitation, case study information, budgetary costs, advantages and disadvantages of rehabilitation techniques, and application of these techniques and materials/equipment used in rehabilitation. It also guides the reader in understanding the importance of, and ways for, conducting the sewer system evaluation and identifying the rehabilitation procedure that best suits a particular problem.

The *Handbook* presents sufficient information to enable engineers and public decision makers to plan and conduct sewer system evaluation and rehabilitation under circumstances which might be encountered when dealing with a specific

sewer system. Because a variety of circumstances are encountered in sewer systems, all of the methodology presented in this *Handbook* may not apply to each project.

Sewer rehabilitation techniques addressed include: grouting, insertion, cured-in-placed inversion lining, speciality concrete, liners, and coatings. Manhole rehabilitation techniques are also covered.

Handbook: Control Technologies for Hazardous Air Pollutants (625/6-91/014)

The 1990 Amendments to the Clean Air Act list 189 toxic air pollutants that must be controlled within specified time periods. Since many of these compounds are controllable by similar control technologies with the appropriate system design, this *Handbook* provides generic information that may be applicable in specific situations. This edition supersedes the first handbook published in 1986 by the same title (EPA/625/6-86/014). No new technologies have been described, but all costs have been updated from the latest literature and vendor information. The objective of this *Handbook* is to present a methodology for determining the performance and cost of air pollution control techniques designed to reduce or eliminate the emissions of potentially hazardous air pollutants (HAP) from industrial/commercial sources.

A corresponding computer program (HAP PRO version 1.0), which will perform necessary calculations from user input data, is also available from the Control Technology Center in Research Triangle Park, NC (Telephone No. 919-541-0800). The *Handbook* was the basis for the software design. This software was designed to be user-friendly and to duplicate the manual calculations of the *Handbook*.

This *Handbook* may be used by EPA regional, state and local air pollution control agency technical personnel and others to (a) respond to inquiries from interested parties (e.g., prospective permit applicants) regarding the HAP control requirements for a specified process or facility and (b) evaluate/review permit applications for sources with the potential to emit HAPs. It also may be used by facility owners and other technical persons to estimate control costs.

Revised: Handbook: Ground Water -Volume II: Methodology (625/6-90/016b)

Volume II of the *Ground Water Handbook* has been printed and can be ordered using the request form at the back of this newsletter. The *Ground Water Handbook*, originally published in 1987 as EPA/625/6-87/016, has been revised and is available in two volumes. Volume I, *Ground Water and Contamination*, was published in September 1990 (EPA/625/6-90/016a). Volume II, *Methodology*, describes various investigative approaches and techniques.

Volume II includes: 1) Monitoring Well Design and Construction, 2) Ground-Water Sampling, 3) Transport and Fate of Contaminants in the Subsurface, 4) Ground-Water Tracers, 5) Introduction to Aquifer Test Analysis, and 6) Models and Computers in Ground-Water Investigations.

Guides to Pollution Prevention

The Photoprocessing Industry (625/7-91/012)

This document provides an overview of photoprocessing operations that generate waste and presents options for minimizing waste generation through source reduction and recycling. It also includes worksheets to assist photoprocessors in performing waste minimization self-assessments to evaluate economic options. This publication is of particular use to photoprocessing operators and environmental engineers. Others who may find this document useful are regulatory agency representatives, industry suppliers, and consultants.

This publication consists of the following sections:

- An introduction and overview of the waste minimization opportunity assessment process
- A profile of the photoprocessing industry
- Waste minimization options for photoprocessors
- Waste minimization assessment worksheets and appendices that include case studies

A number of waste minimization options are defined. Applications presented for source reduction include controlling inventories of process chemicals before

expiration dates; processing solutions being made up only in quantities to meet realistic processing volumes; using floating lids or balls to prevent loss of developer solution or loss of potency through oxidation or evaporation; and improving quality control to prevent unnecessary discharges.

Applications are presented for recycling and recovery which include silver recovery from fixer solutions; silver recovery from rinse water; ferricyanide recovery; water conservation; and rinse water recycling.

Three case studies are drawn from the California Department of Health Services study of photoprocessing laboratories. Results are presented from assessments at these photoprocessing labs with the identification of waste minimization options. Results of a fourth photoprocessor's self assessment are presented demonstrating the use of the waste minimization worksheets.

The Automotive Repair Industry (625/7-91/013)

This document provides waste minimization options for wastes generated by the automotive repair industry and identifies waste generating processes and ways in which waste may be reduced. The waste minimization options presented focus primarily on shop cleanup, parts cleaning, and automotive maintenance.

This document is designed primarily for use by operators of automotive repair shops. Others who may find it useful are operators of vehicle fleets, regulatory agency representatives, and consultants.

This document consists of the following sections:

- An introduction and overview of the waste minimization opportunity process
- A profile of the automotive repair industry and overview of waste generation
- Waste minimization options for automotive repair shops
- Worksheets for conducting a waste minimization assessment
- Appendices including case studies and contacts for assistance

Shop cleanup management options discussed include improved inventory control; first-in, first-out policies; minimizing storage quantities; storage area inspections; employee training; and spill contain-

ment techniques. Parts cleaning waste minimization options addressed include using safer or less hazardous solvents; using solvents properly; improving cleaning efficiency; monitoring solvent composition and operating solvent sinks properly; and using commercial solvent cleaning services.

Automotive maintenance options discussed include solvent segregation; carburetor cleaner segregation; spent antifreeze solution and waste motor oils recycling; recovery and recycle of CFC-12; and consumer education programs to prevent premature automotive fluid replacements.

Three case studies are drawn from the California Department of Health Services study of auto repair shops. These cases include an auto repair shop, a new car dealership, and a parts washing lease and service company. Current practices and recommendations are presented.

The Fiberglass-Reinforced and Composite Plastics Industry (625/7-91/014)

This document reviews the fiberglass-reinforced and composite plastic (FRP/C) process and operations that generate waste and discusses options for minimizing waste generation through source reduction and recycling. The waste minimization options presented focus primarily on source reduction measures which include options for the following: equipment cleaning waste; scrap solvent and partially cured resins; improving inventory control to minimize rejected and/or excess raw materials; recyclable floor sweeping compounds; reduction of air emissions; and miscellaneous waste stream reduction measures.

Composite plastic manufacturers, process operators and fabricators, and environmental engineers should find this document beneficial in evaluating economic options for waste reduction. Others who may find it useful are regulatory agency representatives, industry suppliers, and consultants.

This document consists of the following sections:

- An introduction and overview of the waste minimization opportunity process
- A profile of the FRP/C industry
- Waste minimization options for FRP/C fabricators

- Worksheets for waste minimization assessment
- Appendices including FRP/C plant assessment case studies and contacts for assistance

Two case studies are drawn from the California Department of Health Services assessment of FRP/C fabricators. The first case study reviews plant operations that produce coated composite sheeting. The second case study reviews plant operations for mold-based processes. Current practices and recommendations are presented.

The Marine Maintenance and Repair Industry (625/7-91/015)

This document reviews the maintenance and repair operations of marine service yards and facilities. Marine repair and service yards are highly diversified in terms of the types of services provided.

Options are presented for minimizing waste generated through source reduction and recycling at these locations. These options focus primarily on source reduction measures such as: chemical paint stripping wastes; abrasive blast wastes; equipment cleaning wastes; engine repair wastes; machine shop wastes; speciality shop wastes; vessel cleaning wastes; and management of spills and floor washdowns.

This document is intended to be used primarily by operators and servicing personnel who repair mechanical systems, structural components, electrical systems, and are involved in finishing operations. Others who may find this document useful are regulatory agency representatives, industry suppliers, and consultants.

This guide consists of the following sections:

- An introduction and overview of the waste minimization opportunity assessment process
- A profile of the marine maintenance and repair industry
- Waste minimization options for marine maintenance and repair yards
- Worksheets for waste minimization assessment
- Appendices including case studies of marine maintenance and repair yard assessments and contacts for assistance.

Three case studies were reviewed and describe a variety of repair services representative of small and medium sized repair yards. Current practices and recommendations are presented.

The Automotive Refinishing Industry (625/7-91/016)

This document reviews waste minimization options for the automotive refinishing industry. Options presented are aimed at reducing wastes generation associated with body repair and paint applications. Body repair options discussed include inventory control for reducing the use of raw materials and of dry cleanup methods. Paint application options discussed include management options involving improved inventory controls and good housekeeping practices and paint mixing operations; use of high transfer efficiency equipment; better operator training; proper cleaning methods; offsite recycling; alternative coatings; use of styrofoam filters; donation of excess paint; and improved cleanup practices.

Auto refinishers, operators of fleet vehicles, regulatory agency representatives, and consultants should find this publication useful for developing waste minimization options.

This guide consists of the following sections:

- An introduction and overview of the waste minimization process
- Profile of the automotive refinishing industry
- Options for waste minimization for automotive refinishers
- Worksheets for waste minimization assessment
- Appendices including automotive refinishing shop case study assessments and contacts for assistance

Five case studies are presented ranging from small to large auto refinishing shop operations. Various types of services are reviewed in relation to current waste minimization opportunities being practiced.

The Pharmaceutical Industry (625/7-91/017)

This document reviews the operations of the pharmaceutical industry and provides waste minimization options for this industry. Because of the confidential nature of each company's operation, only a very general discussion of material substitution and process modification can be given. The intent is to stimulate thinking on the part of process operators,

environmental engineers, and plant managers for identifying site-specific waste minimization opportunities. This information may also be of interest to consultants serving the pharmaceutical manufacturing industry and government agencies who regulate waste streams generated from these firms.

Waste minimization options presented provide alternatives for improving operational practices, recycling solvents, and implementing good materials management and housekeeping practices. Discussions of source reduction and recycling opportunities are focused on typical waste streams in the industry such as spent fermentation broths, process liquors, solvents, equipment wash water, spilled materials, off spec products, and used processing aids.

The document contains worksheets that will take the user step-by-step through an analysis of onsite waste generating operations that help identify possibilities for minimizing waste.

The publication consists of the following sections:

- An introduction and overview of the waste minimization process
- Profile of the pharmaceutical industry
- Options for waste minimization for pharmaceutical facilities
- Worksheets for waste minimization assessment
- Appendices including case studies of pharmaceutical manufacturing plant assessments and contacts for assistance

Three case studies are drawn from the California Department of Health Services study of pharmaceutical industries in California, and waste management techniques are specific to California firms. State regulations vary and alternate techniques may be required elsewhere. Current practices and recommendations are presented.

Manual

Alternative Collection Systems for Small Communities (625/1-91/024)

This manual represents the most comprehensive treatment of alternative collection systems (ACS) for small community wastewaters. It covers in depth the history, applicability, design, construction, operation, maintenance, and costs of all three major categories of alternative collection, i.e., pressure, vacuum, and small-diameter gravity sewers (SDGS).

The present surge of ACS application began around 1970 when the costs of conventional sewerage were found to be prohibitive in rural areas owing to their depth of burial and other construction demands. All of the alternative sewers employ lightweight plastic pipe with shallow burial. This concept saves as much as 80% of the cost of conventional gravity sewers, but these savings are partially offset through the need for additional components at each service connection which are not required for gravity sewers.

Two major types of pressure systems are described in detail, the grinder-pump (GP) and the septic tank effluent pumping (STEP) concepts. The former grinds the household wastewater and pumps it into the main while the latter employs a septic tank prior to pumping. Both have been employed widely and successfully.

At one time there were two distinct design approaches to SDGS; one employing conventional gravity sewer concepts of constant grade between control points, while the other followed the natural ground slope and emphasized very small pipe sizes. Presently, SDGS is designed in a manner which generally follows the ground surface but eliminates the troublesome tankage and undue size restrictions of the latter approach. Detailed design versus performance and cost information are provided.

Vacuum sewers employ a different approach than pressure by having a central vacuum station imposing the necessary forces on the small diameter pipeline. Although the number of U.S. installations of vacuum are smaller than SDGS or pressure sewers, their use is presently on the upswing. The history of these systems in the U.S. and their cost and operation requirements are covered in detail in the manual.

This publication represents more than two decades of experience with these systems and should draw worldwide interest. Small rural systems have been identified as a priority environmental problem in many nations, and alternative collection systems represent a major solution to one of the most expensive aspects of this problem.

REQUEST FOR TECHNOLOGY TRANSFER MATERIAL

MANUALS

Phosphorus Removal (Sept. 1987)	625/1-87/001	<input type="checkbox"/>
Land Treatment of Municipal Wastewater (Oct. 1981)	625/1-81/013	<input type="checkbox"/>
Supplement for Land Treatment of Municipal Wastewater (Oct. 1984)	625/1-81/013a	<input type="checkbox"/>
Dewatering Municipal Wastewater Sludges (Sept. 1987)	625/1-87/014	<input type="checkbox"/>
Land Application of Municipal Sludge (Oct. 1983)	625/1-83/016	<input type="checkbox"/>
Odor and Corrosion Control in Sanitary Sewerage Systems and Treatment Plants (Oct. 1985)	625/1-85/018	<input type="checkbox"/>
Municipal Wastewater Disinfection (Oct. 1986)	625/1-86/021	<input type="checkbox"/>
Constructed Wetlands and Aquatic Plant Systems for Municipal Wastewater Treatment (Oct. 1988)	625/1-88/022	<input type="checkbox"/>
Fine Pore Aeration Systems (Oct. 1989)	625/1-89/023	<input type="checkbox"/>
•Alternative Collection Systems for Small Communities (Oct. 1991)	625/1-91/024	<input type="checkbox"/>

TECHNICAL CAPSULE REPORTS

Particulate Control by Fabric Filtration on Coal-Fired Industrial Boilers	625/2-79/021	<input type="checkbox"/>
Bahco Flue Gas Desulfurization and Particulate Removal System	625/2-79/022	<input type="checkbox"/>
First Progress Report: Physical Coal Cleaning Demonstration at Homer City, PA	625/2-79/023	<input type="checkbox"/>
Acoustic Monitoring to Determine the Integrity of Hazardous Waste Dams	625/2-79/024	<input type="checkbox"/>
Disposal of Flue Gas Desulfurization Wastes: Shawnee Field Evaluation	625/2-80/028	<input type="checkbox"/>
Adipic Acid-Enhanced Lime/Limestone Test Results at the EPA Alkali Scrubbing Test Facility	625/2-82/029	<input type="checkbox"/>
Benefits of Microprocessor Control of Curing Ovens for Solvent Based Coatings	625/2-84/031	<input type="checkbox"/>
Radon-Resistant Construction Techniques for New Residential Construction: Technical Guidance	625/2-91/032	<input type="checkbox"/>

SEMINAR PUBLICATIONS

Permitting Hazardous Waste Incinerators	625/4-87/017	<input type="checkbox"/>
Meeting Hazardous Waste Requirements for Metal Finishers	625/4-87/018	<input type="checkbox"/>
Transport and Fate of Contaminants in the Subsurface	625/4-89/019	<input type="checkbox"/>
Corrective Actions - Technologies and Applications	625/4-89/020	<input type="checkbox"/>
Solvent Waste Reduction Alternatives	625/4-89/021	<input type="checkbox"/>
Requirements for Hazardous Waste Landfill Design, Construction and Closure	625/4-89/022	<input type="checkbox"/>
Technologies for Upgrading Existing or Designing New Drinking Water Treatment Facilities	625/4-89/023	<input type="checkbox"/>
Risk Assessment, Management and Communication of Drinking Water Contamination	625/4-89/024	<input type="checkbox"/>
•Design and Construction of RCRA/CERCLA Final Covers (May 1991)	625/4-91/025	<input type="checkbox"/>
•Nonpoint Source Watershed Workshop (Sept. 1991)	625/4-91/027	<input type="checkbox"/>
•Medical and Institutional Waste Incineration: Regulations, Management, Technology , Emissions, and Operation (Oct. 1991)	625/4-91/030	<input type="checkbox"/>

BROCHURES

Environmental Pollution Control Alternatives: Drinking Water Treatment for Small Communities	625/5-90/025	<input type="checkbox"/>
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HANDBOOKS

Septage Treatment and Disposal (Oct. 1984)	625/6-84/009	<input type="checkbox"/>
•Control Technologies for Hazardous Air Pollutants (July 1991)	625/6-91/014	<input type="checkbox"/>
Ground Water (Revised 1990) Volume I	625/6-90/016a	<input type="checkbox"/>
•Ground Water (Revised 1991) - Volume II: Methodology	625/6-90/016b	<input type="checkbox"/>
Retrofitting POTWs for Phosphorus Removal in the Chesapeake Bay Drainage Area (Sept. 1987)	625/6-87/017	<input type="checkbox"/>
Guide to Technical Resources for the Design of Land Disposal Facilities (Dec. 1988)	625/6-88/018	<input type="checkbox"/>
Guidance on Setting Permit Conditions and Reporting Trial Burn Results (Jan. 1989)	625/6-89/019	<input type="checkbox"/>
Retrofitting POTWs (July 1989)	625/6-89/020	<input type="checkbox"/>
Hazardous Waste Incineration Measurement Guidance (June 1989)	625/6-89/021	<input type="checkbox"/>
Stabilization/Solidification of CERCLA and RCRA Wastes (July 1989)	625/6-89/022	<input type="checkbox"/>
Quality Assurance/Quality Control (QA/QC) Procedures for Hazardous Waste Incineration (Jan. 1990)	625/6-89/023	<input type="checkbox"/>
Operation and Maintenance of Hospital Waste Incinerators (Jan. 1990)	625/6-89/024	<input type="checkbox"/>
Assessing the Geochemical Fate of Deep-Well Injected Hazardous Waste (June 1990) Reference Guide	625/6-89/025a	<input type="checkbox"/>
Summaries of Recent Research	625/6-89/025b	<input type="checkbox"/>
Optimizing Water Treatment Plant Performance Using the Composite Correction Program Approach	625/6-91/027	<input type="checkbox"/>
•Sub-Slab Depressurization for Low-Permeability Fill Material Design & Installation of a Home Radon Reduction System (July 1991)	625/6-91/029	<input type="checkbox"/>
•Sewer System Infrastructure Analysis and Rehabilitation (Oct. 1991)	625/6-91/030	<input type="checkbox"/>

INDUSTRIAL ENVIRONMENTAL POLLUTION CONTROL MANUALS

Waste Minimization Opportunity Assessment (July 1988)	625/7-88/003	<input type="checkbox"/>
Guides to Pollution Prevention		
The Pesticide Formulating Industry	625/7-90/004	<input type="checkbox"/>
The Paint Manufacturing Industry	625/7-90/005	<input type="checkbox"/>
The Fabricate Metal Industry	625/7-90/006	<input type="checkbox"/>
The Printed Circuit Board Manufacturing Industry	625/7-90/007	<input type="checkbox"/>
The Commercial Printing Industry	625/7-90/008	<input type="checkbox"/>
Selected Hospital Waste Streams	625/7-90/009	<input type="checkbox"/>
Research and Educational Institutions	625/7-90/010	<input type="checkbox"/>
Approaches for Remediation of Uncontrolled Wood Preserving Sites	625/7-90/011	<input type="checkbox"/>
• The Photoprocessing Industry (Oct. 1991)	625/7-91/012	<input type="checkbox"/>
• The Automotive Repair Industry (Oct. 1991)	625/7-91/013	<input type="checkbox"/>
• The Fiberglass-Reinforced and Composite Plastics Industry (Oct. 1991)	625/7-91/014	<input type="checkbox"/>
• The Marine Maintenance and Repair Industry (Oct. 1991)	625/7-91/015	<input type="checkbox"/>
• The Automotive Refinishing Industry (Oct. 1991)	625/7-91/016	<input type="checkbox"/>
• The Pharmaceutical Industry (Oct. 1991)	625/7-91/017	<input type="checkbox"/>

SUMMARY REPORTS

Sulfur Oxides Control Technology Series: FGD Dual Alkali Process	625/8-80/004	<input type="checkbox"/>
Control and Treatment Technology for the Metal Finishing Industry Series: Ion Exchange	625/8-81/007	<input type="checkbox"/>
Control and Treatment Technology for the Metal Finishing Industry Series: In-Plant Changes	625/8-82/008	<input type="checkbox"/>
Sulfur Oxides Control Technology Series: FGD Spray Dryer Process	625/8-82/009	<input type="checkbox"/>
Fine Pore (Fine Bubble) Aeration Systems	625/8-85/010	<input type="checkbox"/>
Technology Assessment of Sequencing Batch Reactors	625/8-86/011	<input type="checkbox"/>
Causes and Control of Activated Sludge Bulking and Foaming	625/8-87/012	<input type="checkbox"/>
Biomonitoring to Achieve Control of Toxic Effluents	625/8-87/013	<input type="checkbox"/>
Biomonitoring for Control of Toxic Effluent Discharges to the Marine Environment	625/8-89/015	<input type="checkbox"/>
In-Vessel Composting of Municipal Wastewater Sludge	625/8-89/016	<input type="checkbox"/>
Optimizing Water Treatment Plant Performance with the Composite Correction Program	625/8-90/017	<input type="checkbox"/>

EXECUTIVE BRIEFINGS

Injection Well Mechanical Integrity	625/9-89/007	<input type="checkbox"/>
Experiences in Incineration Applicable to Superfund Site Remediation	625/9-88/008	<input type="checkbox"/>
Volumetric Tank Testing: An Overview	625/9-89/009	<input type="checkbox"/>

ENVIRONMENTAL REGULATIONS AND TECHNOLOGY PUBLICATIONS

The Electroplating Industry	625/10-85/001	<input type="checkbox"/>
Fugitive VOC Emissions in the Synthetic Organic Chemicals Manufacturing Industry	625/10-84/004	<input type="checkbox"/>
Control of Pathogens in Municipal Wastewater Sludge	625/10-89/006	<input type="checkbox"/>
Autothermal Thermophilic Aerobic Digestion of Municipal Wastewater Sludge	625/10-90/007	<input type="checkbox"/>

EXPERT SYSTEM

POTW Expert	625/11-90/001	<input type="checkbox"/>
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OTHER

ORD BBS User's Manual	600/M-90/012	<input type="checkbox"/>
•Description and Sampling of Contaminated Soils: A Field Pocket Guide (Oct. 1991)	625/12-91/002	<input type="checkbox"/>

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Description and Sampling of Contaminated Soils: A Field Pocket Guide (625/12-91/002)

This compact guide describes field methods and procedures that can be used for (1) preliminary site reconnaissance, (2) detailed site and contaminant characterization/sampling for transport/fate modeling and risk assessment, and (3) remediation selection and design. The guide contains forms and checklists that can be used in preparing for and during field work. It also provides information on soil sampling methods and equipment that can be used to deal with unanticipated soil sampling conditions at a site.

All methods and procedures described in this guide are simple and inexpensive. When used early in site reconnaissance, site characterization, or remediation projects, these methods may reduce project costs by providing a basis for more efficient application of more complex and expensive field methods when needed.

This pocket field guide is a companion to the *Guide to Site and Soil Description for Hazardous Waste Site Characterization* by EPA's Environmental Monitoring Systems Laboratory (EMSL), Las Vegas. The EMSL guide provides information on methods for characterizing and interpreting 36 site and soil parameters in relation to fate and transport of heavy metals and also serves as the basis for the site and soil software components of the Environmental Sampling Expert System (ESES) another EMSL-Las Vegas product.

Future Technology Transfer Seminars

Stabilization Technologies for RCRA Corrective Actions

This seminar series will provide technical guidance for implementing stabilization technologies for use in RCRA corrective actions. The goal of these stabilization technologies is to prevent or minimize the spread of contamination while long-term corrective action remedies are pursued. Conceptual approaches for characterizing waste site problems will be addressed as well as specific stabilization approaches for containers, tanks, surface impoundments, landfills, and waste piles.

The dates and locations of this one-day seminar are as follows:

- Nov. 13, 1991 - Boston, MA
- Nov. 14, 1991 - Chicago, IL
- Dec. 10, 1991 - San Francisco, CA
- Jan. 07, 1992 - Dallas, TX
- Jan. 08, 1992 - Kansas City, MO
- Feb. 11, 1992 - Denver, CO
- Feb. 12, 1992 - Seattle, WA
- Mar. 18, 1992 - Philadelphia, PA
- Mar. 19, 1992 - New York, NY
- Apr. 02, 1992 - Atlanta, GA

For registration information, contact Elaine Brenner at 617-641-5300. For information on content, contact Ed Barth at 513-569-7669 (FTS 684-7669) or Susan Schock at 513-569-7551 (FTS 684-7551).

Technology Transfer Meetings

Meeting	Title	Date(s)	Location	Contact	Phone No.
Seminar	Stabilization Technologies for RCRA Corrective Actions	Nov. 13, 1991 Nov. 14, 1991 Dec. 10, 1991 Jan. 07, 1992 Jan. 08, 1992 Feb. 11, 1992 Feb. 12, 1992 Mar. 18, 1992 Mar. 19, 1992 Apr. 02, 1992	Boston, MA Chicago, IL San Francisco, CA Dallas, TX Kansas City, MO Denver, CO Seattle, WA Philadelphia, PA New York, NY Atlanta, GA	Elaine Brenner (registration) Ed Barth (content) or Susan Schock (content)	617-641-5300 513-569-7669 FTS-684-7669 513-569-7551 FTS-684-7551
Seminar	Sewer System Infrastructure Analysis and Rehabilitation	Nov. 18-19, 1991 Nov. 21-22, 1991	Boston, MA Tampa, FL	Heike Melhinch (registration) Denis Lussier (content)	617-641-5346 513-569-7354 FTS 684-7354

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