



TECHNOLOGY TRANSFER

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Some Information on Technology Transfer Publication Numbers, Dates, etc.

The order form at the back of this publication lists all the Technology Transfer publications available. They cannot be obtained from any other EPA office and only current, in-stock publications are listed. This is why you see gaps in the order numbers - e.g., 6004 is the first number listed in the 6000 series because the first three Handbooks are no longer available.

Publication dates are included on the order form only for Manuals and Handbooks since these publications are much more likely to be revised than other Technology Transfer documents. The dates shown are for the latest version of each Manual and Handbook; publications with earlier dates are obsolete.

With the exception of the *Supplement for Land Treatment of Municipal Wastewater* (#1013a), any publications containing the letter "a" in its order number is a revision to a previous version and is the current version - e.g., 10001a.

Another exception is the *Sludge Treatment and Disposal Manual* (#1011). This document replaces publication #1006 in its entirety.

It is possible that outdated Technology Transfer publications may be obtained from the National Technical Information Service (703-487-4650) should you have such a need. However, you must have the entire EPA publication number—e.g., EPA/625/1-77-002, not #1002. Our publications office (513-569-7562) can give you the required ordering information for outdated Technology Transfer publications. Letters requesting such additional information, or information on other ORD publications, should be sent to: ORD Publications, U.S. EPA CERL, 26 W. St. Clair, Cincinnati, Ohio 45268.

This edition of *Technology Transfer* contains descriptions of twelve new or revised Technology Transfer publications. To order any of these, or any other Technology Transfer publication, please fill out the order form and forward to: CERL, Technology Transfer, U.S. EPA, PO Box 12505, Cincinnati, Ohio 45212.

New Technology Transfer Publications

Manual: Electrostatic Precipitator Operation and Maintenance (Publication #1017)

This document focuses on operation and maintenance (O&M) and minimizes coverage of theoretical and design factors. It includes O&M procedures, performance monitoring, record keeping practices, performance evaluation, problem diagnosis and correction, inspection methods and procedures, and a model O&M plan. Cause-effect relationships are also presented to help prevent or locate problems. The manual can be used by plant personnel to prepare a site-specific guide for their facility.

Design Manual for Odor and Corrosion Control in Sanitary Sewerage Systems and Treatment Plants (Publication #1018)

This manual is a revision to the Process Design Manual for Sulfide Control in Sanitary Sewerage Systems, published in 1974. The 1984 EPA Needs Survey estimates the backlog cost of major sewer rehabilitation to be \$3.2 billion, a significant part of which may be attributed to corrosion-induced deterioration. Construction costs for new sewers through the year 2000 are estimated at \$38.8 billion. This manual is being revised to include information developed since publication of the 1974 manual. It covers control of corrosion in both new and existing corrosion in sewer systems as well as treatment plants. In addition, odor control in sewers and plants is covered for the first time.

Manual: Lime/Limestone Flue Gas Desulfurization Inspection and Performance Evaluation Manual (Publication #1019)

This manual provides guidance to regulatory personnel involved in the inspection and permitting of flue gas desulfurization (FGD) systems for coal-fired utility steam generators. The primary audience is the field inspector responsible for inspecting FGD-equipped coal-fired utility boilers. A secondary audience is the Federal/State agency permitter. The manual discusses lime and limestone technology, inspection and performance guidelines, and monitoring procedures, and then presents inspection methods and procedures, and data interpretation. O&M procedures are also included.

Seminar Publication: Composting of Municipal Wastewater Sludges (Publication #4014)

This publication is compiled from presentations made at six Technology Transfer seminars on "Sludge Composting and Improved Incinerator Performance" held in 1984. It provides current practical information on windrow, static pile, and in-vessel methods of composting municipal wastewater sludges. It is intended for government and private sector individuals involved in the planning, design, and/or operation of these systems.

Seminar Publication: Municipal Wastewater Sludge Combustion Technology (Publication #4015)

This document describes and evaluates the various municipal sludge combustion systems. It emphasizes the necessity for considering and evaluating the costs involved in the total sludge management train, including dewatering, combustion, air pollution control, and ash disposal processes. It also answers questions raised concerning incineration as a means of sludge

solids processing for ultimate disposal and presents factual answers supported by case histories.

Seminar Publication: Protection of Public Water Supplies from Groundwater Water Contamination (Publication #4016)

This publication provides an organized approach to acquiring the knowledge necessary for effective and efficient management of groundwater supplies. The information is compiled from presentations made at a series of 14 Technology Transfer seminars held from February 1984 to January 1985. It includes chapters on geology, classification of groundwater regions, hydrogeologic processes, management alternatives for preventing and dealing with contamination incidents, and alternative technologies for treating contaminated supplies. It is intended for government and municipal officials and private sector individuals concerned with developing solutions to local contamination problems.

Handbook: Estimating Sludge Management Costs at Municipal Wastewater Treatment Facilities (Publication #6010)

This handbook provides information on estimating costs for management of the sludge residue that results from municipal wastewater treatment. This information makes it possible to obtain rapid cost comparisons between different sludge management alternatives and should result in the selection of more cost-effective combinations of processes.

Summary Report: Fine Pore (Fine Bubble) Aeration Systems (Publication #8010)

It is estimated that 50-90% of the power cost for wastewater treatment is for aeration. Fine pore diffusion presents the opportunity to significantly reduce these costs due to its oxygen transfer efficiency. This report provides the latest information on performance potential, requirements and costs for installation in new municipal wastewater treatment plants as well as retrofit, and describes the requirements for an operation and maintenance program. Although not a design manual, this document will assist practicing engineers in the selection, specification, design, and control of fine pore aeration systems.

Protecting Health and Safety at Hazardous Waste Sites (Publication #9004)

This document summarizes the recommendations developed by a four-agency work group composed of representatives from NIOSH, OSHA, EPA and the Coast Guard and presents the key issues to consider in designing, evaluating or implementing a health and safety program for hazardous waste site activities. It covers such key aspects of protection as planning; training; medical monitoring; site cauterizations; personal protective equipment; site control; decontamination; handling drums and other containers; and site emergencies. The document is intended for local, State, and federal officials, corporate managers, and related technical and nontechnical personnel who need information on the fundamental health and safety aspects of waste site cleanup activities.

Revised Technology Transfer Publications

Environmental Pollution Control Alternatives: Reducing Water Pollution Control Costs in the Electroplating Industry (Publication #5016a)

This document presents the economics of wastewater reduction and materials recovery technologies. It serves as a companion publication to the Environmental Regulations and Technology document covering the same industry (Publication #10001a). Wastewater and materials recovery technologies are presented in the context of the electroplating regulations. Capital and operating costs are described for major components of a wastewater system and several materials recovery processes are described and evaluated with respect to their technical and economic advantages.

Handbook for Remedial Action at Waste Disposal Sites (Publication #6006a)

This is a revised version of the Handbook published originally in 1982. It provides Federal, State, and local officials and private industry sufficient information on remedial technologies to enable the user to select potentially applicable technologies for a given site, and understand what is involved in designing and implementing these technologies. Emphasis is placed on those technologies which are demonstrated for hazardous waste site applications. Emerging technologies are included but in less detail. The Handbook enables the user to make an easy transition to more detailed guidance documents and design manuals referenced throughout the Handbook.

Environmental Regulations and Technology: The Electroplating Industry (Publication #10001a)

This publication provides the electroplating industry a summary of water laws, regulatory activities, and technologies that affect decisions regarding wastewater treatment and disposal. EPA's recently promulgated regulations on water pollution control and sludge disposal are presented and wastewater treatment technologies are discussed for various electroplating categories. Facilities are first divided into captive and job shops, then further separated into plants that combine electroplating waste streams with others prior to discharge and those that discharge only wastewater from electroplating operations. Regulations are discussed for all plants that include monitoring requirements, variances, and pollutants in intake waters.

REQUEST FOR TECHNOLOGY TRANSFER MATERIAL

PROCESS DESIGN MANUALS

- Wastewater Treatment Facilities for Sewered Small Communities (Oct 1977) 1009
- Municipal Sludge Landfills (Oct 1978) 1010
- Sludge Treatment and Disposal (Oct 1979) 1011
- Onsite Wastewater Treatment and Disposal Systems (Oct. 1980) 1012
- Land Treatment of Municipal Wastewater (Oct 1981) 1013
- Supplement for Land Treatment of Municipal Wastewater (Oct 1984) 1013a
- Dewatering Municipal Wastewater Sludges (Oct 1982) 1014
- Municipal Wastewater Stabilization Ponds (Oct. 1983) 1015
- Land Application of Municipal Sludge (Oct. 1983) 1016
- Electrostatic Precipitator Operation and Maintenance (Sept 1985) 1017
- Odor and Corrosion Control in Sanitary Sewerage Systems and Treatment Plants (Oct 1985) 1018
- Lime/Limestone FGD Inspection and Performance Evaluation Manual (Oct 1985) 1019

TECHNICAL CAPSULE REPORTS

- First Progress Report Wellman-Lord SO₂ Recovery Process—Flue Gas Desulfurization Plant 2011
- Double Alkali Flue Gas Desulfurization System Applied at the General Motors Parma, OH Facility 2016
- Recovery of Spent Sulfuric Acid from Steel Pickling Operations 2017
- Fourth Progress Report Forced-Oxidation Test Results at the EPA Alkali Scrubbing Test Facility 2018
- Particulate Control by Fabric Filtration on Coal-Fired Industrial Boilers 2021
- Bahco Flue Gas Desulfurization and Particulate Removal System 2022
- First Progress Report: Physical Coal Cleaning Demonstration at Homer City, PA 2023
- Acoustic Monitoring to Determine the Integrity of Hazardous Waste Dams 2024
- Disposal of Flue Gas Desulfurization Wastes Shawnee Field Evaluation 2028
- Adipic Acid-Enhanced Lime/Limestone Test Results at the EPA Alkali Scrubbing Facility 2029
- Benefits of Microprocessor Control of Curing Ovens for Solvent Based Coatings 2031

SEMINAR PUBLICATIONS

- Composting of Municipal Wastewater Sludges 4014
- Municipal Wastewater Sludge Combustion Technology 4015
- Protection of Public Water Supplies from Groundwater Contamination 4016

BROCHURES

- Environmental Pollution Control Alternatives: Municipal Wastewater 5012
- Environmental Pollution Control Alternatives. Reducing Water Pollution Control Costs in the Electroplating Industry 5016a
- Environmental Pollution Control Alternatives Centralized Waste Treatment Alternatives for the Electroplating Industry 5017
- Environmental Pollution Control Alternatives Sludge Handling, Dewatering, and Disposal Alternatives for the Metal Finishing Industry 5018

HANDBOOKS

- Industrial Guide for Air Pollution Control (June 1978) 6004
- Remedial Action at Waste Disposal Sites (Oct. 1985) 6006a
- Identification/Correction of Typical Design Deficiencies at Municipal Wastewater Treatment Facilities (Oct 1982) 6007
- Improving Publicly Owned Treatment Works Performance Using the Composite Correction Program Approach (Oct. 1984) 6008
- Septage Treatment and Disposal (Oct. 1984) 6009
- Estimating Sludge Management Costs at Municipal Wastewater Treatment Facilities (Oct. 1985) 6010

SUMMARY REPORTS

- Control and Treatment Technology for the Metal Finishing Industry Series. Sulfide Precipitation 8003
- Sulfur Oxides Control Technology Series: FGD Dual Alkali Process 8004
- Sulfur Oxides Control Technology Series: FGD Lime/Limestone Processes 8006
- Control and Treatment Technology for the Metal Finishing Industry Series Ion Exchange 8007
- Control and Treatment Technology for the Metal Finishing Industry Series: In-Plant Changes 8008
- Sulfur Oxides Control Technology Series: FGD Spray Dryer Process 8009
- Fine Pore (Fine Bubble) Aeration Systems 8010

EXECUTIVE BRIEFINGS

- Protecting Health and Safety at Hazardous Waste Sites 9004

ENVIRONMENTAL REGULATIONS AND TECHNOLOGY PUBLICATIONS

- The Electroplating Industry 10001a
- Environmental Regulations and Technology Use and Disposal of Municipal Wastewater Sludge 10003

ATTENTION PUBLICATION USERS

Due to the increasing costs of printing and mailing, it has become necessary to institute positive management controls over distribution of Technology Transfer publications. Although these publications will be distributed on a no-cost basis, any request for more than five documents total, or for more than one copy of a single document must be accompanied by written justification, preferably on organization letterhead. In the event your order cannot be filled as requested, you will be contacted and so advised.

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● Publication listed for first time.

Note: Forward to CERL, Technology Transfer, U.S. Environmental Protection Agency, P.O. Box 12505, Cincinnati, OH 45212