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Office Of Wastewater Enforcement And Compliance (OWEC) Primer

A Primer on the Office of Wastewater Enforcement and Compliance and Its Programs

OWEC

Clean water . . . a better environment

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF WATER

TO: Employees of the Office of Water

This Primer was developed to describe the integrated water pollution control, permitting and enforcement program activities operating in the Office of Wastewater Enforcement and Compliance (OWEC).

The intent of the Primer is to inform new employees and the public of OWEC's missions, initiatives and goals developed to prevent, reduce and eliminate pollution in surface waters for the protection of human health.

I would like to thank the Resources Management and Evaluation Staff and all OWEC employees who contributed to the development of this Primer. I hope you enjoy reading it and that your experiences in contributing to OWEC's overall efforts are challenging and rewarding.

Michael B. Cook
Director
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Chapter One
Introduction

The Office of Wastewater Enforcement and Compliance (OWEC) is responsible to the Assistant Administrator for Water to administer pollution control programs that will protect public health and the aquatic habitat and achieve the goals of the Clean Water Act (CWA).

1.1 Purpose of this Primer

The purpose of this Primer is to inform new employees on the mission and program activities of OWEC. Program activities from the former Office of Water Enforcement and Permits and the former Office of Municipal Pollution Control have been integrated where appropriate and are continuing more effectively in the Office of Wastewater Enforcement and Compliance. Included in this Primer is information on the programs OWEC administers in order to reduce and eliminate water pollution from industrial and municipal discharge pipes as well as diffuse sources such as stormwater, combined sewer overflows, and sludge.

1.2 Organization of this Primer

This Primer is designed to provide general information about OWEC and the programs it oversees and enforces. Chapter 2 of the Primer provides an overview of the water pollution problem. Chapter 3 describes OWEC's organization, both as an office within EPA's Office of Water and as an entity in itself. Chapter 4 explains OWEC's delegation of State-level programs to States and EPA's Regional management of State-level programs when the State has not been authorized to operate these programs. Chapter 5 discusses the National Pollutant Discharge Elimination System (NPDES) Program, a cornerstone of OWEC's program. Chapter 6 covers the National Pretreatment Program and OWEC's complementary programs in pollution prevention. Chapter 7 contains a description of the National Sludge Management Program and OWEC's technical assistance for the beneficial use of sewage sludge. Chapter 8 traces OWEC's enforcement process and strategies. Chapter 9 describes the funding and technical assistance OWEC offers to States and municipalities, and Chapter 10 discusses Special Projects. Chapter 11 covers OWEC's Strategic Plans. Appendix A contains a glossary of acronyms used throughout this Primer. Appendix B provides citations to applicable regulations, and Appendix C gives a chronological history of the NPDES Program. Footnotes are listed at the end of the appropriate chapters. The status of the programs described in this Primer is as of January 1993, and its pages are dated. In that way, updates to each program's status may be added at the end of the appropriate chapter.

Chapter Two
Overview of the Water Pollution Problem

Pollutants in our water can impair or destroy aquatic life, threaten human health, and ruin recreational opportunities and aesthetic potential. Fishing bans, restrictions on harvesting shellfish, beach closings, and algae-coated lakes and rivers are only the most visible and publicized outcomes of water pollution.

The job of cleaning and protecting the nation's surface waters is complex because of the variety of pollution sources. Whatever the source, however, and whatever the pollutant, "wastewater" is collected in a "discrete conveyance," i.e., a pipe, a ditch, a sanitary or storm sewer, and then emitted or discharged into receiving waters. The end of the pipe or sewer, the point at which the wastewater enters the receiving water, is called the "point source." It is there that, under authority of the Clean Water Act, OWEC regulates what goes into our wetlands, lakes, rivers, estuaries, bays, and oceans. OWEC provides guidance and technical assistance on sewage sludge management, pretreatment requirements and groundwater contamination from leaky sewers. Under the NPDES Program, municipalities and industries are required to obtain a permit which specifies monitoring and reporting provisions and establishes limits on the pollutants that are discharged by the source in order to assure compliance with the CWA.

2.1 Sources of Pollution

Traditionally, the Agency has addressed point sources and nonpoint sources of water pollution as separate problems. Now we are adopting a more integrated, holistic strategy, applying a total watershed approach which assesses all sources of water pollution, and focuses on the more specific kinds of pollution problems affecting water quality. A body of water may be affected by discharges from municipal and/or industrial facilities, as well as pollutants from other sources that are not as easily identified and therefore harder to control.

Unlike municipal/industrial sources of pollution, which emanate from a single discrete facility, these other sources are usually more diffuse in nature. For example, rain water washing over farm lands and carrying top soil and fertilizer residues into nearby streams is a major source of pollution. The runoff may carry oil and gasoline, agricultural chemicals, nutrients, heavy metals, and other toxic substances, as well as bacteria, viruses, and oxygen-demanding compounds, and now comprises the largest source of uncontrolled water pollution.

OWEC's main areas of responsibility are to address the continuing demands of municipal and industrial water pollution problems, including non-traditional sources of water pollution which are caused by stormwater and combined sewer overflows (CSOs) during wet weather events, as well as pollution problems that arise from the improper disposal of municipal sewage sludge. OWEC's water pollution control program activities are authorized by the CWA. Water pollution permitting and enforcement activities are addressed under the NPDES program of the CWA. EPA is currently seeking CWA reauthorization, which will include water pollution control requirements for traditional as well as for non-traditional sources of water pollution problems.

2.2 Municipal Water Pollution

Municipal wastewater consists primarily of domestic wastes from households and industrial wastewater from manufacturing and commercial activities. Both of these types of wastewater are collected in sanitary sewers and are usually treated at a municipal wastewater treatment plant, often referred to as a Publicly Owned Treatment Works (POTW). After treatment, the wastewater is discharged by the POTW into its receiving water, e.g., a river, an estuary, or an ocean. Wastewater entering the treatment plant may include organic pollutants, metals, nutrients,

sediment, bacteria, and viruses. Toxic substances used in the home, including motor oil, paint, household cleaners, and pesticides, also make their way into sanitary sewers. In addition, stormwater runoff from impervious surfaces such as roofs, streets, and parking lots may drain into municipal separate storm sewers and then directly into surface waters. Stormwater can pick up a number of contaminants such as solids, nutrients, bacteria, metals, and pesticides. The environmental impacts of stormwater are considerable. The 1990 Water Quality Inventory Report to Congress and a study sponsored by the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), among others, indicate that stormwater including urban runoff, is a major cause of surface water pollution. In some cases, storm water may enter municipal sanitary sewers, mix with the sanitary wastewater, and be discharged before treatment at the POTW through CSOs.

Discharges of pollutants from POTWs or municipal separate storm sewer systems are governed under the CWA by the NPDES program.

2.3 Industrial Water Pollution

The water used in industrial processes, such as steel or chemical manufacturing, produces billions of gallons of wastewater daily. Some industrial pollutants are similar to those in municipal sewage but often are more concentrated. Others are more exotic and include a variety of heavy metals and synthetic organic substances. In sufficient dosages, these pollutants may present serious hazards to human health and aquatic organisms. While as many as several hundred thousand industrial facilities discharge to municipal treatment plants, about 48,000 discharge wastewater directly to a waterbody.

In addition, there are over 100,000 facilities that have discharges of stormwater associated with industrial activity that discharge into municipal separate storm sewers or directly into surface waters. Stormwater can pick up a number of contaminants such as solids, oil and grease, metals, and organic chemicals. The environmental impacts of industrial discharges of stormwater can be considerable.

Like municipal facilities, industrial facilities discharging pollutants directly into a receiving water are governed under the CWA by the NPDES program.

2.4 Industrial Wastewater Discharged to Publicly Owned Treatment Works

Industrial wastes that enter municipal wastewater treatment plants are regulated under the CWA by the pretreatment program. Under the pretreatment program, industrial dischargers into municipal sewage treatment plants must pretreat their wastes:

- to prevent interference with the operation of the municipal plant;
- to prevent pass-through of pollutants from the plant into receiving waters; and,
- to improve opportunities to recycle and reclaim both municipal and industrial wastewaters and sewage sludge.

Actual limits on the quantities of industrial pollutants discharged into municipal treatment plants are set by both EPA and municipal authorities.

2.5 Sewage Sludge

Sewage sludge, the residue left from municipal wastewater treatment, may also cause pollution problems if improperly managed. Since 1972, the volume of sewage sludge has doubled, and quantities are expected to increase significantly by the year 2000. The majority of sewage sludge is relatively free from toxic substances

and can be used for beneficial purposes such as fertilizer or soil conditioners. Other sewage sludge may contain toxic pollutants and pathogens which limit disposal options.

Municipal sewage sludge use and disposal are regulated under the CWA by the National Sludge Management Program. Under the program, sewage sludge must be used and disposed of in a manner that protects human health and the environment.

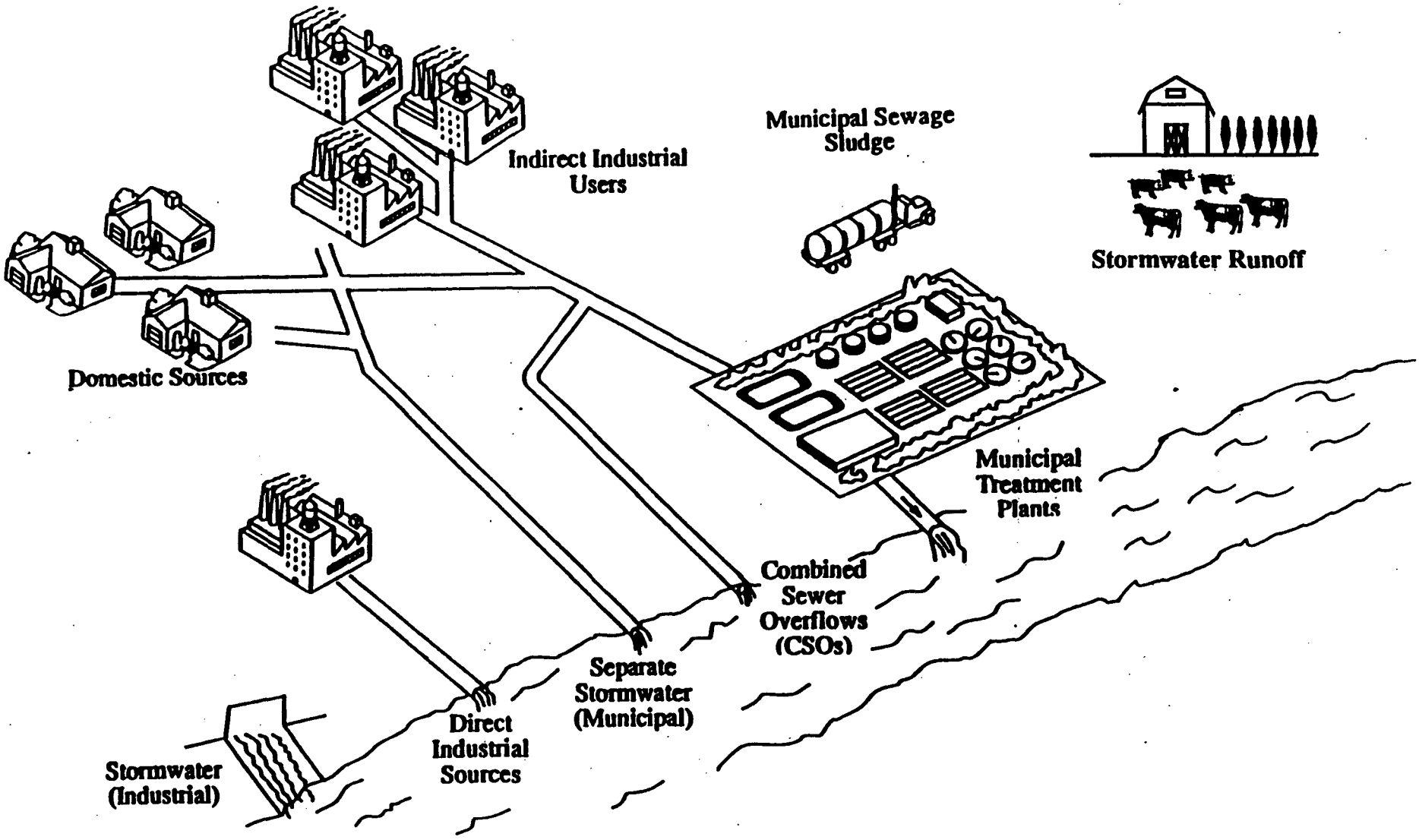


Figure 2-1: Sources of Water Pollution

Chapter Three
Office of Wastewater Enforcement and Compliance (OWEC): Its Role, Organization, and Management

The Office of Wastewater Enforcement and Compliance was created in April 1991 and is one of four offices within EPA's Office of Water (OW) (see Figure 3-1). OWEC consists of an immediate office (the Office of the Director and the Resources Management and Evaluation Staff—RMES) and three divisions—Permits, Enforcement, and Municipal Support—with branches and sections further subdividing the Office's responsibilities. Figure 3-2, shows OWEC's organizational structure.

3.1 OWEC and the Office of Water

OWEC is responsible to the Assistant Administrator for Water for:

- Directing NPDES, CWA, pretreatment, sewage sludge management, compliance and administrative enforcement programs.
- Protecting the multi-billion dollar infrastructure built under the construction grants program through municipal water pollution prevention activities while effectively closing out the remaining workload involved to complete the construction grants program.
- Managing the State Revolving Loan Fund program, making awards to States, and assisting States to develop long-term self-sustaining programs.
- Developing national strategies, program and policy recommendations, regulations and guidelines for municipal water pollution control.
- Developing and defending a national program budget reflecting program needs and priorities.
- Ensuring the implementation of Agency policy and priorities in the Regions and Headquarters.
- Providing technical direction and support to regional offices and other organizations.
- Managing the development and implementation of State authorization and oversight procedures for NPDES, Construction Grants (CG) and State Revolving Fund (SRF) programs.
- Evaluating regional municipal source abatement and control programs including related water quality and cost effectiveness issues, in cooperation with the Office of Science and Technology (OST) and the Office of Wetlands, Oceans and Watersheds (OWOW).
- Developing program policy, guidance and regulations for permitting, sludge management, compliance, and pretreatment activities.
- Evaluating regional permitting, pretreatment and compliance programs.
- Managing CWA Sections 104(b)(3) and 106 grant programs.
- Providing financial assistance for the planning, design, and construction of wastewater treatment projects related to the North American Free Trade Agreement (NAFTA) for unincorporated communities along the U.S.-Mexico border.
- Providing outreach, education, training, coordination, liaison, and information exchange with Regions, States, Indian Tribes, localities, other agencies, Congress, environmental, industrial, citizens' interest groups and other nations, in consultation

with the Office of International Activities (OIA).

- Providing legislative analysis and coordination with the Office of Research and Development (ORD) on research strategy, in cooperation with OST.

- Incorporating water use efficiency principals including short and long term water use reduction, water recycling and wastewater reclamation and reuse into Agency programs.

- Implementing the EPA/OW quality assurance (QA) Program involving environmentally-related measurements.

- Planning and managing resources including strategic planning, budget formulation, budget execution, fiscal management, program management, Strategic Targeted Activities For Results System (STARS), and human resources management.

3.2 OWEC Organization

The Office's program activities can be broadly grouped into six areas:

- Implementation of existing water pollution permit and control programs, including strong oversight and quality assurance/quality control measures;

- Support for wastewater financing by managing construction projects; by working with the States and Indian Tribes treated as states; by establishing SRFs; and by providing technical assistance to small communities which have problems addressing wastewater treatment needs;

- Development of new programs mandated by the Water Quality Act of 1987;

- Improved control of toxic pollutants by expanding the use of existing control strategies and developing new initiatives to reduce whole-effluent toxicity;

- Enforcement of both new and existing programs; and

- Integration of water programs with other Agency activities, such as air pollution and hazardous wastes.

Figure 3-3 shows the program activities handled by RMES and the three divisions. The Water Quality Act of 1987 has created new responsibilities for OWEC, adding the development of new water pollution control programs to the administration of older, established programs under the CWA. Managing the original NPDES permitting program is combined with creating newer permit programs designed to strengthen controls in such areas as sewage sludge management, storm water discharges, and CSOs. In wastewater financial support, OWEC is working with the States to implement SRFs at the same time as it is closing out the CG Program. In carrying out its mission under the CWA, OWEC must maintain the achievements of the past while meeting the demands of new program development.

The activities of OWEC divisions support a coordinated program to address integrated wastewater issues. For example, in the development and oversight of the sewage sludge management and permitting program, the Pretreatment and Multi-Media Branch of the Permits Division takes the lead in regulation development, implementation policy, and State programs. Establishing sludge compliance monitoring and working with enforcement issues is led by the Policy Development Branch of the Enforcement Division. Technology assistance, information dissemination, and promoting the beneficial uses of sludge are the responsibility of the Municipal Technology Branch of the Municipal Support Division.

3.3 OWEC Centralized Policy, Budget, and Management

RMES provides support for the three operating divisions through centralized administrative and management services. These services include:

- Administration and management of the Sections 104(b)(3) and 106 grant programs under the CWA that provides financial assistance to state water quality management projects (discussed in Chapter Nine).

- Centralized management functions, such as: budget formulation and execution; contract and grants management; and program status and evaluation reports. The staff initiates special projects and studies, enhances state water program capacity building, communication, and outreach activities both inside and outside EPA. Strategic planning goals and human resources activities, including personnel and training are also managed by the staff.

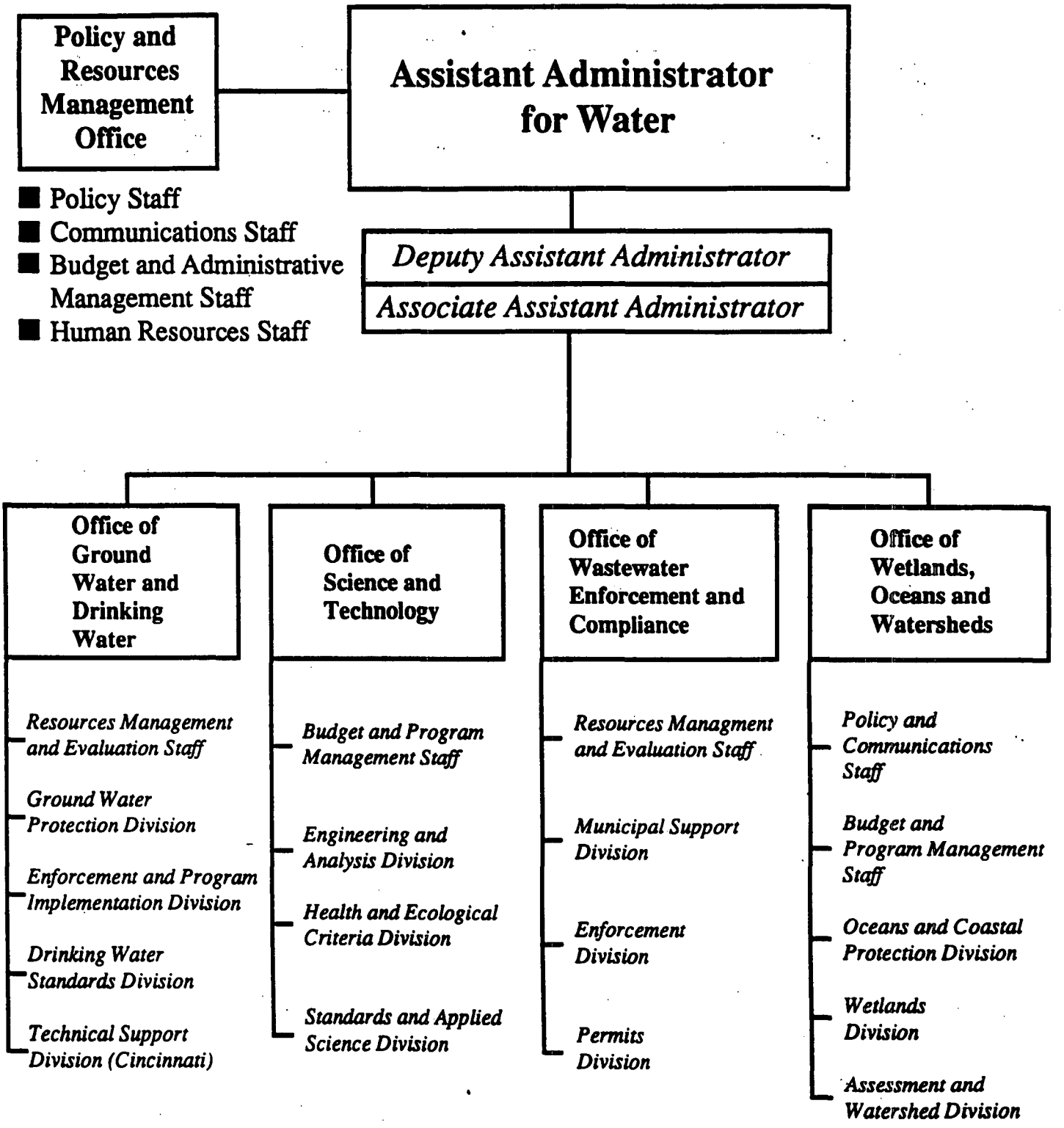
- Cross-media responsibility for issues such as: state funding and capacity building for all aspects of the water quality program, Mexican border activities associated with the North American Free Trade Agreement, and activities related to Eastern Europe and targeted watershed areas.

- Management responsibilities include accountability systems, such as Federal Managers' Financial Integrity Act (FMFIA), reports and the preparation of Information Collection Requests (ICRs) in response to Paperwork Reduction Act requirements.

3.4 Data Management

The programs that OWEC manages are supported by data management systems such as the Grant Information and Control System (GICS), STARS, Needs Survey data base and Permit Compliance System (PCS).

Figure 3-1
Office of Water



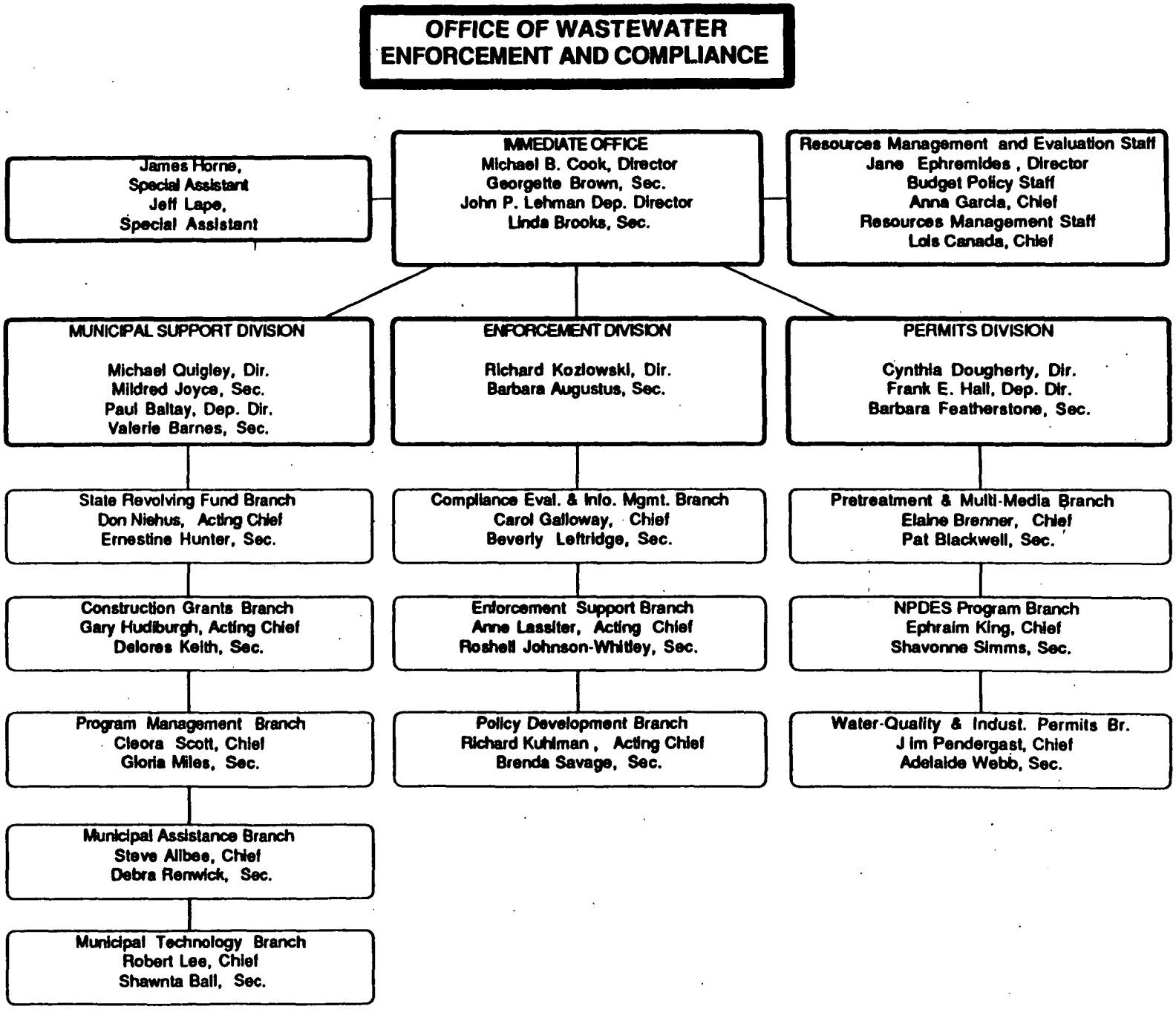

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Figure 3-2

Table 3-1
Office of Wastewater Enforcement and Compliance Divisional Program Activities

RESOURCES MANAGEMENT AND EVALUATION STAFF

- Financial and Administrative Management
- Management Reporting (FMFIA, STARs, AOG)
- Contracts Management
- Administration, Management and Financial Assistance for Sections 104(b)(3) and 106 Water Quality Management Grant Programs
- State Capacity Building
- Budget Formulation/Execution
- Communications

MUNICIPAL SUPPORT DIVISION

- Develop Municipal Water Pollution Control National Policies/Strategies/Regulations/Guidance
- Develop/Defend National Program Budget for the Construction of Wastewater Treatment Projects
- National Overall Management of Ongoing Construction Grants Program/Implement Completion Closeout Strategy
- Protect Previous Investments and Existing Wastewater Treatment Infrastructure
- Oversee Management of Special Construction Projects, including Projects in the Mexican Border/Tijuana/Colonias/Coastal Cities
- Train/assist States, including Indian Tribes
- Develop and Implement the State Revolving Loan Fund Program
- Manage the Development and Implementation of Delegation Oversight Procedures
- Implement Agency Policies and Priorities in the Regions and Headquarters
- Evaluate Regional Municipal Point Source Abatement and Control Programs Related to Water Quality and Cost Effectiveness Issues
- Prepare Biennial Needs Survey Report to Congress
- Develop/Manage Municipal Water Pollution Prevention Activities
- Develop/Manage Water Use Efficiency (Wise Water Use) Activities
- Develop/Manage Public Private Partnership Activities (Privatization)
- Promote Beneficial Use of Sludge
- Liaison with other offices

Table 3-1 (continued)

PERMITS DIVISION

- NPDES Permit Issuance Policies/Guidance
- Combined Sewer Overflows
- Storm Water
- State Program Approval/Oversight
- Local Pretreatment Program oversight
- Sludge Program Development and Implementation
- Develop Special Permit/Pretreatment/Sludge Initiatives
- RCRA/CWA Overlapping Issues
- Technical Assistance and Training
- Regulatory/Policy Development for NPDES, Pretreatment and Sludge
- Permit Appeals Tracking and Assistance
- Liaison with Other Offices

ENFORCEMENT DIVISION

- NPDES Enforcement Policies/Strategies
- Enforcement Case Support
- Evaluate Proposed Enforcement Settlement Agreements
- Targeted Enforcement Initiatives
- PCS Maintenance and Enhancements
- Review and Analysis of Compliance Reports
- Coordination of Compliance Inspections
- Monitor Citizens Suit Activity
- Liaison with the Office of Enforcement
- Training for Federal/State/Local Compliance Personnel
- Discharge Monitoring Reports Quality Assurance
- Feedlots
- Pretreatment Compliance Monitoring and Enforcement
- Combined Sewer Overflow Monitoring and Enforcement
- Sludge Program Implementation

Chapter Four
Delegation and Authorization of State Programs

EPA is responsible for implementing and enforcing the NPDES and CG programs. However, authorized States (or federally recognized Indian Tribes), may perform these functions in lieu of EPA, thereby shifting EPA's role to one of oversight in those jurisdictions. This chapter describes how delegation and authorization of States is determined, how OWEC's programs are implemented by headquarters and the Regions in the absence of such authorization, and what changes are taking place in these roles.

4.1 Procedures for Determining State Delegation and Authorization

Under current regulations, any State or U.S. Territory may apply to administer its own NPDES program. They may also be authorized to administer a Pretreatment or Sludge Program, issue general permits, and permit federal facilities. To obtain approval, the State must submit an application explaining the State program and its legal authority. Upon approval, a memorandum of agreement defining program roles and responsibilities is executed by the appropriate Regional Administrator and the State Program Director. Currently, 39 out of 57 States and Territories have received NPDES program approval from EPA (see Figure 4-1).

Under the 1987 Water Quality Act, federally recognized Indian Tribes may apply to administer their own NPDES programs. A Tribe seeking authorization must first apply for "treatment in the same manner as a State." After EPA approves this application, the Tribe must develop and submit a NPDES program application. EPA is encouraging Indian Tribes to assume NPDES authority and is promulgating regulations for Indian Tribe program assumption. (For a description of funding of wastewater treatment plants through the Indian Set-Aside Program, see Chapter Nine, Funding and Technical Assistance.)

4.1.1 Program Oversight after Authorization

The Strategic Targeting Activities for Results System, under which States and Regions annually commit to particular program goals, reflects the status of certain program activities. STARS includes information such as number of permits to be issued and number of permit appeals to resolve. As part of EPA Headquarters' oversight activities, OWEC then evaluates, among other things, whether States and Regions are meeting their STARS commitments by tracking numbers of permits issued and number of permit appeals resolved, auditing programs, and performing Permit Quality Reviews (PQRs). Where targets are not being met, OWEC assists in the analysis of special or common causes and facilitates improvement of the processes.

4.2 Direct Program Implementation and State Oversight

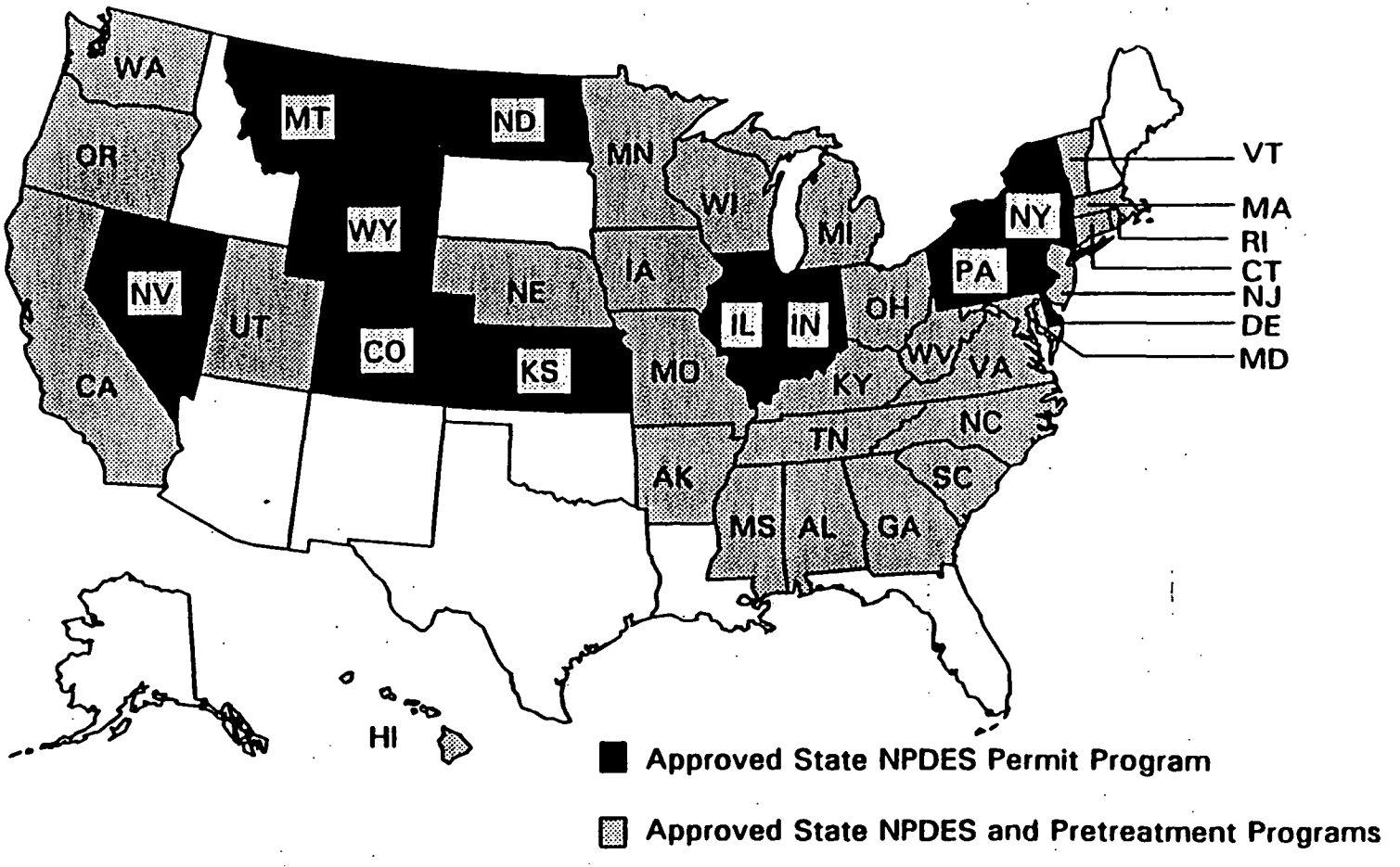
Where EPA is the Permitting Authority, OWEC is responsible for the overall development and implementation of the NPDES program regulations, policy and guidance. The Permits Division of OWEC conducts program development and implementation activities such as providing technical assistance to permit writers, developing budget guidance and program strategies, and overseeing EPA Regional and State programs. The Enforcement Division is responsible for NPDES compliance, including developing technical guidance on facility inspections, managing and reviewing compliance data, and overseeing EPA Regional and State enforcement activities. EPA Regional Offices undertake day-to-day permitting and enforcement activities and act as principal liaisons with approved NPDES States.

Where EPA is responsible for developing and achieving national programs for funding

construction, operations and maintenance of POTWs and sludge management facilities, the Municipal Support Division has the lead role. It is continuing to manage State completion and closeout of the delegated construction grants program. Between 1978 and 1986 all 50 States assumed delegation. Since then, the grant program has been replaced by State Revolving Funds that allow States to tailor wastewater treatment programs to fit their needs.

The Municipal Support Division (MSD) continues to provide support in the CG and SRF programs. For the U.S. territories and Indian Tribes that were not delegated authority to manage the construction grants program, MSD provides oversight in completing and closing out those programs. For the 51 States (including Puerto Rico) that manage their own SRF program, MSD provides program oversight. This oversight consists of ensuring that States meet federal requirements in carrying out the SRF program.

MSD also produces a Municipal Needs Survey every two years that calculates the unmet needs of all municipalities in meeting EPA's requirements. These needs are assessed in terms of labor hours and financial obligations and encompass all requirements EPA establishes for municipalities.



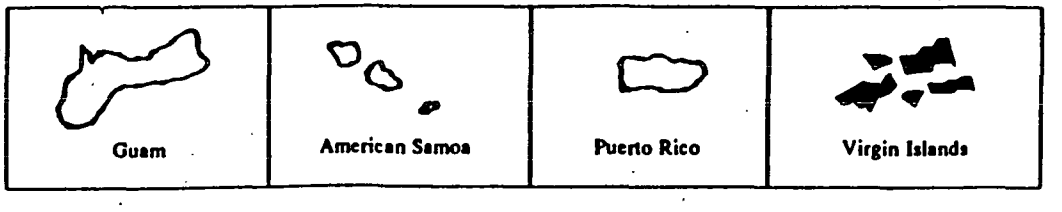


Figure 4-1 Status of State NPDES and Pretreatment Program Delegation

Chapter Five
The National Pollutant Discharge Elimination System (NPDES) Program

The NPDES permit program was established by the CWA. A chronology of the program's development is set out in Appendix B. According to the Act, all discrete sources of pollutants must obtain a permit which regulates their discharge into waters of the United States.[1] Regulated pollutants are conventional pollutants, such as suspended solids; nonconventional pollutants, such as ammonia; and toxic pollutants, such as heavy metals and toxic organic compounds. Table 5-1 briefly describes these three types of pollutants.

5.1 Scope of the NPDES Program

Any source discharging pollutants into waters of the United States through a discrete conveyance, such as a pipe or a system of conveyances, is covered under this program. As of June 1993, there were approximately 75,000 sources regulated by NPDES permits.

NPDES regulated entities are generally divided into two types: industrial and municipal. There are approximately 48,000 industrial sources-commercial and manufacturing facilities that discharge directly into waters of the United States. Municipal sources, or the discharge points of POTWs, number about 15,000. Wastewater from municipal sources results from domestic wastewater discharged to POTWs as well as the indirect discharge of industrial wastes to sewers. In addition, approximately 10,000 facilities in a range of industries are covered by general permits under the NPDES program.

Both industrial and municipal sources are divided into major and minor sources to prioritize permit issuance and oversight.

Industrial facilities are classified as major by a rating system which allocates points in categories such as flow, pollutant loadings, potential public health impacts, and water quality factors. As of July 1991, there were approximately 3,300 major and 45,000 minor industrial permits.

Major municipal facilities are those that have:

- a design or actual flow of one Million Gallons Per Day (MGD) or greater; or,
- a service population of 10,000 or greater; or,
- a significant impact on water quality; i.e.,
  - have a potential for toxic discharge;
  - are located close to a drinking water intake;
  - discharge into stressed receiving waters; or,
  - require advanced waste treatment ("pretreatment").

Municipal facilities that do not meet the above criteria are categorized as minor. More than 3,800 major and 11,700 minor municipal permits have been issued. Nationwide, there are approximately 7,000 major and 57,000 minor industrial and municipal sources.

5.2 Contents of NPDES Permits

Permits for both industrial and municipal sources contain the following terms and conditions:

- Standard conditions common to all permits;
- Site-specific discharge or effluent limits;
- Standard and site-specific compliance monitoring and reporting requirements; and
- Other site-specific conditions that EPA may deem necessary to adequately control the discharge.

Each of these elements is briefly discussed below.

5.2.1 Standard Conditions in All Permits

NPDES regulations require standard or boilerplate conditions in every permit for several reasons.[2] First, the standard conditions describe the legal effect of the permit and how it may be revoked. These conditions also explain the recourse which may be available to a noncompliant permittee. Second, the conditions describe the permittee's duties and obligations during the effective period of the permit. For example, a permittee must report changed conditions at the facility, mitigate noncompliance, allow compliance inspections, and reapply for permit renewal. Finally, the conditions put the permittee on notice of penalties which may be assessed if the permit is violated.

5.2.2 Effluent Limits

Each effluent limit imposed on an NPDES permittee is established using either a technology-based or water quality-based standard methodology, with the more stringent and protective method used to set the limit. Technology-based limits define a consistent, industry-wide level of control and are imposed at the point of discharge or "end-of-the-pipe." Water quality-based standards define site-specific ambient water quality targets and usually are applied after the wastewater has mixed with the receiving stream. The levels of technology to be applied through effluent guidelines for direct dischargers are summarized in Table 5-2.

Technology-Based Limits for Industrial Sources

There are two ways to establish technology-based effluent limitations for industrial sources: 1) national effluent limitation guidelines; and 2) the permit writer's Best Professional Judgment (BPJ). Effluent limitation guidelines are developed by the Engineering and Analysis Division (EAD) of OST.[3] These uniform national standards are developed industry-by-industry and are generally expressed as maximum daily and monthly mass loading or concentration limits.

When promulgating these regulations, EAD first surveys the target industry for information on its typical wastewater characteristics and on model technologies used to treat the discharge. EAD then determines the best economically achievable technology for toxic, conventional, and nonconventional pollutant treatment available to that industry.[4] These initial Agency conclusions are published to solicit public comments, which are taken into consideration before the regulation becomes final.

At this time, EPA has established Best Available Technology Economically Achievable (BATEA, or BAT) and Best Conventional Pollutant Control Technology (BCT) guidelines for about 41 industrial categories. The Agency is developing new or revised effluent guidelines for industrial technologies, and is also performing additional studies to decide whether to revise existing guidelines.

In the absence of industry-based effluent limitation guidelines, the industrial permit writer establishes technology-based controls using BPJ.[5] In essence, the permit writer undertakes an effluent limitation guideline analysis for a single facility. In order for the permit writer's judgment to be defensible, it must be based on the best information reasonably available at the time of permit issuance and adequately documented in the factsheet or statement of basis.[6]

In addition, the industrial permit writer can establish other technology-based limits by requiring a facility to develop a Best Management Practices (BMP) plan. A BMP plan lays out procedures by which the facility will reduce the overall pollutant level in

wastewater by source reduction and good operation/maintenance practices.

Technology-Based Limits for POTWS

All POTWs must achieve an effluent quality at least as high as "secondary treatment." These technology-based standards represent effluent quality expected from well-operated municipal treatment plants. The secondary treatment regulations are set out in the Code of Federal Regulation, 40 CFR Part 133, and address three of five conventional pollutants [Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and pH]. The limits may be expressed in average concentrations for 7-day and 30-day periods. The permit writer must also impose requirements for at least 95 percent removal of BOD and TSS.

Water Quality-Based Limits for Industrial/Municipal Point Sources

In addition to the technology-based limits applicable to all sources, permittees must comply with limits derived from additional or more stringent State water quality standards. These pollutant-specific standards are authorized under the CWA and established under State regulations to achieve or maintain the beneficial uses of a particular waterway. They take precedence when technology-based controls are insufficient to achieve the requirements of State water quality standards. Water quality standards do not usually apply at the end-of-the-discharge pipe. Consequently, permit writers must first calculate available dilution in the receiving water and determine the proper mixing zone (if allowed by the State) to develop an effluent limit.[7]

EPA and States have been concerned that the traditional pollutant-specific regulatory approach controls only a limited number of substances, due in part to the prohibitive costs of monitoring for hundreds of pollutants. Therefore, State water quality standards also prohibit overall toxicity in receiving waters through use of a "no toxics in toxic amounts" requirement. States measure overall toxicity by conducting tests using live organisms. Permit limits to control effluent toxicity using toxicity tests with live organisms are required of all sources known or suspected of exhibiting whole effluent toxicity.

5.2.3 Compliance Monitoring and Reporting Requirements

To a large extent, NPDES permittees police themselves. Permits instruct each permittee on:

- the frequency for collecting wastewater samples,
- the location for sample collection,
- the pollutants to be analyzed, and
- the laboratory procedures to be used in conducting the analysis.

Detailed records of these self-monitoring activities must be retained by the permittee for at least 3 years. Furthermore, each permittee is required to submit periodically the results of these analyses in a Discharge Monitoring Report (DMR).[8] (For further information, see Chapter Eight on Enforcement.)

5.2.4 Other Conditions in NPDES Permits

Other site-specific conditions and requirements may be imposed on both industrial and municipal sources through their NPDES permits. These additional conditions include:

- Construction schedules,
- Additional monitoring for nonregulated pollutants of concern,
- Spill prevention plans, and
- Compliance schedules for pretreatment program development or implementation.

5.3 The Permit Issuance Process

There are two types of NPDES permits: individual and general. To obtain an individual permit, the owner or operator of a source must begin the process by filing a permit application form. This form is reviewed by the permit writer who then prepares a draft permit and a fact sheet or statement of basis. When the draft is ready, it is sent to the applicant, and the proposed permit is published following standard public notification procedures. The permit writer then accepts comments on the draft permit from all interested persons. If warranted, a public hearing may also be held for additional verbal or written response to the draft permit. A response is prepared for all significant comments and then the permit is issued in its final form. Any person who has participated in the process has a right to appeal or challenge the permit's conditions as too lenient or too stringent.

General permits, which cover a number of similar dischargers in a defined geographic area, follow the same general procedures for permit issuance except that a permit application is not required. Once the general permit is issued by EPA or an authorized State, dischargers must file Notices of Intent (NOIs) in order to receive coverage or else must submit an application for an individual permit.

5.4 Current Permitting Priorities

At the time of this writing, there are a number of initiatives that will strengthen the effectiveness of the NPDES program. These priorities include the following:

- Toxicity elimination,
- Stormwater permitting,
- Combined sewer overflow permitting, and
- Sewage sludge use and disposal permitting.

These activities are described briefly in the sections below.

5.4.1 Toxicity Elimination

Section 304(l) was added to the CWA by the 1987 Water Quality Act amendments. The new section required all States to assess the quality of their waters and to submit to EPA a list of waterways which have not achieved compliance with State water quality standards due to the discharge of toxic pollutants. Section 304(l) also required States to identify the point sources discharging toxic pollutants to the listed waterbodies, and to establish more stringent toxic pollutant controls for those dischargers. The new controls, called individual control strategies, were required to control the toxic dischargers by 1992 and in some cases 1993. EPA is required to review, approve, and oversee these individual-control strategies. For States that are unable to develop approvable control strategies, EPA Regional Offices develop and implement the strategies on the State's behalf. Currently, EPA has approved approximately 600 of the 680 required individual control strategies.

In 1989, EPA revised the NPDES regulations to clarify and strengthen its surface water toxics control program. These amendments also served as the basis to implement the Section 304(l) requirements described above (see 54 FR 23868, June 2, 1989). EPA continues to develop guidance material to help the Regions and States implement these regulations in NPDES permits. In March 1991, EPA revised the *Technical Support Document for Water Quality-Based Toxics Control* to provide Regions and States with technical support for permit decisions. EPA has also published a series of technical guidance manuals to assist facilities in identifying substances that contribute to toxicity in wastewater.

5.4.2 Stormwater Permitting

Section 402 (p) of the 1987 Water Quality Act amendments to the CWA established a comprehensive two phased approach for addressing storm water discharges. Stormwater denotes the potentially large volumes of water that drain from rain, snow melt surface runoff, street washing, and other causes, that discharge into surface waters through discrete conveyances. Discrete conveyances include any pipe, ditch, chanel, tunnel, conduit, well, and other conveyances from which pollutants are or may be discharged. Section 402(p) precluded EPA and States from requiring a permit until October 1, 1992 for all but five types of stormwater discharges:

- Discharges for which a permit has been issued prior to February 4, 1987;
- Discharges associated with industrial activity;
- Discharges from medium (100,000 to 250,000 population) and large (over 250,000 population) municipal separate storm sewer systems; and
- Discharges contributing to violations of water quality standards or significantly contributing pollutants to waters of the United States.

The Water Quality Act clarified that permits for discharges of stormwater associated with industrial activity must meet all of the applicable CWA required provisions including technology-based requirements and that permits for discharges from municipal separate storm sewer must meet a new statutory standard requiring controls to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP). The Water Quality Act also specifies deadlines for EPA to promulgate permit application requirements, for applicants to submit permit applications, for EPA and authorized NPDES States to issue NPDES permits, and for permit compliance for regulated stormwater discharges.

To implement these provisions, EPA has developed and published permit application requirements for stormwater discharges associated with industrial activity,[9] and for discharges from medium and large municipal separate storm sewer systems. The regulation presented three permit application options for industrial stormwater dischargers: individual applications, group applications, and notices of intent (NOIs) to be covered under a general permit for stormwater. Municipal separate storm sewer systems covered by the rule must submit two-part applications. The first part of the application requests information on potential sources and pollutants, and the second part requests quantitative data.

To address the large number of industrial dischargers of stormwater (at over 100,000 facilities), EPA has developed a strategy which includes a tiered framework to control the administrative burden and at the same time emphasize reducing the risk to human health and aquatic resources:

Tier I - Baseline Permitting

General permits will initially cover the majority of stormwater discharges associated with industrial activity in a State. These permits will establish pollution prevention and/or best management practices, collect data on stormwater discharges from priority industries and for supporting subsequent permitting activities.

Tier II - Watershed Permitting

Facilities within watersheds shown to be adversely impacted by stormwater discharges associated with industrial activity will be targeted for individual and more specific general permitting activities. EPA and the States will identify surface waters where stormwater discharges associated with industrial activity have been identified as a cause of water quality problems and will target classes of stormwater discharges in these locations for additional permit conditions.

Tier III - Industry-Specific Permitting

Specific industry categories will be targeted for individual or industry-specific general permits. These permits will allow permitting authorities to focus attention and resources on industry categories of particular concern and/or industry categories where tailored requirements are appropriate. EPA and the States will develop model permits for selected classes of industrial stormwater discharges.

Tier IV - Facility-Specific Permitting

Individual permits will be appropriate for some stormwater discharges in addition to those identified under Tier II and Tier III activities. Individual permits would be issued where warranted by the environmental risks of the discharge, the need for additional and more complex individual control mechanisms, a facility's compliance history or the potential to consolidate permit requirements for a particular facility.

The strategy also asks States to develop Stormwater Permitting Plans to provide an effective basis for ensuring public participation and evaluating program implementation at the State level. At a minimum, State Stormwater Permitting Plans should describe the implementation of NPDES permits for discharges from large and medium municipal separate storm sewer systems; the implementation of permits for stormwater discharge associated with industrial activity; the protection of impacted waters; and case-by-case designations of stormwater discharges needing a permit.

EPA with the States is required to conduct two studies on stormwater discharges for which EPA and NPDES States cannot require permits prior to October 1, 1992. The first study will identify these stormwater discharges or classes of stormwater discharges and will determine the nature and extent of pollutants in such discharges. The second study will investigate procedures and methods to control these stormwater discharges to the extent necessary to mitigate impacts on water quality. Based on the two studies, EPA will issue regulations which designate new classes of stormwater discharges to be regulated to protect water quality and to establish a comprehensive program to regulate such designated sources. The program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate.

The strategy also calls for developing State stormwater permitting plans as a basis for public participation and to ensure appropriate implementation of stormwater permitting activities at the State level.

5.4.3 Combined Sewer Overflow Permitting

Combined sewers collect both stormwater and domestic sewage. During heavy or prolonged rainfall, combined sewers often carry more wastewater than the treatment plant can handle. To prevent hydraulic overload, most combined sewers have relief outlets which discharge untreated wastes during peak flows. These discharges are known as Combined Sewer Overflows. EPA estimates that 1,050 communities, concentrated in 30 States, have combined sewer systems with 10,770 overflow discharge points. They are found mainly in older cities in the northeast, mid-central states, and along the west coast.

During heavy rains, as much as 90 percent of the pollutants that enter a combined sewer system never reach the treatment plant and are discharged untreated through CSOs into receiving waters. Dry weather overflows can also occur. These untreated wastes may contain high levels of suspended solids, heavy metals, nutrients, bacteria, and other pollutants.

CSO impacts depend on the frequency, volume, duration, and components of the overflow; on topography and land runoff; and on the nature and uses of receiving waters. Nationally, CSOs

impair 10 percent of estuaries, 11 percent of the Great Lakes shoreline, and up to 4 percent of the coastal shoreline and major rivers. High fecal coliform levels from CSOs have led to beach closings and shellfishing bans in Puget Sound, beach closings on the New Jersey, New York, and Connecticut coasts, and the six-month closing of 10 percent and permanent closing of 25 percent of the shellfishing beds in Rhode Island's Narragansett Bay.

CSOs are subject to CWA treatment and compliance requirements. CSOs that discharge without NPDES permits are unlawful and must be issued permits or eliminated.

Nevertheless, CSOs present enough distinctive problems that OWEC has formulated a special CSO Strategy. Each of the 30 states that have municipalities with CSOs is responsible for developing CSO data and planning, including an inventory of all its CSO points, the current permit status of each, and a priority ranking for issuing permits to CSOs with inadequate or no permits.

OWEC's CSO Strategy has three major goals:

- To ensure that if CSO discharges occur, they are only a result of wet weather, by:
  - prohibiting dry weather overflows;
  - making maximum use of the collection system for storage; and,
  - maximizing flows to POTWs for subsequent treatment.
- To bring all wet weather CSO discharge points into compliance with the technology-based requirements of the CWA and applicable State water-quality standards, by:
  - achieving proper operation and regular maintenance programs for the sewer system and CSO points; and,
  - reviewing and modifying pretreatment programs to ensure that CSO impacts are minimized.
- To minimize water quality, aquatic biota, and human health impacts from wet weather overflows, by:
  - controlling solids/floatables in discharges.

Municipalities are responsible for ensuring that CSO discharge points are permitted, for complying with the permit, and for finding the funding to develop needed controls.

The draft 1992 Needs Survey estimates CSO control costs to be $41.2 billion to eliminate or capture for primary treatment at least 85 percent of the volume of the combined sewage collected in combined sewer systems during rainfall events on a system-wide annual average basis. This estimate is consistent with the draft 1992 CSO policy. Limited federal financing is currently available through the State Revolving Fund Loan Program. (See Chapter Nine.)

As part of the effort to increase productivity, since 1991 CSO and Stormwater Excellence Awards have recognized outstanding work in CSO and stormwater innovation and cost-effectiveness.

5.4.4 Sewage Sludge Use and Disposal Permitting

The management of sewage sludge is controlled by self-implementing regulations and/or by conditions in NPDES permits, other federal permits, or permits issued by States with approved sludge management programs. Permits for treatment works generating sewage sludge contain pollutant limitations, management practices, and self-monitoring and reporting requirements. (For more information on this activity, see Chapter Seven.)

5.5 Program Accomplishments

Substantial efforts in NPDES program development and implementation have produced significant improvements in the quality of United States waters. Current estimates indicate that the NPDES program has contributed to meeting the fishable/swimmable water quality objectives of the CWA in 70 to 75 percent of all United States waters. Over 47,000 stream miles and 390,000 lake acres have shown significant improvement in water quality over the pollutant loadings measured in 1972.

Under the long-term infrastructure investment, EPA will initiate inclusion of safe drinking water projects under the new Drinking Water State Revolving Fund. OWEC will use as much of the existing SRF financial framework as possible and work closely with the Drinking Water program and the States to initiate loans for drinking water facilities. A 1994 Needs Survey will focus on assessing the capital financing needs for safe drinking water facilities and will include needs for non-traditional areas like CSOs, stormwater, estuaries, and wetlands. OWEC will continue to develop and implement major permitting and enforcement needs in accordance with Clean Water Act requirements.

It is also significant that during the early 1980s, the rate of permit issuance slipped behind the rate of permit expiration and a large backlog of unissued permits developed. Since that time the backlog has been reduced significantly.

Table 5-1
Types of Regulated Pollutants

CONVENTIONAL POLLUTANTS. Conventional pollutants are contained in the sanitary wastes of households, commercial establishments, and industries. These wastes include human wastes, sand, leaves, trash, ground-up food from sink disposals, and laundry and bath waters. Five specific pollutants are considered "conventional pollutants":

Biochemical Oxygen Demand (BOD) - This parameter measures the quantity of oxygen used in aerobic oxidation of the organic matter in a sample of wastewater.

Total Suspended Solids (TSS) - This parameter is a measure of the concentration of solid particles suspended in wastewater.

Fecal Coliform - The bacteriological quality of water is based on testing for nonpathogenic indicator organisms, principally the coliform group. Fecal coliform bacteria are used as a measure of health risk since they are more easily detected than pathogens. Fecal coliform bacteria are found in the digestive tracts of humans and animals. Their presence in water indicates the potential presence of pathogenic organisms.

pH - pH is a measure of acidity or alkalinity. pH is measured on a scale of 1 to 14; 1 being extremely acidic, 7 neutral, and 14 extremely alkaline. Most healthy surface waters have a nearly neutral pH; i.e., they are neither strongly acidic nor alkaline.

Oil and Grease - This parameter is a measure of the concentration of a variety of organic substances including hydrocarbons, fats, oils, waxes, and high-molecular fatty acids. These pollutants degrade receiving water treatment because they reduce the biological treatability of the waste and produce sludge solids that are difficult to process.

TOXIC POLLUTANTS. Toxic pollutants represent a list of 126 pollutants that are particularly harmful to one or more forms of animal or plant life. They are primarily grouped into organics and metals.

Organic Pollutants - These pollutants include pesticides, solvents, Polychlorinated Biphenyls (PCBs), and dioxins.

Metals - The metals of concern include lead, silver, mercury, copper, chromium, zinc, nickel, and cadmium.

NONCONVENTIONAL POLLUTANTS. Nonconventional pollutants are any additional substances that are not in the groupings "conventional" or "toxic" that may require regulation. These include "whole effluent toxicity" and nutrients such as nitrogen and phosphorus.

Table 5-2
Summary of Technology Standards

Best Practical Control Technology (BPT). BPT was required to be installed by all industries by July 1, 1997. In determining BPT, EPA considered:

> the total cost of application of technology in relation to the effluent reduction, benefits to be achieved..., the age of the equipment and facilities involved, the process employed, the engineering aspects of ... various types of control techniques, process changes, non-water quality environmental impact and such other factors as deem[ed] appropriate.

Best Conventional Pollutant Control Technology (BCT). Initially, BCT guidelines were to be in place for the control of all conventional pollutants and complied with by July 1, 1984; however, EPA was not able to complete guidelines for all industries by then and Congress extended the deadline to March 31, 1989. Criteria under the BCT standard are similar to those for BPT but require a more stringent costbenefit analysis for the reduction achieved. The benefits of installing BCT, though, do not necessarily have to exceed the costs in order for it to be required by the permit.

Best Available Technology Economically Achievable (BATEA, or BAT). Initially, BAT was required for control of toxic and some nonconventional pollutants by July 1, 1984, but again EPA was not able to meet this deadline and it was extended to March 31, 1989. As part of its increasing concern with toxics control in the 1977 amendments, Congress limited the economic criteria for setting BAT to consideration of the cost of control technology, and not the more lenient cost-benefit analysis (i.e., EPA considers if the industry can afford a technology, not if the amount of reduction is worth the cost).

Endnotes - Chapter 5

1. NPDES permits can be issued to individual dischargers (individual NPDES permits) or to many similarly situated dischargers subject to the same terms and conditions (general NPDES permits).

2. 40 Code of Federal Regulations (CFR) Part 122.

3. See 40 CFR Chapter 1, Subchapter N.

4. While permittees need not install the model technology identified by EPA, they must achieve the same effluent quality.

5. BPJ may not be used instead of an existing guideline, but BPJ methodology may be used to supplement an effluent guideline (e.g., where the regulation does not address a particular pollutant of concern at an otherwise EAD-regulated facility).

6. Many tools are available to assist the permit writer in the development of permit limits based on BPJ. These tools include permit limits for similar facilities using similar treatment technology, performance data from actual operating facilities found in the Discharge Monitoring Report (DMR), and the scientific literature. In developing permit limits based on BPJ, the permit writer must consider the same factors as those required for the development of effluent limitations guidelines (e.g., age and size of facility and treatment employed).

7. For more information on water quality-based toxic controls, see the **Technical Support Document for Water Quality-Based Toxics Control** (March 1991).

8. For most facilities, this reporting requirement is monthly or quarterly but in no case less than once per year.

9. Facilities with storm water discharges associated with industrial activity include: 1) those subject to storm water effluent guidelines, new source performance standards, or toxic pollutant effluent standards; 2) manufacturing facilities; 3) mining operations and oil and gas operations; 4) hazardous waste treatment, storage, or disposal facilities; 5) landfills, land application sites and open dumps; 6) recycling facilities; 7) steam electric power generating facilities; 8) certain transportation faeilities; 9) certain sewage treatment plants; 10) construction activity disturbing five or more acres; and 11) other manufacturing facilities where materials or activities are <u>exposed</u> to storm water. Operators of industrial facilities that are Federal, State or municipally owned or operated that meet the description of the facilities listed in 122.26(b)(14)(i)-(xi) must also submit applications. (55 FR 47990)

Chapter Six
Pretreatment and Municipal Pollution Prevention

Industrial plants are only one of the sources of wastewater discharged into municipal sewers. The wastewater discharged by industry often contains a variety of toxic or otherwise harmful substances at concentrations not common to domestic sources of wastewater. These pollutants include, to give just a few examples, metals and cyanide from electroplating and metal-finishing shops, organic compounds from the manufacture of pesticides and chemicals, and lead from the manufacture of batteries.

Most sewage collection and treatment systems are not designed to treat harmful industrial wastes. As depicted in Figure 6-1 such wastes can damage the collection system, interfere with the operation of treatment plants, pass through the plants to contaminate receiving water bodies, threaten worker health and safety, and increase the cost and risks of sludge treatment and disposal.

Problems such as these can be prevented, however. Using proven pollution control technologies and practices that promote reuse and recycling of material, industrial plants can remove or eliminate pollutants from their wastewaters before discharging them into the municipal sewage treatment system. This practice is known as pretreatment.

Currently, industries in many communities are pretreating their wastewater. The National Pretreatment Program, a cooperative effort of federal, State, and local officials, is fostering this practice nationwide. In tandem with the National Pretreatment Program, OWEC promotes the Municipal Water Pollution Prevention (MWPP) program, described in Section 6.7 below, as a non-regulatory approach to similar problems. Federal, State and local governments have invested billions of dollars in POTW construction since the enactment of the 1972 Federal Water Pollution Control Act, creating a vital national infrastructure that needs protection. By reducing the level of pollutants discharged by industry into municipal sewage systems, the program ensures POTW infrastructure protection and that industrial development vital to the economic well-being of a community will be compatible with a healthy environment.

6.1 History of the Pretreatment Program

In 1972, Congress enacted Section 307 of the CWA, requiring EPA to promulgate pretreatment standards for pollutants not susceptible to treatment by POTWS. As a response to this statutory requirement, EPA promulgated 40 CFR Part 128 at the end of 1973. While these regulations contained general prohibitions against interference with treatment plant operation and pass through of pollutants to receiving waters, they were not specific about pollutants of concern or potential problem industries. In 1977, as Congress amended the CWA, two particular issues involving pretreatment surfaced: 1) an emphasis on control of pollutants through national technology-based standards; and 2) a determination that local governments through POTWs would be primarily responsible for enforcing these standards.

On June 26, 1978, EPA promulgated the General Pretreatment Regulations (40 CFR Part 403). These regulations maintained the general and specific prohibitions of Part 128, but in addition, required local program development and established the need for local limits. These regulations were further revised in 1981 and 1988. Furthermore, under Section 519 of the Water Quality Act of 1987, OWEC evaluated the National Pretreatment Program and reported to Congress in July 1991.

6.2 Pretreatment Program Goals

The General Pretreatment Regulations specify three primary objectives for the pretreatment program:

- To prevent the introduction of those pollutants into a POTW that will interfere with its operation or with the disposal of municipal sludge;
- To prevent the introduction of pollutants that will pass through a POTW into receiving waters; and
- To improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludge.

These goals establish the overall framework for the National Pretreatment Program. The regulations themselves apply and enforce pretreatment standards and requirements on industrial users and establish specific responsibilities for EPA, States, and POTWS. Roles and responsibilities for each party are summarized in Table 6-1.

6.3 Responsibilities of POTWS, States, and EPA

The General Pretreatment Regulations require any POTW with a design flow of more than five million gallons per day (MGD) and smaller POTWs receiving discharges that cause interference or pass-through to obtain an approved local pretreatment program. The National Pretreatment Program extends to more than 200,000 non-domestic sources (30,000 are considered significant industrial users) and more than 1,400 POTWS, which treat almost 80 percent of the national municipal wastewater flow. Each local program must enforce all national pretreatment standards. The local POTW, or "Control Authority," must also enforce more stringent discharge requirements (i.e., local limits) to prevent disruption of the sewage treatment system, adverse environmental impacts, or disruption of sludge use or disposal.

The pretreatment program is built, to a large extent, upon the framework of the National Pollutant Discharge Elimination System (NPDES) program. Each POTW's NPDES permit includes a provision requiring the POTW to implement its approved pretreatment program. NPDES-approved States can also receive pretreatment program approval and then are expected to exercise program oversight responsibilities as the "Approval Authorities." Figure 4-1 shows the 27 States that have approved State pretreatment programs. In those States, EPA Regions oversee the implementation of the State programs. Where a State has not been approved, EPA continues to serve as the Approval Authority.

NPDES States may elect to administer the program directly rather than requiring its POTWs to do so. Vermont, Connecticut, Alabama, Mississippi, and Nebraska have elected to administer State-wide programs in lieu of requiring local programs in accordance with 40 CFR 403.10(e).

POTW programs are overseen in several ways, including comprehensive pretreatment program audits and Pretreatment Compliance Inspections (PCI) conducted by the Approval Authority.

6.4 Pretreatment Standards

To accomplish its objectives, the National Pretreatment Program relies on three types of standards that apply to industry:

National Categorical Standards: National technology-based standards establish industry-specific effluent limits and are developed by EPA Headquarters.

Prohibited Discharge Standards: General Prohibitions [40 CFR 403.5(a)] provide national prohibitions against pollutant discharges from

any nondomestic user which cause pass-through or interference.

Specific Prohibitions [40 CFR 403.5(b)] are national prohibitions against pollutant discharges from any nondomestic user that cause: (1) fire or explosion hazard; (2) corrosive structural damage; (3) interference due to flow obstruction; (4) interference due to flow rate or concentration; and (5) interference due to heat. In 1990 the following additional prohibitions were added: (6) interference due to oils; (7) the release of toxic gases, vapors, or fumes that may cause acute worker health and safety problems; and, (8) the release of any trucked or hauled pollutants, except at designated discharge points.

Local Limits: Specific pollutant limits must be developed at the local level to protect the POTW against pass-through and interference. These local limits are considered pretreatment standards and are federally enforceable.

The rationale behind the three types of standards is, first, that categorical standards provide nationally uniform effluent limits with a technology-based degree of environmental protection for discharges from particular categories of industry. Second, the prohibited discharge standards recognize the site-specific nature of the problems at sewage treatment works and provide a broader baseline level of control that applies to all nondomestic sources discharging to POTWS, whether or not they fall within particular industrial categories. Third, local limits are site-specific requirements developed and enforced by individual POTWs to implement the general and specific prohibitions, and are more stringent than categorical standards to protect the POTW and meet local environmental objectives. This approach ensures that site-specific protections necessary to meet pretreatment objectives are developed by POTWS, the agencies best placed to understand local concerns.

6.5 Pretreatment Enforcement Criteria and Requirements

OWEC issued guidance in FY 1990 (*Guidance for Reporting and Evaluating POTW Noncompliance with Pretreatment Implementation Requirements*) which identified criteria for determining when a POTW should be listed in the Quarterly Noncompliance Report (QNCR) for failure to adequately implement an approved pretreatment program and established a definition of significant noncompliance for pretreatment implementation. The criteria for both reportable noncompliance and significant noncompliance established performance measures related to program implementation which fall in the following general areas:

- timely issuance and reissuance of control mechanisms to industrial users (IUs);
- inspection and sampling of IUs as required;
- enforcement of pretreatment standards as required, including effective and quick enforcement actions against IUs for causing interference or pass-through;
- timely completion of compliance schedule milestones; and
- timely compliance with reporting requirements.

OWEC has also promulgated a definition of significant noncompliance for IUs which must be applied by POTWS. This definition is modeled on the NPDES definition and takes into account the magnitude and frequency of effluent violations, as well as the timely compliance with reporting requirements and compliance schedules.

6.6 Pretreatment Program Accomplishments and Future Directions

Findings of the May 1991 Report to Congress on the National Pretreatment Program indicate that the program has been significantly successful:

- EPA Regions and States have successfully identified those POTWs whose receipt of industrial discharges makes pretreatment necessary. POTWs with approved programs, or covered by State-run programs, receive more than 80 percent of the national wastewater flow discharged to POTWs.

- Control mechanisms have been issued to 84 percent of Significant Industrial Users (SIUs) and 90 percent of SIUs have been inspected under local programs.

- Analysis of local limits for a sample of 200 POTWs found that 90 percent have adopted local limits for one or more toxic pollutants and that more than 70 percent have adopted local limits for the 10 toxic pollutants listed in EPA guidance as those of highest concern.

- Many POTWs report that pretreatment programs have led to significant declines in concentrations and loadings of toxic pollutants in influent, effluent, and sludge. These decreases have reduced operational problems and improved the quality of receiving waters and sludge. Toxic metal pollutant loadings are estimated to have been reduced by 95 percent where categorical Pretreatment Standards for Existing Sources have been instituted, and, though studies differ, toxic organic loadings are estimated to have been reduced by 40-75 percent.

Findings also indicate that the program can be made even more productive:

- Commercial and industrial facilities not yet subject to categorical pretreatment standards may discharge considerable levels of toxic pollutants to POTWS. Such facilities include machinery manufacturing and rebuilding, industrial and commercial laundries, hazardous waste treatment facilities, and waste reclaimers.

- POTWs may also still receive significant loadings of toxic pollutants from hauled waste, landfill leachate, stormwater, underground storage tanks, and Resource Conservation and Recovery Act (RCRA) and Superfund cleanups. Categorical standards, under development for a number of these sources, are expected to reduce loadings further.

EPA's analysis indicates that removal efficiency varies widely from POTW to POTW. This variation underscores the need to use POTW-specific data in making removal decisions applicable to individual POTWS.

As part of the effort to increase productivity and acknowledge the efforts by POTWS, EPA established the Pretreatment Excellence Awards in 1989 to recognize POTWs' outstanding work in pretreatment design, implementation, innovation and environmental benefits.

6.7 Municipal Water Pollution Prevention Program

Through the MWPP program, OWEC also works to protect our POTW investment. Its goals are to: (1) protect the quality of the infrastructure, (2) ensure the maintenance of wastewater facilities, (3) encourage reduction and elimination of water pollution, and (4) and maintain high municipal compliance rates. The MWPP works with the Regions and States to implement programs including regular facility-based self-assessments, voluntary source reduction, wise water use, and pilot program grants to attain these goals.

6.7.1 Voluntary Source Reduction

MWPP promotes voluntary efforts to reduce hazardous waste discharges from non-regulated sources. Such efforts can reduce the need for substantial future investments in treatment technologies and facilities.

Currently there are no hazardous waste regulations for very small sources such as local photograph processing laboratories and dentists' offices. Each of these businesses may be disposing small levels of hazardous waste into local water systems, but the number of individual businesses of the kind referred to can combine to make a significant influx of waste. MWPP is working to involve communities in alternative disposal mechanisms, such as community collection projects, to handle such wastes.

Some cities have successfully established such programs. MWPP has found that if alternative disposal mechanisms are made available, small businesses will use them. If many small sources take advantage of these alternatives, the problem of non-regulated sources of hazardous waste could be solved locally.

6.7.2 Water Use Efficiency

Increasing the efficiency of our water use has gained support as people have become more aware of the importance of protecting our water supply. MWPP supports an Agency task force on water use efficiency.

The Water Use Efficiency Task Force, made up of representatives from throughout the Office of Water (OW) seeks to integrate water use efficiency principles in Agency programs. The Task Force works toward establishing a national water ethic, encouraging State and municipal action to reduce per capita water consumption, and promoting an increase in the reclamation and reuse of wastewater. The Task Force relies on congressional add-on funding for a variety of projects that further the Task Force's goals. One of the Task Force's projects was to evaluate the performance of low-flow fixtures in buildings. Another project will develop a standard methodology to calculate how much water is saved when a community implements a water conservation program. The Task Force also funded the development of state guidelines for the reclamation and reuse of wastewater.

The MWPP works with water suppliers to establish voluntary agreements to reduce water consumption by studying their water-use patterns and installing low-flow fixtures. The MWPP provides publicity regarding the importance of water conservation while water suppliers implement the program. The program has targeted motels and hotels for water use efficiency improvements. The MWPP plans to distribute case studies documenting the financial and environmental benefits of low-flow fixtures to hotels and motels.

The MWPP also works to integrate outreach and education activities in its programs. Outreach efforts are intended to educate a large, diverse audience about the importance of water conservation.

6.7.3 Pilot Program Grants

The MWPP sponsors grants for pilot programs to support water pollution prevention. The program is in its third year of awarding grants. A total of 23 grants have been awarded. These grants are intended to help States establish programs to regularly assess POTWS, to report the ability of POTWs to remain in compliance with NPDES permit requirements, and to promote timely financing and other measures for POTWs to maintain compliance.

Each program described in a grant application should contain an action plan for an early warning system to make changes in a facility before noncompliance occurs, a formal reporting mechanism to ensure that the results of early warning systems are routinely reported, and

corrective actions to ensure that all necessary changes in a facility are made in a timely manner. In consultation with the Regions, eligible States submit grant applications to the MWPP coordinator which reviews the applications and awards grants to the States with the best proposals. MWPP pilot programs are funded based on how well they address the objectives of the ideal program outlined in the MWPP guidance. State proposals demonstrating efforts to institutionalize the MWPP program and promote source reduction are given favorable consideration.

6.7.4 Operation and Maintenance Program

Section 104(g)(1) of the Clean Water Act authorizes operator training programs. Since 1982, funding has been provided for onsite operator training and technical assistance to small wastewater treatment plants with compliance problems. Operation and maintenance (O&M) assistance is provided primarily by State water pollution control agencies or State Environmental Training Centers, and in some cases the EPA Regional Office. EPA, in conjunction with a selected State Environmental Training Center, hosts a National Operator Training Conference annually in June to afford Headquarters, Regional and State personnel and trainers an opportunity to exchange experiences and ideas.

Since 1986, EPA has also sponsored an annual National O&M Awards Program. The objectives of the program are to: 1) heighten public awareness about the contributions of publicly owned wastewater treatment facilities to clean water, 2) encourage public support for effective O&M and user charge systems, and 3) recognize communities that continue to meet permit requirements because of their outstanding O&M practices. The awards are presented at the Water Environment Federation's annual conference with winners selected in nine categories from nominations made at the Regional level.

In addition to MWPP, Section 104(g)(1) of the Clean Water Act authorizes operator training pilot programs. Under this Section Congressional funding has been authorized since 1982 to support onsite training and technical assistance to operators of small community treatment plants.

Figure 6-1
Problems That May Occur When Industrial Wastewaters are Discharged Into Municipal Sewage Treatment Systems

All These Problems Can be Controlled Through Pretreatment

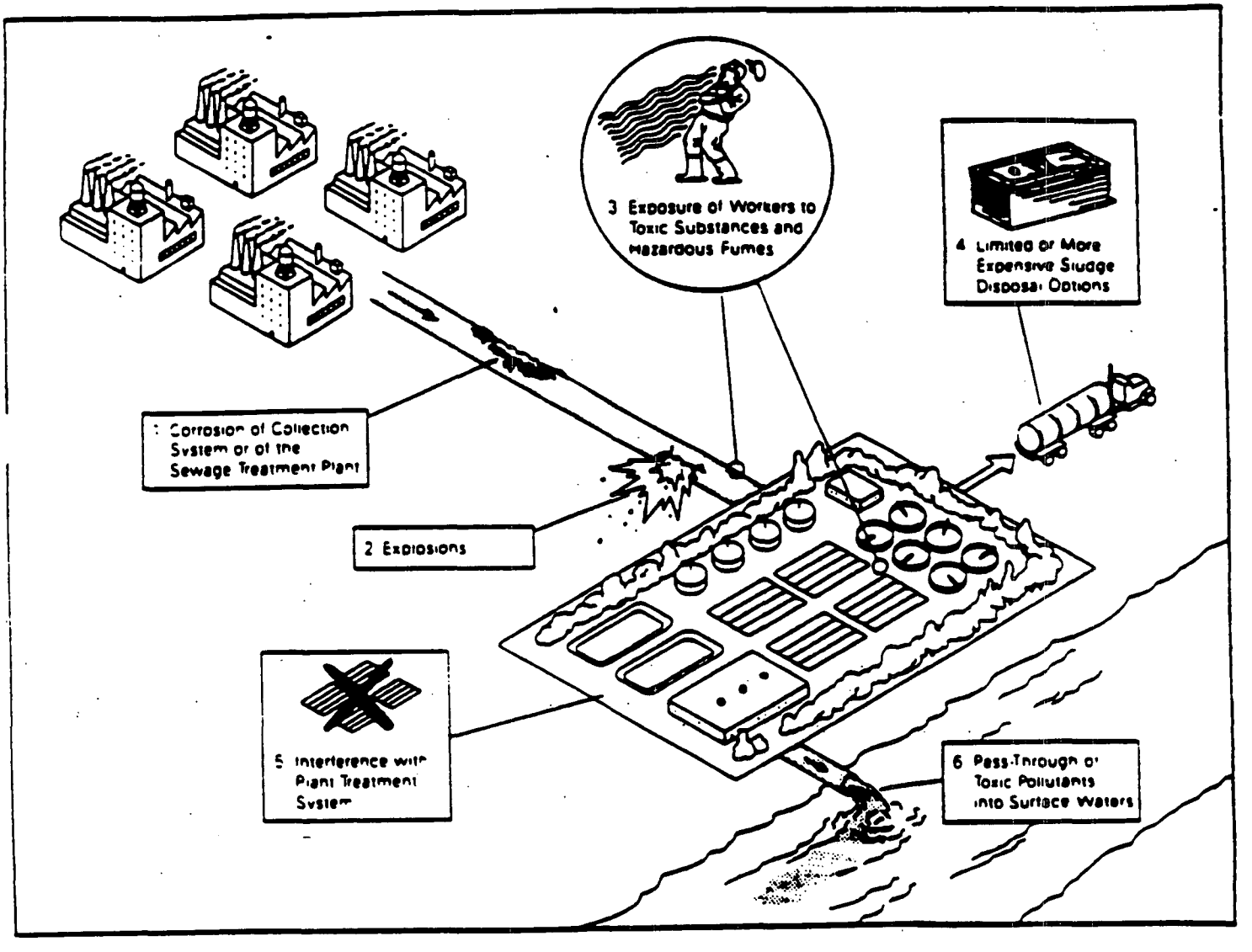


Table 6-1
Organization of the Pretreatment Program and Summary of Responsibilities

EPA Headquarters

- Oversee Program Implementation at All Levels
- Develop and Modify Regulations for the Pretreatment Program
- Develop Policies to Clarify and Further Define the Program
- Develop Technical Guidance for Program Implementation and Training
- Develop Enforcement Policy and Guidance

EPA Regions (10)

- Fulfill Approval Authority Responsibilities for States without Program Delegation
- Oversee State Program Implementation
- Initiate Enforcement Actions
- Serve as Control Authorities for Industries in Unapproved States and Cities

State Approval Authorities (27)
(NPDES States with Pretreatment Program Delegation)

- Notify POTWs of Their Responsibilities
- Review and Approve POTW Pretreatment Programs
- Review Modifications to Categorical Pretreatment Standards
- Oversee POTW Program Implementation
- Provide Technical Guidance to POTWs
- Regulate Industries in Nonpretreatment Cities
- Initiate Enforcement Action Against Noncompliant POTWs or Industrial Users

Control Authorities (Approximately 1,450)
(POTWs with Approved Pretreatment Programs)

- Develop and Maintain an Approved Pretreatment Program
- Evaluate Compliance of Regulated Industrial Users
- Initiate Enforcement Action Against Noncompliant Industrial Users
- Submit Reports to Approval Authority

Industrial Users (As Many as 200,000)

- Comply with Applicable Pretreatment Standards: Prohibited Discharge Standards, Categorical Standards, State Requirements, and Local Limits
- Comply with Federal and POTW Reporting Requirements

Chapter Seven
The National Sludge Management Program

For many years, federal water pollution control programs have been directed principally to preventing pollutants from reaching the waters of the United States by promoting the development of technologies capable of removing significant pollutants from wastewater. Success in treating municipal wastewater has brought with it another challenge—proper management and disposal of sewage sludges, or biosolids (the solids that are removed from wastewater during treatment) which may contain high concentrations of toxic pollutants and pathogens.

Sewage sludge is both a waste and a resource. Treated properly, it can be recycled as a fertilizer and soil conditioner; improperly handled it can threaten air, surface water, ground water, or the food chain. It is therefore important to regulate sewage sludge to ensure that it is properly handled, decontaminated, and tested to make it safe for use or disposal.

7.1 Historical Sludge Control

EPA's first sewage sludge policy (1984) stated that sewage sludge management was a responsibility to be shared by EPA, States, and local governments, and established roles and duties for each of the parties. EPA's primary responsibility is to develop and enforce technical standards and oversee State programs. States are responsible for direct implementation of the sludge program. Local governments must manage sewage sludge and control its quality in accordance with federal requirements.

In early 1987, Congress reemphasized EPA's obligation to address sludge management comprehensively by amending Section 405 of the Clean Water Act (CWA). The 1987 amendments require the use of National Pollutant Discharge Elimination (NPDES) permits (or other permits affording equivalent regulation) to regulate sludge use and disposal. The new statutory provisions also required the Agency to protect public health and the environment from any reasonably anticipated adverse effects of pollutants in sewage sludge by:

- promulgating technical use and disposal regulations for sewage sludge;
- requiring compliance with these technical standards within one year of promulgation (within two years if the regulations require construction of pollution control facilities); and
- addressing sewage sludge in municipal NPDES permits. Before promulgation of technical standards, this may be done on a BPJ basis or through other measures that will protect the environment from adverse effects of sludge use or disposal.

7.2 Interim Sludge Program

To implement Congress' requirement for sludge permitting, OWEC issued a "Sewage Sludge Interim Permitting Strategy" (September 1989) and has prepared guidance (see *Guidance for Writing Case-by-Case Permit Requirements for Municipal Sewage Sludge*, May 1990) to assist federal and State permit writers. The Interim Strategy defined the following three types of POTWs as "priority POTWs" to have special case-by-case permits:

- POTWs with known sewage sludge or sludge disposal problems,
- POTWs which incinerate sludge,
- POTWs with approved local pretreatment programs.

The strategy also includes guidance to assist permit writers in developing standard conditions as well as monitoring and reporting requirements for all POTWs (priority and nonpriority), and describes the process by which EPA intends to coordinate sludge permit issuance with States. In 1989, EPA issued regulations (54 FR 18716) which sets requirements for the issuance of sewage sludge permits to NPDES and non-NPDES facilities. The 1989 regulations also require the development of State sewage sludge programs, either as a subcomponent of the NPDES program or as a separate regulatory program.

The Interim Strategy is designed only to bridge the gap with controls essential to protect public health and the environment until technical regulations are promulgated. Thereafter, technical regulations will form the cornerstone for sludge conditions in NPDES permits or equivalent permits issued under other EPA programs and other approved State sludge programs.

7.3 Long-Term Program

EPA is continuing its efforts to promulgate the technical sewage sludge regulations mandated by the CWA. Regulations [to be published at 40 CFR, Part 503], were initially proposed by EPA on February 6, 1989 (54 FR 5746). For a large universe of pollutants of concern, the initial proposed regulations controlled five common sludge use and disposal practices: 1) incineration; 2) land application; 3) distribution and marketing; 4) disposal in sludge-only landfills; and 5) surface disposal.

Part 503 was promulgated in November 1992. The number of use and disposal practices regulated have been combined into three:

- Incineration requirements control five metals through site-specific development of sludge quality limits and total hydrocarbon emissions according to a national operational standard. Management practices are stipulated for good operating procedures.

- Land application requirements control metals through numerical limits (based on pollutant concentrations or total pollutant loadings at a site), require the reduction of pathogens and vector-attracting properties of sludge, and impose management, record-keeping, and reporting requirements. The rule will lessen administrative controls over sludge that meets certain standards for a highly-treated, "product-like" material.

- Surface disposal requirements control pollutants by providing national sewage sludge quality limits and management practices.

OWEC will be responsible for ensuring that the Part 503 requirements are properly incorporated into permits and enforced as necessary. OWEC has developed a strategy for implementation to ensure a smooth transition to a sewage sludge permitting program. Guidance and training materials will be developed to help permit writers gain additional expertise in sludge permitting. As with the NPDES and National Pretreatment Programs, States are encouraged to apply for authorization to administer the program themselves. Sludge permitting authority can be granted outside the NPDES Program. OWEC will address the need for approved cities to modify local limits under the pretreatment program to satisfy sewage sludge requirements. OWEC has also enhanced its automated Permit Compliance System to accept sludge data.

7.4 Technical Assistance for the Beneficial Use of Sludge

In 1981, the Administrators of EPA and the Food and Drug Administration and the Secretary of the U.S. Department of Agriculture issued an interagency guidance and policy statement that endorsed the utilization of sewage sludge for the production of fruits and vegetables. In 1984,

EPA issued a formal policy promoting the beneficial use of sewage sludge while maintaining environmental quality and protecting public health.

A national "Interagency Policy on Beneficial Use of Municipal Sewage Sludge on Federal Land," reaffirming and supplementing the 1981 and 1984 policies, was published as a Notice in the Federal Register on July 18, 1991.

Organic and nutrient content makes sewage sludge a valuable resource for improving marginal lands and supplementing fertilizers and soil conditioners. In silviculture, sewage sludge can increase forest productivity, and re-vegetate and stabilize harvested or devastated forest land. Sewage sludge has also been used successfully to reclaim severely disturbed land. Philadelphia sludge studies have shown that the microbial communities in reclaimed mined soils revert to those of normal soils at a rate five times faster than in conventional reclamation. Sludge is often disposed at sites specifically set aside for sewage sludge disposal. The objective of this practice is to employ the land as a treatment system by using soil to bind metals and by using soil microorganisms, sunlight, and oxidation to destroy the organic matter and pathogens in the sludge. Landfilling involves depositing sludge, alone or with solid waste, in a dedicated area, buried beneath a soil cover.

In addition to its benefits, reusing sewage sludge can reduce costs. Sales of sewage sludge products can be used to defray the costs of de-watering and composting the sewage sludge, while there are no offsets to the costs of de-watering sewage sludge placed in landfills or incinerated. Furthermore, the labor, capital, and operating and maintenance costs of incinerating sewage sludge are substantially higher than reuse costs. The Municipality of Metropolitan Seattle (METRO), which treats wastewater in the Seattle-King County region, says that by creating a demand for sludge and developing a variety of recycling options, it reduced program expenses per ton of sludge solids from $227 in 1983 to $148 in 1987.

Although the benefits of using sewage sludge to improve land productivity are substantial, some people fear the associated risks. Handled improperly, sewage sludge containing high levels of pathogenic organisms (e.g., viruses, bacteria) or high concentrations of pollutants could contaminate the soil, water, crops, and livestock. Analyses show, however, that current beneficial use practices (i.e., land application, distribution and marketing) are, in terms of carcinogenic risk, on the order of 100,000 times safer than disposal practices.[1]

Sewage sludge disposal can be both more expensive and more hazardous than its reuse. Some methods of sewage sludge disposal, such as incineration and uncovered landfills, may contribute to global warming by releasing carbon dioxide and methane. On surface disposal sites, sewage sludge with high concentrations of organic and metal pollutants can contaminate ground water or release volatile pollutants to the air. Incineration destroys the organic pollutants and reduces the volume of sewage sludge by about 90 percent on a wet weight basis, but emissions from sewage sludge incinerators, if left uncontrolled, will contribute particulates, sulfur dioxide, oxides of nitrogen, heavy metals, toxic organic compounds, and hydrocarbons to the air. Realizing that ocean dumping of sludge may result in the destruction of biota that influence the balance between oxygen and carbon dioxide, Congress banned this practice after 1991.

EPA's National Beneficial Use of Sludge Awards Program continues to recognize outstanding operating projects, technology development efforts, and research activities that have promoted the beneficial use of sludge. A number of USDA-related scientists and projects have been awarded high honors for their outstanding contributions during the three years of this program.

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1. Nevertheless, in spite of the benefits of sludge reuse, the United States effectively reuses only 25 percent of its sewage sludge by applying it to the land or by distributing and marketing it for use in home gardens. In comparison, the twelve countries in the European Economic Community reuse 35 percent (the United Kingdom, 51 percent), and Japan reuses 42 percent.

Chapter Eight
The Enforcement Program

The ultimate goal of the wastewater enforcement program is to improve environmental quality through compliance with environmental laws. More specifically, EPA's wastewater enforcement program is designed to accomplish four major objectives:

- Identify instances of noncompliance,
- Return the violator to compliance,
- Recover any economic advantage obtained by the violator's noncompliance, and
- Deter other regulated facilities from noncompliance.

To achieve these objectives, the program relies on several tools: an extensive network of compliance monitoring techniques and protocols to screen compliance information, a data management system, and enforcement response strategies. Combined, these tools speed compliance assessment and foster timely Agency and State responses to violations of NPDES and pretreatment requirements.

8.1 Determining Violations

Each NPDES permit contains specific terms and conditions which the industry or POTW must follow. Adherence to these permit conditions is tracked by three mechanisms:

- Self-monitoring by the permittee. The permittee reports its self-monitoring data on a Discharge Monitoring Report (DMR) which it submits to either the appropriate State agency or EPA regional office.
- Compliance inspections (which can include sampling at the permittee's facility), are performed by the State or EPA.
- Pretreatment compliance inspections or audits where the POTW has an approved pretreatment program.

In addition, public complaints can trigger follow-up by the relevant enforcement agency to see whether or not a violation has occurred.

The general types of violations possible under the NPDES program are:

- Permit limit (effluent) violations-failure to meet the specific limits of particular pollutants in the discharge, or the character of the discharge from each outfall of a facility.
- Schedule violations-failure to meet a compliance schedule for the construction of a treatment or spill prevention system, modification of process, training of personnel, or development of a program to improve discharge quality. Failure to achieve schedule milestones is a NPDES permit violation.
- Permit reporting violations-failure to submit the required reports in a timely fashion; also failure to submit complete and accurate reports.
- Enforcement order violations-failure to fulfill enforcement actions previously determined against the permitted facility. Violations of these formal (administrative or judicial) enforcement actions are additional violations.
- Other permit requirement violations-such as failure of any approved POTW to implement

its pretreatment program adequately or enforce industrial user pretreatment requirements.

Data from DMRs are entered on to EPA's data base management system; the Permit Compliance System (PCS). PCS tracks permit, compliance, and enforcement status of the approximately 7,200 major NPDES facilities. PCS enables States and EPA Regions to list automatically all major facilities not in compliance with their NPDES permits. EPA has established specific criteria in 40 CFR 123.45 to determine when the five general types of NPDES violations should be reported on a special report, the Quarterly Noncompliance Report (QNCR). The QNCR helps enforcement personnel set priorities for acting on permit violations.

The Agency has also developed criteria for determining when a pretreatment POTW should be listed on the QNCR for failure to implement its approved pretreatment program. These criteria, known as "Reportable Noncompliance" (RNC), are used to review key local program functions and address the failure to issue permits, inspect facilities, and enforce pretreatment in a timely fashion.

8.2 Determining the Action to be Taken

Depending on the severity of the permit violation, the State (or Region) can take several different kinds of action. OWEC has developed the Enforcement Management System (EMS) to help NPDES States or Regions identify instances of noncompliance and efficiently translate them into enforcement actions. EMS makes this translation by:

- Maintaining a **source inventory** that is complete and accurate;
- Handling and assessing the **flow of information** available on a systematic and timely basis;
- Accomplishing a **pre-enforcement screening** by reviewing the flow of information as soon as possible after it is received;
- Performing a more formal **enforcement evaluation** where appropriate, using systematic evaluation screening criteria;
- Instituting formal **enforcement action and follow-up** wherever necessary;
- Initiating **field investigations** based on a systematic plan; and
- Using **internal management controls** to provide adequate enforcement information to all levels of the organization.

The EMS also includes a response guide that matches types of violations to a narrow range of appropriate enforcement responses.

8.3 Available Enforcement Actions

Enforcement actions available to the NPDES State or Region can range from simple informal actions to formal Administrative Orders and civil and/or criminal judicial actions.

8.3.1 Administrative Actions

Enforcement actions are taken at the Regional level by the Regional Water Management Divisions and Regional attorneys. An informal action consists of telephone calls, a letter, or a notice of violation, all of which simply communicates to the permittee that a violation was detected and should be corrected. A formal Administrative Order may also be issued, identifying specific actions to be taken by the permittee, including meeting compliance schedule milestones, ceasing and desisting from a particular activity, or correcting the problems which cause noncompliance. Administrative penalties can also be assessed by the Region. These require public notice and the opportunity

for a hearing. Administrative penalties can be of two types: Class I (up to $25,000) or Class II (up to $125,000).

8.3.2 Judicial Actions

Beyond administrative action comes civil or criminal judicial action. The Region typically forwards a recommendation to pursue judicial action to EPA's Office of Enforcement (OE) and OWEC to review the merits of the case. OE then refers the case to the Justice Department which actually files the action in the District Court where the violation occurred. In certain cases, Regions may refer cases directly to the Justice Department with simultaneous review by OE and OWEC. Civil cases are tried on the basis of strict liability with fines up to $25,000 per day per violation. In most cases, EPA attempts to settle before the case is brought to trial. The Regional Counsels and Water Management Divisions, in conjunction with OE and OWEC, handle the settlement process. The final settlement must be consistent with EPA policy on settlement of judicial actions.

8.4 Permit Compliance System (PCS)

In order to track NPDES permitting and compliance information and to identify violations, OWEC uses a computerized management information system. PCS functions to:

- Track permit issuance, reissuance, and appeal activities;
- Evaluate compliance data to determine effluent, schedule, and reporting violations;
- Track enforcement responses;
- Automate Quarterly Noncompliance Report preparation;
- Automate Agency management system reporting;
- Provide facility information; and
- Facilitate inspection scheduling.

PCS contains basic facility information on all NPDES permits and additional extensive information on the approximately 7,200 major NPDES permittees. To assist in data storage and retrieval, PCS organizes permittee information into the general categories shown in Figure 8-1. The type of information in each category is outlined below.

- **Permit Facility Data** - General descriptive information on each permitted facility, including its name, address, permit number, location, Standard Industrial Classification (SIC) code, and type of ownership.
- **Permit Event Data** - Information tracking the events related to permit issuance from receipt of the initial permit application through actual permit issuance and expiration.
- **Pipe Schedule Data** - Detailed information describing each outfall within a permitted facility and the discharge monitoring requirements associated with each, such as effluent waste type(s), treatment type(s), and limit start and end dates (initial, interim, or final).
- **Parameter Limits Data** - Detailed information specifying self-monitoring requirements associated with each outfall within a permitted facility, such as monitoring location, parameter to be monitored, required frequency of analysis, units in which the measurements are expressed, and quantity and concentration limits for each parameter monitored.

- **Measurement Violations Data** - Actual sampling data from DMRs, including identification of violations of permit limits.

- **Compliance Schedule Data** - Information on permit compliance schedule milestones and actual accomplishment dates.

- **Compliance Schedule Violation Data** - Information on compliance schedule violations, whether from failure to meet a milestone date or failure to submit a required report.

- **Enforcement Action Data** - Data on enforcement actions taken in response to violations of effluent parameter limits or compliance schedule milestones, or for nonreceipt of Discharge Monitoring Reports, including the events in violation and dates of occurrence, the type of enforcement action(s), the dates they were taken, and the current status of each action.

- **Inspection Data** - Information describing inspections performed at a permitted facility, including inspection data, type, inspector (State/EPA), and relevant comments.

- **Pretreatment Summary Data** - Information gathered as part of the Pretreatment Annual Report, such as the number of administrative orders issued, number of judicial actions taken, and amount of penalties collected.

- **Evidentiary Hearing Data** - Data on evidentiary hearings contesting permit requirements.

A management overview of PCS can be found in the *Permit Compliance System Executive Summary* (August 1990). Technical documentation of the system's operation and functions is available in the following documents:

- *PCS Generalized Retrieval Manual;*
- *PCS Inquiry User's Guide;*
- *PCS Data Elements Directory;*
- *PCS Data Entry, Edit, and Update Manual;* and
- *PCS Personal Assistance Link (PAL) Users Guide.*

8.5 Administration of the Enforcement Program: Compliance Assessment

Four of the Enforcement Program's basic activities that are classed under compliance assessment are:

- Implementing EPA's Inspection Policy/Strategy,
- Managing PCS,
- Evaluating QNCRs, and
- Implementing special initiatives, such as the National Municipal Policy (NMP).

8.5.1 Implementing EPA's Inspection Policy/Strategy

Compliance inspections (including pretreatment inspections) are a vital tool in implementing the NPDES program. There are nine different types of NPDES inspections that may be performed. Figure 8-2 highlights these nine inspections. Generally, inspections are conducted to:

- Verify permit compliance,
- Develop enforcement information,
- Respond to citizen complaints,
- Support permit development, and
- Maintain a regulatory presence.

Current policy requires that major permittees be inspected at least annually. The appropriate EPA Regional or State office decides on the type of inspection to be performed for each major permittee and the number and identity of minor permittees that will be inspected during the year. EPA has outlined the process used to select facilities to be inspected on a random basis in the policy entitled "Neutral Inspection for the NPDES Program."

In addition to the neutral inspection criteria policy, the following sources give more information on OWEC's compliance inspection program:

- *NPDES Inspection Strategy and Guideline for Preparing Annual State EPA Compliance Inspection Plans, April 1985;*
- *NPDES Compliance Inspection Manual, January 1988;*
- *NPDES Compliance Inspectors Training Modules (in draft form); and*
- *Guidance for Conducting a Pretreatment Compliance Inspection.*

8.5.2 Evaluation of QNCRs

The QNCR lists major facilities that are in reportable noncompliance with their NPDES permits. It is prepared by NPDES States and EPA Regions and submitted quarterly to OWEC. It lists noncompliant major facilities, identifies the violations causing noncompliance, and summarizes resulting enforcement actions. QNCRs are used by OWEC, EPA Regions, and the States to track progress and assess the effectiveness of NPDES compliance monitoring and enforcement activities. The QNCR can be automatically generated by PCS for all quantitative violations, provided the appropriate information is entered. For further information on automating the QNCR, see the *Guide to the Permit Compliance System Quarterly Noncompliance Report* (June 1988).

8.5.3 Implementation of the National Municipal Policy

The National Municipal Policy (NMP) was adopted in January 1984. Although the federal government had spent over $35 billion on required treatment construction grants to cities by 1984, 1,500 major POTWs had not achieved required treatment levels by that time. The NMP required each of these POTWs to submit either a Composite Correction Plan (CCP) or Municipal Compliance Plan (MCP) that established a construction schedule to achieve compliance on or before July 1, 1988. All NPDES States also developed municipal enforcement policies to ensure that their enforcement activities were similar to EPA's.

Eighty-seven percent of the nation's 3,750 major POTWs met the deadline. Of those not achieving compliance, the vast majority either are on enforceable court schedules or are the subject of federal or State judicial action. Since the deadline, EPA and the States have been following through with enforcement actions against POTWs yet to achieve required treatment.

8.6 Administration of the Enforcement Program: Major Responsibilities

OWEC's major enforcement responsibilities include:

- Providing enforcement case review and support;
- Developing and overseeing the implementation of EPA's penalty policies;
- Reviewing citizen suits (including notices and proposed settlements);

- Managing the NPDES enforcement program and State oversight; and

- Developing enforcement criteria and enforcing pretreatment requirements against POTWs.

These activities are highlighted below.

8.6.1 Enforcement Case Review and Support

In order to properly discharge the responsibility for the management of the National Water Enforcement Program, OWEC reviews all proposed civil enforcement actions and provides comments and recommendations to OE prior to the referral of civil actions to the Department of Justice. The review includes:

- Evaluation of the litigation report to ensure that the proposed action is consistent with the goals of the wastewater enforcement program and with the broad guidelines set forth in the guidance documents and policy directives under which OWEC operates;

- Basic evaluation of the technical sufficiency of the proposed injunctive relief and proposed penalty and a determination of the need for additional technical support by the Region, Headquarters, or by an outside expert.

OWEC reviews all new case settlements as well as associated modifications, terminations, and withdrawals. OWEC participates jointly with the Region and OE in the development of the injunctive relief and civil penalty to be embodied in a settlement agreement or judgment. OWEC reviews all proposed and final settlement agreements to determine that the relief agreed to by the defendant will ensure full compliance with the permit and is consistent with national policy and guidance.

8.6.2 Development and Implementation of EPA's Penalty Policies

The Agency's authority to seek and assess civil and criminal penalties was established in the Clean Water Act (CWA). In order "to promote a more consistent agency wide approach to the assessment of civil penalties while allowing substantial flexibility for individual cases within certain guidelines," OWEC and OE developed the CWA penalty policy. This policy directs the Regions to use a formula that calculates the economic benefit of noncompliance, factors in a "gravity" (seriousness) component, and adjusts for ability to pay, litigation, and other factors. To assist in this calculation, the Agency has developed a computer software program called "BEN" that calculates the economic benefit a violating facility receives in delaying compliance.

For further information on wastewater penalty policies, see:

- *Clean Water Act Penalty Policy for Civil Settlement Negotiations*, February 1986.

- *BEN User's Manual*, revised May 1987.

- *Guidance on Choosing Among Clean Water Act Administrative, Civil and Criminal Enforcement Remedies*, August 1987.

- *Addendum to the Clean Water Act Civil Penalty Policy for Administrative Penalty*, August 1987.

8.6.3 Review of Citizen Suits

The CWA states that citizens who wish to independently enforce the CWA requirements in federal court must file notice of intent to sue with the EPA Administrator 60 days prior to filing a complaint. OWEC and OE review each of these notices to determine: 1) who filed the action; 2) what the alleged noncompliance was; and 3) what penalties are being sought. In

addition, EPA evaluates these notices to determine whether to file such a suit itself. If a citizen complaint already has been filed, EPA decides whether to join the action formally. Finally, EPA reviews all proposed settlements to ensure their appropriateness.

8.7 Management of the NPDES Enforcement Program and State Oversight

OWEC expects all NPDES States to develop written enforcement procedures consistent with the seven Enforcement Management System principles listed in Section 8.2 above. Specifically, EMS has established National review criteria to screen compliance data and a response guide which matches types of violations with a narrow range of appropriate Agency enforcement responses. In addition, EMS advocates that field inspections and enforcement follow-up activities be conducted in accordance with a systematic plan that considers such relevant factors as geography, compliance history, and time since the last site visit.

8.7.1 Development of Enforcement Criteria and Enforcement of Pretreatment Requirements Against POTWs

The decentralized approach of the National Pretreatment Program requires EPA and municipalities to work together in a pretreatment implementation partnership. Traditionally, POTWs have been service-oriented and few have extensive experience or expertise in enforcement.

In 1986, OWEC developed and distributed implementation guidance for pretreatment POTWs entitled *Pretreatment Compliance Monitoring and Enforcement Guidance*. The guidance discussed in detail the following topics:

- Industrial user monitoring frequencies;
- Inspecting and sampling techniques;
- Reviewing self-monitoring data;
- Establishing local enforcement priorities; and
- Reporting program performance to Approval Authorities.

The Pretreatment Compliance Monitoring and Enforcement (PCME) guidance also recommended definitions for "significant industrial users" and "significant noncompliance which have now been promulgated as regulations." These definitions promote National consistency in POTW implementation of pretreatment requirements. To ensure that the PCME principles are understood by local officials, OWEC has provided training to POTW personnel and their attorneys in these areas. In addition, OWEC has developed a computer software package which POTWs can use to track industrial user compliance and determine whether any facilities may be in significant noncompliance.

Local pretreatment implementation is required as a condition of the POTW's NPDES permit. When a POTW fails to adequately implement its program, EPA pursues formal enforcement of these conditions similar to other NPDES violations. OWEC has specific procedures for reviewing POTW program performance and for determining whether the programs are inadequately implemented.

For additional information on this area, see:

- *Guidance for Bringing Enforcement Actions Against POTWs for Failure to Implement Pretreatment Programs*, August 1988.
- *Penalty Calculations for POTW Failure to Implement an Approved Pretreatment Program*, December 1988.
- *Guidance for Reporting and Evaluating POTW Noncompliance with Pretreatment Implementation Requirements*, September 1989.

While primary responsibility for insuring the compliance of industrial users rests with the approved POTW, EPA can and does take enforcement action directly against noncomplying industrial users in some circumstances. This action may be administrative or judicial but almost always involves penalties. Most frequently, EPA takes direct action against the industrial user where the POTW has tried enforcement but has failed to gain the compliance of the industrial user on a timely bases. EPA may also take action where there is no approved local program and the approved State or EPA has the primary enforcement responsibility.

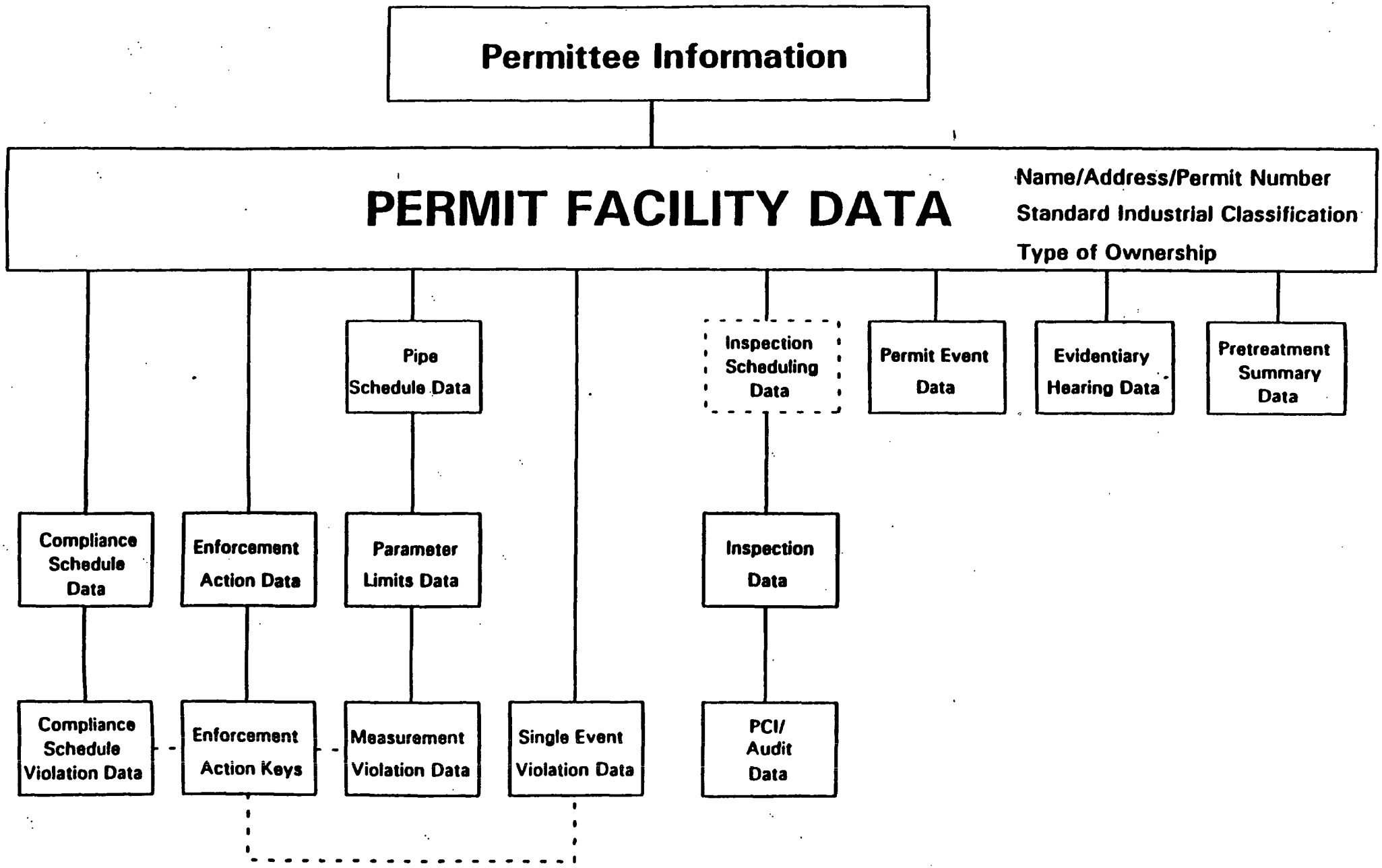

Figure 8-1: Categories of Data Stored in PCS

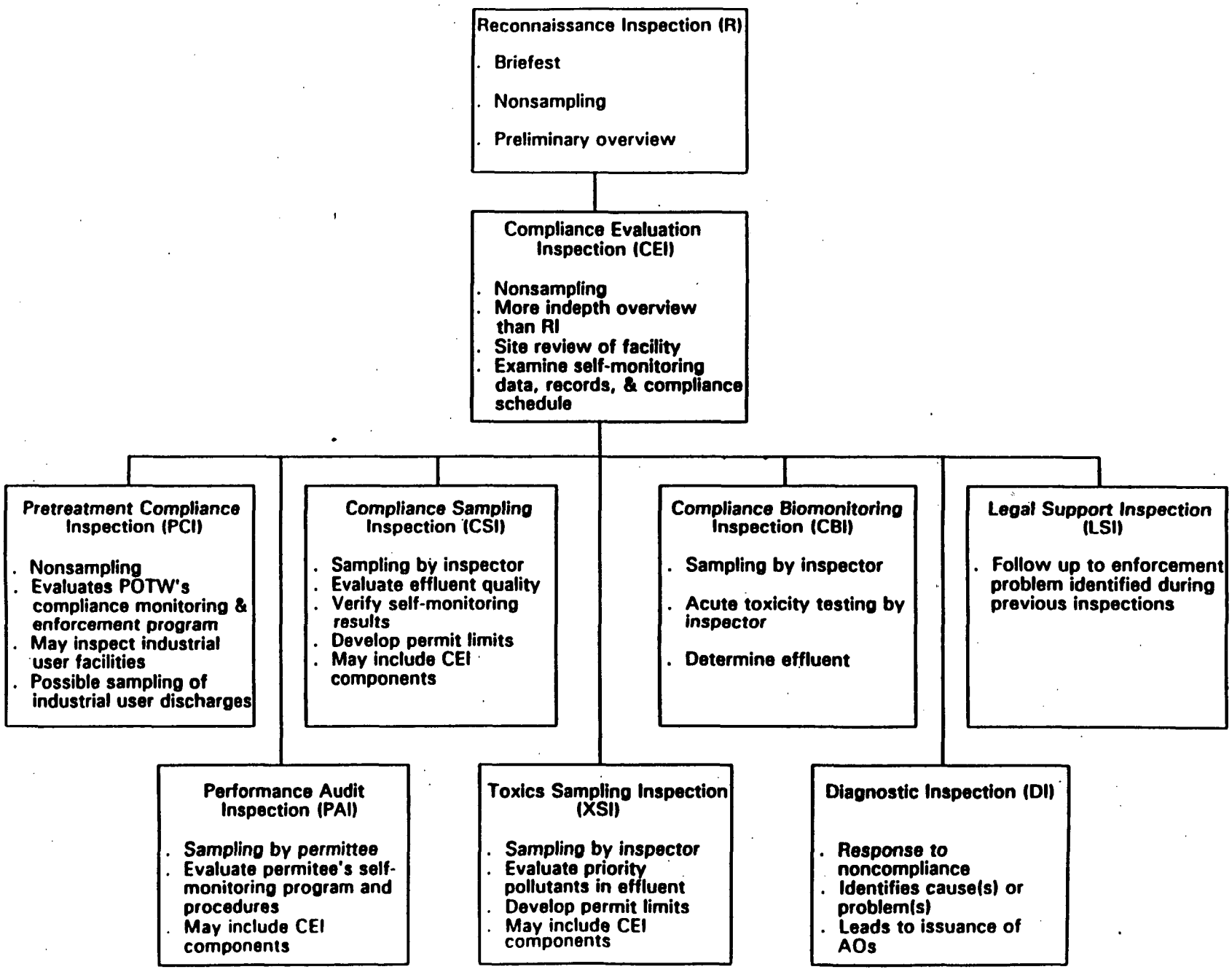

Figure 8-2: NPDES Compliance Inspections

Chapter Nine
Funding and Technical Assistance

As the leader in wastewater control, OWEC's involvement is more comprehensive than merely administering and enforcing pollutant permit programs. Its role is to provide overall direction and assistance -- regulatory, technical, managerial, and financial -- to national, State and local programs to prevent and abate municipal water pollution. One major current responsibility, discussed in this Chapter, is to manage the transition in funding of municipal wastewater systems from the federally funded construction grants program to a self-sufficient State Revolving Fund program.

As described in Chapter Six, OWEC also has responsibility for municipal wastewater pollution prevention and water conservation to help reduce the need for future municipal wastewater treatment facility funding. The Office manages several related programs to increase State and local government management capabilities, to ensure that funds support the highest priority water quality and public health needs, to promote effective treatment technologies, and to ensure optimum performance and effective maintenance of the national wastewater treatment infrastructure.

9.1 Administration and Management of Water Quality Cooperative Agreements Under Section 104(b)(3)

The Clean Water Act Section 104(b)(3) authorizes EPA to make grants to State water pollution control agencies, interstate agencies, other public or nonprofit agencies, institutions, organizations, and individuals to conduct and promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys and studies related to the causes, effects, extent, prevention, reduction, and elimination of pollution.

Activities supported by Section 104(b)(3) include unique pilot or special studies and demonstration programs that will advance the Agency's and the States' knowledge and ability to deal with water pollution problems. Section 104(b)(3) does not fund on-going programs or administrative activities. To select grants, a working group drawn from Regional Office and Headquarters staff issues a guidance on priority areas and eligible activities, and the process for proposal review.

Resources Management and Evaluation Staff provides management support for OWEC's role in the Section 104(b)(3) program. This support includes: support to the workgroup that issues guidance on funding, and receipt and processing of recommended grant proposals.

9.2 Administration and Management of the Section 106 Grants Program

Section 106 of the CWA authorizes EPA to provide grants to States to assist them in administering programs for the prevention, reduction, and elimination of pollution. Section 106 grants are the primary EPA funding source for State Water Quality Management (WQM) program activities such as NPDES permitting and enforcement, developing water quality standards, and collecting monitoring data. Program activities that may be funded by Section 106 grants include but extend beyond point source programs. Eligible activities include, for example: permitting, enforcement, pretreatment, source monitoring, ambient monitoring, laboratory costs, water-quality standards, water quality planning, nonpoint source program implementation, groundwater planning and implementation, outreach and technical assistance, sludge management, emergency response, and administration. Grants are awarded to a total of 50 States, 7 territories and the District of Columbia, 71 Indian tribes, and 6 interstate agencies. Targets for funding State, Territorial, and Interstate agencies are derived

from a formula developed in 1972 that is based on number of point sources. Indian Tribe allotments are made on a separate, population-based formula.

Issues facing the Section 106 program during the 1990s include the following:

- **Formula revision.** In 1990, the Office of Water (OW) committed to revise the current Section 106 grant allocation formula by FY93. The Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) has stated its preference to delay the revision until CWA reauthorization. OWEC efforts to initiate a formal process to revise the formula are currently on hold.

- **Reporting.** The HQ & Regional program offices will work with the States to review reporting requirements.

RMES issues the annual Section 106 State funding targets based on final appropriations. These targets are then sent to the Regional Offices which begin negotiations with their States for each fiscal year.

9.3 Construction Grants

Title II of the 1972 CWA mandated a large federal commitment to municipal water quality by providing funds for municipalities to build and renovate Publicly Owned Treatment Works (POTWs). Responsibilities for administering day-to-day construction activities gradually were delegated to the States as the program progressed. Through an interagency agreement, the Army Corps of Engineers supported the construction grant program by overseeing construction projects and providing training and assistance to State staff. Currently, EPA oversees the States' efforts to ensure that projects are well-managed, designed appropriately and cost-effectively, and that each complies with program and discharge requirements.

EPA provided construction grants to municipalities from 1972 through 1990 and in 1991 and 1992 with carryover and deobligated funds. During that period, 13,000 grants totalling $50 billion were awarded. As of September 30, 1992, 3,800 grants totalling $27.3 billion are still active. The 1987 Amendments to the CWA set FY 1990 as the last year that construction grant funds would be appropriated. Since then, Congress has provided additional funds for special construction projects to protect coastal and border waters. By phasing out the program, EPA shifted the method of municipal financial assistance from direct grants to loans provided by SRFs with EPA capitalization grants and matching State contributions.

9.3.1 Construction Grants Closeout Strategy

Although new funding for construction grants is no longer available, completing and closing out the program will continue to require substantial EPA resources through 1997. To be officially closed, each project must undergo a detailed administrative completion and audit process. To ensure an effective phaseout of the program, EPA Headquarters must work with the Regions and States to develop and implement multi-year strategies to complete and close out remaining construction grant projects efficiently. Grants are also awarded through the Indian Set-Aside Program, which helps to pay for the planning, designing, and building of wastewater treatment systems to serve Indian Tribes and Alaska Native Villages (ANV).

The phase-out of the construction grants program does not end all assistance to municipalities for the construction of wastewater treatment facilities. In 1989, EPA began a SRF Program to provide non-grant assistance to local governments. Capital from each SRF will, in part, fund construction projects.

9.4 State Revolving Funds (SRFs) Program and Special Projects

The 1987 CWA Amendments transferred management and financial responsibilities for municipal wastewater projects from EPA to States and local governments. The amendments discontinued funding for the construction grants program as of FY 1990 and replaced it with SRF capitalization grants. SRFs are selfsustaining programs structured to make low interest loans or provide other non-grant assistance to local governments for water pollution control.

An SRF allows a State to tailor its wastewater treatment program to fit its needs. SRFs provide assistance for the construction of treatment works, the implementation of nonpoint source management programs, and the development and implementation of conservation and management plans under the National Estuary Program.

Each SRF is expected to be a permanent, self-renewing source of loan funds. Capitalization grants were awarded to every State and Puerto Rico as federal seed money to start its revolving fund. Loan repayments are used, at least in part, to provide loanable funds for subsequent projects. In this way the initial funding should be used, replaced and reused so the SRF can continue to make loans. SRFs should provide a perpetual source of low-cost financing, unlike one-time loans or grants. By the end of 1992, EPA had awarded about $5 billion of federal funds to assist in capitalizing the SRFs.

Although individual SRF programs are designed to meet a particular State's needs, their general nature can be defined. Many States incorporate a leveraging system in which borrowing by the SRF generates loanable funds. Leveraging can be very important in the early years of SRF operation when capital needs are greatest. It is also common for federally capitalized SRFs to be authorized to write loans at any rate between the market rate and zero percent. This enables SRFs to deliver relatively deep subsides to small local projects by making SRF loans affordable. An SRF also may arrange for credit enhancement, such as bond insurance to secure the SRF's own borrowing on an individual loan or a series of loans to municipalities. In this way financially weak municipalities can benefit from an SRF's credit-worthiness (i.e., its relatively low cost of borrowing).

Headquarters and the Regions are helping States implement SRF programs using guidance materials developed by EPA. Regional offices have reviewed many SRFs to ensure that the programs are viable and well-managed. The reports of these reviews have been generally positive; only minor operational problems have been found. Regional offices work with the States to make program modifications necessary to address any problems.

9.5 Privatization and User Charge Certification Program

Beginning with the Federal Water Pollution Control Act Amendments of 1972, the nation's waters have benefitted from an investment of over $70 billion by the federal government, the States, and local governments in wastewater treatment facilities and sewers. The federal government contributed more than $57 billion of this initial investment, and its commitment to assisting in the financing of the nation's continued investment in wastewater treatment facilities is demonstrated by its implementation of the SRF program. The funds available from SRFs and other State programs will fall short of the more than $80 billion in wastewater treatment and conveyance needs identified in the 1990 Needs Survey Report to Congress. Further, to the extent that SRF funds are used for nonpoint source and other activities, this funding shortfall for wastewater facilities will be even greater. In an effort to reduce this funding gap, EPA has encouraged Public-Private Partnerships (P3s) for wastewater systems.

On April 30, 1992, President Bush issued Executive Order 12803 to promote private

investment in local infrastructure, including federally-funded wastewater treatment works.

The federal government has invested billions of construction grant dollars in wastewater treatment facilities since the enactment of the CWA. More recently, the federal government has provided capitalization grants for individual SRF programs. Before receiving a loan from the SRF, applicants for projects which receive funds made available by the capitalization grant must submit a plan for a user charge system to EPA for approval. User charges provide income for the facilities to support operations and maintenance activities and protect the federal investment in the facilities.

It is the responsibility of the MSD Facilities Finance Section to ensure that all construction and capitalization grant recipients maintain their user charge systems as originally approved by EPA. In recent years, EPA has reviewed a limited sample from the existing user charge systems. EPA addresses problems as they are identified in these reviews.

9.5.1 Federally-funded Publicly Owned Treatment Works (POTWs)

In the coming years, MSD will be implementing Executive Order 12803 by assisting States and local governments to find innovative ways to support private sector investment in wastewater treatment systems while protecting the public interest in federally-funded facilities. Beginning in the summer of 1992, EPA initiated an inclusionary rule-making process that will identify and resolve the basic issues involved in the implementation of Executive Order 12803. A few of the issues that likely will arise during the rule-making are described below.

What is the definition of "publicly owned treatment works"? While the CWA is silent on this issue, the Agency traditionally has interpreted this term to mean 100 percent ownership by a public entity. What is the appropriate definition of POTW to implement Executive Order 12803?

- If only a part of the wastewater system were sold to a private party, how will the overall integrity of the system be ensured?
- Many POTWs receive (or may receive) SRF loans. What are the implications for repayment of the SRF loan if such a facility were to be sold or leased?
- A private entity that purchased a municipal wastewater system could go bankrupt. What mechanism will exist to protect the users and the integrity of the system in such an event?
- How will users be protected against unreasonable increases in charge if the system is privatized?
- What are the implications of privatization for the NPDES permitting and enforcement programs? What will be the impact of privatization on the pretreatment program?
- How should the assets of wastewater systems be valued for sale? In the event that the proceeds from a sale are insufficient to enable both State and local governments to recoup their investments, how shall the proceeds be distributed?

9.6 Pilot Grant and Technical Assistance Programs

Similar to the Municipal Water Pollution Prevention Program, there are other programs that are designed to protect and enhance the nation's investment in its municipal wastewater treatment facilities. Financial and technical assistance is provided to POTWs through technology advisory services and grant programs.

9.6.1 Municipal Technology Program

It is EPA's policy to assist POTWs by supporting the development, dissemination, and review of the latest technology. This function continues to be important as the POTWs begin programs to plan for compliance with new regulations on sludge, stormwater, and CSOs. The Municipal Technology program is a resource for information on new treatment technologies. It is a center of expertise on new and emerging technologies and serves both the Regions and the States. For example, as discussed in Section 9.3 above, the Branch has been responsible for coordinating continuing research in the beneficial uses of sludge. In this capacity, the program is in an excellent position to facilitate technology transfer among municipal wastewater treatment facilities.

9.6.2 Small Community Assistance Program

The Small Community Outreach and Education (SCORE) program is an OWEC information and technical assistance program directed to local officials and wastewater managers in communities with fewer than 10,000 people. It aims to help these communities build and maintain self-sufficient wastewater facilities that comply with the CWA water quality standards.

The SCORE program is a cooperative network that stretches nationwide. It enlists the expertise and resources of States, federal agencies, public-interest and advocacy groups, educational institutions, and other environmental programs to help deliver EPA's wastewater messages.

SCORE's message focuses on the use of appropriate wastewater technology, sound financial management and operations, pollution prevention, and public education.

In addition to SCORE, OWEC provides information, technical and training assistance to small communities through the National Small Flows Clearinghouse (NSFCH) and the National Environmental Training Center for Small Communities (NETCSC). Both of these programs are managed by EPA through cooperative agreements with the University of West Virginia in Morgantown, WV.

The Clearinghouse distributes information on small wastewater systems and technologies. A variety of services are offered including a tollfree hotline, computerized bulletin boards, training workshops, and technical publications. Similarly, the NETCSC provides resource materials and training programs to support small communities in complying with drinking water, wastewater, and solid waste program regulations.

9.6.3 Indian Set-Aside Program

The OWEC municipal assistance program also provides wastewater treatment information and assistance to Indian Tribes. The 1987 Amendments to the CWA created a grant program under Section 518(c) to help pay for planning, design, and building of wastewater treatment systems to serve Indian Tribes. The CWA was further amended to make Alaska Native Villages (ANVs) and Tribes in Oklahoma on former reservations eligible to receive grants.

The CWA authorizes program funding via a 1/2 percent set-aside from either the Construction Grants or the State Revolving Fund appropriations for Fiscal Years 1987 - 1992.

The program is administered through guidelines developed by Tribal members, EPA, the Indian Health Service, and the Bureau of Indian Affairs. A national Indian Project Priority List is used to rank projects eligible for a construction grant.

Overall, 39 projects have been identified to receive funding, accounting for approximately $36 million for Tribal wastewater treatment systems.

9.7 Enhancing State Capacity

Delegation and authorization of the various OWEC programs to the State is facing a crisis. There are shortfalls in State budgets. The shortfalls for environmental programs are exacerbated by competing demands for resources (e.g., health and social services). OWEC assumes that these shortfalls will persist. If program delegation is to succeed, EPA must work to build and enhance State capacity.

9.7.1 Assessing and Building State Capacity

To do this, OWEC will use a three-pronged approach. First, we will support increases in State program resources through increases in federal funds, and/or through the development of new State program resources (e.g., alternative funding mechanisms). Second, we will promote institutional change to use existing resources more efficiently and effectively. This will be achieved through a strategic planning dialogue to establish multi-year State and EPA priorities and by streamlining administrative processes; building on innovative State management approaches through technology transfer; identifying and promoting resource-efficient tools such as general permits, administrative penalties, and alternative dispute resolution techniques; funding pilot programs; and promoting cooperative training programs. Third, we will work with environmental groups, and State and local organizations to establish a strong communication network through an aggressive outreach and education effort to the public, the regulated community, other environmental groups, executive and legislative branch officials, other federal agencies, and other State programs.

To implement this approach, OWEC will provide contractor assistance to the States (upon request) for the purpose of gathering current comparative data, and preparing informational material in support of State efforts to seek increased State program resources. Meanwhile, OWEC will continue to work to increase federal financial assistance and will seek to obtain necessary data to support its budget request. OWEC will initiate a limited number of special projects designed to promote institutional change. Working with the States and other stakeholders, OWEC will identify outreach needs and priorities and will develop a communications network that will connect the Regions, States, other federal agencies, the public, and environmental groups.

Chapter Ten
Special Projects

EPA is directing efforts to protect marine and coastal waters from degradation due to municipal wastewater discharges. In previous appropriations, Congress has provided additional funding for special construction projects.

10.1 Mexican Border Initiative

The United States shares more than 2,000 miles of border with Mexico. The two nations have created the International Boundary and Water Commission (IBWC) to address the many boundary and water issues that affect both sides of the border. The IBWC negotiates measures to control water pollution across the U.S.-Mexico border.

10.1.1 Colonias

U.S. colonias are unincorporated communities along the U.S.-Mexico border in Texas, New Mexico, Arizona and California populated largely by economically disadvantaged people of Hispanic origin. As a result of uncontrolled subdivision development, colonias often lack basic public necessities such as safe drinking water and sanitation facilities. These conditions pose serious potential public health problems for colonia residents, the general public in the border area and the waters along the border.

Colonias have numerous, distinctive characteristics which impede drinking water and wastewater improvements. The low income of most colonia residents makes many projects infeasible without management, financial, and technical assistance. Colonias often lack: sufficient nearby water sources; local leadership to manage and organize water project financing; and adequate controls to prevent future problems. The combined efforts of city, county, State, and federal officials are required to develop and enforce local laws and regulations concerning septic tank installation, water rights, and land-use. Once in place, these controls will provide a solid foundation to eliminate public health threats which now exist in colonias.

The Municipal Support Division (MSD) Facilities Finance Section is overseeing the development of a program aimed at improving living conditions in the colonias, including appropriation requests to support colonia wastewater collection and treatment projects.

10.1.2 Tijuana

A highly publicized IBWC effort is the ongoing Tijuana wastewater treatment project. Tijuana lacks the capability to convey and treat all its wastewater, so raw sewage flows across the border into the San Diego area. Mexico built the Tijuana Wastewater Treatment Plant which can treat a portion of Tijuana's wastewater. The rest of the wastewater will be piped to an International Treatment Plant to be built in the United States, with an ocean outfall. Plans for the pipeline, plant, and outfall are currently under review. The plant, funded jointly by the United States and Mexico, is scheduled for completion in 1995.

The Tijuana water pollution control effort is only one of many joint efforts by the United States and Mexico included in the International Border Environment Plan (IBEP). EPA, in concert with the IBEP is reviewing many possible joint efforts all along the border, including projects in the Nogales, AZ area and in the Mexicali, BC/Calexico, CA area.

10.2 Designated Coastal Cities

Since 1990, funding has not been provided for traditional new Construction grants projects, but Congress has provided construction grant funds for six large coastal cities which have not yet met secondary treatment standards. Funding assistance is provided to Boston, New York, Los Angeles, San Diego, Seattle and Baltimore. This funding augments EPA's Estuaries Initiative and helps to improve coastal water quality in targeted watersheds where environmental and public health risks are relatively high and where the recreational, ecological, public health and economic benefits are large.

Chapter Eleven
OWEC Strategic Plan

OWEC is undergoing strategic planning and teambuilding efforts to identify a basic vision and mission statement. In building toward this encompassing goal, OWEC managers began development of eight strategic planning documents in the fall of 1991, each dealing with an issue of major importance to the Office. Each of these strategic goals is described below.

Policy Goal #1 - Permitting Priorities

- Our basic priority setting system will emphasize addressing first those problems presenting the greatest risk to the environment and maintaining a credible national program which is responsive to statutory mandates. The intent is to ensure that, as a starting point, Regions and States have in place consistent and credible programs based on clear guidance from Headquarters. As resources become available, additional activities will be undertaken based on relative risk to the environment.

- High priority is to be placed on issuing enforceable permits to new facilities or activities not yet addressed by the NPDES (e.g., CSOs, stormwater, and sludge) and incorporating new water quality standards in NPDES permits. Generally, this will mean a shift of emphasis and resources into wet weather programs.

- CSO permitting will be conducted consistent with the Expanded CSO Policy. This policy, which is an extension of the 1989 CSO Strategy, is intended to provide guidance to all relevant parties on coordinating the planning, selection, sizing, and construction of CSO controls.

- Permitting for Phase I stormwater sources will be conducted consistent with the strategy previously laid out for the program. Actions for Phase II stormwater sources will be defined based on information from a variety of sources including the Rensselaerville Project, the Federal Register Notice which seeks comments on a number of options for addressing these sources, and information gathered for the Reports to Congress required under Section 402 (p)(5). We will also work closely with the nonpoint source program in identifying cost-effective strategies for addressing Phase II sources.

- The fundamental objective of the sludge program is to help get effective State programs in place that promote, to the maximum extent practicable, the beneficial reuse of sludge.

- Priority for sludge permitting will be first targeted to sludge incinerators, facilities posing a threat to human health and the environment, and facilities where permits are necessary to support or promote beneficial reuse.

- The sludge program will also make extensive use of education and outreach tools to inform the public of the importance of beneficial reuse and effective treatment to ensure high quality sludge.

- We will continue aggressive implementation of the National Pretreatment program, placing significant emphasis on industrial, commercial and domestic sources causing or contributing to problems at POTWs. We will also incorporate comprehensive requirements in NPDES permits requiring POTW program implementation and enforcement. Finally, we will establish new measures of performance for local pretreatment programs, with greater emphasis on environmental measures and indicators.

- We will encourage watershed initiatives where watershed management plans have been developed, including increased attention to minor permittees where they are a significant cause of a failure to meet water quality objectives. Permitting authorities should require automatic permit reopeners in order to synchronize permit issuance with watershed permitting strategies.

- Finally, we will examine ways to facilitate permit issuance through the expanded use of various innovative ways of "working smarter" such as expanded use of general permits, administrative continuance of low risk permits, use of alternative dispute resolution techniques in permit appeals, and possible elimination of evidentiary hearings (appeals would instead be referred to civil court).

Policy Goal #2 - Integrated Compliance Approach

- We will continue to implement a vigorous and effective enforcement program which is fully consistent with the requirements of the Clean Water Act (CWA).

- Overall thrust of this goal is to maximize compliance through an integrated program using all available tools (enforcement, assistance, training, education, etc) based on the nature of the noncompliance.

- Major permittees in significant noncompliance (SNC) will continue to be addressed exclusively through formal enforcement actions. Majors in Reportable Noncompliance (RNC) will continue to be addressed primarily through enforcement, but, based on an examination of the underlying causes of these lesser violations, other approaches may be employed to address these violations.

- Similarly, we will undertake an extensive analysis of alternative ways to address noncompliance by minor permittees focusing on a wide variety of potential tools and a better understanding of the relative risk they pose. In the meantime, we will seek opportunities to focus compliance efforts on minors found to be a barrier to water quality in State or local watershed plans.

- Public outreach and generic training will continue to be used extensively, especially in emerging programs like stormwater and sludge to promote initial compliance.

- OWEC will systematically explore options for making the enforcement process more efficient such as expedited penalty orders ("traffic tickets"), use of Alternate Dispute Resolution (ADR) techniques in resolving penalty disputes, use of inspection strategies in sludge and stormwater designed to focus on the most environmentally significant facilities and create maximum deterrence. We will also analyze the feasibility of promoting the use of compliance assurance systems by major industrial facilities or for an entire industry.

- Finally, we will emphasize the need for more aggressive and efficient enforcement programs at the State level and at the local level in the case of pretreatment. Specific objectives may include: all States obtaining administrative penalty authority, EPA and States implementing policies which define criteria for EPA oversight of State enforcement actions, and all States having written penalty policies generally consistent with EPA policies.

Policy Goal #3 - Pollution Prevention

- The basic intent is to integrate pollution prevention into all appropriate OWEC activities in order to reduce pollutant loadings, conserve resources, and improve compliance.

- Effective integration of pollution prevention will involve ensuring that pollution prevention approaches are considered to the maximum extent possible in developing effective NPDES permit limits and in POTW implementation of local pretreatment programs, negotiating administrative and judicial settlements, ensuring that Municipal Water Pollution Prevention programs designed to assist municipalities identify and address potential noncompliance problems early on are institutionalized in all States, and seeing that municipalities and industries are routinely performing pollution prevention self audits.

- Other areas of our programs where pollution prevention will be a major factor include implementation of Sections 104(b)(3) and 106 grants, our Water Use Efficiency strategy, and our industrial stormwater permitting program.

- Critical components of our outreach and education efforts include guidance and assistance for Regions and States for pollution prevention in both voluntary and regulatory actions, including heavy emphasis on training for permit writers. Other components include working with national organizations (e.g., ASIWPCA) to foster and promote pollution prevention approaches, and encouraging POTWs to assume a leadership role in providing technical assistance to industries, small businesses, and individuals.

Policy Goal #4 - Leadership for OW Funding Issues

- We will take all appropriate steps to complete and close out the Construction Grants program as efficiently and expeditiously as possible.

- Where appropriate, private firms will be directly involved in providing capital for expanding and upgrading facilities previously funded through the CG and/or SRF programs.

- To this end, regulations, policies, and procedures will be revised to remove barriers to the implementation of Public-Private Partnerships.

- Beyond this, we will work closely with States to use the SRF as a funding source for not only wastewater construction, but also for a variety of other needs such as nonpoint source (NPS), ground water, water conservation, pollution prevention, and wetlands restoration. This will be done under both current law and through any legislative amendments that may be forthcoming.

- Finally, the role of personnel (HQ and Regions) in the CG and SRF programs will be examined to determine ways to more effectively integrate these individuals over the long term into a wider variety of activities.

Policy Goal #5 - Effective Coordination with Other Offices

- A major component of this effort will be to improve communication efforts among various programs at the federal and State level in conjunction with regular outreach, training, and indoctrination programs to ensure that all relevant staff can more effectively coordinate their activities.

- Specific areas for improving coordination within the Office of Water (OW) include effluent guidelines and water quality criteria development, development and promotion of effective nonpoint source controls to complement the Phase II stormwater program, and specific analytical tools such as Total Maximum Daily Loads (TMDLs).

- This effort will also focus on other federal agencies. For example, we will work closely

with the Department of the Interior to address stormwater permitting issues related to abandoned mines.

- Improved coordination will be extended to the regulated community as well, through such efforts as working to see that water quality criteria are developed based on the best possible scientific methods.

Policy Goal #6 - Developing an Empowered Workforce

- The purpose of this goal is to take actions to empower OWEC employees at all levels to take innovative actions to get the job done as effectively as possible, provide the necessary tools to help employees meet their short and long-term career goals, and create a workplace environment where people are excited about working together at all levels of the organization.

- Specific actions to support this goal include having in place effective programs to adequately train employees, including multi-media training, in all relevant skills; to fully recognizing and rewarding high quality work; and providing opportunities for career enhancement, including rotational assignments both within OWEC and other parts of the Agency, including Regional offices.

- Finally, a key component of this goal will be the development and implementation of a strategy to recruit and hire qualified minority candidates for positions all across the organization.

Policy Goal #7 - State and Local Capacity Building

- Ensure that State and local programs have adequate, predictable resources to meet current and future requirements under the CWA. This will be done initially through a detailed characterization of these needs in order to target our efforts to the greatest needs first.

- We will take steps to improve communications and outreach in order to inform and educate State and local governments on innovative approaches in the areas of technology transfer, funding approaches, elimination of institutional barriers to more efficient program implementation, and building public and political understanding of the environmental benefits derived from these programs.

- As we identify more specific implementation approaches, we will make a major effort to target more resources to them as well as incorporate their accomplishments into the budget and State grants processes, the relevant OWEC or OW accountability systems, and future OWEC and OW strategic planning deliberations.

- In addition, Regions will work with States to develop their own strategic plans, providing the flexibility necessary to meet the needs of each while providing sufficient accountability and consistency with OWEC's strategic direction.

Appendix A
Glossary of Acronyms

ADR	-	Alternate Dispute Resolution
ANV	-	Alaska Native Villages
AO	-	Administrative Order
AOG	-	Agency Operating Guidance
ASIWPCA	-	Association of State and Interstate Water Pollution Control Administrators
BATEA	-	Best Available Technology Economically Achievable (also referred to as BAT)
BCT	-	Best Conventional Pollutant Control Technology
BEN	-	Short term for computer model that generates the dollar amount a violator gains by not putting in a pollution control device
BMPs	-	Best Management Practices
BOD	-	Biochemical Oxygen Demand
BPJ	-	Best Professional Judgment
BPT	-	Best Practicable Control Technology
CCP	-	Composite Correction Plan
CFR	-	Code of Federal Regulations
CG	-	Construction Grants
COE	-	U.S. Army Corps of Engineers
CPR	-	Consolidated Permit Regulations
CSO	-	Combined Sewer Overflow
CWA	-	Clean Water Act
DMR	-	Discharge Monitoring Report
DOJ	-	Department of Justice
EAD	-	Engineering and Analysis Division
ED	-	Enforcement Division

EMS	-	Enforcement Management System
EPA	-	U.S. Environmental Protection Agency
FMFIA	-	Federal Managers' Financial Integrity Act
FWPCA	-	Federal Water Pollution Control Act
GICS	-	Grant Information and Control System
GPD	-	Gallons Per Day
IBEP	-	Inernational Border Environmental Plan
IBWC	-	International Boundary and Water Commission
ITD	-	Industrial Technology Division
IU	-	Industrial User
MCP	-	Municipal Compliance Plan
METRO	-	Municipality of Metropolitan Seattle
MGD	-	Million Gallons Per Day
MSD	-	Municipal Support Division
NAFTA	-	North American Free Trade Agreement
NMP	-	National Municipal Policy
NSFC	-	National Small Flows Clearinghouse
NOI	-	Notice of Intent
NPDES	-	National Pollutant Discharge Elimination System
NRDC	-	Natural Resources Defense Council
OE	-	Office of Enforcement
OECM	-	Office of Enforcement and Compliance Monitoring
OGC	-	Office of General Counsel
ORD	-	Office Research and Development
OST	-	Office of Science and Technology
OWAS	-	Office of Water Accountability Ststem
OW	-	Office of Water

OWEC	-	Office of Wastewater Enforcement and Compliance
OWOW	-	Office of Wetlands, Oceans and Watersheds
OWRS	-	Office of Water Regulations and Standards
P3	-	Public Private Partnerships
PASS	-	Pretreatment Audit Summary System
PCB	-	Polychlorinated Biphenols
PCI	-	Pretreatment Compliance Inspection
PCME	-	Pretreatment Compliance Monitoring and Enforcement
PCS	-	Permit Compliance System
PD	-	Permits Division
POTW	-	Publicly Owned Treatment Works
PQR	-	Permit Quality Review
QA	-	Quality Assurance
QNCR	-	Quarterly Noncompliance Report
RCRA	-	Resource Conservation and Recovery Act
RMES	-	Resources Management and Evaluation Staff
RNC	-	Reportable Noncompliance
SCORE	-	Small Community Outreach and Education Program
SIC	-	Standard Industrial Classification
SIU	-	Significant Industrial Users
SNC	-	Significant Noncompliance
SPMS	-	Strategic Planning and Management System
SRF	-	State Revolving Fund
STARS	-	Strategic Targeting Activities for Results System
TMDLs	-	Total Maximum Daily Loads
TSS	-	Total Suspended Solids
UIC	-	Underground Injection Control

USDA	-	United States Department of Agriculture
WQA	-	Water Quality Act
WQM	-	Water Quality Management
WQS	-	Water Quality Standards
WWTP	-	Wastewater Treatment Plant

Appendix B
Citations to NPDES, Pretreatment, and Sludge Regulations

NPDES REGULATIONS

40 CFR Part 122	Basic program requirements
40 CFR Part 123	State program requirements
40 CFR Part 124	Procedures for decision making
40 CFR Part 125	Criteria and standards (for determining permit conditions)

PRETREATMENT REGULATIONS

40 CFR Parts 401-471	Categorical pretreatment standards
40 CFR Part 403	General pretreatment regulations for existing and new sources of pollution; regulations to implement the requirements of the Domestic Sewage Study (proposed)

SLUDGE REGULATIONS

40 CFR Part 61	Sewage sludge incineration
40 CFR Part 257	Landfilling and land application of sludge
40 CFR Part 501	Permitting procedures and State programs
40 CFR Part 503	Technical use and disposal standards (proposed)
40 CFR Part 258	Solid waste disposal facility criteria (proposed)

RELATED WATER REGULATIONS

40 CFR Part 116	Designation of hazardous substances
40 CFR Part 117	Determination of reportable quantities for hazardous substances
40 CFR Part 121	State certification of activities requiring a Federal license or permit
40 CFR Part 129	Toxic pollutant effluent standards
40 CFR Part 130	Water quality planning and management
40 CFR Part 131	Water quality standards
40 CFR Part 133	Secondary treatment regulation
40 CFR Part 135	Prior notice of citizen suits
40 CFR Part 136	Guidelines establishing test procedures for the analysis of pollutants

Appendix C
Chronology of the NPDES Program

Date	Statute	Significant Regulatory and Other Developments
1948	Federal Water Pollution Control Act (FWPCA)	
1965	Water Quality Act (amending FWPCA) - State water quality standards approach to control of water pollution.	
1972	FWPCA Amendments of 1972 - Establishes NPDES permit program to control direct discharge of pollutants into water. - Technology-based treatment established as minimum level of control to be supplemented where necessary to protect water quality.	
1972-3		NPDES Regulations Promulgated - Permitting and State program requirements. - First State programs approved in 1973.
1977(Dec.)	Clean Water Act (amendmending FWPCA) - Emphasizes control of toxic pollutants. - Indicates that Federal Facilities are subject to State regulation.	
1978(Aug.)		Proposed NPDES Permit Regulations - Modify technology-based industrial treatment levels. - Incorporate increased emphasis on toxic pollutants from Clean Water Act and Natural Resources Defense Council (NRDC) settlement. - Revise regulations based upon experience with NPDES program.

Date	Statute	Significant Regulatory and Other Developments
1987(Feb.)	The Water Quality Act - Mandates "Beyond-BAT" toxicity control program. - Creates Federal Sludge Management Program, implemented largely through NPDES. - Bolsters EPA enforcement responses.	
1987(June)		Court Issues Partial Opinion in NPDES Litigation Upholding Most Regulations, NRDC v. EPA, 26 ERC 1153 (D.C. Cir. 1987)
1988(Sept.)		Court Issues Final Opinion in NPDES Litigation, Ruling for EPA on most issues, including authority to regulate toxicity
1989(Jan.)		Final Rule for Codification of the NPDES Regulations
1989(June)		Final Rule for Implementation of Toxicity Requirements, Section 304(1) of the Clean Water Act
1990(Nov.)		Final Rule on Applications for Storm Water Permitting
1991(Aug.)		Proposed Storm Water Implementation Rule

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