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# Chapter 1

## Introduction

The purpose of this manual is to provide the basic regulatory framework and technical considerations that support the development of wastewater discharge permits as required under the National Pollutant Discharge Elimination System (NPDES) Program. It is designed for new permit writers, but may also serve as a reference for experienced permit writers. In addition, the manual will serve as a useful source of information for anyone interested in learning about the legal process and technical aspects of developing NPDES permits. This manual updates the *Training Manual for NPDES Permit Writers*.<sup>1</sup>

It is recognized that each United States Environmental Protection Agency (EPA) Regional office or approved State will have NPDES permitting procedures adapted to address local situations. Therefore, it is the objective of this manual to explain the minimum national NPDES Program elements common to any State or Regional office that issues NPDES permits. The specific objectives and functions of this training manual are to:

- Provide an overview of the scope and regulatory framework of the NPDES Program

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<sup>1</sup>USEPA (1993). *Training Manual for NPDES Permit Writers*. EPA/B-93-003. Office of Wastewater Management.

- Describe the components of a permit and provide an overview of the permitting process
- Describe the different types of effluent limits and the legal and technical considerations involved in limit development
- Describe other permit conditions including:
  - special conditions
  - standard conditions
  - monitoring and reporting requirements
- Describe other permitting considerations including:
  - variances
  - anti-backsliding
  - other applicable statutes (e.g., National Environmental Policy Act, Endangered Species Act, National Historic Preservation Act)
- Explain the administrative process for issuing, modifying, revoking and terminating NPDES permits.

This manual is not intended to be a stand-alone reference document. Instead, it is intended to establish the framework for NPDES permit development and should be supplemented, where necessary, by additional EPA and State guidance applicable to specific types of dischargers and circumstances. To this end, the *NPDES Permit Writers' Manual* identifies and references other guidance documents throughout the text and provides information on how these documents can be obtained. **Appendix D** of this manual provides the reader with detailed information on how to obtain comprehensive lists of available EPA publications and how these documents can be ordered.

## 1.1 History and Evolution of the NPDES Program

The NPDES Program has evolved from numerous legislative initiatives dating back to the mid-1960s. In 1965, Congress enacted legislation requiring States to develop water quality standards for all interstate waters by 1967. However, despite increasing public concern and increased Federal spending, only about 50 percent of the States had established water quality standards by 1971. Enforcement of the Federal legislation was minimal because the burden of proof lay with the regulatory agencies in demonstrating that a water quality problem had implications for human health or violated water quality standards. Specifically, the agencies had to demonstrate a direct link between a discharger and a water quality problem in order to enforce against a discharger. The lack of success in developing adequate water

quality standards programs, combined with ineffective enforcement of Federal water pollution legislation prompted the Federal government to advance the 1970 Refuse Act Permit Program (RAPP), under the Rivers and Harbors Act of 1899, as a vehicle to control water pollution.

RAPP required any facility that discharged wastes into public waterways to obtain a Federal permit specifying abatement requirements from the United States Army Corps of Engineers. The Administrator of EPA endorsed the joint program with the Corps of Engineers, and on December 23, 1970, the permit program was mandated through Presidential Order. EPA and the Corps of Engineers rapidly began to prepare the administrative and technical basis for the permit program. However, in December 1971, RAPP was struck down by a decision of the Federal District Court in Ohio (*Kalur v. Resor*), which held that the issuance of a permit for an individual facility could require the preparation of an environmental impact statement under the National Environmental Policy Act (NEPA) of 1969. The concept of a permit program survived, however, and, in November 1972, Congress passed a comprehensive recodification and revision of Federal water pollution control law, known as the Federal Water Pollution Control Act amendments of 1972. These amendments included the NPDES permit program as the centerpiece of the efforts for national water pollution control.

The enactment of the 1972 amendments marked a distinct change in the philosophy of water pollution control in the United States. The amendments maintained the water quality-based controls, but added an equal emphasis on a technology-based, or end-of-pipe, control strategy. The 1972 Act established a series of goals or policies in Section 101 that illustrated Congressional intent. Perhaps the most notable was the goal that the discharge of pollutants into navigable waters be eliminated by 1985. This goal was not realized, but remains a principle for establishing permit requirements. The Act had an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water” by July 1, 1983. This is more commonly known as the “fishable, swimmable” goal. The Act also contained four important principles:

- The discharge of pollutants to navigable waters is not a right.
- A discharge permit is required to use public resources for waste disposal and limits the amount of pollutants that may be discharged.

- Wastewater must be treated with the best treatment technology economically achievable—regardless of the condition of the receiving water.
- Effluent limits must be based on treatment technology performance, but more stringent limits may be imposed if the technology-based limits do not prevent violations of water quality standards in the receiving water.

More specifically, Title IV of the Act created a system for permitting wastewater discharges (Section 402), known as the National Pollutant Discharge Elimination System (NPDES), with the objective to implement the goals and objectives of the Act. An outline of the Titles contained in the Act is provided as **Exhibit 1-1**.

### **EXHIBIT 1-1**

#### **Organization of the Clean Water Act**

Title I – Research and Related Programs

Title II – Grants for Construction of Treatment Works

Title III – Standards and Enforcement

- Section 301 Effluent Limitations
- Section 302 Water Quality-Related Effluent Limitations
- Section 303 Water Quality Standards and Implementation Plans
- Section 304 Information and Guidelines [Effluent]
- Section 305 Water Quality Inventory
- Section 307 Toxic and Pretreatment Effluent Standards.

Title IV – Permits and Licenses

- Section 402 National Pollutant Discharge Elimination System (NPDES)
- Section 405 Disposal of Sewage Sludge.

Title V – General Provisions

- Section 502 Definitions
- Section 510 State Authority
- Section 518 Indian Tribes.

Title VI – State Water Pollution Control Revolving Funds

The first round of NPDES permits issued between 1972 and 1976 provided for control of a number of traditionally regulated pollutants, but focused on 5-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), pH, oil and grease, and some metals, by requiring the use of the Best Practicable Control Technology currently available (BPT). The Act established a July 1, 1977, deadline for all facilities to be in compliance with BPT. Additionally, the Act established the compliance deadline for installing Best Available Technology Economically Achievable (BAT) as July 1, 1983. Most of the major permits issued to industrial facilities in the first round of NPDES permitting contained effluent limitations based on Best Professional Judgment (BPJ) because regulations prescribing nationally uniform, technology-based effluent limitations were generally unavailable. The second round of permitting in the late 1970s and early 1980s began to emphasize the control of toxics, but, due to a lack of information on treatability, failed to complete the task.

EPA's failure to develop adequate controls for toxic discharges under the 1972 Act prompted the Natural Resources Defense Council (NRDC) to sue EPA. [NRDC v. Train, 8 E.R.C. 2120 (D.D.C. 1976)]. The suit was settled through a court supervised "consent decree" in 1976. The consent decree identified (1) the "priority" pollutants to be controlled; (2) the "primary industries" for technology-based control; and (3) the methods for regulating toxic discharges through the authorities of the 1972 Act. The provisions of the consent decree were incorporated into the framework of the 1977 amendments of the Act, and resulted in the Act's refocus toward toxics control.

The 1977 amendments to the legislation, known formally as the Clean Water Act (CWA) of 1977, shifted emphasis from controlling conventional pollutants to controlling toxic discharges. This era of toxic pollutant control is referred to as the second round of permitting. The concept of BAT controls was clarified and expanded to include toxic pollutants. Hence, the compliance deadline for BAT was extended to July 1, 1984. The conventional pollutants (BOD<sub>5</sub>, TSS, pH, fecal coliform, and oil and grease) controlled by BPT in the first round of permitting were now subject to a new level of control, termed Best Conventional Pollutant Control Technology (BCT). The compliance deadline for meeting BCT was also July 1, 1984.

On February 4, 1987, Congress amended the CWA with the Water Quality Act (WQA) of 1987. The amendments outlined a strategy to accomplish the goal of

meeting water quality standards set by the States. The WQA required all States to identify waters that were not expected to meet water quality standards after technology-based controls on point sources have been imposed. The State must then prepare an individual control strategy to reduce toxics from point and nonpoint sources in order to meet the water quality standards. Among other measures, these plans were expected to address control of pollutants beyond technology-based levels.

The WQA once again extended the time to meet BAT and BCT effluent limitations. The new compliance deadline was no later than March 31, 1989. The WQA also established new schedules for industrial and municipal storm water discharges to be regulated by NPDES permits. Industrial storm water discharges must meet the equivalent of BCT/BAT effluent quality. Discharges from municipal separate storm sewer systems (MS4) required controls to reduce the discharge of pollutants to the maximum extent practicable (MEP). Additionally, the WQA required EPA to identify toxics in sewage sludge and establish numerical limits to control these pollutants. The WQA also established a statutory anti-backsliding requirement that would not allow an existing permit to be modified or reissued with less stringent effluent limitations, standards, or conditions than those already imposed. There were a few exceptions for technology-based limits, but in no case could the limits be less stringent than existing effluent guidelines (unless a variance has been granted) or violate water quality standards.