History of Federal Clean Water Regulations

Federal Water Pollution Control Act of 1948

The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. It authorized the Surgeon General to prepare comprehensive programs for eliminating or reducing the pollution of interstate waters and tributaries; and for improving the sanitary conditions of surface and underground waters. This statute also authorized the Federal Works Administrator to assist states, municipalities and interstate agencies in constructing treatment plants to prevent discharges of inadequately treated sewerage into other waters and tributaries. Since 1948, the original law has been repeatedly amended to authorize additional water quality programs, to impose standards and procedures governing allowable discharges and to provide funding for specific goals contained within the statute.

Clean Water Act of 1972



November 3, 1952 Cuyahoga River fire (photo credit James Thomas, from Cleveland Press Collection, Cleveland State University Library)

It seemed impossible, as a nation, we had allowed our waterways to become so polluted that they caught on fire. The Cuyahoga River in Ohio erupted in fire several times beginning as early as 1868. On June 22, 1969, a Cuyahoga River fire caught the attention of Time Magazine. Time Magazine focused the nation's attention on the pollution of the Cuyahoga River: “Some river! Chocolate-brown, oily, bubbling with subsurface gases, it oozes rather than flows. ‘Anyone who falls into the Cuyahoga does not drown,’ Cleveland's citizens joke grimly. ‘He decays.’” This seminal event spurred an avalanche of pollution control activities ultimately resulting in the Clean Water Act and the creation of the federal and state Environmental Protection Agencies.

The regulatory philosophy contained in the Clean Water Act is referred to as the command-and-control, or standards-and-enforcement, method. No longer would the federal government wait for the states to devise their own water quality standards, since few had done so when given the opportunity. Rather, Congress gave this responsibility to a new federal agency, the Environmental Protection Agency (EPA). Under authority contained in the 1972 legislation, the EPA had primary responsibility for implementing the ambitious and optimistic goals of ensuring that all waters of the United States be "fishable" and "swimmable" by 1983, 10 years after the act's passage.

The statute employs a variety of regulatory and nonregulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

As passed in 1972, the Act focused on reducing the obvious impacts of pollution flowing from drains, pipes, and other features common to industries. It created a permit program, called the National Pollutant Discharge Elimination System (NPDES), which began to have its desired effect within the next 15 years. Through limitations on the amounts of pollutants discharged, as well as monitoring and reporting requirements, the NPDES program grew to affect reductions at nearly 60,000 dischargers in all 50 states and U.S. territories.

Clean Water Act Amendments 1977 and 1981

In 1977, Congress amended the Clean Water Act. The amendments accomplished the following:

- Established the basic structure for regulating pollutants discharges into the waters of the United States
- Gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry
- Maintained existing requirements to set water quality standards for all contaminants in surface waters
- Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions
- Funded the construction of sewage treatment plants under the construction grants program
- Recognized the need for planning to address the critical problems posed by nonpoint source pollution

In 1981 when Congress passed the Municipal Wastewater Treatment Construction Grants Amendments. Revisions in 1981 streamlined the municipal construction grants process, improving the capabilities of sewage treatment plants built under the program. In 1987, Congress passes the Water Quality Act. Changes in 1987 phased out the construction grants program, replacing it with the State Water Pollution Control Revolving Fund, more commonly known as the Clean Water State Revolving Fund. This new funding strategy addressed water quality needs by building on EPA-state partnerships. All of these statutes reaffirmed the federal interest in assuring water quality in the United States, but they also recognized the difficulty of achieving the goals set forth in the 1972 act within the time period specified. Thus, timelines were pushed forward, and the rigid command-and-control regulatory approach was modified. It was replaced, in part, by a more flexible approach that stressed partnerships between the federal government and the states, tribal governments, and municipalities in achieving common purposes.

Water Quality Act of 1987 – Stormwater Runoff Regulation

The initial emphasis of the Clean Water Act was on point source pollution discharges from industry and municipal sewage facilities, discharges identified as coming from a specific point source. Point sources continue to be a major part of the NPDES program. However, after years of issuing NPDES permits and regulating dischargers, it became clear that efforts to control pollution from more diffuse sources were ineffectual and there was a more serious contributor to the problem of maintaining water quality then initially thought. Stormwater runoff, in particular, from municipal storm sewer systems as well as from construction and industrial sites continued to affect water quality with heavy loads of sediment, metals, nutrients, and other problematic pollutants.

By 1987, however, it became clear that a great deal of pollution was coming from nonpoint sources. It was estimated that over 50 percent of the nation's remaining water pollution problems was coming from sources that are not easily identified, such as runoff from agricultural lands, construction sites, urban areas, and even forests.

Under Section 319 of the 1987 legislation, Congress authorized measures to address these diffuse sources of pollution by directing states to develop and implement management programs targeting their

major nonpoint sources. Federal grants, covering up to 60 percent of the program costs, also were authorized to assist states in tackling this difficult pollution problem.

In the **Water Quality Act of 1987,** Congress responded to the stormwater problem by requiring that industrial stormwater dischargers and municipal separate storm sewer systems (often called "MS4") obtain NPDES permits, by specific deadlines. NPDES (National Pollution Discharge Elimination System) permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds.

In addition, NPDES permits for urban wet weather discharges require cities to develop an overall strategic plan for addressing runoff of pollutants from various types of land use currently employed and expected in the future. The amendments also required EPA to conduct studies on stormwater discharges, with the goal of identifying any other sources contributing to water quality degradation and to provide a basis for establishing a comprehensive program to regulate such sources.

In an effort effectively to implement this type of permitting system across the broad array of municipalities in the United States, the 1987 law created a two-phase permitting and regulation program to control stormwater from municipal storm sewers, based on the size of the municipality involved. Known as “Phase I” and “Phase II,” the components of the permit scheme came into effect over a span of five years.

Large municipalities were the first to be regulated by the new municipal stormwater permitting regulations. Under Phase I of the stormwater NPDES program, CWA requires EPA to establish stormwater permitting regulations for discharges associated with municipal separate storm sewer systems (MS4s), the conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that discharge urban runoff into waters of the United States. Nonpoint sources such as stormwater runoff from impervious areas (e.g. city streets, buildings, construction sites, and farms) are the biggest source of pollution, the number one threat to our surface water quality.

The Phase I requirements apply to the MS4s serving urban areas with a population of 100,000 or greater. These communities are referred to as “medium and large MS4s” to distinguish them from the smaller municipalities regulated under the later Phase II program. In addition, departments of transportation serving these communities, typically state DOTs, and 11 industrial categories, including construction sites disturbing five acres of land or more, were regulated under these requirements. The Phase I regulations came into effect on November 16,1990, and required large municipalities to develop and implement stormwater prevention plans and comply with other requirements intended to reduce stormwater discharges. Large MS4s were required to complete the application process by November 1992, while medium MS4s were given until May 1993. Nearly 1,000 MS4s, primarily city and county governments with responsibility for their storm sewer systems, have been permitted under the Phase I program.

Subsequent to the Phase I regulations, EPA moved to address additional stormwater discharges that were not addressed by this portion of the NPDES permitting scheme. On December 8, 1999, the agency released its Phase II stormwater rules. Phase II regulations expand the scope of the stormwater permit program to encompass construction sites of less than five acres and MS4s operated by smaller municipalities with populations of less than 100,000 people, but with at least a population of 50,000 at an overall density of 1,000 per square mile. The Phase II Rule also allowed state permit agencies to extend the permitting requirements to even smaller MS4s designated by rule when it discharges to impaired waters or may cause impairments to water quality. Obviously, Phase II is much broader, affecting local governments and more facilities such as military bases, smaller transportation departments, hospitals, prisons, and universities.

The stormwater Phase II rules require municipalities and local governments to obtain NPDES permit coverage. These local governments must all have in place a stormwater management program that will

include the development and implementation of six specified measures that reduce stormwater pollution. These “six minimum measures” include:

1. Public education and outreach,
2. Public participation and involvement,
3. Illicit discharge detection and elimination,
4. Construction site runoff control,
5. Post-construction runoff control, and
6. Pollution prevention / good housekeeping.

An NPDES permitting authority issues NPDES stormwater permits. In Missouri, the Department of Natural Resources (MDNR) is authorized to run the NPDES program. Once an NPDES permit is obtained, the conditions of the permit must be satisfied and periodic reports must be submitted to the NPDES permitting authority on the status and effectiveness of the local government program.