CHAPTER 4

WATER POLLUTION

On August 2, 2014, state and local officials warned residents of Toledo, Ohio, and surrounding areas not to drink their tap water. Toledo draws its drinking water from Lake Erie, and algae blooms had formed on the lake surface near the city's intake pipes. Algae blooms, and the cyanobacteria they harbor, can be deadly. In EPA’s words, they “produce extremely dangerous toxins that can sicken or kill people or animals,” as well as creating dead zones in oceans and lakes and generating millions of dollars in treatment costs. EPA, Harmful Algal Blooms, http://www2.epa.gov/nutrientpollution/harmful-algal-blooms#effect. Lake Erie’s blooms were fed by nutrients like phosphorous and nitrogen, which wash off thousands of farms and city streets and continue to pour out of wastewater treatment plants around the lake.

For Lake Erie, this might seem like a surprising turn of events. The lake once was legendary for its pollution, and by the time Congress enacted the Clean Water Act in 1972, some observers had pronounced Lake Erie “dead.” The Clean Water Act led to dramatic improvements in water quality, however, and by the late 1980s, Lake Erie had become a popular poster-child for the Clean Water Act’s successes. But those successes, as we will see in this chapter, were only partial—both at Lake Erie and across the rest of the United States. Toledo’s algae blooms aptly illustrate the extent to which water quality remains an important practical, and legal, challenge.

This chapter addresses the environmental laws that govern water quality. Our primary focus will be the federal Clean Water Act, which remains the most important law in this realm. But we will also discuss the roles of common law and state law.

The chapter begins with a brief discussion of the causes and effects of water quality impairment. We then discuss the history of water quality law and then turn to the Clean Water Act. The materials focus on the scope of federal jurisdiction under the Clean Water Act; the structure and functions of the Act’s primary regulatory programs, and the legal frontiers of water quality protection.

Readers should be aware of two important omissions from this chapter. First, this is not a chapter about the legal protection of groundwater quality. Most of the United States’ liquid freshwater is located beneath the ground, and that groundwater is an important source of municipal, industrial, and domestic water supplies, as well as a key source of recharge flows to surface water bodies. For example, a 2010 study found that groundwater irrigates more than half of the acres of
farmland in North America. S. Siebert et al., *Groundwater Use for Irrigation—A Global Inventory*, 14 HYDROL. EARTH SYST. SCI. 1863 (2010). Like surface water, pollution contaminates groundwater, and that contamination creates economic costs and poses public health threats. But different legal regimes protect groundwater and surface water. Under federal law, groundwater protection primarily arises from the Safe Drinking Water Act, which regulates injection of pollution underground, and from hazardous waste laws like the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which we discuss in detail in chapters 5 and 6. State and local laws also often distinguish between surface and groundwater.

Second, this chapter only briefly addresses legal rights to water use. Those rights are closely connected to water quality; high-quality water is more useful, and extracting water often affects the quality of water that remains in rivers, lakes, and streams. But the large and complicated set of laws that govern the allocation of water resources is typically the subject of a separate course in water law, and is not a focus of this chapter.

I. THE CHALLENGE OF WATER QUALITY

To understand the purposes and structure of water pollution law, it is helpful to know something about water pollution. We therefore begin with a brief summary discussion of the extent, sources, and consequences of water pollution in the United States.

A. SCOPE OF THE PROBLEM

As you will learn later in the chapter, the Clean Water Act requires states to set water quality standards. The Clean Water Act also requires states to monitor whether water bodies are attaining those standards, and section 305(b) of the Act requires states to report their monitoring results. The data tables below come from EPA’s summaries of the states’ data.

### Assessed Waters of United States

Incomplete state-reported information may lead to discrepancies and/or missing information in these reports.

<table>
<thead>
<tr>
<th>Size of Water</th>
<th>(-)</th>
<th>(-)</th>
<th>(-)</th>
<th>(-)</th>
<th>(-)</th>
<th>(-)</th>
<th>(-)</th>
<th>(-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rivers and Streams (Miles)</td>
<td>(486,267)</td>
<td>(5,757,409)</td>
<td>(9,379)</td>
<td>(1,324)</td>
<td>(618)</td>
<td>(573,047)</td>
<td>(78)</td>
<td>(62)</td>
</tr>
<tr>
<td>Lakes, Reservoirs, and Ponds (Acres)</td>
<td>(7,305)</td>
<td>(136,709)</td>
<td>(23,012)</td>
<td>(7,215)</td>
<td>(1,059)</td>
<td>(538,492)</td>
<td>(4,353)</td>
<td>(53,270)</td>
</tr>
</tbody>
</table>

- Good Waters
- Threatened Waters
- Impaired Waters

Total Assessed Waters: \(1,013,355\) (Rivers), \(17,948,160\) (Lakes), \(32,990\) (Reservoirs), \(8,539\) (Bays), \(6,677\) (Coastal Shoreline), \(1,112,438\) (Wetlands), \(4,431\) (Great Lakes), \(53,332\) (Great Lakes—Open Water).

Total Waters: \(3,322,205\) (Rivers), \(41,666,049\) (Lakes), \(87,791\) (Reservoirs), \(58,618\) (Bays), \(54,120\) (Coastal Shoreline), \(107,700,000\) (Wetlands), \(5,202\) (Great Lakes), \(60,546\) (Great Lakes—Open Water).

Percent of Waters Assessed: \(28.7\) (Rivers), \(43.1\) (Lakes), \(37.6\) (Reservoirs), \(14.6\) (Bays), \(3.1\) (Coastal Shoreline), \(1.0\) (Wetlands), \(85.2\) (Great Lakes), \(88.1\) (Great Lakes—Open Water).
In many waterways, water quality has improved dramatically since 1972, when the modern Clean Water Act emerged from Congress. Nevertheless, as these numbers make clear, water quality remains a widespread problem. Of the surveyed rivers and streams, 51.3% were impaired; 67.2% of lakes, ponds, and reservoirs were impaired, and a whopping 71.6% of surveyed estuaries and bays were impaired.

**B. POLLUTANTS AND SOURCES**

What pollutants cause that impairment? Here are EPA’s statistics for rivers and streams:

![Table of Causes of Impairment in Assessed Rivers and Streams](image)
The leading causes of impairment for lakes, estuaries, and other waterways—which are not covered in this chart—are somewhat different. For example, mercury is the leading cause of impairment in most other categories. But this chart provides you with a general sense of the types of pollutants that commonly cause water quality problems.

Where do those pollutants come from? Here, again, EPA’s statistics provide useful summaries. The statistics for rivers and streams again are reproduced below:

Several features of this chart (and the charts for other categories of water bodies) are worth noting. The first is the sheer variety of sources. As you will see, the Clean Water Act initially focused primarily on direct discharges of water pollution from industrial outfalls and municipal sewers. Those sources remain significant, but substantial quantities of pollution enter waterways from a variety of other sources and through a wide variety of pathways. Agriculture, not industry, constitutes the
single largest source of water pollution, degrading 60 percent of impaired miles of river and half of impaired lakes. The phrase “atmospheric deposition” includes pollutants (mercury is a particularly common and problematic example) emitted from smokestacks and then carried by rain and snow down into surface water bodies. Urban stormwater runoff comes from a huge variety of sources, including thousands of roofs, parking lots, roads, and lawns, and it reaches surface waterways by a variety of pathways. These dispersed sources and pathways create a challenge for efforts to regulate water pollution, for there is no single, discrete category of sources upon which regulators may place their primary focus. Indeed, many water pollution sources fall outside the traditional parameters of water quality law, and originate from activities that are the traditional focus of the Clean Air Act or of state and local land use law.

Second, many of these pollution sources work in combination. A single stream might be affected by agricultural runoff, depletion from water withdrawals, dams, loss of riparian habitat, invasive species, and urban stormwater runoff. Devising a regulatory regime that responds to all of those problems is a significant challenge. And if the regime focuses only on a subset of pollution sources, regulated entities are likely to complain that they have been unfairly singled out.
Third, many pollution sources are numerous and geographically dispersed. The most extreme example of this is the so-called Gulf of Mexico "dead zone"—an area where water is too anoxic to support most marine life—that forms annually at the mouth of the Mississippi River. The primary cause of that dead zone is nutrients from thousands of different farms throughout the Mississippi River basin. Similarly, even in a small urban watershed, stormwater pollution is likely to originate on hundreds, if not thousands, of different properties. Again, the dispersion of sources creates substantial challenges for regulatory system design.

C. CONSEQUENCES

Across the world, water quality impairment is a major threat to public health. Millions of people die each year from diseases and parasites attributable to lack of access to safe drinking water and basic sanitation. In the United States, the situation generally is much better, though the 2016 scandal in Flint, Michigan provided a sad reminder that even here, drinking water can be dangerously unhealthy. The difference is partly due to our ability to afford water treatment technology, and it is also partly due to the Safe Drinking Water Act, which sets standards for drinking water quality. Nevertheless, water quality impairment continues to impact public health and the environment in a variety of ways. That is particularly so for the small but significant percentage of the population whose drinking water comes from individual wells that are largely unregulated and rarely tested for contaminants.

Health impacts from poor water quality include exposure to pathogens, which can occur through drinking contaminated water and through direct exposure (typically swimming). Contact-related problems remain widespread. In many oceanfront areas, swimming during or soon after a rainstorm can result in exposure to pathogens washed into the sea with the pulse of urban stormwater runoff. As this example illustrates, water quality problems also can lead people who are fearful of health risks to avoid activities they otherwise would choose to pursue. Water quality problems can also lead to significant economic costs for water suppliers who must forego using, or apply expensive treatment to, polluted water supplies.

Another persistent health problem is exposure to contaminants in fish. Some contaminants, including mercury, bioaccumulate, which means that concentrations intensify up the food chain. A person who frequently eats fish from mercury-contaminated waters therefore can accumulate much of the mercury that those fish ate, and even seemingly low levels of environmental contamination can lead to high levels of exposure.
The environmental impacts of water contamination also can be significant. At the extreme, pollution can make water bodies uninhabitable for most life forms other than bacteria and algae. The Gulf of Mexico dead zone is an example of this phenomenon. Even more moderate levels of pollution can significantly change the number and type of species present in a waterway, as well as its clarity and aesthetic appearance. Recent studies, for example, have found that even a modest influx of urban stormwater runoff—at levels one might expect from sparse suburban development—typically correlates with a reduction in the number and diversity of native species in a stream.

II. History


As Andreen explains, modern water pollution control began to emerge in the late nineteenth century, when a series of waterborne disease outbreaks revealed the threats posed by contaminated waterways. By that time, many urban waterways had become open sewers, and cities had not yet begun to invest in wastewater treatment plants. The United States’ increasing industrialization also took a severe toll on waterways. Cities responded by investing in drinking water treatment plants, by empowering local health boards to regulate water pollution, and, occasionally, by bringing nuisance suits against upstream polluters. But drinking water treatment plants did nothing to remove pollutants from the waterways themselves, the health boards often lacked meaningful regulatory clout, and nuisance lawsuits often failed.

Over the first half of the twentieth century, the situation worsened. The United States’ urban population centers continued to grow, leading to increased loading of human waste. Industrialization also accelerated, particularly during and immediately after World War II. Local health boards struggled to address the increasing pollution, and some states responded by empowering state agencies to regulate water quality. Those agencies often began by designating water quality standards, but they had difficulty establishing mechanisms for actually ensuring the
attainment of those standards, and effective enforcement actions against polluters were rare. Congress did enact a series of water pollution control statutes, such as the Oil Pollution Act of 1824, the Rivers and Harbors Act of 1899, a weak water-quality statute in 1948, and a series of modest amendments in the two decades that followed, but until 1972, those statutes focused primarily on providing support for state regulatory action. Andreen summarizes the results:

In the face of a growing population and rapidly expanding manufacturing activity, state regulatory efforts were proving too little, too late. In 1960, 3,500 cities and towns in the United States were still discharging the raw waste of 25 million Americans. Of the approximately 7,500 communities that had sewage treatment facilities, only two-thirds were served by secondary treatment plants; the rest made do with antiquated, primary treatment systems. Viewed in a more abstract way, the total effluent from both treated and untreated municipal sources in the United States in 1960 would have equaled the amount of raw sewage produced by 75 million people. Despite all this sewage, municipal sources were running “a distant second to industry in the water pollution derby.” By 1968, eighty percent of the pollutant loading to American waters was industrial in origin, up from forty percent in 1900. Of the 22 billion gallons of wastewater which American industry discharged on a daily basis in 1970, only twenty-nine percent received any treatment whatsoever—regardless of whether the level of treatment was adequate.

The implications for water quality were appalling. In the 1960s, Lake Erie was experiencing accelerated eutrophication—a process that also adversely affected a number of other American waters including Lake Tahoe, the Great South Bay on Long Island, Lake Oneida in New York, and a number of bays along the southern shore of Lake Ontario. In 1968, the Buffalo River was described as “a repulsive holding basin for industrial and municipal wastes under the prevalent sluggish flow conditions. It [was] devoid of oxygen and almost sterile. Oil, phenols, color, oxygen-demanding materials, iron, acid, sewage, and exotic organic compounds [were] present in large amounts.” The Cuyahoga was described in equally graphic terms in 1968: “The lower Cuyahoga River and navigation channel throughout the Cleveland area is a waste treatment lagoon. At times, the river is choked with debris, oils, scums, and floating globs of organic sludge. Foul smelling gases can be seen rising from decomposing materials on the river’s bottom.” While these two rivers were among the most polluted in the United States in the late 1960s,
appalling conditions afflicted countless streams and lakes across the country. For more and more Americans, water pollution was becoming intolerable.

22 Stan. Envtl. L.J. at 197–98.¹

By the late 1960s, many members of Congress perceived the states as ineffective regulators, and that perception eventually led to the emergence of the Federal Water Pollution Control Act Amendments of 1972, often called the Clean Water Act.

III. CLEAN WATER ACT OVERVIEW

The 1972 Clean Water Act amendments marked a dramatic departure from the previous decades of water quality regulation. Andreen summarizes the significance of the change:

The Clean Water Act of 1972 was revolutionary in many ways. It made the federal government the dominant authority in an area where the states had long held sway. It instituted a new system of technology-based effluent limitations that would demand the same basic level of treatment for a particular industry, regardless of whether it was located in Georgia or New York, Louisiana or Wisconsin. No longer could an industry so effectively block state pollution control efforts by threatening to relocate to a more lenient jurisdiction. And no longer could discharge limitations be based solely upon the assimilative capacity of the receiving waterway and its ability to meet a designated use—which might well be only industrial or agricultural usage.

To implement and monitor compliance with the new technology-based limitations, and any more stringent limits needed to meet state water quality standards, every discharger, municipal as well as industrial, was required to obtain a permit and comply with its terms. These permits transformed most of the Act’s requirements into specific numerical limits that greatly simplified the enforcement process. No longer would one have to demonstrate actual endangerment or prove that a specific polluter had violated stream standards; instead one need only compare permit limits with a permittee’s performance at the point of discharge. The Clean Water Act also expressed

Congress’ skepticism about EPA’s ability or even the willingness of EPA or any expert administrative agency to continuously and vigorously perform its regulatory mission. The Act thus limited administrative discretion by imposing a long series of mandatory duties, regulatory schedules, and deadlines, and by creating a judicial mechanism through which citizens could seek to compel administrative action and supplement, perhaps even stimulate, agency enforcement.

22 STAN. ENVTL. L.J. at 286.

This section provides an overview of these provisions, and the sections that follow explore them in more depth.

Figure 4.1. A Simplified Conceptual Map of the Clean Water Act

A. GOALS

One of the most distinctive features of the Clean Water Act is the ambition of its stated goals. Congress called for drastic reductions in, and even complete elimination of, water pollution, though it also sought to preserve a significant role for state governance.


(a) Restoration and maintenance of chemical, physical and biological integrity of Nation’s waters; national goals for achievement of objective

The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters. In order to
achieve this objective it is hereby declared that, consistent with the provisions of this chapter—

(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;

(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;

(3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;

(4) it is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;

(5) it is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State;

(6) it is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans; and

(7) it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this chapter to be met through the control of both point and nonpoint sources of pollution.

(b) Congressional recognition, preservation, and protection of primary responsibilities and rights of States

It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter. It is the policy of Congress that the States manage the construction grant program under this chapter and implement the permit programs under sections 1342 and 1344 of this title. It is further the policy of the Congress to support and aid research relating to the prevention, reduction, and elimination of pollution, and to provide Federal technical services and financial aid to State and interstate agencies and municipalities in connection with the prevention, reduction, and elimination of pollution.
Needless to say, the ambitious goals stated in subsections (a)(1) and (a)(2) were not achieved by the stated deadlines, and we are still not close to attaining them today.

B. REGULATORY PROGRAMS

As you have probably learned by this point in your legal education, statutes often state ambitious goals (though not always this ambitious!) but contain more modest and nuanced substantive prohibitions. In that sense, the Clean Water Act is typical, though its substantive provisions still are demanding.

The CWA contains three primary regulatory programs. Two of those programs relate to Section 301 of the Act, which bans “discharges” of water pollutants unless they are authorized by certain types of permits. A “discharge” under the CWA, is a release of pollutants through some sort of discrete conveyance—typically, but not always, a pipe or ditch—into “navigable waters.” In the readings below, we’ll consider the meaning of each of those terms.

NPDES and Technology-Based Standards. The first, and traditionally most important, regulatory program is the National Pollutant Discharge Elimination System, or NPDES. The NPDES program is one of the two programs that allows “discharges” that otherwise would be prohibited by section 301. NPDES permit holders must comply with “technology-based” standards, which are in many ways analogous to the technology-based standards developed under the Clean Air Act. These standard generally specify how much pollution discharges may contain, and they also typically specify monitoring and reporting requirements.

During the early years of CWA implementation, the agencies implementing the NPDES permitting program focused primarily on major industrial sources and wastewater treatment plants. Those sources remain important, but in recent years, controlling stormwater discharges has emerged as the most important frontier in NPDES permitting.

Filling Wetlands and Waterways. The Clean Water Act’s second key regulatory program addresses the filling of wetlands and waterways. Section 404 creates a permitting regime to allow these activities to occur without running afoul of section 301’s prohibition on discharge. The permits are issued by the U.S. Army Corps of Engineers (Michigan and New Jersey have received delegated authority to implement part of the section 404 program, but otherwise the federal government retains control), and the Army Corps and EPA jointly oversee the program.

Prior to issuing a permit, the Army Corps generally requires applicants to ensure that they have avoided filling wetlands or
waterways to the maximum extent practicable; that they have minimized the extent of any unavoidable impacts; and that they have compensated for any remaining impacts, generally through creating, restoring, enhancing, or protecting wetlands or waterways either elsewhere within the construction site or at some other location.

**Water Quality Standards.** One of the central innovations of the 1972 Clean Water Act was to add a technology-based regulatory program. But Congress did not abandon its prior commitment to water quality standards, and the statute still requires each state to adopt water quality standards for all of that state’s waterways. The standards establish the designated uses to which that waterway will be put. The standards also contain water quality criteria which, if satisfied, will be sufficiently protective to preserve those uses. The water quality standards also include a non-degradation policy designed to ensure that the state moves toward, not away from, the national goals of eliminating discharges and ensuring fishable and swimmable waterways. States must periodically update their standards, and the initial standards and updates are subject to EPA review and approval. EPA can step in and establish standards itself if a state fails to do so.

In theory, water quality standards translate into regulatory controls on pollution in three ways. First, Clean Water Act section 401 requires federally-approved projects that discharge into navigable waterways to obtain state certifications that the project will comply with state water quality standards.

Second, section 303 of the Clean Water Act requires states to identify and publish lists of water bodies that do not meet state water quality standards. It also requires states to draft total maximum daily loads (TMDLs), which are essentially pollution budgets, for those water bodies, and to have a “continuing planning processes” for bringing water bodies into compliance. The entire program bears some similarity to the Clean Air Act’s planning provisions, which use state implementation plans as a mechanism to rectify noncompliance with national ambient air quality standards. But, as you will see, there are dramatic differences in enforceability and effectiveness between water quality plans and state implementation plans.

Third, the Clean Water Act directs states (and EPA, in the few states where EPA administers the NPDES program) to factor water quality standards into NPDES permits. Where traditional technology-based controls alone will not be sufficient to bring a water body into compliance with water quality standards, states may then ratchet up the intensity of NPDES permit controls. However, the ratchet works only one way. States cannot rely on water quality standards as a basis for weakening NPDES permit requirements.
C. Funding Programs

For understandable reasons, lawyers tend to focus on the regulatory and enforcement provisions of statutes. To non-lawyers who work in the water quality field, however, and for lawyers advising prospective recipients of federal dollars, funding provisions are also important. The federal government provides several sources of funding for water quality projects.

Prior to 1987, the most important of these funding mechanisms was a construction grants program designed to help states build wastewater treatment plants. The Clean Water Act imposed ambitious and stringent obligations upon wastewater managers, many of which were municipal governments with limited budgets, and Congress viewed financial support as an essential complement to its regulatory mandates (some members of Congress also viewed a major construction program as a way to bring jobs to their districts). In 1987, Congress replaced the construction grants program with a broader revolving loan program. Under that program, EPA issues low-interest loans to states, and the states may use their loans to support a variety of different ways of building or maintaining water quality infrastructure.

In terms of dollars spent, the most important present-day source of water quality grant funding lies outside the Clean Water Act. Farm bills authorize major expenditures to control water pollution from agriculture. The United States Department of Agriculture, rather than EPA, administers those grants.

D. Enforcement Provisions

As Andreen’s historical account explains, one key concern about the Clean Water Act’s predecessor regimes was their perceived lack of enforcement. Congress responded to those concerns by granting EPA and the states civil and criminal enforcement authority under the Clean Water Act, and it did not stop there. Like many environmental statutes, the Act also contains a citizen suit provision authorizing citizens to sue for violations of the Act.

E. Preemption

The Clean Water Act preempts some of state and local regulatory authority and preserves other parts. The Act preempts states’ ability to displace the Act with weaker state laws, but it preserves states’ authority to enact more stringent water quality regulations. Some states have done so; some have not; and some have passed laws that expressly forbid their regulatory agencies from imposing any requirements that go beyond the floor set by federal law.
The Act’s relationship to tort law is somewhat more complex. In the years prior to enactment of the Clean Water Act, plaintiffs sometimes turned to nuisance law in an attempt to abate water quality. They appealed to state common law and also, in interstate water disputes, federal common law. In Milwaukee v. Illinois, 451 U.S. 304 (1981) and Middlesex County Sewerage Authority v. National Sea Clammers Ass’n, 451 U.S. 1 (1981), the United States Supreme Court held that the Clean Water Act had displaced federal common law in the water quality field. Similarly, in International Paper Company v. Ouellette, 479 U.S. 481 (1987), the Court held that the Clean Water Act preempted a nuisance action brought by Vermont plaintiffs under Vermont common law against a point source in New York State, while allowing those plaintiffs to pursue their claim under New York Law. In other words, the Court held that the Clean Water Act preempted the common law of states experiencing the effects of pollution, but preserved the common law of states from which water pollution is emitted.

**IV. SCOPE OF THE CLEAN WATER ACT**

**A. WATERS OF THE UNITED STATES**

The Clean Water Act, as its name suggests, addresses water quality, and does not purport to be a land use statute. But activities on land affect water quality. Indeed, two leading watershed scientists recently asserted that “[t]he primary reason why so many rivers and streams are still being degraded today is poor land stewardship.” Margaret A. Palmer & J. David Allan, *Restoring Rivers*, 22 ISSUES IN SCI. & TECH. 40, 42 (2006). And the boundaries between land and water are not always clear. Wetlands, for example, do not always have crisp edges, and many areas are wet during some parts of the year and dry during others. Streams and rivers change in size as precipitation waxes and wanes, and some streams flow only for a short period after a large precipitation event. The shifting boundaries and complex relationships between land and water raise a legal question: how much of the landscape does the Clean Water Act govern?

For practicing lawyers and property owners, this question is very important. If a wetland is subject to Clean Water Act jurisdiction, a developer cannot fill it without a permit, and obtaining that permit will require time and money. If an intermittent stream is subject to Clean Water Act jurisdiction, industrial facilities cannot discharge effluent into it without a permit. That permit also could be difficult to obtain, and compliance might require treating or even eliminating the discharge. On the other hand, if these activities are not subject to Clean Water Act
jurisdiction, and if no state law fills the void, water quality in the wetland or intermittent stream, and in downstream waterways, could suffer, harming the environment and the economic interests of downstream water users. Businesses, regulators, consultants, and lawyers therefore invest a lot of effort into determining the geographic extent of Clean Water Act jurisdiction.

The problems and materials below explore the somewhat ambiguous and evolving law applicable to the boundary between land and water. As you read the materials, you’ll notice that there are many different sources of law that might govern, including statutes, regulations, Supreme Court decisions (the most recent of which lacks a majority opinion), and the United States Constitution. That creates a challenge for you (and for practicing lawyers): you’ll need to figure out not just what each source of law says, but also where different legal sources might conflict and, if they do, which source controls.

**Problem: Vernal Pools and Intermittent Streams**

A developer wishes to construct a new shopping mall on undeveloped land in State X. The land is bounded on one side by Shiner Brook, a small stream. Where it flows through the proposed construction site, Shiner Brook is ephemeral, which means it contains water only during and a few days after rainstorms. Three miles downstream, Shiner Brook discharges into the Trout River. The Trout River is currently popular among recreational canoers, and at the time State X became a state, the Trout River was navigated by commercial traders transporting furs.

The proposed site also contains a complex of vernal pools. Vernal pools are seasonal wetlands that lack permanent connections to surface water bodies. Because they are seasonal, and because they are usually isolated from surface water bodies, vernal pools cannot support fish populations, but they provide excellent breeding grounds for amphibians and many invertebrates. Their biological productivity can be remarkable; in some regions of the country, as much as half of the animal biomass in a forest is born in vernal pools. This biological productivity also attracts predators, including species of migratory and resident birds.
As part of his development proposal, the developer would like to fill the vernal pools and a portion of Shiner Brook. He has asked the U.S. Army Corps of Engineers for a “jurisdictional determination”—that is, a determination that the pools and the streambed either are or are not subject to federal jurisdiction under the Clean Water Act. An Army Corps biologist has inspected the site and has come to the following conclusions:

- At the site, Shiner Brook typically contains water only during and for a few days after rainstorms. Only when a series of rainstorms occurs in succession does flow continue for weeks at a time.
- Despite its ephemeral flows, Shiner Brook does have a discernible streambed.
- The vernal pools are ¼ mile from Shiner Brook.
The portion of Shiner Brook that might be filled is not within the Trout River’s floodplain, and the vernal pools are not within the floodplains of Shiner Brook or the Trout River.

About once every five years, surface water flows from the pools to Shiner Brook.

Water from the pools flows into a groundwater aquifer and water from the aquifer flows into Shiner Brook downstream of the site, and then, eventually, to the Trout River.

If the pools were filled and the site were developed, more stormwater runoff would reach Shiner Brook, and less groundwater would reach the brook. The quality of that stormwater runoff would be lower than the quality of the groundwater that currently reaches the brook.

Animals often move between the vernal pools, Shiner Brook, and the Trout River. Some of the amphibians that breed in the pools live other parts of their life cycle in the brook and the river. Birds also often move between the habitats. The biologist concludes that filling the pools would diminish the biological richness of the brook and the river, but the change would be slight.

If you were an attorney for the Army Corps, would you advise it to assert jurisdiction over the vernal pools and/or Shiner Brook? If you were an attorney for the developer, and the Army Corps elected to assert jurisdiction, would you advise your client to challenge that jurisdictional determination? Assume that changing the project to avoid the vernal pools and the stream, either by reducing its scale or finding an alternate location, would cost hundreds of thousands of dollars. If you would advise a challenge, what arguments would you raise?

In researching this problem, you would quickly learn that “jurisdictional determinations”—that is, determinations about whether a particular waterway falls within federal jurisdiction—require consideration of three sources of law:

- Congress cannot exceed its authority under the Constitution. Questions about the scope of that authority have featured prominently in litigation over the scope of the Clean Water Act.

- Regulatory agencies like EPA and the Army Corps of Engineers cannot exceed the authority Congress vested in them, and also cannot stretch their authority beyond constitutional boundaries. For that reason, the meaning of the Clean Water Act’s language has also been centrally important to litigation.
- EPA and the Army Corps of Engineers have issued regulations implementing the Clean Water Act. “Jurisdictional determinations” for individual sites must be consistent with those regulations.

The most important constitutional provision for jurisdictional determinations is the Commerce Clause, which appears below:

**United States Constitution, art. I, § 8, cl.3**

The Congress shall have Power **[t]**o regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.

In combination, several provisions of the Clean Water Act prohibit the discharge of pollutants into “navigable waters” unless that discharge occurs in compliance with a permit. The Clean Water Act also prohibits the discharge of fill materials into “navigable waters” except in compliance with a permit. The Clean Water Act’s definition of “navigable waters” appears below.


(7) The term “navigable waters” means the waters of the United States, including the territorial seas.

The Clean Water Act empowers EPA and the Army Corps of Engineers—the two agencies with jurisdiction to implement the act—to promulgate regulations fleshing out the statute’s requirements. EPA and the Army Corps have used that authority to define “waters of the United States.” An excerpt from those regulations appears below. Importantly, these regulations were issued after the Rapanos decision, which you will read next. Many plaintiffs are currently challenging these regulations, arguing that they are inconsistent with the Clean Water Act, as interpreted by the Supreme Court in Rapanos and its predecessor decisions, and, also, that the regulations are unconstitutional. As this casebook goes to press, the regulations have been stayed by the Sixth Circuit, and the Trump Administration has criticized them. Their fate, in short, is highly uncertain. Nevertheless, for purposes of answering the problem, please assume that they do apply—if, of course, they are consistent with the Clean Water Act and the United States Constitution.
33 C.F.R. § 328.3. Definitions

(a) For purposes of the Clean Water Act, 33 U.S.C. 1251 et seq. and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term “waters of the United States” means:

(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters, including interstate wetlands;

(3) The territorial seas;

(4) All impoundments of waters otherwise identified as waters of the United States under this section;

(5) All tributaries, as defined in paragraph (c)(3) of this section, of waters identified in paragraphs (a)(1) through (3) of this section;

(6) All waters adjacent to a water identified in paragraphs (a)(1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;

(7) All waters in paragraphs (a)(7)(i) through (v) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section.

[Eds.: Paragraphs (a)(7)(i) through (v) then provide a series of categories of waters, none of which is at issue in this problem.]

. . . (8) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.
(b) The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (a)(4) through (8) of this section.

(1) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.

(2) Prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(3) The following ditches:
   
   (i) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.

   (ii) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.

   (iii) Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section.

(4) The following features:

   (i) Artificially irrigated areas that would revert to dry land should application of water to that area cease;

   (ii) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;

   (iii) Artificial reflecting pools or swimming pools created in dry land;

   (iv) Small ornamental waters created in dry land;

   (v) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;

   (vi) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and

   (vii) Puddles.

(5) Groundwater, including groundwater drained through subsurface drainage systems.

(6) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.
(7) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

c) Definitions.

In this section, the following definitions apply:

(1) Adjacent.

The term adjacent means bordering, contiguous, or neighboring a water identified in paragraphs (a)(1) through (5) of this section, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (a)(1) through (5) of this section. Adjacent waters also include all waters that connect segments of a water identified in paragraphs (a)(1) through (5) or are located at the head of a water identified in paragraphs (a)(1) through (5) of this section and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent.

(2) Neighboring.

The term neighboring means:

(i) All waters located within 100 feet of the ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section. The entire water is neighboring if a portion is located within 100 feet of the ordinary high water mark;

(ii) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (5) of this section and not more than 1,500 feet from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;

(iii) All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (a)(1) or (a)(3) of this section, and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 feet of the high tide line or within 1,500 feet of the ordinary high water mark of the Great Lakes.
(3) Tributary and tributaries.

The terms tributary and tributaries each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (a)(4) of this section), to a water identified in paragraphs (a)(1) through (3) of this section that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded under paragraph (b) of this section. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (a)(1) through (3) of this section.

(4) Wetlands.

The term wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(5) Significant nexus.

The term significant nexus means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section. The term “in the region” means the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For
purposes of determining whether or not a water has a significant nexus, the water's effect on downstream paragraph (a)(1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (c)(5)(i) through (ix) of this section. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (a)(1) through (3) of this section. Functions relevant to the significant nexus evaluation are the following:

(i) Sediment trapping,
(ii) Nutrient recycling,
(iii) Pollutant trapping, transformation, filtering, and transport,
(iv) Retention and attenuation of flood waters,
(v) Runoff storage,
(vi) Contribution of flow,
(vii) Export of organic matter,
(viii) Export of food resources, and
(ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (a)(1) through (3) of this section.

(6) Ordinary high water mark.

The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(7) High tide line.

The term high tide line means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not
include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Litigants have often challenged EPA’s and the Army Corps’ assertions of regulatory jurisdiction, and the issue has repeatedly reached the United States Supreme Court. The Court’s most recent decision appears below, and you will find summaries of two important earlier cases in the justices’ opinions. As you read, consider what legal standards emerge from this decision, which produced three opinions and a four-one-four split among the justices. Again, you should also consider whether the regulations you read above are consistent with the case below—and, if you think that consistency is not present, what that means for your client.

Rapanos v. United States

**JUSTICE SCALIA** announced the judgment of the Court and delivered and opinion, in which THE CHIEF JUSTICE, JUSTICE THOMAS, and JUSTICE ALITO join.

In April 1989, petitioner John A. Rapanos backfilled wetlands on a parcel of land in Michigan that he owned and sought to develop. This parcel included 54 acres of land with sometimes-saturated soil conditions. The nearest body of navigable water was 11 to 20 miles away. Regulators had informed Mr. Rapanos that his saturated fields were “waters of the United States,” 33 U.S.C. § 1362(7), that could not be filled without a permit. Twelve years of criminal and civil litigation ensued.

The burden of federal regulation on those who would deposit fill material in locations denominated “waters of the United States” is not trivial. In deciding whether to grant or deny a permit, the U.S. Army Corps of Engineers (Corps) exercises the discretion of an enlightened despot, relying on such factors as “economics,” “aesthetics,” “recreation,” and “in general, the needs and welfare of the people,” 33 C.F.R. § 320.4(a) (2004). The average applicant for an individual permit spends 788 days and $271,596 in completing the process, and the average applicant for a nationwide permit spends 313 days and $28,915—not counting costs of mitigation or design changes.[2] “[O]ver $1.7 billion is spent each year by the private and public sectors obtaining wetlands permits.”

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2 Eds: Later in this chapter, we’ll explain the difference between an individual and a general nationwide permit. The vast majority of 404 permits fall into the latter category.
The enforcement proceedings against Mr. Rapanos are a small part of the immense expansion of federal regulation of land use that has occurred under the Clean Water Act—without any change in the governing statute—during the past five Presidential administrations. In the last three decades, the Corps and the Environmental Protection Agency (EPA) have interpreted their jurisdiction over “the waters of the United States” to cover 270-to-300 million acres of swampy lands in the United States—including half of Alaska and an area the size of California in the lower 48 States. And that was just the beginning. The Corps has also asserted jurisdiction over virtually any parcel of land containing a channel or conduit—whether man-made or natural, broad or narrow, permanent or ephemeral—through which rainwater or drainage may occasionally or intermittently flow. On this view, the federally regulated “waters of the United States” include storm drains, roadside ditches, ripples of sand in the desert that may contain water once a year, and lands that are covered by floodwaters once every 100 years. Because they include the land containing storm sewers and desert washes, the statutory “waters of the United States” engulf entire cities and immense arid wastelands. In fact, the entire land area of the United States lies in some drainage basin, and an endless network of visible channels furrows the entire surface, containing water ephemerally wherever the rain falls. Any plot of land containing such a channel may potentially be regulated as a “water of the United States.”

I

Congress passed the Clean Water Act (CWA or Act) in 1972. The Act’s stated objective is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 86 Stat. 816, 33 U.S.C. § 1251(a). The Act also states that “[i]t is the policy of Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter.” § 1251(b).

One of the statute’s principal provisions is 33 U.S.C. § 1311(a), which provides that “the discharge of any pollutant by any person shall be unlawful.” “The discharge of a pollutant” is defined broadly to include “any addition of any pollutant to navigable waters from any point source,” § 1362(12), and “pollutant” is defined broadly to include not only traditional contaminants but also solids such as “dredged spoil, . . . rock, sand, [and] cellar dirt,” § 1362(6). And, most relevant here, the CWA defines “navigable waters” as “the waters of the United States, including the territorial seas.” § 1362(7).
The Act also provides certain exceptions to its prohibition of “the discharge of any pollutant by any person.” § 1311(a). Section 1342(a) authorizes the Administrator of EPA to “issue a permit for the discharge of any pollutant, . . . notwithstanding section 1311(a) of this title.” Section 1344 authorizes the Secretary of the Army, acting through the Corps, to “issue permits . . . for the discharge of dredged or fill material into the navigable waters at specified disposal sites.” § 1344(a), (d). It is the discharge of “dredged or fill material”—which, unlike traditional water pollutants, are solids that do not readily wash downstream—that we consider today. ***

We first addressed the proper interpretation of 33 U.S.C. § 1362(7)’s phrase “the waters of the United States” in *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985). That case concerned a wetland that “was adjacent to a body of navigable water,” because “the area characterized by saturated soil conditions and wetland vegetation extended beyond the boundary of respondent’s property to . . . a navigable waterway.” Id., at 131; see also 33 C.F.R. § 328.3(b). Noting that “the transition from water to solid ground is not necessarily or even typically an abrupt one,” and that “the Corps must necessarily choose some point at which water ends and land begins,” 474 U.S., at 132, we upheld the Corps’ interpretation of “the waters of the United States” to include wetlands that “actually abut[ted] on” traditional navigable waters. Id., at 135.

Following our decision in *Riverside Bayview*, the Corps adopted increasingly broad interpretations of its own regulations under the Act. For example, in 1986, to “clarify” the reach of its jurisdiction, the Corps announced the so-called “Migratory Bird Rule,” which purported to extend its jurisdiction to any intrastate waters “[w]hich are or would be used as habitat” by migratory birds. 51 Fed. Reg. 41217. ***

In *SWANCC*, we considered the application of the Corps’ “Migratory Bird Rule” to “an abandoned sand and gravel pit in northern Illinois.” 531 U.S., at 162. Observing that “[i]t was the significant nexus between the wetlands and ‘navigable waters’ that informed our reading of the CWA in *Riverside Bayview*,” id., at 167 (emphasis added), we held that *Riverside Bayview* did not establish “that the jurisdiction of the Corps extends to ponds that are not adjacent to open water,” 531 U.S., at 168 (emphasis deleted). On the contrary, we held that “nonnavigable, isolated, intrastate waters,” id., at 171—which, unlike the wetlands at issue in *Riverside Bayview*, did not “actually abut[t] on a navigable waterway,” 531 U.S., at 167—were not included as “waters of the United States.” ***
II

In these consolidated cases, we consider whether four Michigan wetlands, which lie near ditches or man-made drains that eventually empty into traditional navigable waters, constitute “waters of the United States” within the meaning of the Act. Petitioners in No. 04–1034, the Rapanos and their affiliated businesses, deposited fill material without a permit into wetlands on three sites near Midland, Michigan: the “Salzburg site,” the “Hines Road site,” and the “Pine River site.” The wetlands at the Salzburg site are connected to a man-made drain, which drains into Hoppler Creek, which flows into the Kawkawlin River, which empties into Saginaw Bay and Lake Huron. The wetlands at the Hines Road site are connected to something called the “Rose Drain,” which has a surface connection to the Tittabawassee River. And the wetlands at the Pine River site have a surface connection to the Pine River, which flows into Lake Huron. It is not clear whether the connections between these wetlands and the nearby drains and ditches are continuous or intermittent, or whether the nearby drains and ditches contain continuous or merely occasional flows of water.

[Eds.: This decision actually addressed two consolidated cases. We have included some of the facts of the Rapanos case but not the facts of the Carabell case.]

* * *

We granted certiorari and consolidated the cases to decide whether these wetlands constitute “waters of the United States” under the Act, and if so, whether the Act is constitutional.

III

Rapanos petitioners contend that the terms “navigable waters” and “waters of the United States” in the Act must be limited to the traditional definition of The Daniel Ball, which required that the “waters” be navigable in fact, or susceptible of being rendered so. See 10 Wall., at 563. But this definition cannot be applied wholesale to the CWA. The Act uses the phrase “navigable waters” as a defined term, and the definition is simply “the waters of the United States.” 33 U.S.C. § 1362(7). Moreover, the Act provides, in certain circumstances, for the substitution of state for federal jurisdiction over “navigable waters . . . other than those waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce . . . including wetlands adjacent thereto.” § 1344(g)(1) (emphasis added). This provision shows that the Act’s term “navigable waters” includes something more than traditional navigable waters. We have twice stated that the meaning of “navigable waters” in the Act is broader than the traditional understanding of that term, SWANCC, 531 U.S., at 167; Riverside Bayview, 474 U.S., at 133. We have
also emphasized, however, that the qualifier “navigable” is not devoid of significance, SWANCC, supra, at 172.

We need not decide the precise extent to which the qualifiers “navigable” and “of the United States” restrict the coverage of the Act. Whatever the scope of these qualifiers, the CWA authorizes federal jurisdiction only over “waters.” 33 U.S.C. § 1362(7). The only natural definition of the term “waters,” our prior and subsequent judicial constructions of it, clear evidence from other provisions of the statute, and this Court’s canons of construction all confirm that “the waters of the United States” in § 1362(7) cannot bear the expansive meaning that the Corps would give it.

The Corps’ expansive approach might be arguable if the CWA defined “navigable waters” as “water of the United States.” But “the waters of the United States” is something else. The use of the definite article (“the”) and the plural number (“waters”) shows plainly that § 1362(7) does not refer to water in general. In this form, “the waters” refers more narrowly to water “[a]s found in streams and bodies forming geographical features such as oceans, rivers, [and] lakes,” or “the flowing or moving masses, as of waves or floods, making up such streams or bodies.” Webster’s New International Dictionary 2882 (2d ed. 1954) (hereinafter Webster’s Second). On this definition, “the waters of the United States” include only relatively permanent, standing or flowing bodies of water. The definition refers to water as found in “streams,” “oceans,” “rivers,” “lakes,” and “bodies” of water “forming geographical features.” Ibid. All of these terms connote continuously present, fixed bodies of water, as opposed to ordinarily dry channels through which water occasionally or intermittently flows. Even the least substantial of the definition’s terms, namely, “streams,” connotes a continuous flow of water in a permanent channel—especially when used in company with other terms such as “rivers,” “lakes,” and “oceans.” None of these terms encompasses transitory puddles or ephemeral flows of water.

The restriction of “the waters of the United States” to exclude channels containing merely intermittent or ephemeral flow also accords with the commonsense understanding of the term. In applying the definition to “ephemeral streams,” “wet meadows,” storm sewers and culverts, “directional sheet flow during storm events,” drain tiles, man-made drainage ditches, and dry arroyos in the middle of the desert, the Corps has stretched the term “waters of the United States” beyond parody. The

5 By describing “waters” as “relatively permanent,” we do not necessarily exclude streams, rivers, or lakes that might dry up in extraordinary circumstances, such as drought. We also do not necessarily exclude seasonal rivers, which contain continuous flow during some months of the year but no flow during dry months—such as the 290-day, continuously flowing stream postulated by Justice STEVENS’ dissent (hereinafter the dissent), post, at 2259–2260. Common sense and common usage distinguish between a wash and a seasonal river.
plain language of the statute simply does not authorize this “Land Is Waters” approach to federal jurisdiction.

*** As we noted in SWANCC, the traditional term “navigable waters”—even though defined as “the waters of the United States”—carries some of its original substance: “[I]t is one thing to give a word limited effect and quite another to give it no effect whatever.” 531 U.S., at 172. That limited effect includes, at bare minimum, the ordinary presence of water.

***

Even if the phrase “the waters of the United States” were ambiguous as applied to intermittent flows, our own canons of construction would establish that the Corps’ interpretation of the statute is impermissible. As we noted in SWANCC, the Government’s expansive interpretation would “result in a significant impingement of the States’ traditional and primary power over land and water use.” 531 U.S., at 174. Regulation of land use, as through the issuance of the development permits sought by petitioners in both of these cases, is a quintessential state and local power. See FERC v. Mississippi, 456 U.S. 742, 767–768, n. 30 (1982); Hess v. Port Authority Trans-Hudson Corporation, 513 U.S. 30, 44 (1994).

The extensive federal jurisdiction urged by the Government would authorize the Corps to function as a de facto regulator of immense stretches of intrastate land—an authority the agency has shown its willingness to exercise with the scope of discretion that would befit a local zoning board. See 33 C.F.R. § 320.4(a)(1) (2004). We ordinarily expect a “clear and manifest” statement from Congress to authorize an unprecedented intrusion into traditional state authority. See BFP v. Resolution Trust Corporation, 511 U.S. 531, 544 (1994). The phrase “the waters of the United States” hardly qualifies.

Likewise, just as we noted in SWANCC, the Corps’ interpretation stretches the outer limits of Congress’s commerce power and raises difficult questions about the ultimate scope of that power. See 531 U.S., at 173. (In developing the current regulations, the Corps consciously sought to extend its authority to the farthest reaches of the commerce power. See 42 Fed. Reg. 37127 (1977).) Even if the term “the waters of the United States” were ambiguous as applied to channels that sometimes host ephemeral flows of water (which it is not), we would expect a clearer statement from Congress to authorize an agency theory of jurisdiction that presses the envelope of constitutional validity. See Edward J. DeBartolo Corp. v. Florida Gulf Coast Building & Constr. Trades Council, 485 U.S. 568, 575 (1988).

In sum, on its only plausible interpretation, the phrase “the waters of the United States” includes only those relatively permanent, standing or continuously flowing bodies of water “forming geographic features” that are described in ordinary parlance as “streams[,] . . . oceans, rivers, [and] lakes.” See Webster’s Second 2882. The phrase does not include channels
through which water flows intermittently or ephemerally, or channels that periodically provide drainage for rainfall. The Corps’ expansive interpretation of the “the waters of the United States” is thus not “based on a permissible construction of the statute.” *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843 (1984).

IV

[Eds.: The Court then discussed when an “adjacent” wetland meets the Clean Water Act’s definition of “navigable waters.”]

* * * Therefore, only those wetlands with a continuous surface connection to bodies that are “waters of the United States” in their own right, so that there is no clear demarcation between “waters” and wetlands, are “adjacent to” such waters and covered by the Act. Wetlands with only an intermittent, physically remote hydrologic connection to “waters of the United States” do not implicate the boundary-drawing problem of *Riverside Bayview*, and thus lack the necessary connection to covered waters that we described as a “significant nexus” in *SWANCC*. 531 U.S., at 167. Thus, establishing that wetlands such as those at the Rapanos and Carabell sites are covered by the Act requires two findings: first, that the adjacent channel contains a “wate[ ] of the United States,” (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the “water” ends and the “wetland” begins.

[Eds.: The Court remanded the case so the Sixth Circuit could apply this standard.]

[Eds.: Chief Justice Roberts’ concurrence is omitted]

**JUSTICE KENNEDY**, concurring in the judgment.

These consolidated cases require the Court to decide whether the term “navigable waters” in the Clean Water Act extends to wetlands that do not contain and are not adjacent to waters that are navigable in fact. In *Solid Waste Agency of Northern Cook Cty. v. Army Corps of Engineers*, 531 U.S. 159 (2001) (*SWANCC*), the Court held, under the circumstances presented there, that to constitute “‘navigable waters’” under the Act, a water or wetland must possess a “significant nexus” to waters that are or were navigable in fact or that could reasonably be so made. *Id.*, at 167, 172. In the instant cases neither the plurality opinion nor the dissent by Justice STEVENS chooses to apply this test; and though the Court of Appeals recognized the test’s applicability, it did not consider all the factors necessary to determine whether the lands in question had, or did not have, the requisite nexus. In my view the cases ought to be remanded to the Court of Appeals for proper consideration of the nexus requirement. * * *
The statutory term to be interpreted and applied in the two instant cases is the term “navigable waters.” The outcome turns on whether that phrase reasonably describes certain Michigan wetlands the Corps seeks to regulate. Under the Act “[t]he term ‘navigable waters’ means the waters of the United States, including the territorial seas.” § 1362(7). In a regulation the Corps has construed the term “waters of the United States” to include not only waters susceptible to use in interstate commerce—the traditional understanding of the term “navigable waters of the United States,” see, e.g., United States v. Appalachian Elec. Power Co., 311 U.S. 377, 406–408 (1940); The Daniel Ball, 10 Wall. 557, 563–564 (1871)—but also tributaries of those waters and, of particular relevance here, wetlands adjacent to those waters or their tributaries. 33 C.F.R. §§ 328.3(a)(1), (5), (7). * * *

Contrary to the plurality’s description, wetlands are not simply moist patches of earth. They are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” § 328.3(b). The Corps’ Wetlands Delineation Manual, including over 100 pages of technical guidance for Corps officers, interprets this definition of wetlands to require: (1) prevalence of plant species typically adapted to saturated soil conditions, determined in accordance with the United States Fish and Wildlife Service’s National List of Plant Species that Occur in Wetlands; (2) hydric soil, meaning soil that is saturated, flooded, or ponded for sufficient time during the growing season to become anaerobic, or lacking in oxygen, in the upper part; and (3) wetland hydrology, a term generally requiring continuous inundation or saturation to the surface during at least five percent of the growing season in most years. See Wetlands Research Program Technical Report Y–87–1 (on-line edition), pp. 12–34 (Jan. 1987), http://www.saj.usace.army.mil/permit/documents/87manual.pdf. Under the Corps’ regulations, wetlands are adjacent to tributaries, and thus covered by the Act, even if they are “separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like.” § 328.3(c). * * *

II

Twice before the Court has construed the term “navigable waters” in the Clean Water Act. In United States v. Riverside Bayview Homes, Inc., 474 U.S. 121 (1985), the Court upheld the Corps’ jurisdiction over wetlands adjacent to navigable-in-fact waterways. Id., at 139. * * * Recognizing that “[a]n agency’s construction of a statute it is charged with enforcing is entitled to deference if it is reasonable and not in conflict with the expressed intent of Congress,” id., at 131 (citing Chemical Mfrs. Assn. v.
**Natural Resources Defense Council, Inc.**, 470 U.S. 116, 125 (1985), and *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842–845 (1984), the Court held that “the Corps' ecological judgment about the relationship between waters and their adjacent wetlands provides an adequate basis for a legal judgment that adjacent wetlands may be defined as waters under the Act,” 474 U.S., at 134. The Court reserved, however, the question of the Corps' authority to regulate wetlands other than those adjacent to open waters. See *id.*, at 131–132, n. 8.

In *SWANCC*, the Court considered the validity of the Corps' jurisdiction over ponds and mudflats that were isolated in the sense of being unconnected to other waters covered by the Act. 531 U.S., at 171. The property at issue was an abandoned sand and gravel pit mining operation where “remnant excavation trenches” had “evolv[ed] into a scattering of permanent and seasonal ponds.” *Id.*, at 163. Asserting jurisdiction pursuant to a regulation called the “Migratory Bird Rule,” the Corps argued that these isolated ponds were “waters of the United States” (and thus “navigable waters” under the Act) because they were used as habitat by migratory birds. *Id.*, at 164–165. The Court rejected this theory. “It was the significant nexus between wetlands and ‘navigable waters,’” the Court held, “that informed our reading of the [Act] in *Riverside Bayview Homes*.” *Id.*, at 167. Because such a nexus was lacking with respect to isolated ponds, the Court held that the plain text of the statute did not permit the Corps' action. *Id.*, at 172.

*** Taken together these cases establish that in some instances, as exemplified by *Riverside Bayview*, the connection between a nonnavigable water or wetland and a navigable water may be so close, or potentially so close, that the Corps may deem the water or wetland a “navigable water” under the Act. In other instances, as exemplified by *SWANCC*, there may be little or no connection. Absent a significant nexus, jurisdiction under the Act is lacking. Because neither the plurality nor the dissent addresses the nexus requirement, this separate opinion, in my respectful view, is necessary. ***

The concerns addressed in *SWANCC* do not support the plurality’s interpretation of the Act. In *SWANCC*, by interpreting the Act to require a significant nexus with navigable waters, the Court avoided applications—those involving waters without a significant nexus—that appeared likely, as a category, to raise constitutional difficulties and federalism concerns. Here, in contrast, the plurality’s interpretation does not fit the avoidance concerns it raises. On the one hand, when a surface-water connection is lacking, the plurality forecloses jurisdiction over wetlands that abut navigable-in-fact waters—even though such navigable waters were traditionally subject to federal authority. On the other hand, by saying the Act covers wetlands (however remote)
possessing a surface-water connection with a continuously flowing stream (however small), the plurality’s reading would permit applications of the statute as far from traditional federal authority as are the waters it deems beyond the statute’s reach. Even assuming, then, that federal regulation of remote wetlands and nonnavigable waterways would raise a difficult Commerce Clause issue notwithstanding those waters’ aggregate effects on national water quality, but cf. Wickard v. Filburn, 317 U.S. 111 (1942); the plurality’s reading is not responsive to this concern. As for States’ “responsibilities and rights,” § 1251(b), it is noteworthy that 33 States plus the District of Columbia have filed an amici brief in this litigation asserting that the Clean Water Act is important to their own water policies. These amici note, among other things, that the Act protects downstream States from out-of-state pollution that they cannot themselves regulate. ** *

[T]he plurality’s overall tone and approach—from the characterization of acres of wetlands destruction as “backfilling . . . wet fields,” to the rejection of Corps authority over “man-made drainage ditches” and “dry arroyos” without regard to how much water they periodically carry, to the suggestion, seemingly contrary to Congress’ judgment, that discharge of fill material is inconsequential for adjacent waterways,—seems unduly dismissive of the interests asserted by the United States in these cases. Important public interests are served by the Clean Water Act in general and by the protection of wetlands in particular. To give just one example, amici here have noted that nutrient-rich runoff from the Mississippi River has created a hypoxic, or oxygen-depleted, “dead zone” in the Gulf of Mexico that at times approaches the size of Massachusetts and New Jersey. Scientific evidence indicates that wetlands play a critical role in controlling and filtering runoff. It is true, as the plurality indicates, that environmental concerns provide no reason to disregard limits in the statutory text, but in my view the plurality’s opinion is not a correct reading of the text. The limits the plurality would impose, moreover, give insufficient deference to Congress’ purposes in enacting the Clean Water Act and to the authority of the Executive to implement that statutory mandate. ** *

Consistent with SWANCC and Riverside Bayview and with the need to give the term “navigable” some meaning, the Corps’ jurisdiction over wetlands depends upon the existence of a significant nexus between the wetlands in question and navigable waters in the traditional sense. The required nexus must be assessed in terms of the statute’s goals and purposes. Congress enacted the law to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,” 33 U.S.C. § 1251(a), and it pursued that objective by restricting dumping and filling in “navigable waters,” §§ 1311(a), 1362(12). With respect to wetlands, the rationale for Clean Water Act regulation is, as the Corps
has recognized, that wetlands can perform critical functions related to
the integrity of other waters—functions such as pollutant trapping, flood
control, and runoff storage. 33 C.F.R. § 320.4(b)(2). Accordingly, wetlands
possess the requisite nexus, and thus come within the statutory phrase
“navigable waters,” if the wetlands, either alone or in combination with
similarly situated lands in the region, significantly affect the chemical,
physical, and biological integrity of other covered waters more readily
understood as “navigable.” When, in contrast, wetlands’ effects on water
quality are speculative or insubstantial, they fall outside the zone fairly
encompassed by the statutory term “navigable waters.” * * *

When the Corps seeks to regulate wetlands adjacent to navigable-in-fact
waters, it may rely on adjacency to establish its jurisdiction. Absent more
specific regulations, however, the Corps must establish a significant
nexus on a case-by-case basis when it seeks to regulate wetlands based
on adjacency to nonnavigable tributaries. Given the potential
overbreadth of the Corps’ regulations, this showing is necessary to avoid
unreasonable applications of the statute. Where an adequate nexus is
established for a particular wetland, it may be permissible, as a matter
of administrative convenience or necessity, to presume covered status for
other comparable wetlands in the region. That issue, however, is neither
raised by these facts nor addressed by any agency regulation that
accommodates the nexus requirement outlined here.

This interpretation of the Act does not raise federalism or Commerce
Clause concerns sufficient to support a presumption against its adoption.
To be sure, the significant-nexus requirement may not align perfectly
with the traditional extent of federal authority. Yet in most cases
regulation of wetlands that are adjacent to tributaries and possess a
significant nexus with navigable waters will raise no serious
constitutional or federalism difficulty. Cf. Pierce County v. Guillen, 537
safety in the channels of commerce”); Oklahoma ex rel. Phillips v. Guy F.
Atkinson Co., 313 U.S. 508, 525–526 (1941) (“[J]ust as control over the
non-navigable parts of a river may be essential or desirable in the
interests of the navigable portions, so may the key to flood control on a
navigable stream be found in whole or in part in flood control on its
tributaries . . . . [T]he exercise of the granted power of Congress to
regulate interstate commerce may be aided by appropriate and needful
control of activities and agencies which, though intrastate, affect that
commerce”). As explained earlier, moreover, and as exemplified by
SWANCC, the significant-nexus test itself prevents problematic
applications of the statute. See 531 U.S., at 174. The possibility of
legitimate Commerce Clause and federalism concerns in some
circumstances does not require the adoption of an interpretation that
departs in all cases from the Act’s text and structure. See Gonzales v.
When a general regulatory statute bears a substantial relation to commerce, the de minimis character of individual instances arising under that statute is of no consequence” (internal quotation marks omitted).

III

In both the consolidated cases before the Court the record contains evidence suggesting the possible existence of a significant nexus according to the principles outlined above. Thus the end result in these cases and many others to be considered by the Corps may be the same as that suggested by the dissent, namely, that the Corps’ assertion of jurisdiction is valid. Given, however, that neither the agency nor the reviewing courts properly considered the issue, a remand is appropriate, in my view, for application of the controlling legal standard. * * *

In these consolidated cases I would vacate the judgments of the Court of Appeals and remand for consideration whether the specific wetlands at issue possess a significant nexus with navigable waters.

Justice Stevens, with whom Justice Souter, Justice Ginsburg, and Justice Breyer join, dissenting.

* * *

The narrow question presented in No. 04–1034 is whether wetlands adjacent to tributaries of traditionally navigable waters are “waters of the United States” subject to the jurisdiction of the Army Corps; the question in No. 04–1384 is whether a manmade berm separating a wetland from the adjacent tributary makes a difference. The broader question is whether regulations that have protected the quality of our waters for decades, that were implicitly approved by Congress, and that have been repeatedly enforced in case after case, must now be revised in light of the creative criticisms voiced by the plurality and Justice Kennedy today. Rejecting more than 30 years of practice by the Army Corps, the plurality disregards the nature of the congressional delegation to the agency and the technical and complex character of the issues at stake. Justice Kennedy similarly fails to defer sufficiently to the Corps, though his approach is far more faithful to our precedents and to principles of statutory interpretation than is the plurality’s.

In my view, the proper analysis is straightforward. The Army Corps has determined that wetlands adjacent to tributaries of traditionally navigable waters preserve the quality of our Nation’s waters by, among other things, providing habitat for aquatic animals, keeping excessive sediment and toxic pollutants out of adjacent waters, and reducing downstream flooding by absorbing water at times of high flow. The Corps’ resulting decision to treat these wetlands as encompassed within the term “waters of the United States” is a quintessential example of the Executive’s reasonable interpretation of a statutory provision. See

I would affirm the judgments in both cases, and respectfully dissent from the decision of five Members of this Court to vacate and remand. I close, however, by noting an unusual feature of the Court’s judgments in these cases. It has been our practice in a case coming to us from a lower federal court to enter a judgment commanding that court to conduct any further proceedings pursuant to a specific mandate. That prior practice has, on occasion, made it necessary for Justices to join a judgment that did not conform to their own views. In these cases, however, while both the plurality and Justice KENNEDY agree that there must be a remand for further proceedings, their respective opinions define different tests to be applied on remand. Given that all four Justices who have joined this opinion would uphold the Corps’ jurisdiction in both of these cases—and in all other cases in which either the plurality’s or Justice KENNEDY’s test is satisfied—on remand each of the judgments should be reinstated if either of those tests is met.

[Eds.: Justice Breyer’s separate dissenting opinion is omitted.]

NOTES

1. As the closing paragraph of Justice Stevens’ dissent acknowledges, the Rapanos decision places lower courts in a difficult position. They must decide not only what standards the Justices’ opinions create, but also, in some cases, which standard to apply. Some intercircuit confusion has resulted, with some courts applying only Justice Kennedy’s “significant nexus” test, some applying Justice Scalia’s test, and some following Justice Stevens’ suggestion that courts find federal jurisdiction where the wetland in question meets either Justice Kennedy’s test or Justice Scalia’s test. See Robin Kundis Craig, Agencies Interpreting Courts Interpreting Statutes: The Deference Conundrum of a Divided Supreme Court, 61 EMORY L.J. 1, 59–60 (2011).

2. Are there constitutional provisions other than the Commerce Clause that Congress could invoke as sources of authority to regulate water quality? Congress can enact laws to implement treaties with other countries, and that power represents a potential alternative or additional source of authority. In the SWANCC case discussed in Rapanos, the Court suggested that the Commerce Clause might not grant Congress power to regulate hydrologically isolated waters used as habitat by migratory birds. During that litigation, the United States did not argue that Congress has authority to protect migratory bird habitat to implement the 1916 Convention for the Protection of Migratory Birds between the United States and Great Britain (acting on behalf of Canada). That treaty might serve as an alternative source of authority to allow Congress to regulate certain waters that might fall outside
the Commerce Clause. See Chapter 2 (discussing the Treaty Power as a potential source of congressional power to enact environmental legislation).

3. State water quality statutes may have somewhat different scope than the federal Clean Water Act. Among other things, state statutes are not limited to the scope of federal regulatory authority under the Commerce Clause. Pennsylvania’s Clean Streams Law, 35 P.S. §§ 691.1–691.1001, for example, prohibits unauthorized discharges of “sewage,” “industrial waste,” or “pollution” into “waters of the Commonwealth,” which it defines as “any and all rivers, streams, creeks, rivulets, impoundments, ditches, water courses, storm sewers, lakes, dammed water, ponds, springs and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.” 35 P.S. § 691.1. Would the vernal pools or Shiner Brook, if located in Pennsylvania, constitute “waters of the Commonwealth”? To what extent would the reasoning of the Rapanos plurality, concurring, and dissenting opinions apply to interpreting the Clean Streams Law?

B. POINT SOURCE

Establishing that an aquatic resource is a “water of the United States” is a necessary precondition for protection under the Clean Water Act. But the kinds of protections that apply to a waterway also depend upon the pollution sources impacting that waterway. One distinction is particularly important: the Clean Water Act separates pollution sources into point source and non-point source categories. Because point sources are often stringently regulated, and nonpoint sources are generally subject to less stringent regulation or no regulation at all, this distinction is of great interest to environmental lawyers. The problem below introduces you to a particularly controversial application of that distinction.

PROBLEM: FIREWORKS

Every year around the Fourth of July, Wisconsin’s lakes get a little bit louder. In Wisconsin, fireworks permits are readily available, and many people spend hundreds of dollars, or more, on spectacular displays, some of them above the state’s many lakes. Many of the other homeowners enjoy their neighbors’ displays, or at least view them as an inevitable and unavoidable consequence of lakefront homeownership. But a few residents have begun voicing concerns about consequences for water quality. Fireworks displays leave behind chemicals and debris, and while fireworks manufacturers and fireworks display sponsors argue that the quantities are de minimis, some water quality advocates disagree.

Recently, a homeowners’ association on one lake decided to turn those concerns into legal action. It sent a letter to ten landowners, each of whom had held fireworks displays every year for the previous ten years, notifying them of the association’s intent to bring suit under the citizens’ suit provision
of the Clean Water Act, 33 U.S.C. § 1365. The letter warned the fireworks aficionados that their displays had violated the Clean Water Act and could not proceed without permits.

Please consider this controversy from the following perspectives:

- You are an attorney with the Wisconsin John Muir Chapter of the Sierra Club. The homeowner’s association has asked the chapter to join in filing a lawsuit. What will you advise? Legally, how strong are your potential arguments? Do you think bringing the lawsuit would be an effective advocacy strategy?

- You are an attorney with the Wisconsin Department of Natural Resources, which administers the NPDES program in Wisconsin. How will you respond to the notice letter? Will you bring your own enforcement action? Doing so would supplant the homeowners’ association’s suit and would put your department in charge of the litigation. Will you try to participate as an intervenor or amicus curiae? On which side, and with what arguments?

- You are an attorney for several of the homeowners who received the notice letter. What advice will you give them? If they elect to litigate (rather than settle), are they likely to prevail?

In researching the issue, you have identified some key passages from the Clean Water Act and one potentially important case, all of which appear below. You also have identified two other places where the application of the Clean Water Act to fireworks has become a controversial issue. One is San Diego, where the San Diego Regional Water Quality Control Board now requires permits for fireworks displays over “waters of the United States.” The other is Lake Tahoe, where residents have initiated litigation against the sponsors of fireworks shows. Materials from both of those controversies also appear below.

If you were a real-world attorney considering this problem, you would consider not just whether fireworks displays are point sources, but also how those displays would be regulated if they are classified as point sources. For purposes of this problem, you should focus only on the former question. In the next unit, we’ll consider how point sources are regulated.

CWA § 301, 33 U.S.C. § 1311. Effluent limitations
(a) Illegality of pollutant discharges except in compliance with law
Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful. ** * * *
Sections 1312, 1316, 1317, 1328, 1342, and 1344 set forth the requirements of the various permitting programs, including the NPDES program, under which pollutants may lawfully be discharged.]


(6) The term “pollutant” means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. This term does not mean (A) “sewage from vessels or a discharge incidental to the normal operation of a vessel of the Armed Forces” within the meaning of section 1322 of this title; or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources. **

(12) The term “discharge of a pollutant” and the term “discharge of pollutants” each means (A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft. **

(14) The term “point source” means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

**United States v. Plaza Health Laboratories**

*3 F.3d 643 (2d. Cir. 1992)*

**George C. Pratt, Circuit Judge:**

Facts and Background

Villegas was co-owner and vice president of Plaza Health Laboratories, Inc., a blood-testing laboratory in Brooklyn, New York. On at least two occasions between April and September 1988, Villegas loaded containers of numerous vials of human blood generated from his business into his personal car, and drove to his residence at the Admirals Walk Condominium in Edgewater, New Jersey. Once at his condominium complex, Villegas removed the containers from his car and carried them to the edge of the Hudson River. On one occasion he carried two containers of the vials to the bulkhead that separates his condominium complex from the river, and placed them at low tide within a crevice in the bulkhead that was below the high-water line.

On May 26, 1988, a group of eighth graders on a field trip at the Alice Austin House in Staten Island, New York, discovered numerous glass vials containing human blood along the shore. Some of the vials had washed up on the shore; many were still in the water. Some were cracked, although most remained sealed with stoppers in solid-plastic containers or ziplock bags. Fortunately, no one was injured. That afternoon, New York City workers recovered approximately 70 vials from the area.

On September 25, 1988, a maintenance worker employed by the Admirals Walk Condominium discovered a plastic container holding blood vials wedged between rocks in the bulkhead. New Jersey authorities retrieved numerous blood vials from the bulkhead later that day.

Ten of the retrieved vials contained blood infected with the hepatitis-B virus. All of the vials recovered were eventually traced to Plaza Health Laboratories.

Based upon the May 1988 discovery of vials, Plaza Health Laboratories and Villegas were indicted on May 16, 1989, on two counts each of violating § 1319(c)(2) and (3) of the Clean Water Act. 33 U.S.C. §§ 1251 et seq. A superseding indictment charged both defendants with two additional CWA counts based upon the vials found in September 1988.

Counts II and IV of the superseding indictment charged Villegas with knowingly discharging pollutants from a “point source” without a permit. See 33 U.S.C. §§ 1311(a), 1319(c)(2). Counts I and III alleged that Villegas had discharged pollutants, knowing that he placed others in “imminent danger of death or serious bodily injury”. See 33 U.S.C. § 1319(c)(3). On January 31, 1991, following a trial before Judge Korman, the jury found Villegas guilty on all four counts.

Villegas contends that one element of the CWA crime, knowingly discharging pollutants from a “point source”, was not established in his case. He argues that the definition of “point source”, 33 U.S.C. § 1362(14),
does not include discharges that result from the individual acts of human beings. Raising primarily questions of legislative intent and statutory construction, Villegas argues that at best, the term “point source” is ambiguous as applied to him, and that the rule of lenity should result in reversal of his convictions. ** **

Discussion

** **

A. Navigating the Clean Water Act.

The basic prohibition on discharge of pollutants is in 33 U.S.C. § 1311(a), which states:

Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful.

_Id._ (emphasis added).

The largest exception to this seemingly absolute rule is found in 33 U.S.C. § 1342, which establishes the CWA’s national pollutant discharge elimination system, or NPDES:

(a) Permits for discharge of pollutants

(1) Except as provided in sections 1328 [aquaculture] and 1344 of this title [dredge and fill permits], the Administrator may, after opportunity for public hearing, issue a permit for the discharge of any pollutant . . . notwithstanding section 1311(a) of this title, upon condition that such discharge will meet . . . all applicable requirements under sections 1311, 1312, 1316, 1317, 1318, and 1343 of this title. . . .

33 U.S.C. § 1342(a) (emphasis added).

Reading § 1311(a), the basic prohibition, and § 1342(a)(1), the permit section, together, we can identify the basic rule, our rhumb line to clean waters, that, absent a permit, “the discharge of any pollutant by any person” is unlawful. 33 U.S.C. § 1311(a).

We must then adjust our rhumb line by reference to two key definitions—“pollutant” and “discharge”. “Pollutant” is defined, in part, as “biological materials . . . discharged into water.” 33 U.S.C. § 1362(6) (emphasis added). “Discharge”, in turn, is “any addition of any pollutant to navigable waters from any point source. . . .” (emphasis added). 33 U.S.C. § 1362(12).

As applied to the facts of this case, then, the defendant “added” a “pollutant” (human blood in glass vials) to “navigable waters” (the Hudson River), and he did so without a permit. The issue, therefore, is whether his conduct constituted a “discharge”, and that in turn depends
on whether the addition of the blood to the Hudson River waters was “from any point source”.

For this final course adjustment in our navigation, we look again to the statute.

(14) The term “point source” means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.


As the parties have presented the issue to us in their briefs and at oral argument, the question is “whether a human being can be a point source”.

1. **Language and Structure of Act.**

Human beings are not among the enumerated items that may be a “point source”. Although by its terms the definition of “point source” is nonexclusive, the words used to define the term and the examples given (“pipe, ditch, channel, tunnel, conduit, well, discrete fissure”, etc.) evoke images of physical structures and instrumentalities that systematically act as a means of conveying pollutants from an industrial source to navigable waterways.

In addition, if every discharge involving humans were to be considered a “discharge from a point source”, the statute’s lengthy definition of “point source” would have been unnecessary. It is elemental that congress does not add unnecessary words to statutes. Had congress intended to punish any human being who polluted navigational waters, it could readily have said: “any person who places pollutants in navigable waters without a permit is guilty of a crime.”

The Clean Water Act generally targets industrial and municipal sources of pollutants, as is evident from a perusal of its many sections. Consistent with this focus, the term “point source” is used throughout the statute, but invariably in sentences referencing industrial or municipal discharges. See, e.g., 33 U.S.C. § 1311 (referring to “owner or operator” of point source); § 1311(e) (requiring that effluent limitations established under the Act “be applied to all point sources of discharge”); § 1311(g)(2) (allows an “owner or operator of a point source” to apply to EPA for modification of its limitations requirements); § 1342(f) (referring to classes, categories, types, and sizes of point sources); § 1314(b)(4)(B) (denoting “best conventional pollutant control technology measures and practices” applicable to any point source within particular category or
class); § 1316 (“any point source * * * which is constructed as to meet all applicable standards of performance”); § 1318(a) (administrator shall require owner or operator of any point source to install, use and maintain monitoring equipment or methods); and § 1318(c) (states may develop procedures for inspection, monitoring, and entry with respect to point sources located in state).

This emphasis was sensible, as “[i]ndustrial and municipal point sources were the worst and most obvious offenders of surface water quality. They were also the easiest to address because their loadings emerge from a discrete point such as the end of a pipe.” David Letson, *Point/Nonpoint Source Pollution Reduction Trading: An Interpretive Survey*, 32 NAT. RESOURCES J. 219, 221 (1992).

Finally on this point, we assume that congress did not intend the awkward meaning that would result if we were to read “human being” into the definition of “point source”. Section 1362(12)(A) defines “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source”. Enhanced by this definition, § 1311(a) reads in effect “the addition of any pollutant to navigable waters from any point source by any person shall be unlawful” (emphasis added). But were a human being to be included within the definition of “point source”, the prohibition would then read: “the addition of any pollutant to navigable waters from any person by any person shall be unlawful”, and this simply makes no sense. As the statute stands today, the term “point source” is comprehensible only if it is held to the context of industrial and municipal discharges.

2. Legislative History and Context.

* * *

The legislative history of the CWA, while providing little insight into the meaning of “point source”, confirms the act’s focus on industrial polluters. Congress required NPDES permits of those who discharge from a “point source”. The term “point source”, introduced to the act in 1972, was intended to function as a means of identifying industrial polluters—generally a difficult task because pollutants quickly disperse throughout the subject waters. The senate report for the 1972 amendments explains:

In order to further clarify the scope of the regulatory procedures in the Act the Committee had added a definition of point source to distinguish between control requirements where there are specific confined conveyances, such as pipes, and control requirements which are imposed to control runoff. The control of pollutants from runoff is applied pursuant to section 209 and the authority resides in the State or other local agency.

We accordingly conclude that the term “point source” as applied to a human being is at best ambiguous.

[Eds.: The court also concluded that the rule of lenity weighed against the government’s reading of “point source.”]

Convictions reversed; cross-appeal affirmed.

■ OAKES, CIRCUIT JUDGE, dissenting:

I agree that this is not the typical Clean Water Act prosecution—though, as criminal prosecutions under the Act are infrequent, or at least result in few published judicial opinions, what is “typical” is as yet ill-defined. I also agree that the prosecutors in this case may not have defined the theory of their case before proceeding to trial as well as they might have, thereby complicating the task of determining whether the jury was asked to resolve the proper factual questions. However, because I do not agree that a person can never be a point source, and because I believe that Mr. Villegas’ actions, as the jury found them, fell well within the bounds of activity proscribed by the Clean Water Act’s bar on discharge of pollutants into navigable waters, I am required to dissent.

Point source.

I begin with the proposition that the Clean Water Act bars “the discharge of any pollutant by any person,” except as authorized elsewhere in the Act. 33 U.S.C. § 1311(a) (1988). The only limiting factors are definitional: the Act bars “discharges” from “point sources” of “pollutants” to “navigable waters.” It does not bar nonpoint source pollution, pollution of dry land or nonnavigable waters, or the movement of existing pollution within the navigable waters.

The key in this case is the definition of a point source.

The language of this definition indicates that it encompasses a wide range of means of placing pollutants into navigable waters. The question before us is what, in addition to the listed examples, is a “discernible, confined and discrete conveyance.”

I begin with the obvious, in hopes that it will illuminate the less obvious: the classic point source is something like a pipe. This is, at least in part, because pipes and similar conduits are needed to carry large quantities of waste water, which represents a large proportion of the point source pollution problem. Thus, devices designed to convey large quantities of waste water from a factory or municipal sewage treatment facility are readily classified as point sources. Because not all pollutants are liquids, however, the statute and the cases make clear that means of conveying solid wastes to be dumped in navigable waters are also point sources. See, e.g., 33 U.S.C. § 1362(14) (“rolling stock,” or railroad cars, listed as an example of a point source); Avoyelles Sportsmen’s League, Inc. v. Marsh,
715 F.2d 897, 922 (5th Cir. 1983) (backhoes and bulldozers used to gather fill and deposit it on wetlands are point sources).

What I take from this look at classic point sources is that, at the least, an organized means of channeling and conveying industrial waste in quantity to navigable waters is a “discernible, confined and discrete conveyance.” The case law is in accord: courts have deemed a broad range of means of depositing pollutants in the country’s navigable waters to be point sources. ** In short, the term “point source” has been broadly construed to apply to a wide range of polluting techniques, so long as the pollutants involved are not just humanmade, but reach the navigable waters by human effort or by leaking from a clear point at which waste water was collected by human effort. From these cases, the writers of one respected treatise have concluded that such a “man-induced gathering mechanism plainly is the essential characteristic of a point source” and that a point source, “[p]ut simply, . . . is an identifiable conveyance of pollutants.” 5 Robert E. Beck, Waters & Water Rights § 53.01(b)(3) at 216–17 (1991), citing Sierra Club v. Abston Constr. Co., 620 F.2d at 45 (miners channeled waters into sump pits which leaked after heavy rains).

This broad reading of the term “point source” is essential to fulfill the mandate of the Clean Water Act, in that

> [t]he touchstone of the regulatory scheme is that those needing to use the waters for waste distribution must seek and obtain a permit to discharge that waste, with the quantity and quality of the discharge regulated. The concept of a point source was designed to further this scheme by embracing the broadest possible definition of any identifiable conveyance from which pollutants might enter the waters of the United States. **

We believe it contravenes the intent of FWPCA and the structure of the statute to exempt from regulation any activity that emits pollution from an identifiable point.

_Earth Sciences_, 599 F.2d 368, 373.

Nonetheless, the term “point source” sets significant definitional limits on the reach of the Clean Water Act. Fifty percent or more of all water pollution is thought to come from nonpoint sources. S. Rep. 99–50, 99th Cong., 1st Sess. 8 (1985); William F. Pedersen, Jr., _Turning the Tide on Water Quality_, 15 ECOL. L.Q. 69, n.10 (1988). So, to further refine the definition of “point source,” I consider what it is that the Act does not cover: nonpoint source discharges.

Nonpoint source pollution is, generally, runoff: salt from roads, agricultural chemicals from farmlands, oil from parking lots, and other substances washed by rain, in diffuse patterns, over the land and into navigable waters. The sources are many, difficult to identify and difficult
to control. Indeed, an effort to greatly reduce nonpoint source pollution could require radical changes in land use patterns which Congress evidently was unwilling to mandate without further study. The structure of the statute—which regulates point source pollution closely, while leaving nonpoint source regulation to the states under the Section 208 program—indicates that the term “point source” was included in the definition of discharge so as to ensure that nonpoint source pollution would not be covered. Instead, Congress chose to regulate first that which could easily be regulated: direct discharges by identifiable parties, or point sources.

While Villegas’ activities were not prototypical point source discharges—in part because he was disposing of waste that could have been disposed of on land, and so did not need a permit or a pipe—they much more closely resembled a point source discharge than a nonpoint source discharge.

Accordingly, I would affirm the rulings of the district court.

In the course of researching the controversy, you have come across some materials from similar controversies in California. Excerpts from some of those materials appear below. The first item is from an advocacy letter submitted to the San Diego Regional Water Control Board, a California government agency, on behalf of the La Jolla Community Fireworks Foundation. The second item is a legal memorandum produced by the California State Water Resources Control Board. The third item is a notice letter indicating the intent of homeowners along Lake Tahoe to bring a Clean Water Act Lawsuit. The fourth item is a letter from ten United States senators to EPA. As you read these materials, bear in mind that none of them contains binding legal authority. Instead, they will help you anticipate arguments that might be raised in your controversy.

Letter from Robert Howard, Latham & Watkins LLP, to San Diego Regional Water Quality Control Board
Dec. 9, 2010

Dear Mr. Gibson and Honorable Board Members:

Thank you for the opportunity to submit comments in advance of the December 16, 2010 workshop on Tentative Order No. R9–2010–0124 regarding General Waste Discharge Requirements for the Public Display of Fireworks in the San Diego Region (“Tentative Order”), released by the San Diego Regional Water Quality Control Board (“Regional Board”) on
September 23, 2010. We submit these comments on behalf of the La Jolla Community Fireworks Foundation ("LJCF"), a non-profit corporation organized for the purpose of promoting patriotism and community spirit by preserving La Jolla’s Fourth of July tradition with a public fireworks display.

We are very concerned that the Regional Board staff has proposed a new, unnecessary and nation-wide precedent-setting regulatory regime for future public fireworks displays, without any significant public input and, more importantly, without any scientific basis. Quite simply, the Tentative Order is a regulation seeking a problem. There have been no showing of problems or water quality issues presented to the Regional Board that justify the issuance of this Tentative Order and the onerous regulatory requirements set forth therein. The burdensome regulations, testing and reporting requirements will almost certainly prevent most coastal communities in the San Diego region from participating in a patriotic fireworks tradition that dates back over 200 years. Importantly, no regulatory body in the nation has found it necessary or appropriate to regulate any one of the countless fireworks displays that have occurred during the almost forty years that the Clean Water Act has been in existence. And any attempt to justify the terms of the Tentative Order based on the current fireworks displays put on by Sea World is preposterous when one considers that the Sea World events occur for over 100 consecutive days from a barge in an enclosed, shallow bay, whereas, by way of example, Fourth of July fireworks are a once-a-year event that last a matter of mere minutes.

We would therefore request that the Regional Board withdraw this Tentative Order, and, as has been done for inland fireworks displays, issue a General National Pollution Discharge Elimination System ("NPDES") permit exemption for public fireworks displays that occur from the same coastal location between four to ten times a year. In the alternative, the Regional Board should revise the Tentative Order to implement a de minimis exception for those public fireworks displays which occur from the same coastal location less than ten times a year and/or detonate no more than a reasonable annual threshold of pyrotechnical material, a threshold that can be reached through consultation with water quality consultants.

I. The Tentative Order Would Regulate Fourth of July Fireworks Out Of Existence

A. Implementation of the Tentative Order Would Result in Cancellation of Most Coastal Community Fireworks Displays

First and foremost, the Regional Board must understand that the Tentative Order as it now stands would result in the cancellation of most, if not all, San Diego area community fireworks displays as a result of the
high cost of compliance with the Tentative Order’s demanding regulations, testing and reporting requirements. Financed by small individual community contributions, these long-standing patriotic celebrations would be permanently shut down if communities are forced to produce enough capital to comply with the unnecessary and duplicative provisions of the Tentative Order.

As an example, the La Jolla Cove fireworks display has been an annual community celebration for over 25 years. This year’s 2010 display lasted 23 minutes, at a total cost of approximately $30,000. Yet the Tentative Order proposes water quality and sediment monitoring that local water quality consultants have estimated will cost between $30,000 and $100,000, thereby doubling or quadrupling the cost of the event and making any single event cost prohibitive.

***

II. The Regional Board Has No Jurisdiction to Regulate Public Displays of Fireworks as They Are Not a “Point Source” Under Federal Clean Water Act

A. Fireworks Are Not a “Point Source” Under the Clean Water Act

Even if San Diego communities could conceivably raise enough capital annually to finance the permit fee, water monitoring and sediment testing requirements of the Tentative Order, the Regional Board has no legal jurisdiction to require these community organizers to comply with the terms of the Tentative Order. As explained below, occasional public fireworks displays detonated above or near water cannot be considered a “point source” under the federal Clean Water Act (33 U.S.C. § 1251 et seq.) (“CWA”), and thus the Regional Board has no legal basis for regulating these displays.

The CWA empowers states to administer the NPDES permit program, under which entities such as the Regional Board are authorized to issue and administer NPDES permits. 33 U.S.C. § 1342(b). However, the CWA requires such permits only when pollutants are discharged from a “point source.” 33 U.S.C. § 1362(12). As explained below, the legislative history of the CWA, EPA regulations, and federal case law all confirm that individual fireworks displays are not “point sources” under the CWA and thus cannot be regulated by the Regional Board under the NPDES program.

The CWA defines a point source as “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation; or vessel or other floating craft, from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14). The legislative history of the Act suggests that Congress meant to cover discharges that were at least “frequent,” or that resulted in some
“measurable” waste entering the water. *Northwest Envtl. Def. Ctr. v. Brown*, 617 F.3d 1176, 1183 (9th Cir. 2010). Here, the evidence shows that occasional celebratory and civic public fireworks displays are neither “frequent” nor result any “measurable” amount of waste entering the water; thus, it makes sense that no regulatory body in the nation, including the U.S. Environmental Protection Agency (“EPA”) which has primary jurisdiction for nationwide enforcement of the CWA, has ever attempted to regulate such displays as a “point source” under the CWA.

The federal regulations interpreting the definition of “point source” focus on various industrial categories such as dairy products processing; grain mills; the textile industry; cement manufacturing; feed lots; fertilizer manufacturing; nonferrous metals manufacturing; steam electric power generating; leather tanning; asbestos manufacturing; and coal mining. *40 C.F.R. § 405 et seq.* While the regulations include explosives manufacturing as a specified category of regulated point sources, fireworks displays are not referred to anywhere in the regulations. Given the breadth of regulations existing with regards to other potential “point sources,” a logical conclusion from this conspicuous regulatory absence is that Congress does not consider occasional public fireworks displays detonated above water to constitute a “point source” discharge under the CWA.

Federal courts have held that activities and “sources” such as people, grazing cows, and even a building from which trash and runoff ran into a river are not “point sources.” *United States v. Plaza Health Labs., Inc.*, 3 F.3d 643 (2d Cir. 1993); *Oregon Natural Desert Ass’n v. Dombeck*, 172 F.3d 1092 (9th Cir. 1998); *Hudson Riverkeeper Fund v. Harbor at Hastings Assocs.*, 911 F. Supp. 251 (S.D.N.Y. 1996). The Second Circuit has stated that the definition of “point source” and the examples given by Congress “evoke images of physical structures and instrumentalities that systematically act as a means of conveying pollutants from an industrial source to navigable waterways.” *Plaza Health Labs., Inc.*, 3 F.3d at 646 (emphasis added). The individual fireworks displays at issue here do not systematically convey pollutants because they take place only once or twice per year, nor are they an industrial source of pollutants. Similarly, occasional fireworks displays are not comparable to the year-after-year deliberate bombing of water-based targets and disposal of millions of pounds of military munitions into the ocean surrounding Vieques Island. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 307 (1982).

By enacting the CWA, Congress intended to target “industrial and municipal production of pollutants,” not infrequent activities such as fireworks displays. *Plaza Health Labs., Inc.*, 3 F.3d at 650. The Tentative Order would constitute the first and only interpretation in the country that public fireworks displays are a “point source” discharge under the
CWA. It simply cannot be reasonably argued that occasional coastal fireworks displays fall within the definition of “point source” discharge under federal law.

B. Regulation of Fireworks as a “Point Source” Would Lead To Absurd Conclusions

Any attempt by the Regional Board to label occasional public fireworks display as a “point source” under the CWA would inevitably lead to a slippery slope of endless regulation with illogical results. For example, if once- or twice-yearly fireworks displays constitute a “point source,” then the Regional Board by necessity must also require a NPDES permit for any plane flying over the ocean whose engines discharge particulates, or any person entering the ocean with non-waterproof sunscreen, or even a person caught littering in a body of water. All of these sources produce far more cumulative “pollutants” and occur infinitely more frequently than a 23-minute Fourth of July fireworks display; yet the Regional Board has correctly not seen fit to regulate any of these discharges as a point source under the CWA. No doubt the Regional Board recognizes that it does not have the legal authority to do so under the CWA, and such regulation would result in an endless permitting fiasco. The Regional Board should now apply those same principles here and provide a general NPDES permitting exemption for occasional public fireworks displays.

The characterization of Fourth of July fireworks displays as a “point source” is a fantastic and inappropriate expansion of the term as it is used in the CWA. * * * Occasional public fireworks events occurring between four and ten times per year (or which comprise no more than a certain threshold of pyrotechnics) should be treated as exempt from any NPDES permitting requirements. * * *

Very Truly Yours,

Robert M. Howard

Jessica M. Newman & Catherine George Hagan
(Staff Counsel, California State Water Resources Control Board), Memorandum Analyzing Whether Fireworks Are Point Source Discharges under Clean Water Act
Apr. 20, 2011

Background

The Regional Water Quality Control Board, San Diego Region (San Diego Water Board) is considering adoption of a national pollutant discharge
elimination system (NPDES) permit for residual firework pollutant waste discharges to waters of the United States. The permit would cover public displays of fireworks in the San Diego region and uses a tiered approach to regulating the firework displays. Several comment letters received by the San Diego Water Board expressed the view that fireworks are not a point source discharge that could be regulated through an NPDES permit.

**Question Presented**

Are fireworks that enter waters of the United States a point source discharge?

**Brief Answer**

Yes, fireworks are a point source. The definition of a point source must be read broadly to protect water quality. While courts have not considered the issue of whether fireworks are a point source, courts have found that ordnance from military aircraft, spent shot from a gun fired over water, and pesticides sprayed via airplane or helicopter over water are all point sources. For fireworks, the point source is the instrument that shoots the firework into the air and causes the discharge.

**Discussion**

* * *

In light of the goals of the CWA, courts have very broadly interpreted the definition of a point source. The Second Circuit Court of Appeals stated that the definition “embrac[es] the broadest possible definition of any identifiable conveyance from which pollutants might enter waters of the United States.” (Peconic Baykeeper, Inc. v. Suffolk County (2d Cir. 2010) 600 F.3d 180, 188 (quoting Cordiano v. Metacon Gun Club, Inc. (2d. Cir. 2009) 575 F.3d 199, 219; Dague v. City of Burlington (2d Cir. 1991) 935 F.2d 1343, 1354–55); see also Northwest Environmental Defense Center v. Brown (9th Cir. 2010) 617 F.3d 1176, 1183; United States v. Earth Sciences, Inc. (10th Cir. 1979) 599 F.2d 368, 373.) One comment letter noted that the federal regulations interpreting the definition of a point source have focused on industrial sources. (Letter from Latham & Watkins on behalf of the La Jolla Community Fireworks Foundation (December 9, 2010) at p. 5.) While industrial sources may be common discharges, the definition of a point source is much broader than just that category of discharges. The Ninth Circuit Court of Appeals noted that Senate Committee Report “instructed that the [EPA] Administrator should not ignore discharges resulting from point sources other than pipelines or similar conduits . . . There are many other forms of periodic, though frequent, discharges of pollutants into the water through point sources such as barges, vessels, feedlots, trucks, and other conveyances.” (Northwest Environmental Defense Center v. Brown, supra, 617 F.3d at p. 1183 (quoting S. Rep. No. 92–414, at p. 51 (1971).) Thus, a broad
interpretation of “point source” must be used when determining whether fireworks are a point source.

While a court has not yet reviewed the specific issue of whether fireworks are point sources, courts have looked at similar discharges that are not explicitly identified in the definition of a point source. Ordnance fired from a military aircraft into the water has been held to be the addition of a pollutant from a point source that requires an NPDES permit. (*Romero-Barcelo v. Brown* (1st Cir. 1981) 643 F.2d 835, 861, rev’d sub nom. *Weinberger v. Romero-Barcelo* (1982) 456 U.S. 305.) The ordnance fired from the military aircraft included accidental bombings of the navigable waters and the occasional intentional bombing of water targets. (*Weinberger v. Romero-Barcelo* (1982) 456 U.S. 305, 307.) Even though the ordnances did not frequently enter the water, the military still needed an NPDES permit to comply with the CWA. The district court, when looking at the facts, held that an NPDES permit was required notwithstanding the fact that the Environmental Protection Agency did not have any regulations governing the issuance of an NPDES permit to cover ordnances entering the water, and that there was no evidence that the ordnances had measurable deleterious effects on the water. (*Romero-Barcelo v. Brown* (D.P.R. 1979) 478 F. Supp. 646, 664, aff’d in part, vacated in part, (1st Cir. 1981), 643 F.2d 835, rev’d sub nom. *Weinberger v. Romero-Barcelo* (1982) 456 U.S. 305.) When comparing fireworks to ordnances, both contain pollutants that are discharged from an untraditional source that had not been previously regulated.

Spent shot and target fragments from trap shooting over the water are also discharges of a pollutant over navigable waters. (*Stone v. Naperville Park Dist.* (N.D. Ill. 1999) 38 F. Supp. 2d 651, 655; see also *Connecticut Coastal Firemen’s Association v. Remington Arms Co.* (2d Cir. 1993) 989 F.2d 1305, 1313 (finding that lead and steel shot are both “pollutants” under the CWA).) In *Stone*, the court held that the trap shooting range and each firing station were a “point source” under the CWA. (*Stone v. Naperville Park Dist., supra*, 38 F. Supp. 2d at p. 655.) The court found that the whole purpose of the facility was to “discharge pollutants” in the form of lead shot and fragmented targets and the facility was “discernible, confined and discrete.” (*Ibid.* Similarly, the point of the instruments that set off fireworks is to discharge pollutants, i.e. shoot the firework into the air to allow the firework to explode and produce the colorful effect we all see. The firework itself is the pollutant, much like the bullet is the pollutant at a firing range.

The interpretation of the instrument setting off the firework being the point source is confirmed by an analysis of the word “from” in the phrase “. . . addition of any pollutant to navigable waters from any point source.” (33 U.S.C. § 1362(12).) When looking at pesticides sprayed into the air over navigable waters from a truck and helicopter, the Second Circuit
Court of Appeals found that the point source was not the air but rather the spray apparatus that was on the truck or helicopter. (Peconic Baykeeper, Inc. v. Suffolk County (2d. Cir. 2010) 600 F.3d 180, 188.) Even though the pesticides were being sprayed into the air, the spray apparatus was the starting point and so was the point source. (Ibid.) The same analysis applies to fireworks that explode in the air. The discharge comes from the instruments that shoot the fireworks into the air and not from the air after the fireworks explode. Therefore, the instruments that set off the fireworks are the point source from which the pollutants in the fireworks are discharged.

* * *

Letter from Michael R. Lozeau, Lozeau Drury LLP, to Carol Chaplin, Executive Director, Lake Tahoe Visitors Association, et al.
Sept. 5, 2013

Dear Ms. Chaplin, Mr. Souza, Mr. Dicks, and Mr. Gilfillan,

We write to notify you that Joan and Joseph Truxler, long-time residents of Zephyr Cove, Nevada, hereby notify the Lake Tahoe Visitors’ Association (“LTVA”), Pyro Spectaculars North, Inc., Pyro Spectaculars, Inc., Pyro Spectaculars Productions, Inc., Carol Chaplin, James R. Souza, John E. Dicks, and Mathew Gilfillan that they are each in violation of the Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1376 (hereinafter “Clean Water Act” or “CWA”) by discharging pollutants into Lake Tahoe without having obtained a National Pollutant Discharge Elimination System (“NPDES”) permit during the biannual fireworks shows held in South Lake Tahoe on July 4th and Labor Day eve each year. By this letter, pursuant to 33 U.S.C. § 1365(a) and (b) of the CWA, the Truxlers are providing each of you with notice of their intent to file suit to address the violations of the Clean Water Act referenced in this letter.


Under the CWA, it is unlawful to discharge pollutants from a “point source” to navigable waters without obtaining and complying with a permit governing the quantity and quality of discharges. Trustees for Alaska v. EPA, 749 F.2d 549, 553 (9th Cir. 1984). Section 301(a) of the Clean Water Act prohibits “the discharge of any pollutants by any person,” except as in compliance with, among other sections of the Act, Section 402, the NPDES permitting requirements. 33 U.S.C. § 1311(a). The term “discharge of pollutants” means “any addition of any pollutant
to navigable waters from any point source.” 33 U.S.C. § 1362(12). Pollutants are deemed to include, among other examples, solid waste, garbage, munitions, chemical wastes, industrial waste, and municipal waste discharged into water. 33 U.S.C. § 1362(6). Debris and chemicals from detonated fireworks are pollutants. See Weinberger v. Romero-Barcelo, 456 U.S. 305, 309–310 (1982) (acknowledging lower courts’ rulings that “the release of ordnance from aircraft or from ships into navigable waters is a discharge of pollutants”); Barcelo v. Brown, 478 F. Supp. 646, 664 (D.P.R. 1979) (“Defendant Navy is required to have an NPDES permit to cover the accidental or intentional release or firing of ordnance” into waters off of Puerto Rico); Long Island Soundkeeper Fund v. New York Athletic Club, 1996 U.S. Dist. LEXIS 3383 (S.D.N.Y. Mar. 20, 1996) (“shot and target debris generated by operation of defendant’s trap shooting range constitute pollutants within the meaning of the CWA”). A point source is defined as “any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, [or] conduit . . . from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14). Each of the mortar tubes that discharges pollutants to Lake Tahoe is a distinct and separate point source. “Navigable waters” means “the waters of the United States.” 33 U.S.C. § 1362(7). Lake Tahoe is a water of the United States.

This notice covers all violations occurring from September 5, 2008 to the present, as well as any violations described in this notice that occur after the date of this notice letter. Based on the information currently available to the Truxlers, LTV A, Carol Chaplin, Pyro Spectaculars North, Inc., Pyro Spectaculars, Inc., Pyro Spectaculars Productions, Inc., James R. Souza, John E. Dicks, and/or Mathew Gilfillan (collectively “LTVA and Pyro Spectaculars”) have managed and operated a fireworks show offshore of South Lake Tahoe every Fourth of July and Labor Day eve for at least the last five years. The fireworks show consists of launching several thousand rockets, mortars, and other fireworks from an array of several hundred mortar tubes set up on one or more barges/boats floating in Lake Tahoe. The fireworks are fired over the Lake and, upon detonation, spread debris and chemicals upon the surface of Lake Tahoe. Over the past five years, discharges of pollutants to the Lake from mortar tubes mounted on fireworks barges or boats have occurred on or about July 4, 2009, September 6, 2009, July 4, 2010, September 5, 2010, July 4, 2011, September 4, 2011, July 4, 2012, September 3, 2012, July 4, 2013, and September 1, 2013. * * *

Pursuant to Section 309(d) of the Act (33 U.S.C. § 1319(d)) and the Adjustment of Civil Monetary Penalties for Inflation (40 C.F.R. § 19.4) each separate violation of the Act subjects LTVA and Pyro Spectaculars to a penalty of up to $32,500 per day per violation for all violations occurring during the period commencing five years prior to the date of
this Notice of Violations and Intent to File Suit through January 12, 2009, and a maximum of $37,500 per day per violation for all violations occurring after January 12, 2009. Each discharge from each point source, i.e., each mortar tube operated on the barges or boats, is a separate and distinct violation. In addition to civil penalties, the Truxlers will seek injunctive relief preventing further violations of the Act pursuant to Sections 505(a) and (d) (33 U.S.C. § 1365(a) and (d)) and such other relief as permitted by law. Lastly, Section 505(d) of the Act (33 U.S.C. § 1365(d)), permits the Truxlers as prevailing parties to recover costs and fees, including attorneys’ fees from each of you.

The Truxlers believe this Notice of Violations and Intent to File Suit sufficiently states grounds for filing suit. The Truxlers intend to file a citizen suit under Section 505(a) of the Act against LTVA and Pyro Spectaculars, and their agents for the above-referenced violations upon the expiration of the 60-day notice period. However, during the 60-day notice period, the Truxlers would be willing to discuss effective remedies for the violations noted in this letter. If you wish to pursue such discussions in the absence of litigation, we suggest that you initiate those discussions within the next 20 days so that they may be completed before the end of the 60-day notice period. The Truxlers do not intend to delay the filing of a complaint in federal court if discussions are continuing when that period ends.

Sincerely,
Michael R. Lozeau

Letter from Senator David Vitter, et al., to Gina McCarthy, Administrator, Environmental Protection Agency
July 1, 2014

Dear Administrator McCarthy:

As Independence Day approaches, we write to express concern for a cherished Fourth of July tradition: celebratory fireworks to commemorate our nation’s founding. In the past few years, misguided citizen lawsuits have threatened community fireworks shows. We are concerned, on the eve of the celebration of this great nation’s founding, that the Environmental Protection Agency (EPA) is set to foster expanded efforts to undermine this form of celebration. If finalized, EPA and the Army Corps of Engineers’ (Corps) proposal to expand the Clean Water Act’s definition of the “waters of the United States” may enable litigious environmental groups to jeopardize fireworks displays throughout the country.
In California, there is clearly a concerted effort to prevent local communities from conducting traditional Fourth of July fireworks shows. The Lake Murray July Fourth Music Fest and Fireworks Show has been cancelled three years in a row due to litigation uncertainty. Last month, the San Diego City Council agreed to pay an environmental lawyer $250,000 in order to end litigation over Fourth of July fireworks displays. At Lake Tahoe, officials nearly cancelled this year’s Fourth of July fireworks show in response to an environmental lawsuit, but a settlement reached in April will apparently allow the show to go on as scheduled.

The Lake Tahoe lawsuit is particularly noteworthy, since it alleged that the locality’s Fourth of July fireworks show violated the Clean Water Act. According to the plaintiffs’ complaint, the fireworks show was unlawful because it resulted in the unpermitted discharge of pollutants into Lake Tahoe. The Lake Tahoe lawsuit also demanded that fireworks operators and municipal authorities pay $37,500 per day in civil penalties for each violation of the Clean Water Act. Similarly misguided approaches to the Clean Water Act have led some legal observers to question the future viability of community fireworks shows.

Unfortunately, EPA and the Corps’ proposed “waters of the United States” rule could exacerbate this disturbing trend. By expanding federal Clean Water Act jurisdiction to include ditches, small streams, ponds, and other purely local waterbodies, EPA and the Corps may be exposing landowners and municipalities across the country to costly citizen suit litigation if they should attempt to conduct a neighborhood fireworks show. Recent history in California may set an ominous precedent for such challenges to fireworks displays in other states. If the proposed “waters of the United States” rule becomes final and serves as the eventual basis for future citizen suits against those who organize fireworks shows, we fear few homeowners, communities, or local organizations will be able to conduct fireworks displays as they have for decades or longer.

Commemorative fireworks displays have been a part of our nation’s history since its founding. However, there are individuals and groups who would like to significantly limit this tradition through heavy-handed citizen suit litigation under the Clean Water Act and other laws. Finalization of the proposed “waters of the United States” rule could unduly encourage proponents of this tactic, lending further and additional reason for the withdrawal of the proposed rule. As we celebrate the Fourth of July later this week, we appreciate your attention to this important matter.

[Eds.: The letter was signed by Senators David Vitter, John Barrasso, Mike Enzi, Orrin Hatch, Jim Inhofe, Mike Johanns, Deb Fischer, Mike Lee, Saxby Chambliss, and John Hoeven]
NOTES

1. The materials relating to the San Diego fireworks controversy note that the permitting decision will be made by the San Diego Regional Water Control Board, a California government agency. This reflects the important role that state government agencies play in implementing the Clean Water Act in states with approved programs.

2. In many older cities, “combined sewer overflows” are particularly problematic kinds of point sources. A combined sewer system collects both stormwater and sanitary wastewater within a single set of pipes. During dry weather or mild precipitation events, the system conveys all of that water to a wastewater treatment plant. But during wet events, many systems now receive more stormwater runoff than they can handle. To avoid damaging wastewater treatment plants, those systems divert some of the sewage/stormwater mix into an overflow pipe, which then discharges the untreated mix directly into surface waterways. These CSOs are major sources of pollution, but removing a CSO generally requires expensive engineering, which can put severe strains on municipal budgets. That conflict has led to legal work, and many cities now are subject to consent decrees establishing schedules for removing their CSOs.

ADDITIONAL QUESTIONS

Decide whether each of the following factual scenarios involves a discharge of a pollutant from a point source.

1. A paper mill is located on the banks of the Fox River in Wisconsin. The mill treats its effluent at an on-site wastewater treatment plant, then discharges that effluent through a pipe into the river. While the treatment plant removes most contaminants from the effluent, low quantities of tannins, cellulosic fibers, chlorinated compounds, and acids remain in the effluent.
2. In eastern Colorado, a ditch conveys irrigation water to fields near a tributary to the Platte River. Not all of the water is consumed by crops, and a second ditch conveys excess water back into the stream. The returning water contains elevated concentrations of salt, sediment, and nutrients and trace quantities of herbicides and pesticides.

3. In central Iowa, thousands of acres of farmland occupy lands that once were quite wet. Groundwater tables beneath those lands still can rise to the surface, flooding plants' root zones and destroying valuable crops. Farmers have responded to these flooding problems by constructing systems of tile drains. Tile drains are underground pipes that collect groundwater and convey it into surface ditches, which then drain into natural rivers and streams. While these systems are effective at protecting crops, they also convey fertilizers, pesticides, and herbicides that percolate downward through the soil and accumulate in groundwater. Indeed, lands irrigated by tile drain systems contribute much of the nutrient loading to the Mississippi River system, and thus are major contributors to the Gulf of Mexico dead zone beyond the Mississippi Delta. As of this writing, these tile drains never have been regulated as point sources. Should they be?

4. A large system of municipal storm sewers collects stormwater runoff from Los Angeles and the surrounding cities and delivers that stormwater runoff into the Los Angeles River. The runoff generally begins its pathway to the river by pooling on parking lots, roofs, roadways, and other developed areas. It then flows over the ground surface to storm drains, and then flows through subsurface pipes to the river. As it flows, the stormwater picks up a variety of impurities, including metals scraped from brake pads, oil and grease from cars, and fertilizers and herbicides.

5. A group of families intending to start a boating club recently purchased property along a river. The property is vacant, except for a pile of fertilizer left by the previous owner. Since the boating club bought the property, neighbors have told them that the fertilizer pile seems to be eroding into the river, loading the water with sediment and nutrients. Rumor has it that a local environmental group may be considering bringing suit under the Clean Water Act. The boating club has found someone willing to haul away the fertilizer sometime this summer, but in the meantime the club is concerned that it might be violating the Clean Water Act. It is considering attempting to build a berm between the fertilizer pile and the river, with the hopes of preventing runoff from reaching the river.

6. In a town in eastern North Carolina, 10,000 pigs are raised in a complex of warehouse-like buildings. The pigs generate huge volumes of fecal waste, which are stored in adjacent open-air lagoons. During occasional heavy rainstorms, one of the lagoons overflows, and the waste travels through a small ditch and into the New River.

7. A power company operates a hydroelectric plant between two rivers. Although the two rivers are only a few miles apart, one river flows at a higher elevation than the other, and the company generates power by shifting water
from the higher river to the lower one. The higher river has lower water quality, and shifting the water from the higher river to the lower river introduces sediment into the lower river system.

8. An old coal-fired power plant discharges a variety of pollutants, including sulfur dioxide, nitrogen oxides, and mercury, through its stacks. Hundreds of miles away, many of these pollutants are carried back to earth by the rain. Some fall directly into waterways, and some flow overland into those waterways. They raise nutrient concentrations, lower the pH, and contribute to mercury loading within the waterway.

V. NPDES PROGRAM

Section 301 of the Clean Water Act prohibits the discharge of pollutants into navigable waters, unless that discharge occurs in compliance with one of the Clean Water Act’s two major permitting programs. One of those permitting programs is the National Pollutant Discharge Elimination System, or NPDES. The other, which we discuss after the NPDES materials that follow, is the Section 404 program for permitting the dredging and filling of waters of the United States.

This section discusses the NPDES program in detail. Within that discussion, we initially focus on the regulation of effluent from large, discrete sources like industrial facilities and wastewater treatment plants. We will then discuss the NPDES program’s approach to stormwater management.

PROBLEM: PHARMACEUTICAL MANUFACTURING

Although the Clean Water Act is considerably less complex than the Clean Air Act, it still is easy to get lost in the maze of statutory programs, terms, and cross-references. To gain an understanding of how the Clean Water Act actually works to regulate pollutant discharges from point sources, we will use the example of a hypothetical pharmaceutical manufacturing facility that wants to know how the Clean Water Act applies to its facility. What regulatory programs apply to the facility? What specific regulatory requirements apply to the facility? What characteristics of the facility affect what the Act requires? These are the types of issues that practicing environmental lawyers encounter in advising a client about obtaining a Clean Water Act permit, or enforcing the Clean Water Act, or in negotiating over possible violations of the Clean Water Act.

A. EFFLUENT LIMITATIONS

Recall that Clean Water Act section 301, 33 U.S.C. § 1311, prohibits “the discharge of any pollutant by any person” except as authorized by the Act. The NPDES program is the primary regulatory mechanism for authorizing a discharge of a pollutant that would otherwise be illegal
under Clean Water Act section 301. The program involves technology-based standards that are set for specified categories of sources.

Let’s consider how the program regulates pharmaceutical manufacturing. Manufacturing pharmaceutical products and medicines is an important industry in the United States. Approximately 2,000 facilities around the country employ over 200,000 people and generate over $188 billion in product. See U.S. Census Bureau, Snapshots: Pharmaceutical and Medicine Manufacturing. Pharmaceutical manufacturing facilities use different types of processes, each of which produces somewhat different wastewaters. See 60 Fed. Reg. 21,592, 21,603–04 (proposed May 2, 1995); U.S. EPA, Development Document for Final Effluent Limitations Guidelines and Standards for the Pharmaceutical Manufacturing Point Source Category (July 30, 1998). The four primary types of pharmaceutical manufacturing processes are as follows:

*Fermentation* uses an organism such as a yeast, mold, or fungus to induce chemical changes that produce a pharmaceutical active ingredient. Most antibiotics and steroids are produced through fermentation. Fermentation generally involves large-scale batch processing of a dilute fermentation broth—similar to brewing beer, in which yeast is used to ferment sugar into carbon dioxide and alcohol—followed by processing to extract the pharmaceutical active ingredient from the broth. Fermentation primarily generates wastewater from spent (used) fermentation broth and solvents and other substances used to extract the active ingredient from the broth.

*Biological and natural extraction* derives active ingredients from natural sources such as plants, animals, and fungi. The extraction process generates relatively small amounts of active ingredient from large quantities of natural sources, and is thus generally used only when no alternative types of processes will work. Extraction generates wastewater from spent raw materials such as plant or animal tissue residue, from washing floors and equipment, and from spent solvents used in the extraction process.

*Chemical synthesis* uses a series of chemical reactions to convert raw materials into active ingredients. Most pharmaceutical active ingredients are manufactured through chemical synthesis. Chemical synthesis generally uses a batch process to chemically synthesize active ingredients. Wastewaters produced from chemical synthesis include process wastewaters such as spent solvents and filtrates, and floor and equipment washes.

*Mixing, compounding, and formulating* puts active ingredients into dosage forms such as tablets, liquids, capsules, and ointments. These
processes generate some wastewater from floor and equipment washes, wet scrubbers, and spills.

Some pharmaceutical manufacturing facilities discharge their wastewater into a sewer system that carries the wastewater to a publicly owned treatment works (POTW), which treats the waste before discharging it. Other facilities discharge their wastewater directly into a waterway such as a river. This brings us to a first general distinction in Clean Water Act regulation of point source discharges under the NPDES program:

- Facilities that discharge into sewer systems are known as *indirect dischargers*. 40 C.F.R. § 122.2. Because they are not discharging into waters of the United States, they do not require a NPDES permit. They are, however, subject to *pretreatment standards* that limit what they can discharge into the sewer system. See 33 U.S.C. § 1317(b)–(e).

- Facilities that discharge into waters of the United States are known as *direct dischargers*. See 40 C.F.R. § 122.2. They require a NPDES permit. See 33 U.S.C. §§ 1311 (a), 1342(a).

The wastewater streams generated by pharmaceutical manufacturing include different pollutants that pose varying threats to human and environmental health. All pollutants can cause harm at some level of exposure, but some are more hazardous or more difficult to remove from wastewater. For example, the materials in spent fermentation broth are relatively easy to remove through biological treatment processes, such as those used in POTWs. Other substances, such as cyanide, are highly dangerous and persistent in the environment and require different treatment. This brings us to a second general distinction in Clean Water Act regulation of point source discharges:

- *Conventional pollutants* are generally naturally occurring, biodegradable substances that traditionally have been the focus of wastewater treatment. 43 Fed. Reg. 32,857 (July 28, 1978). Congress designated four conventional pollutants (the first two of which are really groups of pollutants) in the Clean Water Act—biological oxygen demanding, suspended solids, fecal coliform, and pH. 33 U.S.C. § 1314(a)(3)(A). EPA has since added a fifth, oil and grease. 40 C.F.R. § 401.16.

- *Toxic pollutants* are toxic and persistent substances that cause serious biological abnormalities or malfunctions in organisms. 33 U.S.C. §§ 1317(a), 1362(13). Congress designated 65 pollutants as toxic in the Clean Water Act. 33 U.S.C. § 1317(a). Based on the list of toxic pollutants, which includes some groups of pollutants, EPA has
developed a list of 126 specific *priority pollutants* for which it has developed analytical test methods and specific regulatory limits. 40 C.F.R. pt. 423 App. A.

- *Non-conventional pollutants* are those pollutants not classified as conventional or toxic pollutants. 33 U.S.C. §§ 1311(a), 1342(a). Aluminum, for example, is a non-conventional pollutant.

Some pharmaceutical manufacturing facilities have been operating for years and have invested in processes and equipment. Their commitment to that existing infrastructure limits their ability to change to conform to new regulatory requirements without incurring significant, perhaps even unaffordable, costs. Other facilities will not be built until after regulations are in place, and so have much greater ability to adopt particular processes or employ certain equipment at lower cost. For this reason, the Clean Water Act, like most environmental statutes, also distinguishes between facilities based on their age, which presents a third general distinction in Clean Water Act regulation of point source discharges:

- *New sources* are sources for which construction began after the publication of regulations addressing discharges from new sources in that industry. *See* 33 U.S.C. § 1316(a)(2); 40 C.F.R. § 122.2.

- *Existing sources* are sources other than new sources—that is, sources for which construction began before the publication of regulations addressing discharges from new sources in that industry. *See* 40 C.F.R. § 122.29(a)(3).

Together, these various distinctions—direct versus indirect dischargers, conventional versus toxic versus non-conventional pollutants, new source versus existing source—affect the stringency of the regulatory limits that apply to a particular discharge covered by the Clean Water Act. (Whether a waterway is meeting its water quality goals also may affect the applicable regulatory limits, a topic we address later in this chapter.) To some extent, these distinctions operate independently. For example, new sources are generally regulated more stringently than existing sources, for all types of pollutants and for both direct and indirect discharges. But the distinctions are also interrelated to some extent. In particular, because POTWs can effectively treat conventional pollutants, permits for indirect discharges—that is, discharges to sewer systems that flow into POTWs—often do not include limits for conventional pollutants. Toxic and non-conventional pollutants, by contrast, can interfere with the bacteria that treat sewage or pass through treatment works untreated, and so pretreatment standards for those pollutants are vitally important.
Recall that Clean Water Act § 402, 33 U.S.C. § 1342, establishes the NPDES program that allows point sources to discharge pollutants into waters of the United States without violating the Act. Section 402 requires permitted discharges to comply with other provisions of the Clean Water Act. Among the most important of these other provisions are Clean Water Act sections 301, 304, and 307, id. §§ 1311, 1314, 1317, which in combination direct EPA to establish, and periodically review, effluent limitations specifying the amount of pollutants that can be present in discharges covered by the Act. These effluent limitations are a type of technology-based standard, because they are based on EPA’s determination of what levels of pollution prevention and control are technically and economically feasible for a particular industry. Despite their name, however, technology-based effluent limits do not require sources to use a specific pollutant control technology; instead, effluent limits identify specific maximum pollutant levels that are permitted in the sources’ wastewater discharges. The technology-based standards imposed by the CWA are a variety of performance standard, discussed in chapter 1.

EPA approaches effluent limitations on an industry-by-industry basis, issuing sets of regulations (effluent guidelines) that specify effluent limitations for different types of facilities within a particular industry. Just as with the Clean Air Act, different types of sources within an industry are subject to different effluent limitations based on different control technologies. The types of dischargers are classified according to the various distinctions we have identified in this section:

- **Best Practicable Control Technology (BPT)** applies to direct discharges of all categories of pollutants (conventional, non-conventional, and toxic) from existing sources in the industry. EPA bases BPT effluent limitations on the average of the best performing existing sources within the industry. 33 U.S.C. § 1311(b)(1)(A) (directing effluent limitations requiring BPT); id. § 1314(b)(1) (defining BPT).

- **Best Conventional Pollutant Control Technology (BCT)** applies to direct discharges of conventional pollutants from existing sources in the industry. Thus, BCT overlaps in application with BPT, which applies to direct discharges of all pollutants from existing sources. BCT is what is known as a second level of control, because it potentially regulates sources more stringently than the first level of control under the BPT standard. The BCT standard allows EPA to establish effluent limitations at levels more stringent than the BPT standard, but only if the incremental additional stringency is cost-effective. If the additional stringency is at least as cost-effective as the BPT standard (known as the
industry cost-effectiveness test), and not less cost-effective than a comparable increase in stringency in POTW treatment (known as the POTW test), then EPA establishes effluent limitations based on the BCT standard. 51 Fed. Reg. 24,974 (July 9, 1986); Am. Paper Inst. v. EPA, 660 F.2d 954 (4th Cir. 1981). If no method of pollutant control passes these cost-effectiveness tests, then EPA sets BCT effluent limitations at the same level as BPT effluent limitations. 33 U.S.C. § 1314(a)(4) (defining conventional pollutants); id. § 1314(b)(4) (defining BAT).

- Best Available Technology Economically Achievable (BAT) applies to direct discharges of non-conventional and toxic pollutants from existing sources in the industry. See 33 U.S.C. § 1311(b)(2) (directing effluent limitations requiring BAT for non-conventional and toxic pollutants); id. § 1314(b)(2) (defining BAT); id. § 1317(a) (defining toxic pollutant). Thus, just as BCT and BPT overlap in application with respect to discharges of conventional pollutants from existing direct dischargers, BAT overlaps in application with BPT with respect to direct discharges of non-conventional and toxic pollutants from existing sources. Like BCT, BAT is a second level of control that potentially results in more stringent effluent limitations than under BPT. EPA bases BAT effluent limitations guidelines on the best existing pollution control technology that is economically and technologically achievable for sources in the industry. Although cost is a factor under the BAT standard, BAT effluent limitations are not subject to the strict cost-effectiveness tests of the BCT standard.

- New Source Performance Standards (NSPS) apply to direct discharges of all types of pollutants from new sources in the industry. EPA bases new source performance standards on the best available demonstrated control technology. Because new sources can use the most efficient production processes and the most effective pollution control technologies, NSPS should generally be the most stringent effluent limitations for an industry. 33 U.S.C. § 1316.

- Pretreatment Standards for Existing Sources (PSES) apply to indirect discharges of pollutants (typically non-
conventional and toxic pollutants)\textsuperscript{3} from existing sources in the industry. Pretreatment standards are intended to prevent indirect discharges that pass through, interfere with, or are otherwise incompatible with the operation of a POTW. 33 U.S.C. § 1317(b). EPA bases pretreatment standards for existing sources on the same factors it employs to set effluent limitations for existing direct dischargers under the BAT standard.

- \textit{Pretreatment Standards for New Sources (PSNS)} apply to indirect discharges of pollutants (typically non-conventional and toxic pollutants) from new sources in the industry. 33 U.S.C. § 1317(b). Pretreatment standards for existing sources on the same factors it employs to set effluent limitations for new direct dischargers in the NSPS.

As lawyers, it is important to understand these terms conceptually, but also to understand how the text of the Clean Water Act creates these control technologies and defines the types of discharges to which they apply. Unfortunately, the way the statute does this for direct dischargers is complicated and reminiscent of the Clean Air Act’s many internal cross-references. Clean Water Act section 301(b) creates a timetable for EPA to establish effluent limitations for different categories of discharges and specifies the control technology that applies to each category of discharge. For example, section 301(b)(2)(E) directs EPA, by March 31, 1989, to issue effluent limitations that “require application of the best conventional pollutant control technology as determined in accordance with regulations by the Administrator pursuant to section 1314(b)(4),” for “pollutants identified pursuant to section 1314(a)(4).” Section 304, in turn, identifies the pollutants, \textit{see, e.g.}, 33 U.S.C. § 1314(a)(4) (defining “conventional pollutants”), and the factors that are to be considered in determining each control technology, \textit{see, e.g.}, id. § 1314(a)(4) (defining the best conventional pollutant control technology). The Clean Water Act’s directive for pretreatment standards is mercifully simpler and for the most part contained in a single provision, \textit{id.} § 1317(b).

\textsuperscript{3} EPA sometimes sets pretreatment standards for conventional pollutants, either as surrogates for toxic or nonconventional pollutants or when necessary to prevent interference with the operation of POTWs.
Now let’s apply this framework to pharmaceutical manufacturers. EPA issued its first effluent guidelines for pharmaceutical manufacturers in 1976. 41 Fed. Reg. 50,676 (Nov. 17, 1976). EPA revised and expanded the pharmaceutical effluent guidelines in 1983, 1986, and 1998. See 63 Fed. Reg. 50,388 (Sept. 21, 1998); 51 Fed. Reg. 45,094 (Dec. 16, 1986); 48 Fed. Reg. 49,808 (Oct. 27, 1983); see also 68 Fed. Reg. 12,266 (Mar. 13, 2003) (minor clarification); 64 Fed. Reg. 10,391 (Mar. 4, 1999) (technical correction). When EPA begins the process of establishing or revising effluent guidelines, it compiles information about the industry’s processes, water use, wastewater characteristics, and treatment technologies. The extensive process leading to the 1998 amendments began with EPA developing a database of technical and cost information about how each of the facilities subject to the effluent guidelines for pharmaceutical manufacturers dealt with its wastewater. 60 Fed. Reg. 21,592, 21,602–03 (proposed May 2, 1995). Based on the information in the database, EPA identified various pollutant control processes and technologies, calculated the potential effluent characteristics of wastewater associated with each process and technology, and estimated the costs of these processes and technologies. Id. EPA published initial proposed regulations for public comment in 1995, 60 Fed. Reg. 21,592, and then published additional information for public comment in a 1997 notice, 62 Fed. Reg. 42,720 (Aug. 8, 1997). With the information gathered through this process, including from public comments, EPA issued final regulations in 1998 reflecting the agency’s judgments about what effluent limitations were appropriate for each type of discharge, based on the relevant statutory factors:

For discharges of wastewater containing chemical oxygen demand—a non-conventional pollutant—from existing sources that use a fermentation or chemical synthesis process, EPA determined that advanced biological treatment was widely used in the industry and therefore consistent with the statutory factors that define the BPT. 63 Fed. Reg. at 50,396–99. EPA determined that implementation of advanced biological treatment could reduce discharges of chemical oxygen demand to a maximum daily concentration of 1675 parts per
milion (ppm) and a maximum monthly average concentration of 856 ppm. 40 C.F.R. §§ 439.13(c), 439.32(c).

With respect to the second level of control under the BCT standard for the direct discharge of conventional pollutants from existing sources, which as explained above requires any incremental limitation beyond what is required under BPT to be cost-effective, EPA determined that no technologies were available that would achieve greater removal of conventional pollutants than the BPT effluent limits and also satisfy the BCT cost test. 63 Fed. Reg. at 50,402. Accordingly, EPA promulgated BCT effluent limitations that are equal to BPT limitations for each category. 40 C.F.R. §§ 439.13, 439.23, 439.33, 439.43.

With respect to the second level of control under the BAT standard for the direct discharge of 31 non-conventional and toxic pollutants from existing sources that use a fermentation or chemical synthesis process, EPA determined that advanced biological treatment and biological nitrification was economically achievable and consistent with the statutory factors for BAT. 63 Fed. Reg. at 50,399–400. EPA promulgated maximum daily and maximum monthly average effluent limitations, applicable to fermentation and chemical synthesis processes, which it determined could be achieved through use of this technology. 40 C.F.R. §§ 439.14(a), 439.34(a).

For direct discharges of pollutants from new sources under the NSPS, EPA determined that it lacked data about the performance of control technologies that might reduce effluent levels below those prescribed for existing sources. 63 Fed. Reg. at 50,402. Accordingly, EPA promulgated effluent limitations for new sources equal to those for existing sources. 40 C.F.R. §§ 439.15, 439.25, 439.35, 439.45.

For indirect discharges of pollutants from existing sources using a fermentation or chemical synthesis process, EPA determined that steam stripping and nitrification would reduce levels of 23 volatile organic compounds and ammonia that otherwise would pass through POTWs. 63 Fed. Reg. at 50,400–02. EPA promulgated effluent limitations for existing indirect dischargers under the PSES for these pollutants. 40 C.F.R. §§ 439.16, 439.36. Because EPA could not identify a technology that would achieve lower effluent levels than steam stripping and nitrification, it promulgated effluent limitations for new indirect discharges under the PSNS standard equal to the limitations for existing sources under the PSES standard. 40 C.F.R. §§ 439.17, 439.37.

**QUESTIONS**

For each of the following hypotheticals, identify the type of source, applicable control technology standard, and apply the effluent guidelines for
pharmaceutical manufacturing, 40 C.F.R. Part 439, to determine the maximum monthly discharge limit for the specified pollutants.

1. Lee Pharmaceuticals has operated its plant since 1995. The plant produces pharmaceutical products by a fermentation process and discharges wastewater containing benzene into a sewer system, which then discharges to a wastewater treatment plant.

2. Assume the same facts as in (1), but the plant discharges its wastewater into the Delaware River.

3. Lee Pharmaceuticals is considering constructing a new plant along the Delaware River. The new plant will utilize an extraction process and will discharge wastewater into the river. Lee is concerned about limits on the amounts of total suspended solids in its wastewater.

4. In 1995, Lee Pharmaceuticals constructed a plant that manufactures pharmaceutical products through chemical synthesis and produces wastewater containing cyanide. The plant currently discharges its wastewater directly into the Delaware River, but Lee is considering whether to alter its process so that it discharges to a sewer system. Lee wants to know whether and how such a change will affect the limits on the amount of cyanide in its wastewater.

5. Assume that Lee Pharmaceuticals is operating the plant referenced in (3), and EPA issues a proposed rule that would amend section 439.23 to limit maximum monthly average discharges of total suspended solids to 20 ppm. Would this new limit apply to Lee’s plant? Why or why not?

6. Why do none of the pretreatment standards contain limits on discharges of total suspended solids?

B. PERMITTING

Commonwealth Pharma Services operates a pharmaceutical manufacturing facility in Conshohocken, Pennsylvania. The facility discharges approximately 56,000 gallons of wastewater per day into the Schuylkill River. The Clean Water Act thus requires Commonwealth Pharma to operate under an NPDES permit that authorizes its discharges.

Role of States. The Clean Water Act, like the Clean Air Act, is a “cooperative federalism” statute. It grants states the option to take over implementation of the NPDES program, so long as the state’s implementation program meets certain criteria. 33 U.S.C. § 1342(b). A state with delegated NPDES authority then becomes the primary source of NPDES permits and enforcement actions within that state’s boundaries. Almost all of the states have taken advantage of this opportunity, and EPA directly administers the NPDES program in only a handful of states. Thus, the Pennsylvania Department of

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4 The description in this section is based on an actual plant, but we have changed some of the information.
Environmental Protection—rather than EPA—issued Commonwealth’s NPDES permit for the Conshohocken plant. A copy of the permit can be found on the course website.

Even where EPA has approved a state NPDES program, EPA still retains a central role in NPDES permitting. State permits are written in accordance with EPA’s national effluent limitations. 33 U.S.C. § 1342(b)(1)(A). EPA retains oversight over state implementation of NPDES permitting, and, in theory, may revoke that authority. Id. § 1342(c)(3). EPA retains veto power over individual permits. Id. § 1342(d). EPA and the U.S. Justice Department—in addition to states—may take enforcement action against violations of state-issued permits, just as they can with EPA-issued permits. Id. § 1342(i).

That being said, although states with delegated authority must comply with the terms of the Clean Water Act in order to gain (and keep) EPA’s approval, state agencies often have considerable leeway in implementing the Act, especially when there is ambiguity or controversy about the statute’s meaning. Recall, for example, that the decision whether to require a permit for the San Diego fireworks displays was to be made at least in the first instance by the San Diego Regional Water Control Board, a California government agency—not by EPA. Unless EPA can credibly threaten to revoke its approval, a state agency such as the San Diego Board may be able to implement the Clean Water Act in ways that differ from what EPA would do. See Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256, 1276 (2009) (noting that cooperative federalism under federal environmental statutes “lends the states considerable leverage, which they have sometimes used to challenge and reshape federal policy”).

**Permit Limits.** A NPDES permit specifies the effluent limitations that apply to the permitted facility’s discharges. A single permitted source may discharge from multiple *outfalls*. Thus, Commonwealth Pharma’s Conshohocken plant has one outfall that discharges wastewater from its wastewater treatment plant, and another outfall that discharges stormwater runoff from parking lots, roof drains, and the manufacturing area. Each outfall has its own effluent limitations. The effluent limitations for the wastewater derive directly from EPA’s effluent guidelines for pharmaceutical manufacturing. For example, Commonwealth Pharma’s permit specifies that it may not discharge wastewater with an average monthly chemical oxygen demand of greater than 856 ppm or a
maximum daily chemical oxygen demand of greater than 1,675 ppm, the same limits set forth in EPA’s effluent guidelines regulations. 40 C.F.R. §§ 439.32(a), 439.34(a). For industries for which EPA has not yet issued effluent guidelines, Clean Water Act section 402(a)(1)(B), 33 U.S.C. § 1342(a)(1)(B), directs permitting authorities to apply “conditions as [the permitting authority] determines are necessary to carry out the provisions of [the CWA]”—which EPA regulations refer to as “Best Professional Judgment,” 40 C.F.R. § 125.3. Consequently, even if EPA had not established effluent limitations for pharmaceutical manufacturers, Commonwealth Pharma’s Conshohocken plant would need to secure a NPDES permit and that permit would limit the pollutants in the plant’s effluent.

**Monitoring and Reporting.** Although effluent limitations are an essential element of NPDES permits, permits do more than simply require permittees to comply with effluent limits. Permits also require periodic effluent sampling; Johnson Matthey’s permit requires it to sample for some pollutants daily, some weekly, and others monthly. Permittees must provide monthly *discharge monitoring reports* that transmit their monitoring results to regulators. Those reports then may be obtained by the public, which means that environmental groups have ready access to data on NPDES permit violations. The course website also contains Commonwealth Pharma’s discharge reports for April and May 2014. Note how easy it is to determine whether Commonwealth Pharma was in compliance with its permit limits—the monitoring results and permit limits are both reported.

Given the penalties for violating a NPDES permit, you might wonder why a permittee would not falsify its discharge monitoring reports to conceal a discharge that exceeds the effluent limitations in its permit. While such behavior undoubtedly occurs, the Clean Water Act makes it a felony to knowingly falsify monitoring data. 33 U.S.C. § 1319(c)(4); see, e.g., *United States v. Hopkins*, 53 F.3d 533 (2d Cir. 1995); *United States v. Kuhn*, 165 F. Supp. 2d 639 (E.D. Mich. 2001). Moreover, states and EPA are generally relatively lenient in penalizing permittees who accurately report and diligently correct their permit violations.

**Standard Clauses.** In addition to effluent limitations and monitoring and reporting requirements, permits also include standard clauses regarding the administration and enforcement of the permit. For example, Commonwealth Pharma’s permit requires the company to properly operate and maintain its facility, including all treatment and control equipment; authorizes the Pennsylvania Department of Environmental Protection and EPA to revoke the permit for cause; and authorize the agencies to enter the facility and perform inspections.
QUESTIONs

1. Why do you think NPDES permits—see Commonwealth Pharma’s permit at III.B.4 on page 15—restrict who may sign the discharge monitoring report?

2. Commonwealth Pharma’s permit (III.B.5 on page 15), in accordance with EPA regulations, 40 C.F.R. § 122.41(l)(4)(ii), dictates that if the permittee monitors more frequently than its permit requires, the permittee must report all of its monitoring data on its discharge monitoring report. Why do you think EPA regulations require this?

3. If Commonwealth Pharma wanted to sell its Conshohocken plant to Lee Pharmaceuticals, would Lee Pharmaceuticals have to apply to the Pennsylvania Department of Environmental Protection for a new NPDES permit?

C. STORMWATER

The problems above focus on the application of the NPDES program to effluent discharges from industrial facilities. Because they have achieved enormous reductions in pollution loading, environmental lawyers often describe these requirements as among the most successful in all of environmental law. Similar requirements apply to discharges from municipal wastewater treatment plants, and those requirements have been similarly effective.

But there is another universe of sources that the NPDES program regulates less effectively. Stormwater regulation, and its associated challenges, have become one of the most important frontiers for water quality law. To understand why, one must first know something about why stormwater runoff is an important environmental concern. The excerpt below summarizes some of the key ways urbanization impacts water quality. Most of them derive from the ways stormwater moves through an urban landscape.

Dave Owen, Urbanization, Water Quality, and the Regulated Landscape

Urbanized watersheds typically have very different hydrology from undeveloped watersheds. In the latter, some precipitation does not reach the ground and instead remains on leaves, branches, or grass. The rest typically lands on porous surfaces—either partly decayed leaves and duff or in meadows with matted layers of live and dead grass—which allow infiltration into the ground but impede surface flow. Once in the ground, some water is absorbed into root systems and transpired by plants, some
remains as soil moisture, and the rest percolates downward to the water table. It then flows laterally, usually at a very slow rate, until it discharges to surface waters. Only in larger storm events, when the rate of precipitation exceeds the ground’s capacity for infiltration or on landscapes with abundant bedrock or hard-packed soils, does precipitation produce significant quantities of surface runoff.

In several ways, that natural flow regime supports surface water quality. While surface flows tend to warm or cool to ambient surface temperatures, which vary widely over seasons and even days, subsurface conditions vary little, and streams recharged primarily by groundwater flow therefore have relatively stable temperatures. Shade vegetation creates a similar moderating effect, and trees also promote habitat diversity when they fall into waterways. An undeveloped landscape usually contains few pollutant sources, and some of the pollution carried with precipitation or deposited on the land surface filters out as water moves through the ground. And in undeveloped landscapes, waterways are directly connected to surrounding riparian and upland habitat, allowing species to move between habitat zones as they forage, shelter, and breed. For all of these reasons, the quality of waterways flowing through undeveloped landscapes tends to be quite high.

Urbanization introduces a series of detrimental changes to that hydrology. Human development almost invariably increases the extent of impervious surfaces—pavement and roofs, most importantly, but also compacted soils—which stop water from infiltrating the ground and force it to flow overland, usually to a system of storm drains and sometimes directly to receiving waters. Because these overland flows move much faster than groundwater, more water reaches streams during and shortly after rainstorms, which increases, often dramatically, the frequency and intensity of high flows. Meanwhile, groundwater flows diminish, and less water flows into streams between storm events. Water extractions can exacerbate this effect; lawns and landscaped vegetation usually require irrigation, which can increase pumping from aquifers already depleted by reductions in recharge. Consequently, urbanized watersheds frequently experience “flashy” flow, with higher flows, and often even floods, during storm events and lower or non-existent flows in dry periods.

For a variety of reasons, the composition of urban runoff also differs from runoff in undeveloped areas. Urbanization adds many pollutants: lawn fertilizers and pesticides; oil and grease from cars and machinery; heavy metals scraped from brake pads and tires; salts from snow and ice treatment; sediment from construction sites; and aromatic hydrocarbons from fuel combustion, among others. Loading of most of these pollutants increases in proportion to the area of impervious surfaces. Other pollutants, like animal feces or atmospherically deposited nitrogen or
mercury, occur in both urban and undeveloped areas but are more easily washed into surface waters where impervious surfaces are present. Temperatures also change; urban landscapes often warm and sometimes cool runoff, leading to both greater temperature variability than in undeveloped landscapes and greater stress for many aquatic species. Often these pollutants arrive in pulses, particularly when rain falls after extended dry periods or, in colder regions, when snow melts. In watersheds with combined sewers, the pulses are particularly pronounced; runoff from small storm events may be treated, but larger storms can overflow treatment systems and discharge mixtures of untreated stormwater and raw sewage.

Urbanization also changes the physical structure of streams. With development, streams are often channelized, routed through culverts and dams, or even buried. Development often displaces riparian habitat, severing connections between streams and the surrounding habitat and removing shade vegetation. The loss of riparian vegetation limits the influx of large woody debris, which provides important habitat in healthy streams. Flow changes also affect the physical shape of streambeds. High flows tend to be erosive, and flashy flows will often widen and deepen a stream’s bed. Habitat diversity typically diminishes, with riffles, pools, and bends replaced by a straighter stream with a more homogenous substrate.

The aggregate consequence of these physical and chemical changes usually is a stream with little resemblance to a stream in an undeveloped area. Native biodiversity decreases, with sensitive (and sometimes legally protected) species declining or disappearing. Streams can lose aesthetic appeal, with low, sluggish flows moving through wide, unvegetated streambeds, except during occasional periods of high flow or flood. These changes are pervasive. Some survey studies conclude that water quality tends to decline when impervious surfaces cover more than 10 percent of a watershed, and that small watersheds with more than 25 percent impervious cover almost always exhibit highly degraded water quality. Even sparse exurban development, if spread across a watershed, will exceed the former threshold, and stream degradation therefore is a standard feature of the landscapes in which most Americans live, work, and shop. Other recent research suggests that impacts begin at even lower development levels; several studies have found a consistent onset of degradation at impervious cover levels below 5 percent. The correlation between impervious cover and degradation in larger watersheds is less clear; while larger watersheds are still impacted, studies have not yet tied degrees of degradation to specific levels of urbanization. But even with those remaining uncertainties, scientists know that thousands of urban streams, small rivers, and even larger watersheds are significantly degraded by stormwater pollution from roofs and pavement.
While urbanization almost invariably lowers water quality, a variety of mechanisms can mitigate the effects. Builders can reduce the footprints of buildings and the area of roads or can substitute pervious pavement and green roofs for traditional road surfaces and building designs. Impervious surfaces can drain into infiltration swales or rain gardens rather than into storm drainage systems. Prohibitions on toxic products, educational programs, and maintenance programs like street sweeping can reduce pollutant loading. Uncertainties about treatment remain; few watershed-scale studies document the effectiveness of mitigation programs, and most researchers expect that no amount of planning and engineering can turn an urbanized landscape into the hydrologic equivalent of a forest. These solutions also cost money—particularly when they require retrofitting already-developed areas—and financial constraints therefore could prevent full mitigation even if it were theoretically possible. But such measures, if transformed into standard practice, could slow the degradation of water quality in developing areas and improve it where development already has taken place.

Because of these impacts, stormwater has emerged as one the central issues confronting water pollution lawyers. But that focus is relatively new. In its 1972 incarnation, the Clean Water Act said nothing specific about stormwater. EPA initially focused its regulatory efforts on other discharges—primarily effluents from industrial processes and wastewater treatment plants—and it initially interpreted the Clean Water Act’s definition of “point source” to exclude most forms of stormwater runoff. Administrative feasibility concerns were the primary reason for that exclusion; administrators believed that their newly-formed agency simply lacked the capacity to regulate tens of thousands of stormwater sources, and that their limited resources would be better spent elsewhere. See NRDC v. Costle, 568 F.2d 1369, 1372–73 (D.C. Cir. 1977).

Costle rejected EPA’s attempts to exclude stormwater from point source controls. According to the court, “The wording of the statute, legislative history, and precedents are clear: the EPA Administrator does not have authority to exempt categories of point sources from the permit requirements of [section] 402. Courts may not manufacture for an agency a revisory power inconsistent with the clear intent of the relevant statute.” The D.C. Circuit also noted that permitting huge numbers of point sources might not be as difficult as EPA claimed. It observed that EPA could use general permits, which establish standardized requirements for large groups of permittees, to reduce the transaction costs of permitting and to ease administrative burdens. The D.C. Circuit also observed that regulators could use controls other than effluent limitations, which EPA had argued would be a poor fit for stormwater
runoff. It noted that permits could require activities—which Clean Water Act lawyers refer to as “best management practices” or BMPs—designed to reduce stormwater pollution.

The D.C. Circuit’s suggestions foreshadowed EPA’s stormwater regulatory program, but that program still took years to emerge. A series of legislative amendments, court decisions, and rulemaking processes has redefined the legal scope of the NPDES stormwater program. That evolution continues to this day.

In its modern form, the program applies differently depending upon the type of stormwater source.

Agricultural stormwater runoff. In 1977, immediately following the Costle decision, Congress amended the Clean Water Act to (among other things) expressly exclude agricultural stormwater runoff from the Act’s definition of “point source.” Consequently, agricultural stormwater runoff is not part of the NPDES program, even when it reaches surface waterways through discrete conveyances that otherwise would meet the definition of a point source. States may regulate agricultural stormwater runoff if they choose, and the TMDLs and continuing planning processes required by Clean Water Act section 303—which you will read about in more detail in the pages to come—may help inform state regulatory efforts. In a few places, states also have attempted to create trading programs that allow traditional NPDES dischargers to purchase pollution reductions from agricultural sources and use the resulting “offsets” to avoid reductions in their own discharge limits. But other than these limited exceptions, agricultural stormwater runoff is simply not regulated by the CWA.

Silvicultural stormwater runoff. Runoff from timber harvesting, known as silvicultural runoff, also is largely exempted from NPDES permitting requirements, though for different reasons. For decades, EPA declined to require NPDES permits for all but a very limited set of activities associated with logging. In the mid-2000s, an environmental group challenged that exclusion. Its specific focus was runoff from logging roads, and it argued that neither the CWA nor EPA’s regulations...
excluded logging road runoff from NPDES permitting. In 2013, however, the Supreme Court rejected the environmental group’s challenge. See *Decker v. Northwest Envtl. Def. Ctr.*, 133 S. Ct. 1326 (2013). While the case was pending, EPA also promulgated new regulations designed to make the silvicultural stormwater exclusion more explicit. 77 Fed. Reg. 72,974 (2012). The net result is that silvicultural stormwater runoff, though quite possibly a form of “point source” pollution (the Supreme Court did not resolve that question), remains almost entirely outside the NPDES program.

**Industrial stormwater discharges.** By contrast, industrial stormwater discharges are subject to NPDES permitting. EPA creates general permits for different industrial sectors, and industrial dischargers also can pursue individual permits tailored to conditions at their facilities. The permits generally specify BMPs designed to limit stormwater pollution, and they also often require periodic monitoring of stormwater discharges. The effectiveness of industrial stormwater monitoring is subject to dispute. See Wendy E. Wagner, *Stormy Regulation: The Problems that Result when Stormwater (and other) Regulatory Programs Neglect to Account for Limitations in Scientific and Technical Information*, 9 CHAP. L. REV. 191 (2006). Wagner’s core critique is that the program affords industrial dischargers too much flexibility to specify the terms of their own programs, allowing them to select BMPs that are cheap rather than effective and monitoring plans that maintain appearances rather than catching problems.

**Municipal stormwater runoff.** EPA also regulates municipal stormwater runoff. Most municipalities operate storm sewer systems—formally referred to as municipal separate storm sewer systems (MS4s)—which collect runoff from city streets and from public and private properties (many private properties have private stormwater collection systems, which may or may not flow into municipal systems). This public/private hybrid system sometimes puts cities in a difficult position. Because they own and manage the ultimate discharge points, they are the NPDES permit holders, and they are ultimately responsible for complying with NPDES permit terms. But because they do not directly manage much—often most—of the properties where pollution originates, they must assert regulatory authority over private and other public landowners in order to assure compliance.

EPA’s stormwater regulations specify mandatory elements of MS4 permits, and these mandatory elements reflect the need for municipalities to assume a regulatory role. Each MS4 permit must contain:
A public education and outreach program. Much stormwater pollution is ultimately traceable to individual behaviors, like excessive fertilizer use or failure to clean up dog feces, that are not easily addressed through regulatory controls. Education and outreach (a common and familiar example is the “No Dumping” stamps that appear next to many storm drains) may be better tactics to limit these kinds of pollution.

An illicit discharge detection and control program. The term “illicit discharge” refers to the addition of non-stormwater pollutants—for example, used motor oil or industrial waste—into storm sewer systems.

Controls for construction sites. Construction sites can be major sources of sediment and other pollutants. A municipal permit therefore must require BMPs (the hay bales one often sees at the edge of building sites are a common example) for construction sites.

Controls on post-construction runoff. Even after construction is completed, developed sites continue to be pollution sources, particularly if stormwater flows off impervious surfaces rather than infiltrating into the ground. Many post-construction controls therefore attempt to encourage on-site infiltration of stormwater.

A pollution prevention program. The goal of this program is to reduce the amount of pollution generated rather than to manage the flows that transport that pollution.
A monitoring program.

Stormwater also can be regulated, either within or outside the MS4 program, by state and local law. States with delegated NPDES authority issue and oversee MS4 permits, and they enjoy some discretion to specify permit requirements. States also can create independent regulatory programs for stormwater runoff, as can local governments. In developing those requirements, state and local governments can draw upon their TMDLs and upon the “continuing planning processes” required by CWA section 303(e).

For urban areas, at least, this might seem like a thorough regulatory program. But critics have several concerns:

- The industrial stormwater component of the NPDES program leaves out many forms of non-residential development. Commercial properties (like shopping malls and office parks) and institutional properties (like university campuses) are not included, even though some of these areas can be major sources of polluted stormwater runoff.

- For industrial properties that are covered, stormwater permits traditionally focus on keeping stormwater away from industrial process materials. That’s important, but runoff from industrial roofs and parking lots may also be polluted even if the industrial plant does an excellent job protecting its process materials from the elements.

- Not all municipalities need MS4 permits. Phase I of the MS4 program covered only cities and some counties with populations over 100,000. Phase II applied to smaller urbanized areas (determined by residential population density). But most rural and many suburban areas are not required to have MS4 permits. Even some highly developed areas, like commercial shopping malls, are not covered by the MS4 program because of their low population density. In other words, some important point sources of stormwater are not subject to any NPDES permitting at all.

- Many municipalities are reluctant participants in the program. An effective stormwater control program generally requires money for monitoring, enforcement, maintenance, and, often, retrofitting of municipal streets and facilities. But many municipalities are cash-strapped. They also need that money for things like paying police and maintaining schools. An effective program also requires regulation of private landowners. But prospective land use controls are unpopular in many areas, and expensive
retrofitting requirements are even more financially and politically difficult to impose. Similarly, finding and responding to stormwater violations may be an uncomfortable thing for local officials to do.

- Controls on non-point-source stormwater runoff are minimal. In environmental law and policy circles, it's quite common to hear people describe urban stormwater runoff as non-point source pollution. They aren't completely wrong. Most urban stormwater reaches surface waterways through ditches, pipes, or other discrete conveyances that meet the CWA's definition of “point sources.” But some urban stormwater runoff travels as “sheet flow” which means it has not been channelized into any discrete conveyance. That runoff (if polluted, which it often is) really is non-point source pollution. While TMDLs may describe and establish budgets for that non-point runoff, it is subject to regulation only under state and local laws.

- State and local regulatory efforts are uneven. In some places, state or local governments have enacted extensive and stringent water quality protection programs. In others, however, they have done little or nothing. One reason for that inaction is a fear that heightened water quality protection requirements will deter economic development.

- The program doesn't seem to be working. EPA began regulating stormwater decades ago, but discrepancies between water quality standards and actual water quality remain pervasive in urban areas. Meanwhile, urban stormwater management has become the leading legal challenge in the water quality realm.

As this casebook goes to press, EPA has been working on a new draft rule addressing urban stormwater. That rule has been in the works for many years, however, and when it will emerge and what it will say both remain uncertain.

VI. THE 404 PROGRAM

The NPDES program isn’t the only way to legally discharge pollutants into waters of the United States. Section 404 of the Clean Water Act also sets up a permitting program, which applies where applicants would like to dredge or fill waters of the United States. In practice, this is a very common situation. Particularly in relatively wet parts of the country, building a major development project, like a
shopping mall, or a linear project, like a road or utility pipeline, without filling wetlands and waterways is very difficult. Indeed, some forms of construction—recreational docks, for example—are by definition water-dependent. Consequently, thousands of permits issue each year, and dealing with the requirements of Clean Water Act section 404 generates thousands of hours of work for attorneys.

The program is administered through a complicated arrangement. Except in the states of Michigan and New Jersey, which have authority to administer part of the 404 program, the Army Corps of Engineers processes and issues all of the permits. EPA holds veto authority over those permits (including permits issued by Michigan and New Jersey), and on very rare occasions EPA exercises that authority. The Army Corps and EPA jointly develop regulations and guidance governing the permitting program. Because permitting decisions trigger section 401 of the Clean Water Act (discussed in more detail later in this chapter) and, sometimes, the Endangered Species Act, state environmental agencies, the United States Fish and Wildlife Service, and the National Marine Fisheries Service also hold authority over permitting decisions.

Section 404 permits may take two forms:

- **Individual permits** are issued for individual activities and are tailored to that specific activity.
- **General permits** establish standard requirements and conditions for a class of similar activities. Such permits can be established on a local, statewide, regional, or national basis. General permits, while less flexible than individual permits, require much less effort (and therefore less money) to obtain, and the Army Corps typically uses general permits to address smaller and repeatedly-occurring dredging or filling projects.

While both individual and general permits allow the destruction of wetlands and waterways, they also place limits upon dredging and filling. A “no net loss” policy, which was first articulated by President George H.W. Bush and later written into joint EPA/Army Corps regulations, governs national wetland regulation. In accordance with that policy, the Army Corps generally requires permit applicants to analyze alternatives to dredging or filling waters of the United States, to avoid filling waters where it is possible; to minimize the extent of any dredging or filling that must occur; and to provide compensatory mitigation for any waters that must be impacted. That compensatory mitigation may be provided by creating new wetlands, restoring or enhancing damaged wetlands, or by preserving wetlands that are under threat. It also may be directly provided by the permit applicant or by third parties that the applicant pays to restore those wetlands. In concept, this compensatory mitigation
system bears some similarity to the emissions trading systems we discussed when we studied the Clean Air Act. The basic premise is that permit applicants should be able to engage in an environmentally destructive and otherwise prohibited activity so long as they compensate by providing extra environmental protection somewhere or sometime else. See James Salzman & J.B. Ruhl, Currencies and the Commodification of Environmental Law, 53 Stan. L. Rev. 607 (2000).

The section 404 program has been controversial. As the opening paragraphs of Justice Scalia’s Rapanos opinion indicate, regulated entities have chafed at its cost. Environmental advocates have often charged that the Army Corps does a poor job fulfilling its no-net-loss mandate. They have been particularly critical of compensatory mitigation, which they argue has often produced ecologically dysfunctional substitute wetlands. In the 1990s and 2000s, a series of studies from the National Research Council and the Government Accountability Office substantiated many of those critiques. But the program continues to evolve, with increasing reliance on third-party mitigation techniques that are designed—in theory—to allocate money to coordinated protection or restoration of high-value wetlands. See Royal Gardner, Lawyers, Swamps, and Money: U.S. Wetland Law, Policy, and Politics (2011).

VII. WATER QUALITY STANDARDS

While the NPDES and 404 programs have been primary foci of Clean Water Act lawyers, the statute also contains other regulatory programs. These include a series of measures that begin with state water quality standards and, in theory, translate those standards into controls on individual sources. This section discusses those programs, first explaining what water quality standards are and how they are created, and then exploring their potential consequences.

A. ELEMENTS

The obligation to set water quality standards derives from Clean Water Act section 303, which also requires states to submit their standards to EPA for approval. The Clean Water Act itself says little about the content of those standards, which instead is specified by EPA regulations. Those regulations require water quality standards to include the following core elements:

- designated and existing uses for individual waterways;
- criteria for measuring whether the water body is sufficiently clean to support its designated and existing uses; and
• a non-degradation policy designed to ensure that water quality progresses toward the overall goals of the Clean Water Act.

The process of setting and updating these standards therefore involves several steps. First, states make waterway-by-waterway determinations of designated and existing uses. The chosen uses might include, for example, providing drinking water, supporting a cold- or warm-water fishery, supporting contact or non-contact recreation, or providing agricultural or industrial water supplies. The CWA contemplates that those uses will vary from waterway to waterway, and they do. Sometimes states also designate different uses for different segments of the same waterway. EPA’s regulations do provide some parameters, however, effectively creating a rebuttable presumption that states should designate water to at least support fishing and swimming.

Second, the states must select criteria for measuring whether water quality is sufficiently high to support designated uses. Those criteria can be expressed in a wide variety of ways: as numeric standards, like temperature thresholds or pollutant concentrations that the waterway should not exceed, or in narrative form. States also may choose many different proxies to measure water quality. Many criteria focus on concentrations of particular contaminants, and a few states use the number and diversity of native species as a key indicator of water quality attainment. EPA influences this process at both the front and back ends; it helps states by developing model criteria, and it holds approval authority over the ultimate standards. If states fail to set water quality standards, or set standards that fail to obtain EPA approval, the CWA obligates EPA to step in and develop the standards on its own.

B. IMPLICATIONS

There are, in theory, three primary ways in which state water quality standards can translate into controls on specific sources. The materials that follow discuss each. We begin with the certification process required by section 401 of the Clean Water Act, which gives state environmental regulators some ability to regulate federally-approved projects. We then discuss TMDLs. We then return to the NPDES program and explain how water quality standards and TMDLs can increase the stringency of NPDES permits.

1. WATER QUALITY CERTIFICATIONS

One key mechanism for translating water quality standards into pollution controls is supplied by Clean Water Act section 401. Section 401 applies to (a) any applicant for a federal license or permit to conduct any activity that (b) may result in a discharge. It obliges those applicants to obtain a certification from the state that the discharge will comply with
applicable water quality standards. Those requirements may seem straightforward, but controversies arise regarding what activities require a water quality certification, when states can or must deny a certification, and what conditions states can attach to a certification.

**PROBLEM: WATER QUALITY CERTIFICATION AND SECTION 404 PERMITS**

Timber Creek flows through a forested region of your state. The primary economic activities in the Timber Creek watershed are timber harvesting and viticulture (growing wine grapes). The state’s monitoring data show that the creek does not meet state water quality standards for sediment, temperature, dissolved oxygen, and several pesticides.

Your client, Timber Creek Vineyard, owns and operates a vineyard, inn, and restaurant along the banks of Timber Creek. Business is good, and Timber Creek Vineyard would like to expand the physical footprint of its buildings and its vineyards. The catch is that expanding will require building over, and partially filling, a small intermittent stream that flows into Timber Creek. The U.S. Army Corps of Engineers has informed you that it considers the intermittent stream to be a “water of the United States,” a conclusion you think a court would uphold. Timber Creek Vineyard therefore will need a Clean Water Act section 404 permit if the project is to proceed. The Army Corps has signaled its willingness to issue the permit, but it has asked your client to obtain a section 401 certification from the state water quality agency. That certification would come with strings attached.

Specifically, the state agency has demanded that your client mitigate impacts to the stream channel by planting native riparian vegetation along another stretch of Timber Creek, and that your client reconstruct a small wetland area from which the small tributary stream drains (both areas are on Timber Creek Vineyard’s property). According to the state, the replanting will provide shade for the stream, reducing temperature impacts associated with the land clearing your client proposes to do, and the reconstructed wetland will trap sediment, compensating for increased sedimentation associated with your client’s land-clearing activities. To Timber Creek Vineyards, that sounds like a lot of demands. “Can they really force us to do this?” your client representative asks you. “I mean, we’re asking for a federal permit to tinker with part of a little stream. And I’m fine with making sure we’re careful about how we tinker with that stream. But it seems like now the state is trying to take over management of other parts of our property. Can they do that?”

How will you respond to this question?
CWA § 401, 33 U.S.C. § 1341. Certification

(a) Compliance with applicable requirements; application; procedures; license suspension

(1) Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate, that any such discharge will comply with the applicable provisions of sections 1311, 1312, 1313, 1316, and 1317 of this title. In the case of any such activity for which there is not an applicable effluent limitation or other limitation under sections 1311(b) and 1312 of this title, and there is not an applicable standard under sections 1316 and 1317 of this title, the State shall so certify, except that any such certification shall not be deemed to satisfy section 1371(c) of this title. Such State or interstate agency shall establish procedures for public notice in the case of all applications for certification by it and, to the extent it deems appropriate, procedures for public hearings in connection with specific applications. In any case where a State or interstate agency has no authority to give such a certification, such certification shall be from the Administrator. If the State, interstate agency, or Administrator, as the case may be, fails or refuses to act on a request for certification, within a reasonable period of time (which shall not exceed one year) after receipt of such request, the certification requirements of this subsection shall be waived with respect to such Federal application. No license or permit shall be granted until the certification required by this section has been obtained or has been waived as provided in the preceding sentence. No license or permit shall be granted if certification has been denied by the State, interstate agency, or the Administrator, as the case may be. ***

(d) Limitations and monitoring requirements of certification

Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations, under section 1311 or 1312 of this title, standard of performance under section 1316 of this title, or prohibition, effluent standard, or pretreatment standard under section 1317 of this title, and with any other appropriate requirement of State law set forth in
such certification, and shall become a condition on any Federal license or permit subject to the provisions of this section.

The primary United States Supreme Court case considering section 401—and, therefore, a particularly important case for your client, appears below. Understanding the case is somewhat easier with visual aids, and the map below shows the proposed project considered in the case. The petitioners proposed to build a hydroelectric project on Washington’s Dosewallips River just east of Olympic National Park. The project would have operated by withdrawing water from the river just east of the park boundary, sending it through a tunnel (the black dashed line) that would run roughly parallel to the river, and discharging the water back into the river after it passed through the powerhouse, which is the small rectangular box near the eastern edge of the map. The dispute centered around the flows—or lack thereof—in the portion of the river between the intake and the powerhouse.

5 The authors thank Chris Maynard of the Washington Department of Ecology for finding this map.
PUD No. 1 of Jefferson County v. Washington Dept. of Ecology
511 U.S. 700 (1994)

JUSTICE O’CONNOR delivered the opinion of the Court.

Petitioners, a city and a local utility district, want to build a hydroelectric project on the Dosewallips River in Washington State. We must decide whether respondent state environmental agency (hereinafter respondent) properly conditioned a permit for the project on the maintenance of specific minimum stream flows to protect salmon and steelhead runs.

I.

This case involves the complex statutory and regulatory scheme that governs our Nation’s waters, a scheme that implicates both federal and state administrative responsibilities. The Federal Water Pollution Control Act, commonly known as the Clean Water Act, 86 Stat. 816, as amended, 33 U.S.C. § 1251 et seq., is a comprehensive water quality statute designed to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” § 1251(a). The Act also seeks to attain “water quality which provides for the protection and propagation of fish, shellfish, and wildlife.” § 1251(a)(2).

To achieve these ambitious goals, the Clean Water Act establishes distinct roles for the Federal and State Governments. Under the Act, the Administrator of the Environmental Protection Agency (EPA) is required, among other things, to establish and enforce technology-based limitations on individual discharges into the country’s navigable waters from point sources. See §§ 1311, 1314. Section 303 of the Act also requires each State, subject to federal approval, to institute comprehensive water quality standards establishing water quality goals for all intrastate waters. §§ 1311(b)(1)(C), 1313. These state water quality standards provide “a supplementary basis . . . so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.” EPA v. California ex rel. State Water Resources Control Bd., 426 U.S. 200, 205, n. 12 (1976).

The State of Washington has adopted comprehensive water quality standards intended to regulate all of the State’s navigable waters. See Washington Administrative Code (WAC) 173–201–010 to 173–201–120 (1986). The State created an inventory of all the State’s waters, and divided the waters into five classes. 173–201–045. Each individual fresh surface water of the State is placed into one of these classes. 173–201–080. The Dosewallips River is classified AA, extraordinary. 173–201–080(32). The water quality standard for Class AA waters is set forth at
The standard identifies the designated uses of Class AA waters as well as the criteria applicable to such waters.

In addition to these specific standards applicable to Class AA waters, the State has adopted a statewide antidegradation policy. That policy provides:

“(a) Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses will be allowed.

“(b) No degradation will be allowed of waters lying in national parks, national recreation areas, national wildlife refuges, national scenic rivers, and other areas of national ecological importance.

... 

“(f) In no case, will any degradation of water quality be allowed if this degradation interferes with or becomes injurious to existing water uses and causes long-term and irreparable harm to the environment.”

As required by the Act, EPA reviewed and approved the State’s water quality standards. See 33 U.S.C. § 1313(c)(3); 42 Fed. Reg. 56792 (1977). Upon approval by EPA, the state standard became “the water quality standard for the applicable waters of that State.” 33 U.S.C. § 1313(c)(3).

States are responsible for enforcing water quality standards on intrastate waters. § 1319(a). In addition to these primary enforcement responsibilities, § 401 of the Act requires States to provide a water quality certification before a federal license or permit can be issued for activities that may result in any discharge into intrastate navigable waters. 33 U.S.C. § 1341. Specifically, § 401 requires an applicant for a federal license or permit to conduct any activity “which may result in any discharge into the navigable waters” to obtain from the State a certification “that any such discharge will comply with the applicable provisions of sections [1311, 1312, 1313, 1316, and 1317 of this title].” 33 U.S.C. § 1341(a). Section 401(d) further provides that “[a]ny certification . . . shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant . . . will comply with any applicable effluent limitations and other limitations, under section [1311 or 1312 of this title] . . . and with any other appropriate requirement of State law set forth in such certification.” 33 U.S.C. § 1341(d). The limitations included in the certification become a condition on any federal license. Ibid.

II

Petitioners propose to build the Elkhorn Hydroelectric Project on the Dosewallips River. If constructed as presently planned, the facility would
be located just outside the Olympic National Park on federally owned land within the Olympic National Forest. The project would divert water from a 1.2-mile reach of the river (the bypass reach), run the water through turbines to generate electricity and then return the water to the river below the bypass reach. Under the Federal Power Act (FPA), 41 Stat. 1063, as amended, 16 U.S.C. § 791a et seq., the Federal Energy Regulatory Commission (FERC) has authority to license new hydroelectric facilities. As a result, petitioners must get a FERC license to build or operate the Elkhorn Project. Because a federal license is required, and because the project may result in discharges into the Dosewallips River, petitioners are also required to obtain state certification of the project pursuant to § 401 of the Clean Water Act, 33 U.S.C. § 1341.

The water flow in the bypass reach, which is currently undiminished by appropriation, ranges seasonally between 149 and 738 cubic feet per second (cfs). The Dosewallips supports two species of salmon, coho and chinook, as well as steelhead trout. As originally proposed, the project was to include a diversion dam which would completely block the river and channel approximately 75% of the river’s water into a tunnel alongside the streambed. About 25% of the water would remain in the bypass reach, but would be returned to the original riverbed through sluice gates or a fish ladder. Depending on the season, this would leave a residual minimum flow of between 65 and 155 cfs in the river. Respondent undertook a study to determine the minimum stream flows necessary to protect the salmon and steelhead fishery in the bypass reach. On June 11, 1986, respondent issued a § 401 water quality certification imposing a variety of conditions on the project, including a minimum stream flow requirement of between 100 and 200 cfs depending on the season.

[Eds.: The Court then explained the prior procedural history of the matter, which culminated in the Washington Supreme Court holding in favor of the Washington Department of Ecology.]

III

The principal dispute in this case concerns whether the minimum stream flow requirement that the State imposed on the Elkhorn Project is a permissible condition of a § 401 certification under the Clean Water Act. To resolve this dispute we must first determine the scope of the State’s authority under § 401. We must then determine whether the limitation at issue here, the requirement that petitioners maintain minimum stream flows, falls within the scope of that authority.

A.

There is no dispute that petitioners were required to obtain a certification from the State pursuant to § 401. Petitioners concede that, at a
minimum, the project will result in two possible discharges—the release of dredged and fill material during the construction of the project, and the discharge of water at the end of the tailrace after the water has been used to generate electricity. Petitioners contend, however, that the minimum stream flow requirement imposed by the State was unrelated to these specific discharges, and that as a consequence, the State lacked the authority under § 401 to condition its certification on maintenance of stream flows sufficient to protect the Dosewallips fishery.

If § 401 consisted solely of subsection (a), which refers to a state certification that a “discharge” will comply with certain provisions of the Act, petitioners’ assessment of the scope of the State’s certification authority would have considerable force. Section 401, however, also contains subsection (d), which expands the State’s authority to impose conditions on the certification of a project. Section 401(d) provides that any certification shall set forth “any effluent limitations and other limitations . . . necessary to assure that any applicant” will comply with various provisions of the Act and appropriate state law requirements. 33 U.S.C. § 1341(d) (emphasis added). The language of this subsection contradicts petitioners’ claim that the State may only impose water quality limitations specifically tied to a “discharge.” The text refers to the compliance of the applicant, not the discharge. Section 401(d) thus allows the State to impose “other limitations” on the project in general to assure compliance with various provisions of the Clean Water Act and with “any other appropriate requirement of State law.” Although the dissent asserts that this interpretation of § 401(d) renders § 401(a)(1) superfluous, we see no such anomaly. Section 401(a)(1) identifies the category of activities subject to certification—namely, those with discharges. And § 401(d) is most reasonably read as authorizing additional conditions and limitations on the activity as a whole once the threshold condition, the existence of a discharge, is satisfied.

Our view of the statute is consistent with EPA’s regulations implementing § 401. The regulations expressly interpret § 401 as requiring the State to find that “there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards.” 40 C.F.R. § 121.2(a)(3) (1993) (emphasis added). EPA’s conclusion that activities—not merely discharges—must comply with state water quality standards is a reasonable interpretation of § 401, and is entitled to deference. See, e.g., Arkansas v. Oklahoma, 503 U.S. 91, 110 (1992); Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984).

Although § 401(d) authorizes the State to place restrictions on the activity as a whole, that authority is not unbounded. The State can only ensure that the project complies with “any applicable effluent limitations and other limitations, under [33 U.S.C. §§ 1311, 1312]” or certain other
provisions of the Act, “and with any other appropriate requirement of State law.” 33 U.S.C. § 1341(d). The State asserts that the minimum stream flow requirement was imposed to ensure compliance with the state water quality standards adopted pursuant to § 303 of the Clean Water Act, 33 U.S.C. § 1313.

We agree with the State that ensuring compliance with § 303 is a proper function of the § 401 certification. Although § 303 is not one of the statutory provisions listed in § 401(d), the statute allows States to impose limitations to ensure compliance with § 301 of the Act, 33 U.S.C. § 1311. Section 301 in turn incorporates § 303 by reference. See 33 U.S.C. § 1311(b)(1)(C); see also H.R. Conf. Rep. No. 95–830, p. 96 (1977), U.S. Code Cong. & Admin. News 1977, pp. 4326, 4471 (“Section 303 is always included by reference where section 301 is listed”). As a consequence, state water quality standards adopted pursuant to § 303 are among the “other limitations” with which a State may ensure compliance through the § 401 certification process. This interpretation is consistent with EPA’s view of the statute. See 40 C.F.R. § 121.2(a)(3) (1992). Moreover, limitations to assure compliance with state water quality standards are also permitted by § 401(d)’s reference to “any other appropriate requirement of State law.” We do not speculate on what additional state laws, if any, might be incorporated by this language. But at a minimum, limitations imposed pursuant to state water quality standards adopted pursuant to § 303 are “appropriate” requirements of state law.

JUSTICE THOMAS, with whom JUSTICE SCALIA joins, dissenting.

The Court today holds that a State, pursuant to § 401 of the Clean Water Act, may condition the certification necessary to obtain a federal license for a proposed hydroelectric project upon the maintenance of a minimum flow rate in the river to be utilized by the project. In my view, the Court makes three fundamental errors. First, it adopts an interpretation that fails adequately to harmonize the subsections of § 401. Second, it places no meaningful limitation on a State’s authority under § 401 to impose conditions on certification. Third, it gives little or no consideration to the fact that its interpretation of § 401 will significantly disrupt the carefully crafted federal-state balance embodied in the Federal Power Act. Accordingly, I dissent.

NOTES

1. In addition to clarifying a state’s authority under section 401, the PUD No. 1 decision was significant for two other reasons, neither of which is directly implicated by the problem. First, the case upheld states’ ability to base the conditions they imposed on federal licenses on designated uses, even if those uses were expressed in narrative form, not just on quantitative water
quality criteria. Second, the Supreme Court emphatically rejected an argument that section 401 conditions could not address issues of water quantity. Many water lawyers, particularly in the west, had viewed water allocation and water quality protection as distinct legal spheres, with the latter sphere occupied by state water allocation law and the Federal Power Act—and with no room left for the Clean Water Act. But the Court rejected that view.

Petitioners also assert more generally that the Clean Water Act is only concerned with water “quality,” and does not allow the regulation of water “quantity.” This is an artificial distinction. In many cases, water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery. In any event, there is recognition in the Clean Water Act itself that reduced stream flow, i.e., diminishment of water quantity, can constitute water pollution. First, the Act’s definition of pollution as “the man-made or man induced alteration of the chemical, physical, biological, and radiological integrity of water” encompasses the effects of reduced water quantity. 33 U.S.C. § 1362(19). This broad conception of pollution—one which expressly evinces Congress’ concern with the physical and biological integrity of water—refutes petitioners’ assertion that the Act draws a sharp distinction between the regulation of water “quantity” and water “quality.”

511 U.S. at 719.

2. TMDLs

The second mechanism for translating a water quality standard into actual water quality improvements involves the creation of TMDLs. TMDLs, as you have previously read, are essentially pollutant budgets for impaired waterways. The following problem asks you to think about the circumstances that trigger an obligation to create a TMDL, and the implications of creating a TMDL.

**Problem: Impaired Waterbodies and TMDLs**

This problem returns you to Timber Creek. Please assume, as before, that Timber Creek is listed as impaired for sediment, dissolved oxygen, nutrients, and several pesticides. The primary source of these pollution problems is stormwater runoff from timber harvesting activities and from vineyards. Please assume, also, that the state in which Timber Creek is located has not prepared a TMDL for the creek.

- If you represent the Timber Creek Alliance, an environmental group, and the state declines to prepare a TMDL, would you advise the alliance to sue to compel TMDL preparation? Assume that the alliance does not want to litigate if all it can
obtain is a hollow legal victory. Your key questions, then, are not just whether a lawsuit demanding a TMDL is likely to prevail, but also whether preparation of a TMDL is likely to lead to actual water quality improvements.

- If you represent Timber Creek County, and your client asked you to explain the likely consequences of a TMDL, what would you say? Assume that your client is particularly concerned about the impacts on regulated industries in the county.

- How does the political climate of your state factor into your answer? Some states are committed to water quality protection, while others have passed laws precluding administrative agencies from imposing any constraint that is not clearly required by federal law. Does it matter which type of state you are in?

**CWA § 303, 33 U.S.C. § 1313. Water quality standards and implementation plans**

(d) Identification of areas with insufficient controls; maximum daily load; certain effluent limitations revision

(1)(A) Each State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

(B) Each State shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 1311 of this title are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

(C) Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

(D) Each State shall estimate for the waters identified in paragraph (1)(B) of this subsection the total maximum daily
thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof.

(2) Each State shall submit to the Administrator from time to time, with the first such submission not later than one hundred and eighty days after the date of publication of the first identification of pollutants under section 1314(a)(2)(D) of this title, for his approval the waters identified and the loads established under paragraphs (1)(A), (1)(B), (1)(C), and (1)(D) of this subsection. The Administrator shall either approve or disapprove such identification and load not later than thirty days after the date of submission. If the Administrator approves such identification and load, such State shall incorporate them into its current plan under subsection (e) of this section. If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such State and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.

(3) For the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (1)(A) and (1)(B) of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margins of safety, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation and for thermal discharges, at a level that would assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife.

(4) Limitations on revision of certain effluent limitations

   (A) Standard not attained

   For waters identified under paragraph (1)(A) where the applicable water quality standard has not yet been attained, any effluent limitation based on a total maximum daily load or other
waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section.

(B) Standard attained

For waters identified under paragraph (1)(A) where the quality of such waters equals or exceeds levels necessary to protect the designated use for such waters or otherwise required by applicable water quality standards, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section, or any water quality standard established under this section, or any other permitting standard may be revised only if such revision is subject to and consistent with the antidegradation policy established under this section.

(e) Continuing planning process

(1) Each State shall have a continuing planning process approved under paragraph (2) of this subsection which is consistent with this chapter.

(2) Each State shall submit not later than 120 days after October 18, 1972, to the Administrator for his approval a proposed continuing planning process which is consistent with this chapter. Not later than thirty days after the date of submission of such a process the Administrator shall either approve or disapprove such process. The Administrator shall from time to time review each State's approved planning process for the purpose of insuring that such planning process is at all times consistent with this chapter. The Administrator shall not approve any State permit program under subchapter IV of this chapter for any State which does not have an approved continuing planning process under this section.

(3) The Administrator shall approve any continuing planning process submitted to him under this section which will result in plans for all navigable waters within such State, which include, but are not limited to, the following:

(A) effluent limitations and schedules of compliance at least as stringent as those required by section 1311(b)(1), section 1311(b)(2), section 1316, and section 1317 of this title, and at least as stringent as any requirements contained in any
Subsections 303(d) and (e) have an interesting implementation history. On their face, they appear to create mandatory obligations. But for many years, states did not submit section 303(d) lists or TMDLs to EPA for approval. EPA also did not publish its own substitute lists or TMDLs. The entire program instead languished, and EPA and the states focused on implementing the NPDES program.

In the late 1980s and early 1990s, that all changed. Environmental groups began suing the EPA, arguing the states' failures to submit 303(d) lists and TMDLs amounted to the “constructive submission” of defective lists and TMDLs. EPA, the environmental groups argued, was therefore obligated to step in and prepare its own section 303(d) lists and TMDLs. The environmental groups prevailed in many of these lawsuits and settled many others, and EPA and the states soon found themselves subject to court orders and consent decrees setting schedules for submitting 303(d) lists and preparing TMDLs. See OLIVER A. HOUCK, THE CLEAN WATER ACT TMDL PROGRAM: LAW, POLICY, AND IMPLEMENTATION (2d ed. 2002). Tens of thousands of TMDLs have been prepared, and the key questions confronting lawyers now are whether individual TMDLs are legally sufficient and what legal obligations a completed TMDL creates.

The case below explores the answer to that second question. The core question raised was whether water bodies must be listed, and TMDLs prepared, where impairment results solely from non-point source pollution. The Pronisolinos—and, more generally, the agriculture and
timber industries—argued that the TMDL requirements only applied where permitted point sources were present and traditional technology-based controls would not be sufficient to attain water quality standards. Under that interpretation, a river impaired only by non-point source runoff from timber harvesting or agriculture would not require TMDLs, even if its water quality failed to attain state standards. EPA interpreted section 303 to require TMDLs for any water body that failed to attain water quality standards regardless of the presence or absence of point sources. The Ninth Circuit, as you will see below, held in favor of EPA.

The Ninth Circuit’s resolution of that question is of great historical importance, for a contrary holding would have excluded thousands of streams from TMDL requirements. That historic importance is one reason we have included the case, although, to conserve space, we have left out much of the detailed statutory analysis that led to that conclusion. The other reason, which is of greater practical importance looking forward, is what the Ninth Circuit has to say about the legal consequences of TMDLs.

Pronsolino v. Nastri
291 F.3d 1123 (9th Cir. 2002)

■ BERZON, CIRCUIT JUDGE.

The United States Environmental Protection Agency (“EPA”) required California to identify the Garcia River as a water body with insufficient pollution controls and, as required for waters so identified, to set so-called “total maximum daily loads” (“TMDLs”)—the significance of which we explain later—for pollution entering the river. Appellants challenge the EPA’s authority under the Clean Water Act (“CWA” or the “Act”) § 303(d), 33 U.S.C. § 1313(d), to apply the pertinent identification and TMDL requirements to the Garcia River. The district court rejected this challenge, and we do as well.

CWA § 303(d) requires the states to identify and compile a list of waters for which certain “effluent limitations” “are not stringent enough” to implement the applicable water quality standards for such waters. § 303(d)(1)(A). Effluent limitations pertain only to point sources of pollution; point sources of pollution are those from a discrete conveyance, such as a pipe or tunnel. Nonpoint sources of pollution are non-discrete sources; sediment run-off from timber harvesting, for example, derives from a nonpoint source. The Garcia River is polluted only by nonpoint sources. Therefore, neither the effluent limitations referenced in § 303(d) nor any other effluent limitations apply to the pollutants entering the Garcia River.
The precise statutory question before us is whether the phrase “are not stringent enough” triggers the identification requirement both for waters as to which effluent limitations apply but do not suffice to attain water quality standards and for waters as to which effluent limitations do not apply at all to the pollution sources impairing the water. We answer this question in the affirmative, a conclusion which triggers the application of the statutory TMDL requirement to waters such as the Garcia River.

I. Statutory Background


At the same time, Congress decidedly did not in 1972 give up on the broader goal of attaining acceptable water quality. CWA § 101(a), 33 U.S.C. § 1251(a). Rather, the new statute recognized that even with the application of the mandated technological controls on point source discharges, water bodies still might not meet state-set water quality standards, Natural Res. Def. Council, 915 F.2d at 1316–17. The 1972 statute therefore put in place mechanisms other than direct federal regulation of point sources, designed to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” § 101(a).

In so doing, the CWA uses distinctly different methods to control pollution released from point sources and that traceable to nonpoint sources. Oregon Natural Res. Council, 834 F.2d at 849. The Act directly mandates technological controls to limit the pollution point sources may discharge into a body of water. Dombeck, 172 F.3d at 1096. On the other hand, the Act “provides no direct mechanism to control nonpoint source pollution but rather uses the ‘threat and promise’ of federal grants to the states to accomplish this task,” id. at 1097 (citations omitted), thereby “recogniz[ing], preserv[ing], and protect[ing] the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use . . . of land and water resources . . . .” § 101(b).
B.  The Structure of CWA § 303, 33 U.S.C. § 1313

* * *

2.  Section 303(d): “Identification of Areas with Insufficient Controls; Maximum Daily Load”

* * *

For waters identified [as impaired] pursuant to § 303(d)(1)(A)(the “§ 303(d)(1) list”), the states must establish the “total maximum daily load” (“TMDL”) for pollutants identified by the EPA as suitable for TMDL calculation.2  § 303(d)(1)(C). “A TMDL defines the specified maximum amount of a pollutant which can be discharged or ‘loaded’ into the waters at issue from all combined sources.” Dioxin/Organochlorine Center v. Clarke, 57 F.3d 1517, 1520 (9th Cir. 1995). The TMDL “shall be established at a level necessary to implement the applicable water quality standards . . . .” § 303(d)(1)(C).

Section 303(d)(2), in turn, requires each state to submit its § 303(d)(1) list and TMDLs to the EPA for its approval or disapproval. If the EPA approves the list and TMDLs, the state must incorporate the list and TMDLs into its “continuing planning process,” the requirements for which are set forth in § 303(e). § 303(d)(2). If the EPA disapproves either the § 303(d)(1) list or any TMDLs, the EPA must itself put together the missing document or documents. Id. The state then incorporates any EPA-set list or TMDL into the state’s continuing planning process. Id.

* * *

3.  Continuing Planning Process

The final pertinent section of § 303, § 303(e), requiring each state to have a “continuing planning process,” gives some operational force to the prior information-gathering provisions. The EPA may approve a state’s continuing planning process only if it “will result in plans for all navigable waters within such State” that include, inter alia, effluent limitations, TMDLs, areawide waste management plans for nonpoint sources of pollution, and plans for “adequate implementation, including schedules of compliance, for revised or new water quality standards.” § 303(e)(3).

The upshot of this intricate scheme is that the CWA leaves to the states the responsibility of developing plans to achieve water quality standards if the statutorily-mandated point source controls will not alone suffice, while providing federal funding to aid in the implementation of the state plans. See Dombeck, 172 F.3d at 1097; § 303(e); see also § 319(h), 33 U.S.C. § 1329(h) (providing for grants to states to combat nonpoint source pollution). TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans. See Alaska Center for the Environment v. Browner,
20 F.3d 981, 984–85 (9th Cir. 1994). As such, TMDLs serve as a link in an implementation chain that includes federally-regulated point source controls, state or local plans for point and nonpoint source pollution reduction, and assessment of the impact of such measures on water quality, all to the end of attaining water quality goals for the nation’s waters.

II. Factual And Procedural Background

A. The Garcia River TMDL

In 1992, California submitted to the EPA a list of waters pursuant to § 303(d)(1)(A). Pursuant to § 303(d)(2), the EPA disapproved California’s 1992 list because it omitted seventeen water segments that did not meet the water quality standards set by California for those segments. Sixteen of the seventeen water segments, including the Garcia River, were impaired only by nonpoint sources of pollution. After California rejected an opportunity to amend its § 303(d)(1) list to include the seventeen substandard segments, the EPA, again acting pursuant to § 303(d)(2), established a new § 303(d)(1) list for California, including those segments on it. California retained the seventeen segments on its 1994, 1996, and 1998 § 303(d)(1) lists.

California did not, however, establish TMDLs for the segments added by the EPA. Environmental and fishermen’s groups sued the EPA in 1995 to require the EPA to establish TMDLs for the seventeen segments, and in a March 1997 consent decree the EPA agreed to do so. According to the terms of the consent decree, the EPA set March 18, 1998, as the deadline for the establishment of a TMDL for the Garcia River. When California missed the deadline despite having initiated public comment on a draft TMDL and having prepared a draft implementation plan, the EPA established a TMDL for the Garcia River. The EPA’s TMDL differed only slightly from the state’s draft TMDL.

The Garcia River TMDL for sediment is 552 tons per square mile per year, a sixty percent reduction from historical loadings. The TMDL allocates portions of the total yearly load among the following categories of nonpoint source pollution: a) “mass wasting” associated with roads; b) “mass wasting” associated with timber-harvesting; c) erosion related to road surfaces; and d) erosion related to road and skid trail crossings.

B. The Appellants

In 1960, appellants Betty and Guido Pronsolino purchased approximately 800 acres of heavily logged timber land in the Garcia River watershed. In 1998, after re-growth of the forest, the Pronsolinos applied for a harvesting permit from the California Department of Forestry (“Forestry”).
In order to comply with the Garcia River TMDL, Forestry and/or the state’s Regional Water Quality Control Board required, among other things, that the Pronsolinos’ harvesting permit provide for mitigation of 90% of controllable road-related sediment run-off and contain prohibitions on removing certain trees and on harvesting from mid-October until May 1. The Pronsolinos’ forester estimates that the large tree restriction will cost the Pronsolinos $750,000.

Larry Mailliard, a member of the Mendocino County Farm Bureau, submitted a draft harvesting permit on February 4, 1998, for a portion of his property in the Garcia River watershed. Forestry granted a final version of the permit after incorporation of a 60.3% reduction of sediment loading, a requirement included to comply with the Garcia River TMDL. Mr. Mailliard’s forester estimates that the additional restrictions imposed to comply with the Garcia River TMDL will cost Mr. Mailliard $10,602,000.

Bill Barr, another member of the Mendocino County Farm Bureau, also applied for a harvesting permit in 1998 for his property located within the Garcia River watershed. Forestry granted the permit after incorporation of restrictions similar to those included in the Pronsolinos’ permit. A forester states that these additional restrictions, included to comply with the TMDL, will cost Mr. Barr at least $962,000. * * *

III. Analysis

A. Deference to the EPA

As this is a summary judgment case, our review of the district court’s decision is, of course, de novo. See Oregon Natural Res. Council, 834 F.2d at 844. Harder to answer is the question of the degree of deference we owe the EPA’s regulations and decisions interpreting and applying CWA § 303. The EPA argues that we owe deference to the interpretation of § 303 embodied in its regulations, pursuant to Chevron U.S.A., Inc. v. Natural Res. Def. Council, 467 U.S. 837 (1984). An agency’s statutory interpretation is entitled to Chevron deference if “Congress delegated authority to the agency generally to make rules carrying the force of law, and . . . the agency interpretation claiming deference was promulgated in the exercise of that authority.” United States v. Mead, 533 U.S. 218, 226–27 (2001). If Chevron deference applies, we must defer to the agency’s interpretation as long as it is reasonably consistent with the statute. Id. at 229.

[Eds.: The court held that EPA’s interpretation should receive Chevron deference. It then concluded that the statutory language and structure strongly supported EPA’s interpretation, and that the interpretation was reasonable. The court concluded its statutory analysis by considering the federalism implications of the competing interpretations. That portion of
the analysis, which reveals much about the legal implications of a TMDL, appears below.

C. Federalism Concerns

The Pronolinos finally contend that, by establishing TMDLs for waters impaired only by nonpoint source pollution, the EPA has upset the balance of federal-state control established in the CWA by intruding into the states’ traditional control over land use. See Solid Waste Agency of Northern Cook County v. United States Army Corps of Eng’rs, 531 U.S. 159, 172–73 (2001). That is not the case.

The Garcia River TMDL identifies the maximum load of pollutants that can enter the Garcia River from certain broad categories of nonpoint sources if the river is to attain water quality standards. It does not specify the load of pollutants that may be received from particular parcels of land or describe what measures the state should take to implement the TMDL. Instead, the TMDL expressly recognizes that “implementation and monitoring” “are state responsibilities” and notes that, for this reason, the EPA did not include implementation or monitoring plans within the TMDL. EPA, Garcia River Sediment Total Maximum Daily Load 43 (Mar. 16, 1998).

Moreover, § 303(e) requires—separately from the § 303(d)(1) listing and TMDL requirements—that each state include in its continuing planning process “adequate implementation, including schedules of compliance, for revised or new water quality standards” “for all navigable waters within such State.” § 303(e)(3). The Garcia River TMDL thus serves as an informational tool for the creation of the state’s implementation plan, independently—and explicitly—required by Congress.

California chose both if and how it would implement the Garcia River TMDL. States must implement TMDLs only to the extent that they seek to avoid losing federal grant money; there is no pertinent statutory provision otherwise requiring implementation of § 303 plans or providing for their enforcement. See CWA § 309, 33 U.S.C. § 1319; CWA § 505, 33 U.S.C. § 1365. * * *

The decision of the district court is AFFIRMED.
To environmental groups, the success of their lawsuits seeking to compel EPA and states to develop TMDLs seemed like cause for celebration. But what consequences have TMDLs actually produced, and what obligations might a TMDL create for polluters? That question is difficult to answer, partly because of the dearth of comprehensive data on TMDL implementation. But a recent General Accounting Office study provides some clues. Here is a summary:

**General Accounting Office, Changes Needed if Key Program Is to Help Fulfill the Nation’s Water Quality Goals**

2013

Of about 50,000 TMDLs developed and approved, nearly 35,000 were approved more than 5 years ago, long enough for GAO to consider them long established. State officials GAO surveyed in its representative sample of 191 TMDLs reported that pollutants had been reduced in many waters, but few impaired water bodies have fully attained water quality standards.

The sample of 25 TMDLs reviewed by water resource experts GAO contacted seldom contained all features key to attaining water quality standards. According to the National Research Council and EPA, these features—some that are beyond the scope of EPA’s existing regulations—include identifying pollution-causing stressors and showing how addressing them would help attain such standards; specifying how and by whom TMDLs will be implemented; and ensuring periodic revisions as needed. The experts found, however, that 17 of 25 long-established TMDLs they reviewed did not show that addressing identified stressors would help attain water quality standards; 12 contained vague or no information on actions that need to be taken, or by whom, for implementation; and 15 did not contain features to help ensure that TMDLs are revised if need be. GAO’s review showed that EPA’s existing regulations do not explicitly require TMDLs to include these key features, and without such features in TMDLs—or in addition to TMDLs—impaired water bodies are unlikely to attain standards.
In response to GAO’s survey, state officials reported that long-established TMDLs generally do not exhibit factors most helpful for attaining water quality standards, particularly for nonpoint source pollution (e.g., farms and storm water runoff). The officials reported that landowner participation and adequate funding—factors they viewed as among the most helpful in implementing TMDLs—were not present in the implementation activities of at least two-thirds of long-established TMDLs, particularly those of nonpoint source TMDLs. Because the Clean Water Act addresses nonpoint source pollution largely through voluntary means, EPA does not have direct authority to compel landowners to take prescribed actions to reduce such pollution. In GAO’s survey, state officials knowledgeable about TMDLs reported that 83 percent of TMDLs have achieved their targets for point source pollution (e.g., factories) through permits but that 20 percent achieved their targets for nonpoint source pollution. In 1987, when the act was amended to cover such pollution, some Members of Congress indicated that this provision was a starting point, to be changed if reliance on voluntary approaches did not significantly improve water quality. More than 40 years after Congress passed the Clean Water Act, however, EPA reported that many of the nation’s waters are still impaired, and the goals of the act are not being met. Without changes to the act’s approach to nonpoint source pollution, the act’s goals are likely to remain unfulfilled.

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**NOTE**

Some particularly interesting TMDL litigation has addressed so-called proxy TMDLs. These TMDLs use measures other than mass loading of pollutants, and therefore seek instead to set a budget for things like the amount of stormwater flow entering a waterway or the amount of impervious cover in a watershed. EPA and some states have argued that these TMDLs provide more useful diagnoses of the causes of water pollution, and that they prescribe more implementable responses, but challengers have argued that they violate the requirements of section 303(d). *See, e.g.*, *Virginia Dep’t of Transp. v. U.S. EPA*, No. 12–775, 2013 WL 53741 (E.D. Va. Jan. 3, 2013) (rejecting EPA’s argument that regulating stormwater flow was a permissible proxy for regulating sediment).

3. **WATER QUALITY STANDARDS AND NPDES PERMITS**

Water quality standards also can affect the terms of NPDES permits. States (or EPA, where it retains authority to implement the NPDES program) can increase the stringency of NPDES permits where technology-based standards alone would not be sufficient to ensure compliance with water quality standards (water quality standards cannot be used to *weaken* NPDES permits below the floor set by
technology-based standards). In many states, a water quality analysis is an important part of the process of issuing NPDES permits. However, as you will see from the materials below, the circumstances under which water quality standards compel a state or EPA to issue more stringent NPDES permits—or to decline to issue a NPDES permit—are subject to some ambiguity and dispute.

**Problem: Water Quality Certification and Section 402 Permits**

This problem incorporates the facts from the two preceding Timber Creek problems. For this problem, assume that the state has listed Timber Creek as an impaired water and issued a TMDL with wasteload and load allocations, but the state has not yet developed a program to turn the load and wasteload allocations into enforceable controls on specific facilities. Please also assume that your client, Timber Creek Vineyard, owns and operates a small wastewater treatment plant, which discharges to Timber Creek. That wastewater treatment plant discharges some nutrients into the stream.

Business for Timber Creek Vineyard has been particularly good recently, and, building on its previous expansions, your client would like to construct a new inn, restaurant, and winery further upstream along Timber Creek. That will require building another wastewater treatment plant. Timber Creek Vineyard plans to build a state-of-the-art facility, which will use a combination of engineered wetlands and traditional wastewater treatment plant technology to reduce pollutant discharges to very low levels, but the new treatment facility would still discharge some pollutants into the stream. You have already advised Timber Creek Vineyards that the new wastewater treatment facility will need a NPDES permit.

In addition, Timber Creek Vineyard needs to make some upgrades to its existing wastewater treatment facility. To your client, working on two facilities at once sounds like a hassle. But the environmental engineers working on the project see an opportunity. By making some technological upgrades to the existing facility, they think that nutrient discharges can be reduced. In fact, they believe that the total nutrient discharges from the new facility and the upgraded but preexisting facility would be less than the current nutrient discharges from the existing facility. “If we promise to make those pollution reductions at the existing facility,” they argue, “that should streamline the process of getting the new permit, shouldn’t it?”

Your client wants to know the answer to that question. Can Timber Creek get a NPDES permit for the new facility? And would it streamline the permitting process to offset the pollutant discharges from the new facility with pollutant discharge reductions at the existing facility?
CWA § 302, 33 U.S.C. § 1312. Water quality related effluent limitations

(a) Establishment
Whenever, in the judgment of the Administrator or as identified under section 1314(l) of this title, discharges of pollutants from a point source or group of point sources, with the application of effluent limitations required under section 1311(b)(2) of this title, would interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters which shall assure protection of public health, public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations (including alternative effluent control strategies) for such point source or sources shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality.

(b) Modifications of effluent limitations
[Eds.: Subsection (b) sets forth procedures for adopting the effluent limitations required under subsection (a), and also sets forth several circumstances under which EPA may make exceptions to the requirements of subsection (a).] * * *

40 C.F.R. § 122.4. Prohibitions

No permit may be issued:
* * *

(d) When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States; * * *

(i) To a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards. The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards even after the application of the effluent limitations required by sections 301(b)(1)(A) and 301(b)(1)(B) of CWA, and for which the State or interstate agency has performed a pollutants load allocation for the pollutant to be discharged, must demonstrate, before the close of the public comment period, that:
(1) There are sufficient remaining pollutant load allocations to allow for the discharge; and

(2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards. The Director may waive the submission of information by the new source or new discharger required by paragraph (i) of this section if the Director determines that the Director already has adequate information to evaluate the request. An explanation of the development of limitations to meet the criteria of this paragraph (i)(2) is to be included in the fact sheet to the permit under §124.56(b)(1) of this chapter.

**Friends of Pinto Creek v. U.S. EPA**

504 F.3d 1007 (9th Cir. 2007)

**HUG, CIRCUIT JUDGE:**

In this case, we determine whether the Environmental Protection Agency (“EPA”) properly issued a National Pollution Discharge Elimination System (“NPDES”) permit under the Clean Water Act to Carlota Copper Company (“Carlota”). The permit allows mining-related discharges of copper into Arizona’s Pinto Creek, a waterbody already in excess of water quality standards for copper. Based upon provisions of the Clean Water Act, the implementing regulations, and their applicability to the factual scenario of this case, we vacate the permit and remand.

**I. Factual Background**

Pinto Creek is a desert river located near Miami, Arizona, approximately 60 miles east of Phoenix. It has been listed by the American Rivers Organization as one of the country’s most endangered rivers due to threats from proposed mining operations. Pinto Creek and its riparian environs are home to a variety of fish, birds, and other wildlife, some of which are specially protected. Due to excessive copper contamination from historical mining activities in the region, Pinto Creek is included on Arizona’s list of impaired waters under §303(d) of the Clean Water Act, 33 U.S.C. §1313(d), as a water quality limited stream due to non-attainment of water quality standards for dissolved copper.

Carlota proposed to construct and operate an open-pit copper mine and processing facility approximately six miles west of Miami, Arizona, covering over 3000 acres while extracting about 100 million tons of ore. Part of the operation plan includes constructing diversion channels for Pinto Creek to route the stream around the mine, as well as groundwater cut-off walls to block the flow of groundwater into the mine. *****
Because the proposed action would involve the discharge of pollutants into Pinto Creek, Carlota applied to the EPA for an NPDES permit under § 402 of the Clean Water Act, 33 U.S.C. § 1342, in 1996. The EPA ultimately issued the permit, and the Environmental Appeals Board (“Appeals Board”), the internal appellate board of the EPA, denied review.

II. Issues

A. Whether the issuance of the permit to discharge a pollutant, dissolved copper, into Pinto Creek, which already exceeded the amount of dissolved copper allowed under the Section 303(d) Water Quality Standard, is in violation of the Clean Water Act and the applicable regulations.

B. Whether the EPA’s failure to include and regulate all discharges from the Carlota Copper Mine in the NPDES permit violates the Clean Water Act and the applicable regulations.

IV. Analysis

The Petitioners contend that as a “new discharger” Carlota’s discharge of dissolved copper into a waterway that is already impaired by an excess of the copper pollutant violates the intent and purpose of the Clean Water Act. Under the NPDES permitting program, 40 C.F.R. § 122.4(i) addresses the situation where a new source seeks to permit a discharge of pollutants into a stream already exceeding its water quality standards for that pollutant. Section 122.4 states in relevant part:

No permit may be issued:

(i) To a new source or a new discharger if the discharge from its construction or operation will cause or contribute to the violation of water quality standards. The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards . . . and for which the State or interstate agency has performed a pollutants load allocation for the pollutant to be discharged, must demonstrate, before the close of the public comment period, that:

(1) There are sufficient remaining pollutant load allocations to allow for the discharge; and

(2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.
The plain language of the first sentence of the regulation is very clear that no permit may be issued to a new discharger if the discharge will contribute to the violation of water quality standards. This corresponds to the stated objectives of the Clean Water Act “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” 33 U.S.C. § 1251(a) (1987). And that “it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.” 33 U.S.C. § 1251(a)(3) (1987).

The EPA contends that the partial remediation of the discharge from the Gibson Mine will offset the pollution. However, there is nothing in the Clean Water Act or the regulation that provides an exception for an offset when the waters remain impaired and the new source is discharging pollution into that impaired water.

The regulation does provide for an exception where a TMDL has been performed and the owner or operator demonstrates that before the close of the comment period two conditions are met, which will assure that the impaired waters will be brought into compliance with the applicable water quality standards. The plain language of this exception to the prohibited discharge by a new source provides that the exception does not apply unless the new source can demonstrate that, under the TMDL, the plan is designed to bring the waters into compliance with applicable water quality standards.

The EPA argues that under the requirements of clause (1), there are sufficient remaining load allocations to allow for the discharge because the TMDL provides a method by which the allocations could be established to allow for the discharge. There is no contention, however, that these load allocations represent the amount of pollution that is currently discharged from the point sources and nonpoint sources, and there is no indication of any plan that will effectuate these load allocations so as to bring Pinto Creek within the water quality standards. The TMDL merely provides for the manner in which Pinto Creek could meet the water quality standards if all of the load allocations in the TMDL were met, not that there are sufficient remaining pollutant load allocations under existing circumstances.

With regard to the requirements of clause (2), the EPA argues that the requirement of “compliance schedules” pertains only to point sources for which there is a permit. This does not correspond to the plain language of clause (2), which provides “the existing discharges into that segment [of Pinto Creek] are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.” 40 C.F.R. § 122.4(i)(2) (2000).
We examine that language utilizing the definitions provided in the regulation. The term “discharge” is defined to mean “the discharge of a pollutant.” 40 C.F.R. § 122.2 (2000). The term “discharge of a pollutant,” is defined as any addition of any “pollutant” or combination of pollutants to “waters of the United States” from “any point source.” Id. at § 122.2(a) (emphasis added). Thus, under the plain language of the regulation, compliance schedules are not confined only to “permitted” point source discharges, but are applicable to “any” point source.

The EPA contends that this would amount to a complete ban of the discharge of pollution to impaired waters. This is based on its misreading of the plain language of the regulation to state that the remediation has to be completed before Carlota’s discharge. The plain language of clause (2) of the regulation, instead, provides that existing discharges into that segment (of the waters) are “subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.” 40 C.F.R. § 122.4(i)(2) (2000) (emphasis added). This is not a complete ban but a requirement of schedules to meet the objective of the Clean Water Act. * * *

In Carlota’s case, there are no plans or compliance schedules to bring the Pinto Creek segment “into compliance with applicable water quality standards,” as required by § 122.4(i)(2), which Carlota and the EPA both acknowledge is the applicable section with which Carlota must comply. The error of both the EPA and Carlota is that the objective of that section is not simply to show a lessening of pollution, but to show how the water quality standard will be met if Carlota is allowed to discharge pollutants into the impaired waters.

The EPA has the responsibility to regulate discharges from point sources and the states have the responsibility to limit pollution coming into the waters from non-point sources. If point sources, other than the permitted point source, are necessary to be scheduled in order to achieve the water quality standard, then the EPA must locate any such point sources and establish compliance schedules to meet the water quality standard before issuing a permit. If there are not adequate point sources to do so, then a permit cannot be issued unless the state or Carlota agrees to establish a schedule to limit pollution from a nonpoint source or sources sufficient to achieve water quality standards. * * *

In this case, the Petitioners do not argue for an absolute ban on discharges into a waterway that is in violation of the water quality standards. Rather, the Petitioners point to the § 122.4(i) exception by which a new discharger can comply with the Clean Water Act requirements. Those requirements simply were not met. * * *
V. Conclusion

Because the issuance of the NPDES Permit to Carlota Copper Mine was based on errors of law under the Clean Water Act, 40 C.F.R. § 122.4(i), and the NEPA, we vacate and remand the permit to the EPA for further proceedings consistent with this opinion.

NOTES

1. The Pinto Creek decision addressed constraints on the issuance of new NPDES permits in areas with deficient water quality. It does not say what obligations the Clean Water Act establishes for the revision of existing permits in areas with deficient water quality. Nor are those obligations set forth elsewhere in the statute. In regulations implementing section 303(d), EPA has required that each TMDL include a “load allocation” for non-point source pollution and a “wasteload allocation” for point source pollution, and those budgets can provide starting points for reducing pollutant loading from existing point sources. But states retain discretion to allocate their budget between the load and wasteload allocations, and as the Pronsolino decision notes, they also retain discretion to decide whether or not to turn TMDLs into controls on non-point source pollution. That means a state has discretion to shield existing NPDES permit-holders by establishing a generous wasteload allocation and a small load allocation, and then can shield non-point source pollution sources by leaving the load allocation unimplemented.

2. The Pinto Creek decision refers to something called an “offset.” As with air quality, an offset is a reduction in pollution in one location or time to compensate for the introduction of pollution at some other time or place. Here, for example, the mining company argued, and EPA agreed, that several actions taken in the creation of the mine would lead to pollution reductions, which would offset the introduction of pollution from the new discharges.

   While the Ninth Circuit was skeptical of the legal and factual basis of that argument (in an omitted footnote, it questioned whether the offset was real), other courts have distinguished Pinto Creek and have allowed new discharges, even in the absence of compliance schedules, where those discharges were to be offset by other pollution reductions. See, e.g., Assateague Coastkeeper v. Md. Dept. of Envt., 28 A.3d 178, 205–09 (Md. 2011).

3. On some waterways, EPA and states have tried to expand the offset concept and create environmental trading systems for water quality. The basic premise of these trading systems is that regulated entities can compensate for their pollution by paying some other entity for pollution reductions. In practice, this could happen by trading among NPDES permit holders—for example, one wastewater treatment plant could pay another plant for pollutant reductions, rather than reducing pollution itself.
Alternatively, NPDES permit holders could pay other polluters, including non-point sources, for pollution reductions. Thus, for example, wastewater treatment plants might sponsor measures to reduce nutrient loading from farms. Because reducing nutrient loading from farms is often much cheaper than squeezing additional pollutant reductions out of wastewater treatment plants, this approach seems potentially appealing.

Despite that seeming promise, and EPA’s support, water quality trading is much less common than air quality trading. For an exploration of reasons why water quality trading lags behind some other forms of environmental trading, see Karen Fisher-Vanden & Sheila Olmstead, *Moving Pollution Trading from Air to Water: Potential, Problems, and Prognosis*, 27 J. ECON. PERSPECTIVES 147, 147 (2013).

4. Does the Clean Water Act require municipal stormwater permits to ensure compliance with water quality standards? According to one court, the answer is no, though EPA or a state may demand such compliance if it chooses to do so. *See Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999). In other circuits, the question remains open, and environmental groups have advocated for such requirements. The resolution of this question is potentially quite important, for many urban waterways do not currently comply with water quality standards, and stormwater discharges are important contributing causes.

**VIII. CAPSTONE PROBLEM: CHESAPEAKE BAY TMDL**

Of all the United States’ water quality controversies, none is more prominent—and more complicated—than the Chesapeake Bay. The Bay’s watershed includes parts of Virginia, West Virginia, Maryland, Delaware, New York, Pennsylvania, and Washington, D.C., and its water quality problems therefore present a major interstate challenge. The Bay’s pollution problems—which are long-lasting and serious—also derive from a wide variety of sources, including agricultural, wastewater treatment plant discharges, industrial discharges, and urban stormwater. For decades, the federal government and the Chesapeake Bay states have been discussing and attempting to implement fixes for those problems, so far with little success.

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6 Created by, and adapted and reused with permission from, Bryan Franey, Manko, Gold, Thacher & Fox LLP.
In recent years, EPA and the states have turned to the TMDL process as a potential driver of reform. In 2010, EPA published a massive TMDL for sediment and nutrients entering Chesapeake Bay.

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**Chesapeake Bay TMDL Executive Summary**

EPA (Dec. 2010)

*Introduction*

The U.S. Environmental Protection Agency (EPA) has established the Chesapeake Bay Total Maximum Daily Load (TMDL), a historic and comprehensive “pollution diet” with rigorous accountability measures to initiate sweeping actions to restore clean water in the Chesapeake Bay and the region’s streams, creeks and rivers.

Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries. The TMDL is required under the federal Clean Water Act and responds to consent decrees in Virginia and the District of Columbia from the late 1990s. It is also a keystone commitment of a federal strategy to meet President Barack Obama’s Executive Order to restore and protect the Bay.
The TMDL—the largest ever developed by EPA—identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia and sets pollution limits necessary to meet applicable water quality standards in the Bay and its tidal rivers and embayments. Specifically, the TMDL sets Bay watershed limits of 185.9 million pounds of nitrogen, 12.5 million pounds of phosphorus and 6.45 billion pounds of sediment per year—a 25 percent reduction in nitrogen, 24 percent reduction in phosphorus and 20 percent reduction in sediment. These pollution limits are further divided by jurisdiction and major river basin based on state-of-the-art modeling tools, extensive monitoring data, peer-reviewed science and close interaction with jurisdiction partners.

The TMDL is designed to ensure that all pollution control measures needed to fully restore the Bay and its tidal rivers are in place by 2025, with at least 60 percent of the actions completed by 2017. The TMDL is supported by rigorous accountability measures to ensure cleanup commitments are met, including short-and long-term benchmarks, a tracking and accountability system for jurisdiction activities, and federal contingency actions that can be employed if necessary to spur progress.

**TMDL Background**

The Clean Water Act (CWA) sets an overarching environmental goal that all waters of the United States be “fishable” and “swimmable.” More specifically it requires states and the District of Columbia to establish appropriate uses for their waters and adopt water quality standards that are protective of those uses. The CWA also requires that every two years jurisdictions develop—with EPA approval—a list of waterways that are impaired by pollutants and do not meet water quality standards. For those waterways identified on the impaired list, a TMDL must be developed. A TMDL is essentially a “pollution diet” that identifies the maximum amount of a pollutant the waterway can receive and still meet water quality standards.

Most of the Chesapeake Bay and its tidal waters are listed as impaired because of excess nitrogen, phosphorus and sediment. These pollutants cause algae blooms that consume oxygen and create “dead zones” where fish and shellfish cannot survive, block sunlight that is needed for underwater Bay grasses, and smother aquatic life on the bottom. The high levels of nitrogen, phosphorus and sediment enter the water from agricultural operations, urban and suburban stormwater runoff, wastewater facilities, air pollution and other sources, including onsite septic systems. Despite some reductions in pollution during the past 25 years of restoration due to efforts by federal, state and local governments;
non-governmental organizations; and stakeholders in the agriculture, urban/suburban stormwater, and wastewater sectors, there has been insufficient progress toward meeting the water quality goals for the Chesapeake Bay and its tidal waters.

More than 40,000 TMDLs have been completed across the United States, but the Chesapeake Bay TMDL will be the largest and most complex thus far—it is designed to achieve significant reductions in nitrogen, phosphorus and sediment pollution throughout a 64,000-square-mile watershed that includes the District of Columbia and large sections of six states. The TMDL is actually a combination of 92 smaller TMDLs for individual Chesapeake Bay tidal segments and includes pollution limits that are sufficient to meet state water quality standards for dissolved oxygen, water clarity, underwater Bay grasses and chlorophyll-a, an indicator of algae levels. It is important to note that the pollution controls employed to meet the TMDL will also have significant benefits for water quality in tens of thousands of streams, creeks, lakes and rivers throughout the region.

* * *

**Developing the Chesapeake Bay TMDL**

Development of the Chesapeake Bay TMDL required extensive knowledge of the stream flow characteristics of the watershed, sources of pollution, distribution and acreage of the various land uses, appropriate best management practices, the transport and fate of pollutants, precipitation data and many other factors. The TMDL is informed by a series of models, calibrated to decades of water quality and other data, and refined based on input from dozens of Chesapeake Bay scientists. Modeling is an approach that uses observed and simulated data to replicate what is occurring in the environment to make future predictions, and was a critical and valuable tool to develop the Chesapeake Bay TMDL.

The development of the TMDL consisted of several steps:

1. EPA provided the jurisdictions with loading allocations for nitrogen, phosphorus and sediment for the major river basins by jurisdiction.
2. Jurisdictions developed draft Phase I WIPs to achieve those basin-jurisdiction allocations. In those draft WIPs, jurisdictions made decisions on how to further sub-allocate the basin-jurisdiction loadings to various individual point sources and a number of point and nonpoint source pollution sectors.
3. EPA evaluated the draft WIPs and, where deficiencies existed, EPA provided backstop allocations in the draft
TMDL that consisted of a hybrid of the jurisdiction WIP allocations modified by EPA allocations for some source sectors to fill gaps in the WIPs.

4. The draft TMDL was published for a 45-day public comment period and EPA held 18 public meetings in all six states and the District of Columbia. Public comments were received, reviewed and considered for the final TMDL.

5. Jurisdictions, working closely with EPA, revised and strengthened Phase I WIPs and submitted final versions to EPA.

6. EPA evaluated the final WIPs and used them along with public comments to develop the final TMDL.* * *

Ultimately, the TMDL is designed to ensure that by 2025 all practices necessary to fully restore the Bay and its tidal waters are in place, with at least 60 percent of the actions taken by 2017. The TMDL loadings*** were determined using the best peer-reviewed science and through extensive collaboration with the jurisdictions and are informed by the jurisdictions’ Phase I WIPs.

Accountability and Goals

The Chesapeake Bay TMDL is unique because of the extensive measures EPA and the jurisdictions have adopted to ensure accountability for reducing pollution and meeting deadlines for progress. The TMDL will be implemented using an accountability framework that includes WIPs, two-year milestones, EPA’s tracking and assessment of restoration progress and, as necessary, specific federal contingency actions if the jurisdictions do not meet their commitments. This accountability framework is being established in part to provide demonstration of the reasonable assurance provisions of the Chesapeake Bay TMDL pursuant to both the Clean Water Act (CWA) and the Chesapeake Bay Executive Order, but is not part of the TMDL itself.

When EPA establishes or approves a TMDL that allocates pollutant loads to both point and nonpoint sources, it determines whether there is a “reasonable assurance” that the point and nonpoint source loadings will be achieved and applicable water quality standards will be attained. Reasonable assurance for the Chesapeake Bay TMDL is provided by the numerous federal, state and local regulatory and non-regulatory programs identified in the accountability framework that EPA believes will result in the necessary point and nonpoint source controls and pollutant reduction programs. The most prominent program is the CWA’s National Pollutant Discharge Elimination System (NPDES) permit program that regulates point sources throughout the nation. Many nonpoint sources are not covered by a similar federal permit program; as
a result, financial incentives, other voluntary programs and state-specific regulatory programs are used to achieve nonpoint source reductions.

Beginning in 2012, jurisdictions (including the federal government) are expected to follow two-year milestones to track progress toward reaching the TMDL’s goals. If a jurisdiction’s plans are inadequate or its progress is insufficient, EPA is committed to take the appropriate contingency actions to ensure pollution reductions. These include expanding coverage of NPDES permits to sources that are currently unregulated, increasing oversight of state-issued NPDES permits, requiring additional pollution reductions from point sources such as wastewater treatment plants, increasing federal enforcement and compliance in the watershed, prohibiting new or expanded pollution discharges, redirecting EPA grants, and revising water quality standards to better protect local and downstream waters.

**Watershed Implementation Plans**

The cornerstone of the accountability framework is the jurisdictions’ development of WIPs, which serve as roadmaps for how and when a jurisdiction plans to meet its pollutant allocations under the TMDL. In their Phase I WIPs, the jurisdictions were expected to subdivide the Bay TMDL allocations among pollutant sources; evaluate their current legal, regulatory, programmatic and financial tools available to implement the allocations; identify and rectify potential shortfalls in attaining the allocations; describe mechanisms to track and report implementation activities; provide alternative approaches; and outline a schedule for implementation.

EPA provided the jurisdictions with detailed expectations for WIPs in November 2009 and evaluation criteria in April 2010. To assist with WIP preparation, EPA provided considerable technical and financial assistance. EPA worked with the jurisdictions to evaluate various “what if” scenarios—combinations of practices and programs that could achieve their pollution allocations.

The two most important criteria for a WIP is that it achieves the basin-jurisdiction pollution allocations and meets EPA’s expectations for providing reasonable assurance that reductions will be achieved and maintained, particularly for non-permitted sources like runoff from agricultural lands and currently unregulated stormwater from urban and suburban lands.

After the draft Phase I WIP submittals in September 2010, a team of EPA sector experts conducted an intense evaluation process, comparing the submissions with EPA expectations. The EPA evaluation concluded that the pollution controls identified in two of the seven jurisdictions’ draft WIPs could meet nitrogen and phosphorus allocations and five of the seven jurisdictions’ draft WIPs could meet sediment allocations. The
EPA evaluation also concluded that none of the seven draft Phase I WIPs provided sufficient reasonable assurance that pollution controls identified could actually be implemented to achieve the nitrogen, phosphorus and sediment reduction targets by 2017 or 2025.

In response to its findings, EPA developed a draft TMDL that established allocations based on using the adequate portions of the jurisdictions’ draft WIP allocations along with varying degrees of federal backstop allocations in all seven jurisdictions. Backstop allocations focused on areas where EPA has the federal authority to control pollution allocations through NPDES permits, including wastewater treatment plants, stormwater permits, and animal feeding operations. ***

*Final Watershed Implementation Plans and TMDL*

Since submittal of the draft WIPs and release of the draft TMDL in September 2010, EPA worked closely with each jurisdiction to revise and strengthen its plan. Because of this cooperative work and state leadership, the final WIPs were significantly improved. ***

These improvements enabled EPA to reduce and remove most federal backstops, leaving a few targeted backstops and a plan for enhanced oversight and contingency actions to ensure progress.

*Backstop Allocations, Adjustments, and Actions*

Despite the significant improvement in the final WIPs, one of the jurisdictions did not meet all of its target allocations and two of the jurisdictions did not fully meet EPA’s expectations for reasonable assurance for specific pollution sectors. To address these few remaining issues, EPA included in the final TMDL several targeted backstop allocations, adjustments and actions. As a result of the jurisdictions’ significant improvements combined with EPA’s backstops, EPA believes the jurisdictions are in a position to implement their WIPs and achieve the needed pollution reductions. This approach endorses jurisdictions’ pollution reduction commitments, gives them the flexibility to do it their way first, and signals EPA’s commitment to fully use its authorities as necessary to reduce pollution. ***

*Enhanced Oversight and Contingencies*

While final WIPs were significantly improved and the jurisdictions deserve credit for the efforts, EPA also has minor concerns with the assurance that pollution reductions can be achieved in certain pollution sectors in Pennsylvania, Virginia and West Virginia. EPA has informed these jurisdictions that it will consider future backstops if specific near-term progress is not demonstrated in the Phase II WIP. ***
Ongoing Oversight of Chesapeake Bay Jurisdictions

EPA will carefully review programs and permits in all jurisdictions. EPA’s goal is for jurisdictions to successfully implement their WIPs, but EPA is prepared to take necessary actions in all jurisdictions for insufficient WIP implementation or pollution reductions. Federal actions can be taken at any time, although EPA will engage particularly during two-year milestones and refining the TMDL in 2012 and 2017. Actions include:

- Expanding coverage of NPDES permits to sources that are currently unregulated
- Increasing oversight of state-issued NPDES permits
- Requiring additional pollution reductions from federally regulated sources
- Increasing federal enforcement and compliance
- Prohibiting new or expanded pollution discharges
- Conditioning or redirecting EPA grants
- Revising water quality standards to better protect local and downstream waters
- Discounting nutrient and sediment reduction progress if jurisdiction cannot verify proper installation and management of controls

Final TMDL

As a result of the significantly improved WIPs and the removal and reduction of federal backstops, the final TMDL is shaped in large part by the jurisdictions’ plans to reduce pollution. Jurisdiction-based solutions for reducing pollution was a long-standing priority for EPA and why the agency always provided the jurisdictions with flexibility to determine how to reduce pollution in the most efficient, cost-effective and acceptable manner.

Now, the focus shifts to jurisdictions’ implementation of the WIP policies and programs designed to reduce pollution on-the-ground and in-the-water. EPA will conduct oversight of WIP implementation and jurisdictions’ progress toward meeting two-year milestones. If progress is insufficient, EPA will utilize contingencies to place additional controls on federally permitted sources of pollution, such as wastewater treatment plants, large animal agriculture operations and municipal stormwater systems, as well as target compliance and enforcement activities.

The TMDL raises some interesting questions about the extent to which TMDLs can compel regulatory action and, relatedly, about the role
of states and the federal government in addressing interstate water quality problems. See Am. Farm Bureau Fed’n v. U.S. EPA, 792 F.3d 281 (3rd Cir. 2015). For purposes of this problem, however, your focus is within one state—Pennsylvania—and, specifically the policy question of how Pennsylvania should go about complying with the obligations set forth in the TMDL.

The facts provided in this problem are based on the Chesapeake Bay TMDL but do not always match the actual facts. You should rely exclusively on the facts in the problem to develop your “factual” arguments. Do not make up facts. For any legal arguments, most of what you need is embedded in the fact pattern. You can develop additional legal arguments by looking at outside resources, but make sure that they fit within the fact pattern.

The Pennsylvania Department of Environmental Protection (DEP) has been tasked with developing a Watershed Implementation Plan (WIP) to describe how the Commonwealth will meet its obligations under the Chesapeake Bay TMDL to reduce nitrogen, phosphorus, and sediment loadings to the Bay. This problem, however, focuses only on nitrogen. As the chart below shows, the Commonwealth currently discharges 100 million pounds of nitrogen to the Chesapeake Bay. Under the Chesapeake Bay TMDL, the Commonwealth must reduce its loadings of nitrogen to the Bay to 75 million pounds of nitrogen.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Current Loadings</th>
<th>Adjustment</th>
<th>Future TMDL Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Sources (e.g., forests)</td>
<td>20</td>
<td>−2</td>
<td>18</td>
</tr>
<tr>
<td>Point Source (POTWs)</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point Source (Industrials)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater (MS4s)</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Septic</td>
<td>3</td>
<td>−1</td>
<td>2</td>
</tr>
<tr>
<td>Air Deposition</td>
<td>1</td>
<td>−0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Totals</td>
<td>100</td>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

The purpose of the public hearing will be to debate and then determine how much each business sector will be required to reduce its loadings to the Bay. The class will be divided into six teams:
- Pennsylvania Farm Bureau, representing the agricultural sector;
- Association of Pennsylvania Publicly Owned Treatment Works (POTWs), representing the point source (POTW) category;
- Pennsylvania Municipal Authorities Association, representing municipalities that own separate storm sewer systems (MS4s);
- Pennsylvania Chamber of Commerce, representing industrial interests;
- PennFuture, representing general environmental interests; and
- DEP, responsible for allocating nitrogen loadings to each business sector.

You are the legal team representing your assigned interest group. Your client has asked you to attend the public hearing and give a brief presentation in support of your group’s interests (i.e., how should DEP allocate the loading of nitrogen amongst the various sources). You will be provided with confidential information from your client to help you develop the presentation.

Your presentation should briefly state what group you represent, how that group discharges nitrogen to the Bay (i.e., how it will be impacted by the TMDL), and then provide several arguments in support of your client’s position. The arguments can be based on the law, the facts provided, or policy. You can argue why your client should not have to reduce its loadings (or by only a certain amount), or you can argue why other groups should be forced to reduce their loads. You can also offer up certain reductions where you think your client should be willing to do so, particularly if you believe that this will avoid even more drastic reductions.

You will not have time to provide much background or context for your arguments, so keep your arguments short and simple. For example, if a team represented the “air deposition” source category, it could argue that its client should not be forced to reduce loadings to the Bay because its client’s impact is already de minimis (1% of the problem), and any forced reductions would be an inefficient use of limited resources. In addition, the team could argue that EPA has already promulgated several rules that will have the co-benefit of reducing nitrogen deposition to the Chesapeake Bay, and further reductions would be duplicative and/or unduly burdensome.

After each group has had the opportunity to present, the members of the DEP team will meet and will decide what sectors will be required
to reduce their loading of nitrogen and by how much. The reductions of the Septic, Forest, and Air Deposition categories have already been selected, so DEP will have to reduce nitrogen loadings by an additional 21.5 million pounds per year (refer to the chart above).

Publicly Available Information

The following information is available to all groups:

- Stormwater runoff from agriculture results in 39 million pounds of nitrogen loading per year.
- It is technically feasible for POTWs to install pollution prevention technology that will reduce that sector’s loadings to 6 million pounds per year.
- It is technically feasible to reduce stormwater runoff into MS4s from 7 to 3 million pounds of nitrogen per year by implementing “best management practices” (BMPs).
- It is technically feasible for industrials that directly discharge to the Chesapeake Bay watershed to install pollution prevention technology that would reduce nitrogen discharges by 1 million pounds per year.
- Municipalities could reduce nitrogen loadings (2 million pounds per year) to the Chesapeake Bay by prohibiting the application of lawn fertilizer.
- Concentrated Animal Feeding Operations (CAFOs) contribute approximately 10 million pounds of nitrogen to the Bay each year.

Your instructor will provide your group with additional confidential information. Rumor has it that internal whistleblowers for some of the groups have leaked confidential information to PennFuture.

Here are examples of some additional resources that you can use to develop your arguments or find background information:

- Interest and Advocacy Group Webpages—see, e.g., Food & Water Watch, Pennsylvania Farm Bureau.