



Surface Water Quality

Prepared by: Ethan Lauer, Senior Staff Attorney

Surface water quality is regulated primarily under the federal Clean Water Act (CWA).¹ Although the U.S. Environmental Protection Agency (EPA) develops national criteria for certain pollutants and retains an oversight role, the state Department of Natural Resources (DNR) exercises “delegated authority” to implement many CWA requirements.

As required by the CWA, DNR establishes surface water quality standards according to the designated use for a given body of water, and the water quality criteria required to maintain that use. In other words, the law recognizes that different standards may be required for different waterbodies. Water quality standards must protect the public interest, including the protection of the public health and welfare and the present and prospective future use of such waters for public and private water systems, propagation of fish and aquatic life and wildlife, domestic and recreational purposes, and agricultural, commercial, industrial, and other legitimate uses. [s. 281.15, Stats.]

DISCHARGES FROM POINT SOURCES

Any discharge of pollution to a navigable water from a point source² must be authorized by a Wisconsin Pollutant Discharge Elimination System (WPDES) permit. A WPDES permit includes a compliance schedule, under which certain pollution control levels must be achieved, and effluent limitations, which limit the specific pollutants that may be discharged. [ss. 283.31 (3) and (4) and 283.55, Stats.]

Effluent limitations are expressed as “[technology-based](#)” effluent limits, which are based on the level of pollution control achieved using treatment technology that is reasonably available for limiting the discharge of the pollutant, and “[water quality-based](#)” effluent limits (WQBELs), which are based on the quality of the water body receiving the discharge. WQBELs may be narrative (describing the characteristics the water should have) or numeric (specifying the maximum concentration of a pollutant). A WPDES permit contains either technology-based limitations or WQBELs, whichever are more stringent. [s. 283.53 (1), Stats.]

A [special WPDES permitting process](#) applies to large concentrated animal feeding operations (CAFOs).³ [s. NR 243.13, Wis. Adm. Code.] A WPDES permit is also required before sewage sludge (also known as “municipal biosolids”) may be applied to land in the state. [s. NR 204.05 (1), Wis. Adm. Code.]

NONPOINT SOURCE POLLUTION

The CWA requires states to address nonpoint source⁴ pollution, which contributes many of the contaminants that impair surface waters. Unlike point sources, nonpoint sources typically are not concentrated or localized and lack a single, well-defined point of origin. Examples of pollutants from nonpoint sources include fertilizers, nutrients, oil, and sediment from agricultural, urban, and residential areas.

The DNR, in consultation with the Department of Agriculture, Trade and Consumer Protection (DATCP), must establish performance standards and prohibitions designed to limit nonpoint source pollution from agricultural sources. The standards and prohibitions must, at a minimum, prohibit a livestock operation⁵ from having any of the following: direct runoff from a feedlot or stored manure into the waters of the state; overflow of manure storage structures; unconfined manure piles in certain areas; and unlimited access by livestock to waters of the state. [s. 281.16 (3) (a), Stats.] DNR also must establish performance standards for nonpoint sources that are not agricultural facilities or agricultural practices. [s. 281.16 (2) (a), Stats.]

POLLUTION CONTROL STRATEGIES

Total Maximum Daily Loads

The CWA requires states to develop total maximum daily loads (TMDLs) for all impaired surface waters. [33 U.S.C. s. 1313 (d) (1).] A TMDL is generally the amount of a pollutant that a waterbody (or waterbody segment) can assimilate and not exceed water quality standards. Once a TMDL is developed and approved by the EPA, Wisconsin implements the TMDL by regulating both point sources and nonpoint sources. For point sources, the establishment of a TMDL may prompt revisions to a WPDES permittee's effluent limitations. Typically, the state regulates nonpoint source pollution in a TMDL area through the strategies described below.⁶

Nutrient Management

Nutrient management is one part of a system of conservation practices related to nonpoint source pollution. Nutrient management conservation practices seek to limit runoff of nutrients such as potassium, phosphorus, and nitrogen while maximizing farm cost-effectiveness. Local units of government may enact ordinances that are consistent with the state standards. Agricultural landowners satisfy performance standards set forth in DNR administrative rules, and any applicable ordinances, by implementing these practices. [s. 92.15, Stats.; chs. ATP 50 and NR 151, Wis. Adm. Code.]

Water Quality Credit Trading

Although the CWA does not specifically mention water quality trading, EPA policy allows states to develop water pollution trading programs. Wisconsin created a pilot program for trading water pollution credits in 1997. The program, now available statewide, authorizes a WPDES permittee to exceed otherwise applicable effluent limitations if the permittee negotiates an agreement with another permittee or nonpoint source that will result in an overall improvement in water quality within a given basin. [s. 283.84, Stats.] In 2020, the Legislature authorized the use of a [clearinghouse](#) to produce, sell, and maintain a bank of water quality trading credits.

Adaptive Management

Adaptive management allows a WPDES permittee to reduce phosphorus discharges from other sources, including nonpoint sources, if doing so is more cost-effective than reducing its own discharge. The DNR may authorize a permittee to use adaptive management if the permittee has met certain conditions, including the submission of an adaptive management plan. An adaptive management plan must include specified analyses, goals, and demonstrations. A reissued permit authorizing adaptive management must include monitoring and reporting requirements, and water quality-based effluent limitations or a TMDL approved by the EPA. [s. NR 217.18 (3) (e), Wis. Adm. Code.]

Stormwater Management

The DNR must promulgate a state stormwater management plan and establish uniform state standards relating to stormwater management at construction sites. Subject to certain exceptions, local stormwater ordinances must strictly conform to those state standards. [s. 281.33, Stats.]

¹ In Wisconsin, the CWA has been interpreted as generally not extending to groundwater. [*Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994), *cert. denied*, 513 U.S. 930 (1994).] Other laws, such as those relating to wetlands, shoreland zoning, solid waste management, sewage treatment, and boating may also affect surface water quality.

² A “point source” is a ny discernible, confined, and discrete conveyance from which pollutants are or may be discharged. [33 U.S.C. s. 1362 (14).]

³ A “CAFO” is a lot or facility where a specified minimum number of animals have been, are, or will be stabled or confined. CAFOs are classified as small, medium, or large, depending on their size. [s. NR 243.03 (12), (31), (39), and (59), Wis. Adm. Code.]

⁴ A “nonpoint source” is “a land management activity which contributes to runoff, seepage or percolation which adversely affects or threatens the quality of waters of this state and which is not a point source.” [s. 281.65 (2) (b), Stats.]

⁵ A “livestock operation” is a feedlot or other facility or a pasture where animals are fed, confined, maintained, or stabled. [s. 281.16 (1) (c), Stats.]

⁶ For more on TMDLs, see Legislative Council, [Total Maximum Daily Loads for Surface Waters](#), Issue Brief (April 2021).