Interim Permitting Manual—Navigating NPDES Permit Issues on Impaired Waters

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Interim Permitting Manual—Navigating NPDES Permit Issues on Impaired Waters

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Abstract

Many facilities in the petrochemical industry discharge to impaired waters, or waters not meeting water quality standards. These facilities confront difficult issues when obtaining wastewater discharge permits during the "interim" period—before a total maximum daily load (TMDL) is developed—including significantly stricter effluent limitations, limits on facility modification or expansion, and even discharge prohibitions. This manual will assist affected facilities as they face these and other interim permitting issues. This manual is intended for use by plant and corporate compliance and permitting staff as they negotiate the terms of wastewater discharge permits under the National Pollutant Discharge Elimination System (NPDES) program.

However, this manual is not intended to provide legal advice. Users should consult their own legal counsel regarding compliance with appropriate laws and regulations.

Executive Summary

The first part of this manual will discuss water quality standards and the listing process, in order to provide a basic understanding of how a water becomes labeled as "impaired." Water quality standards, which serve as the basis for comparison to actual water quality, include the designated uses for all waters, and the narrative and numeric water quality criteria necessary to support those uses. This manual addresses many water quality standards issues that facilities may encounter, including existing uses, use attainability analyses (UAAs) to revise designated uses, fish consumption advisories, whole effluent toxicity (WET) criteria, and sediment criteria. In addition, the first part will describe the listing process, through which impairment determinations are made, including state listing methodologies, assessment of waters, identification of impaired waters, and submission of reports to the U.S. Environmental Protection Agency (EPA) for approval. The manual will provide guidance on a number of listing issues, including listings due to violations of narrative criteria and fish consumption advisories, delisting, listing waters that are impaired but do not need a TMDL because they are expected to meet standards through other means, and challenging an erroneous listing determination.

The second part of this manual will discuss permitting discharges to impaired waters during the interim period before TMDLs are developed. The manual will describe the development of water quality-based effluent limitations on impaired waters, and will also discuss a number of issues for affected facilities to consider during the permitting process, including timing (when the permit should be issued), watershed permitting, verifying the impairment determination before the permit is issued, other controls available to bring the water into attainment, reasonable potential calculations, voluntary reduction measures, non-numeric effluent limitations, and calculating numeric effluent limitations. The manual will also briefly discuss antidegradation and backsliding issues, as well as stormwater permits. Finally, the manual will discuss some options for obtaining relief from permit limits, including variances, site-specific criteria, and UAAs.

PART 1: STANDARDS AND LISTING

So you're discharging to an impaired water. What exactly does that mean? Impaired waters are defined in comparison to water quality standards—that is, waters must be listed as impaired if they are not meeting water quality standards. Ultimately, TMDLs must be developed for most impaired waters. Before those TMDLs are developed, however, an impairment determination may result in more stringent permit limits for your facility. In order to help you understand how those determinations are made, the first part of this manual describes water quality standards generally, how waters are evaluated for compliance with those standards, how waters not in compliance with those standards become listed as impaired, and how you can deal with issues that arise during the listing process to be sure that your water is accurately listed before your permit is affected.

Water Quality Standards

Water quality standards serve as the foundation of the listing process for impaired waters (also called the 303(d) process), because waters can only be listed if they are not meeting the state's water quality standards. If the standards applicable to your receiving water are not appropriate, the basis of any impairment determination will be flawed. The Clean Water Act (CWA) sets forth the components of water quality standards as follows:

> … Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. …[1]

Water quality standards therefore include designated uses and specific water quality criteria necessary to protect those uses. As discussed in more detail below, criteria may be numeric or narrative (*e.g.*, "no toxics in toxic amounts"). In addition, the state's antidegradation policy is considered to be part of its water quality standards.[2] States are required to adopt water quality standards applicable to waters within their jurisdictions, and to evaluate those waters to determine whether the standards are being met. As discussed in more detail below, waters that are not meeting standards will be considered impaired, and generally will be scheduled for TMDL development.

Designated Uses

The CWA includes goals for the nation's water quality: that all waters should provide for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water.[3] These goals are often interpreted as a requirement that all waters be "fishable" and "swimmable." The CWA specifies that states must take the fishable/swimmable goals—and several other uses—into consideration when establishing their water quality standards:

> Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.[4]

In addition, the state must account for any downstream water quality standards in designating uses for its waters:

> In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of the downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.[5]

States may also designate their waters for uses not listed in the statute. The only prohibited uses are waste transport and waste assimilation.[6] Many states and tribes have adopted other designated uses, including for coral reef protection and tribal ceremonies, among other things.

Further, states may adopt subcategories of designated uses:

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[1] CWA 303(c)(2)(A); 33 USC 1313(c)(2)(A); *see also* 40 *CFR* 131.3(i).
[2] 40 *CFR* 131.6(d).
[3] CWA 101(a)(2); 33 USC 1251(a)(2).
[4] CWA 303(c)(2)(A); 33 USC 1313(c)(2)(A). Similar requirements are contained in 40 *CFR* 131.10(a).
[5] 40 *CFR* 131.10(b).
[6] 40 *CFR* 131.10(a).

> States may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries.[7]

Examples of subcategorization also include secondary contact recreation.

Finally, states may adopt seasonal uses:

> States may adopt seasonal uses as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria should be adjusted to reflect the seasonal uses, however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season.[8]

Examples of seasonal uses include recreational uses such as full body contact recreation, which may be applicable only during summer months.

Waters can—and frequently do—have multiple designated uses. For example, a waterbody may be designated for all of the following uses: warm water fishery, primary contact recreation, public water supply, industrial water supply, and agriculture. Be sure you identify all the uses designated for your receiving water, so you can better understand how your waterbody was assessed. You should be able to obtain this information by looking at the state water statutes or regulations, which are generally available on your state environmental agency's water website. You may also find useful information concerning your state's water quality standards on EPA's Water Science web page.[9]

When you are evaluating the uses designated for your receiving water, remember that a water can be designated for a use even if it is not currently attaining—or has never attained—that particular use:

> *Designated uses* are those uses specified in water quality standards for each water body or segment whether or not they are being attained.[10]

Accordingly, many states have assigned a core set of designated uses to all of their waters, regardless of whether all waters are capable of actually attaining those uses. EPA particularly encourages states to designate all waters for the fishable and swimmable uses that serve as a key goal of the CWA:

> [I]t 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…[11]

Federal regulations do not require any special procedures for states to assign fishable and swimmable uses to its waters. However, if a state does not designate the fishable or swimmable use for a waterbody, or if it wishes to establish sub-categories of certain uses, it must support its decision by conducting a use attainability analysis (UAA), which is a scientific assessment of the factors affecting attainment of a particular use.[12] The UAA process is described in greater detail below.

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[7] 40 *CFR* 131.10(c).
[8] 40 *CFR* 131.10(f).
[9] http://www.epa.gov/ost/.
[10] 40 *CFR* 131.3(f).
[11] 33 USC 1251(a)(2).
[12] 40 *CFR* 131.10(j).

Existing Uses

Unlike designated uses, the concept of "existing uses" does not come directly from the CWA. Rather, it is EPA's regulatory interpretation of the intent of the CWA to protect the actual uses of the nation's waters. EPA defines an existing use as follows:

> *Existing uses* are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.[13]

EPA has interpreted this regulation to mean that a particular use is considered to be "existing" if: either the use has actually occurred at any time since November 28, 1975; or the water quality at any time since that date has been suitable to allow that use to be attained.[14] EPA has interpreted its regulation to mean that a particular use is considered an "existing" use if it has actually occurred since the 1975 date, or if the water quality since that date has been suitable to allow that use to be attained.[15] EPA has also indicated that existing use determinations should be linked to water quality. In other words, states should not designate an existing use where an activity has occurred but where water quality is not—and has not been—sufficient to support that type of activity; on the other hand, where water quality is sufficient to support the use the use should be designated even if the associated activity has never occurred.[16]

In addition to identifying the designated uses applicable to your receiving water, it is important to determine whether any existing uses have been defined for that water. If any designated use is also considered to be an existing use, a UAA is not an option for removal of that use.[17] Unfortunately, states often do not define existing uses until the issue arises during a UAA. If your state is attempting to define existing uses on your water, keep in mind that the state has the discretion to define those uses very narrowly if it chooses, and can determine that a broader existing use is still satisfied even if the associated activity has changed since 1975.[18] For example, the state could define an existing recreational use to be limited to dry weather. Or the state could determine that an existing "fishing" use is being met even if the types of fish suitable for consumption are different than when the existing use first occurred.

Use Attainability Analyses (UAAs)

If you feel that the uses designated for your receiving water are inappropriate because they are not attainable, you may wish to pursue a UAA to have the use changed. Federal regulations define attainable uses as follows:

> At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under sections 301(b) and 306 of the Act and cost-effective and reasonable best management practice for nonpoint source control.[19]

There are limited circumstances under which a state can determine that a designated use (that is not also an existing use) should be removed because it is not attainable:

> States may remove a designated use which is *not* an existing use, as defined in §131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

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[13] 40 *CFR* 131.3(e).
[14] *Interpretation of the Term "Existing Uses" Under the Antidegradation Policy* (EPA, Feb. 21, 1985); *Water Quality Standards Regulation: Advanced Notice of Proposed Rulemaking*, 63 Fed. Reg. 36,742, 36,752-53 (EPA, Jul. 7, 1998) (the ANPRM).
[15] *Interpretation of the Term "Existing Uses" Under the Antidegradation Policy* (EPA, Feb. 21, 1985); *Water Quality Standards Regulation: Advanced Notice of Proposed Rulemaking* (the ANPRM), 63 Fed. Reg. 36,742, 36,752-53 (EPA, Jul. 7, 1998).
[16] *Id.*
[17] 40 *CFR* 131.10(g) ("States may remove a designated use which is *not* an existing use"); 40 CFR 131.10(h).
[18] *Determination of "Existing Uses" for Purposes of Water Quality Standards Implementation* (EPA, Apr. 7, 1986).
[19] 40 *CFR* 131.10(d).

> (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
>
> (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State or Tribal water conservation requirements to enable uses to be met;
>
> (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
>
> (4) Dams, diversions or other types of hydrological modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of a use;
>
> (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
>
> (6) Controls more stringent than those required by Sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.[20]

As noted above, this process applies to the refinement of designated uses into subcategories, but only if the criteria necessary to support the proposed subcategories are less stringent than those associated with the general designated use category:

> A state must conduct a use attainability analysis as described in §131.3(g) whenever:
>
> (2) The state wishes to…adopt subcategories of uses specified in section 101(a)(2) of the Act which require less stringent criteria.[21]

The UAA process is not simple to accomplish. It requires time, resources, and justification to EPA and the public:

> Prior to adding or removing any use, or establishing sub-categories of a use, the State shall provide notice and an opportunity for a public hearing under §131.20(b) of this regulation.[22]

As a result, many states have chosen to establish fishable and swimmable designated uses for all state waters, even if some state waters are not capable of supporting such uses. These statewide generic fishable and swimmable use designations can be problematic, because they may force states to list waters as impaired, regardless of whether the water quality standards can ever be attained. States often lack the resources to collect all of the information required to support a change in use. If you feel that a UAA is necessary for your receiving water, consider whether you can fund or conduct the study yourself—either alone or in cooperation with other affected dischargers.

Resource and political pressures can make UAAs difficult to accomplish. With the exception of some very simple situations—for example, limiting primary contact uses for ephemeral waters—UAAs can take years to

[20] 40 *CFR* 131.10(g).
[21] 40 *CFR* 131.10(j); *See also* ANPRM at 36,752-53.
[22] 40 *CFR* 131.10(e).

conduct, and years to get approved. However, a number of UAAs have been conducted across the country—over 4,000 as of May 2004, according to one EPA official. Kansas has been particularly successful at UAAs, and has established protocols with detailed, step-by-step instructions for conducting UAAs for various designated use categories, including expedited UAAs for recreational uses.[23] Kansas also specifically allows third parties to conduct UAAs, which must then be approved by the state.[24]

Despite the difficulties involved, it may be worth conducting a UAA if your facility would otherwise be forced either to use prohibitively expensive technologies in an attempt to achieve an unattainable standard, or to stop discharging altogether. If a UAA is conducted and approved, the designated use for your water can be revised to one that is actually achievable, which can be supported through less stringent water quality criteria. When evaluated with the new criteria, your water may be meeting standards, in which case it can be delisted. Even if it is still impaired, however, any reductions necessary in your interim permit—and any later permit under a TMDL—should be more reasonable.

Criteria to Support Designated Uses

Water quality criteria are established to protect designated uses, and must be scientifically sound:

> States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.[25]

Waters are evaluated for listing purposes based on whether they meet the state's water quality standards, which include the designated use classifications and the criteria necessary to support those classifications. Waters that do not meet a criterion for a specific pollutant—or that do not meet the statutory thermal requirements—must be included on the state's 303(d) List, and will be scheduled for TMDL development, with a few limited exceptions. The process a state must follow to assess waters in comparison to water quality criteria, including listing methodologies and data quality requirements, is discussed in more detail later in this manual.

Federal regulations set forth the procedures a state must follow to adopt criteria for toxic pollutants:

> *Toxic Pollutants.* States must review water quality data and information on discharges to identify specific water bodies where toxic pollutants may be adversely affecting water quality or the attainment of the designated water use or where the levels of toxic pollutants are at a level to warrant concern and must adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use. Where a State adopts narrative criteria for toxic pollutants to protect designated uses, the State must provide information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria. Such information may be included as part of the standards or may be included in documents generated by the State in response to the Water Quality Planning and Management Regulations (40 CFR part 35).[26]

States may and have adopted many different types of water quality criteria:

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[23] *Guidance Document for Use Attainability Analyses (UAAs)* (Kansas Department of Health and Environment, Dec. 1, 2001).
[24] *Kansas Implementation Procedures: Surface Water Quality Standards* (Kansas Department of Health and Environment, May 1, 2003).
[25] 40 *CFR* 131.11(a)(1).
[26] 40 *CFR* 131.11(a)(2).

> Form of criteria: in establishing criteria, States should:
>
> (1) Establish numerical values based on:
>
> (i) 304(a) Guidance; or
>
> (ii) 304(a) Guidance modified to reflect site-specific conditions; or
>
> (iii) Other scientifically defensible methods;
>
> (2) Establish narrative criteria or criteria based upon biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria.[27]

Although certain types of criteria are easier to interpret when determining a water's attainment status, a state may use all types of criteria to varying degrees during its assessment process.

If you are concerned that a particular criterion that is or will be applicable to your water is not appropriate, you should have a number of opportunities to participate in the criteria development or revision process. Water quality criteria are generally adopted through a formal state rulemaking process, which provides for public participation through review and comment periods or hearings. In addition, states are required to review their water quality standards—including criteria—every three years to determine whether new data or other information would justify any revisions.[28] Although this so-called "triennial review" does not always occur on a timely basis, it does allow public participation. If you have information that a criterion that has already been adopted is not appropriate, you may petition your state to revise the criterion, or request a site-specific criterion or variance to obtain some relief until the next triennial review. If the criterion is appropriate to support the designated use, but that use cannot be met, a UAA may be justified. Keep in mind, however, that your state may adopt numeric interpretations of narrative criteria without following the same public process. If so, the numeric values that will be used to assess your water may appear for the first time in the state's listing methodology, or even in the 303(d) List itself. In that case, you should be allowed to oppose the underlying values when you submit comments on those documents.

Numeric Criteria

Numeric criteria are the most common and easily identifiable type of water quality criteria. States adopt numeric criteria for specific pollutants or other constituents to protect aquatic life and human health. Aquatic life criteria come in two forms: acute criteria to address toxic effects (usually death) from short term exposure; and chronic criteria to address long term exposure effects, such as on reproduction. Human health criteria can be expressed in several forms, but generally focus on long term risks (cancer and noncancer) based on the type of potential exposure (drinking or nondrinking).

Some states have also adopted numeric criteria for the protection of wildlife. States in the Great Lakes system are required to adopt such criteria.[29] As a result, for example, while in many states the most stringent criterion for mercury is for the protection of human health, in the Great Lakes states the mercury wildlife criterion of 1.3 nanograms per liter (ng/L), or parts per trillion (ppt), is the most stringent.

In addition to adopting numeric criteria for specific pollutants, many states have also adopted methodologies to develop new numeric criteria, as needed. States can use these methodologies when a numeric criterion has not yet been established for a particular pollutant. Some states also allow existing numeric criteria to be modified to account for site-specific factors of a particular water, such as the presence of certain species, or other site-specific water quality characteristics. Commonly known as a "site-specific modification" or site-specific criterion," this procedure can result in a numeric criterion that is more appropriately tailored to conditions in your receiving water.

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[27] 40 *CFR* 131.11(b).
[28] CWA 303(c)(1); 33 USC 1313(c)(1).
[29] 40 *CFR* 132.3(d).

Although it is the responsibility of states to adopt water quality criteria for waters within their jurisdictions, EPA is charged with developing recommended numeric criteria for certain pollutants defined as toxic under the CWA.[30] States are not required to adopt EPA's recommended criteria.[31] Moreover, it is unlikely that the recommended national criteria will be suitable for all waters in a particular state. States must, however, adopt some form of numeric criterion for each toxic pollutant for which EPA has developed a recommended criterion:

> Whenever a State reviews water quality standards pursuant to paragraph (1) of this subsection, or revises or adopts new standards pursuant to this paragraph, such State shall adopt criteria for all toxic pollutants listed pursuant to section 1317(a)(1) of this title for which criteria have been published under section 1314(a) of this title, the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the State, as necessary to support such designated uses. Such criteria shall be specific numerical criteria for such toxic pollutants. ….[32]

States may adopt the EPA suggested criteria directly, or may formulate its own criteria. If a state chooses criteria that are less stringent than EPA's recommendations, it must provide scientific justification for that decision when it submits the criteria to EPA for review.

Narrative Criteria

Narrative criteria describe certain characteristics that should or should not be present in a particular water. These characteristics typically fall within toxicological, ecological, or aesthetic criteria. States adopt narrative criteria to provide general protections for waters in addition to, or in the absence of, specific numeric criteria. Such narrative criteria are usually expressed in the form of subjective statements, such as the following example:

> All waters shall be free from substances that (a) cause toxicity to aquatic life or human health, (b) settle to form objectionable deposits, (c) float as debris, oil, scum and other materials in concentrations that form nuisances, (d) produce objectionable color, odor, taste, or turbidity, or (e) produce undesirable aquatic life, or result in the dominance of nuisance species.

It was initially expected that as states developed their numeric water quality standards for particular pollutants, those standards would play the primary role in determining water quality-based requirements in permits, and that narrative criteria would not drive those requirements to a great extent. Narrative criteria, however, are now playing a very important role in the identification of impaired waters, and it appears that this role will continue. States are using narrative criteria frequently, both to determine whether waterbodies are impaired, and to set targets to be achieved in TMDLs.

In particular, narratives are being used in the following situations:

- Where the state has not set numeric standards, such as for nutrients.
- Where the state has established certain measures of water quality that have not been adopted as formal water quality standards, such as fish advisories for mercury.
- Where the water quality effects at issue cannot easily be associated with levels of specific pollutants, such as for whole effluent toxicity and overall biological health of a water.

[30] CWA 304(a); 33 USC 1314(a).
[31] *See* 40 *CFR* 131.11(b), quoted above.
[32] 33 USC 1313(c)(2)(B).

In these cases, the state may set "impairment levels" or TMDL targets based on an application of the narrative criteria, using the interpretation that waters with certain levels of pollutants or certain measurements of biological health do not meet the conditions set forth in the narratives. EPA has supported the use of narrative criteria for impairment determinations, taking the position that waters determined not to meet the state's interpretation of its narrative criteria must be included on the state 303(d) List.[33] This policy allows the state to address known water quality concerns without waiting for completion of the formal process of issuing numeric water quality criteria.

This use of narrative criteria, however, presents significant concerns for regulated parties. The numeric values that the state uses as "interpretations" of its narrative criteria have not undergone the extensive rulemaking process that states generally use in setting water quality standards. This means that the issuance of a draft 303(d) List may be the first time that regulated parties can see the actual values used. Although there will be an opportunity to comment on the draft list, stakeholders will not have the same procedural rights that they ordinarily would have during a rulemaking to establish true water quality standards. In addition, the numeric "interpretation" of the narrative criterion generally will not have undergone the scientific review process that is often used in developing water quality standards. Some states also require certain findings when promulgating water quality standards, such as that a standard is attainable or justified after a cost/benefit analysis. When such a state uses its narratives instead of adopting numeric criteria, it may not make these necessary determinations.

EPA regulations address these concerns about narratives to a limited extent, by requiring states to establish a methodology for translation of narrative criteria for toxic pollutants before regulating point sources on impaired waters:

> Where a State adopts narrative criteria for toxic pollutants to protect designated uses, the State must provide information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria. Such information may be included as part of the standards or may be included in documents generated by the State in response to the Water Quality Planning and Management regulations (40 *CFR* part 35).[34]

For listing purposes, EPA has recommended that state "translate the applicable narrative criteria on a site-specific basis or adopt site-specific numeric criteria." *Guidance: Use of Fish and Shellfish Advisories and Classifications in 303(d) and 305(b) Listing Decisions* (EPA, Oct. 24, 2000).

EPA describes such "translators" as follows:

> EPA encourages state, territories and authorized tribes to use chemical data to interpret narrative criteria; however, these jurisdictions should develop implementation procedures, often referred to as translators, that explain how different types of chemical data are used to make attainment/impairment decisions based on narrative criteria. These implementation procedures should be made available for review and comment by the public.[35]

Establishing such "translators" can help address the problems that can arise in the use of narrative criteria. If the state has set forth a procedure by which it will interpret its narratives, regulated parties can more easily understand—and evaluate the validity of—the resulting numeric values, which will be used in assessing impaired waters.

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[33] *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA TMDL-01-03, Jul. 21, 2003).
[34] 40 *CFR* 131.11(a)(2).
[35] *Consolidated Assessment and Listing Methodology (CALM): Toward a Compendium of Best Practices* (EPA, Jul. 2002) at p. 4-8.

EPA, however, does not require these translator procedures to be issued as rules. Although EPA recommends that the state allow public comment before it uses any translators, such public participation is not required. In addition, EPA has made it clear that it will not require development of translators before state states are allowed to use narrative criteria for listing purposes. In fact, when a state has indicated its intention not to use its narratives until implementation procedures or translators are developed, EPA has rejected that approach. If a state has established narrative criteria, EPA will require those criteria to be applied during the listing process, regardless of whether the recommended translators have been established after public participation.

Fish Consumption Advisories

Fish consumption advisories are not water quality criteria, but many states use their existence as the basis for classifying waters as impaired and including them on 303(d) Lists. Fish consumption advisories typically are issued by a state's health agency, based on the level of certain pollutants—such as mercury, PCBs, and dioxins—present in fish tissue, and the amount of locally-caught fish consumed by different segments of the population. For example, a state department of health may recommend that the general population eat no more than one meal of a certain species of fish each week, and that children and pregnant or nursing women eat no more than one meal of that fish each month. State practices may vary, but some states consider a water to be impaired if there is any limitation on the amount of fish that can be consumed safely.

Whole Effluent Toxicity (WET) Criteria

Many dischargers have conducted whole effluent toxicity (WET) testing as a requirement of their NPDES permits. WET testing is used to provide a general measure of an effluent's toxicity to aquatic life. Testing occurs in a laboratory setting; certain species are exposed to a facility's effluent, and acute and chronic toxic effects are measured. Based on the results, acute and/or chronic toxicity limits may be imposed, and the plant may be required to undertake studies to determine the pollutant or pollutants causing the toxicity. States typically impose these requirements based on the general narrative criteria concerning acute and chronic toxicity. Some states, particularly those in the Great Lakes system, have adopted numeric WET criteria, expressed as acute and chronic toxicity units. States touching on the Great Lakes are required to adopt either numeric WET criteria or a numeric interpretation of narrative WET criteria.[36]

Sediment Criteria

States sometimes use their general narrative criteria in an attempt to regulate sediments, but few have adopted sediment criteria. The narratives are used to address both excessive deposits of clean sediment and the presence of contaminated sediment. States should not use narrative sediment criteria to add waters to their 303(d) Lists unless they have also established a mechanism for translating the narrative criteria using numeric values, as discussed above. As with other criteria, states must have a sound scientific basis for adopting true sediment criteria, or numeric translators for narrative criteria that are applied to clean or contaminated sediment.

The Listing Process

This section discusses the basic listing requirements, and the general processes states follow to assess and list waters based on an evaluation of whether they are meeting water quality standards.

Assessing Water Quality

The CWA requires states to submit water quality reports to EPA every two years:

[36] *See* 40 *CFR* 132, Appendix F, Procedure 6.

> Each State shall prepare and submit to the Administrator by April 1, 1975, and shall bring up to date by April 1, 1976, and biennially thereafter, a report which shall include—
>
> (A) a description of the water quality of all navigable waters in such State during the preceding year, with appropriate supplemental descriptions as shall be required to take into account seasonal, tidal, and other variations, correlated with the quality of water required by the objective of this chapter (As identified by the Administrator pursuant to criteria published under section 1314(a) of this title) and the water quality described in subparagraph (B) of this paragraph; ….[37]

This report is called a "305(b) Report," and is required to be submitted to EPA on April 1 of every even numbered year.

Identifying Impaired Waters

The CWA requires states to identify waters that are not meeting water quality standards:

> 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.[38]

The method for identifying waters with inadequate thermal controls relies not on state temperature standards, but on evaluation of certain statutory factors:

> 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.[39]

A water that is not meeting state standards, or that does not satisfy the statutory requirement, is called a "water quality limited segment" or "impaired water," and is defined in EPA regulations as follows:

> Any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Act.[40]

The state's list of impaired waters is called a "303(d) List," and is also required to be submitted to EPA on April 1 of every even numbered year.

What do States Use to List Waters?

In developing their 303(d) Lists, EPA regulations require states to consider "all existing and readily available data and information," as follows:

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[37] CWA 305(b)(1); 33 USC 1315(b)(1).
[38] CWA 303(d)(1); 33 USC 1313(d)(1)(A), *See also,* 40 CFR 130.7(b)(1) (listing requirement) and 40 *CFR* 130.7(b)(4) (priority ranking).
[39] CWA 303(d)(1)(B); 33 USC 1313(d)(1)(B). *See also,* 40 *CFR* 130.7(b)(2).
[40] 40 *CFR* 130.2(j).

> Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by §§ 130.7(b)(1) and 130.7(b)(2) [the 303(d) List]. At a minimum "all existing and readily available water quality-related data and information" includes but is not limited to all of the existing and readily available data about the following categories of waters:
>
> (i) Waters identified by the State in its most recent section 305(b) report as "partially meeting" or "not meeting" designated uses or as "threatened";
>
> (ii) Waters for which dilution calculations or predictive models indicate nonattainment of applicable water quality standards;
>
> (iii) Waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions. These organizations and groups should be actively solicited for research they may be conducting or reporting. For example, university researchers, the United States Department of Agriculture, the National Oceanic and Atmospheric Administration, the United States Geological Survey, and the United States Fish and Wildlife Service are good sources of field data; and
>
> (iv) Waters identified by the State as impaired or threatened in a nonpoint assessment submitted to EPA under section 319 of the CWA or in any updates of the assessment.[41]

State Listing Methodologies

States must also describe exactly how they use all this data and information in developing their 303(d) Lists:

> Each State shall provide documentation to the Regional Administrator to support the State's determination to list or not to list its waters as required by §§ 130.7(b)(1) and 130.7(b)(2). This documentation shall be submitted to the Regional Administrator together with the list required by §§ 130.7(b)(1) and 130.7(b)(2) and shall include at a minimum:
>
> (i) A description of the methodology used to develop the list; and
>
> (ii) A description of the data and information used to identify waters, including a description of the data and information used by the State as required by § 130.7(b)(5); and
>
> (iii) A rationale for any decision to not use any existing and readily available data and information for any one of the categories of waters as described in § 130.7(b)(5); and
>
> (iv) Any other reasonable information requested by the Regional Administrator. …[42]

Listing methodologies explain how the state will evaluate the available data and information to make impairment determinations, and are often developed in a separate process prior to data collection and evaluation for listing.

In recent years, EPA has offered detailed guidance to states concerning development of 303(d) Lists and listing methodologies. EPA's most recent listing guidance provides recommendations on preparation of the 2004

[41] 40 *CFR* 130.7(b)(5).
[42] 40 *CFR* 130.7(6).

303(d) Lists.[43] More detailed guidance concerning development and implementation of listing methodologies is provided in EPA's *CALM Guidance*.[44] Data quality issues are addressed in another EPA guidance.[45]

State methodologies should, at a minimum, provide the following information:

- The types, quality, and quantity of data necessary to conduct an evaluation of water quality, as compared to promulgated water quality standards.
- How the assembled data and information will be used to make impairment determinations.

In addition, some states may include provisions allowing third parties to contribute data pursuant to a state-approved quality assurance project plan (QAPP). The methodology may also include deadlines for submission of qualified data.[46]

Some state legislatures have enacted comprehensive statutes concerning the assessment and listing process. Others have adopted regulations or issued guidance documents containing their listing methodologies. It is important to understand what your state requires, and to be sure that the agency charged with developing the 303(d) List satisfies those requirements. If your state is developing or modifying its methodology, participate in the process so you know exactly how your water will be assessed.

What Waters Get on the List?

States list waters that are not meeting water quality standards, for which a TMDL must be developed. As discussed earlier, water quality standards come in many different forms. Ideally, states should list only those waters that exceed a numeric criterion—or a numeric interpretation of a narrative criterion—for a particular pollutant.

Waters that are not impaired by a pollutant should not be included on the state's 303(d) List. Although such waters may be impaired, no valid TMDL can be developed. For example, a state should not list waters that are deemed to be impaired based on physical conditions, such as poor habitat or hydrologic modifications. However, if an impairment is identified, but the available data are insufficient to determine whether an impairment is caused by a pollutant, EPA has indicated that the water should be included on the 303(d) List as requiring a TMDL.[47]

For waters that are impaired by a pollutant that is being addressed through other programs, a TMDL may not be necessary. If other control measures—such as air controls or remediation activities—will allow water quality standards to be met without a TMDL, the water should not be included on the 303(d) List.

To find out whether your water has been identified as impaired, you can check the state's most recent 303(d) List, which should be posted on the state environmental agency's water website. In addition, information concerning state 303(d) Lists can be found on EPA's TMDL web page.[48] Some states define multiple levels of impairment, such as "partially supporting" and "not supporting," or "partially impaired." For purposes of the 303(d) List, any impairment—even if only partial—means that the water will be listed.

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[43] *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA TMDL 01-03, Jul. 21, 2003).
[44] *Consolidated Assessment and Listing Methodology (CALM): Toward a Compendium of Best Practices* (EPA, Jul. 2002).
[45] *Guidance for the Data Quality Objectives Process* (EPA-600-R-96-055, Aug. 2000).
[46] See *Preparation of Integrated Water Quality Monitoring and Assessment Reports* (Federal Water Quality Coalition, *et al.*, Mar. 11, 2002) for a more detailed discussion of assessment and listing issues and methodologies.
[47] *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA TMDL-01-03, Jul. 21, 2003).
[48] http://www.epa.gov/owow/tmdl/.

How Can Waters Come Off the List?

If a water is listed, it must be scheduled for TMDL development. Before the TMDL is developed, however, the state may determine that the water is not impaired, and therefore no longer belongs on the 303(d) List. EPA allows states to "delist" or remove waters from the 303(d) List by showing "good cause," which EPA has defined as follows:

> Upon request by the Regional Administrator, each State must demonstrate good cause for not including a water or waters on the list. Good cause includes, but is not limited to, more recent or accurate data; more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed in the categories in § 130.7(b)(5); or changes in conditions, e.g., new control equipment, or elimination of discharges.[49]

EPA has indicated that each 303(d) List is an independent document, and should be based on the data quality and other requirements in the state's current listing methodology.[50] In other words, a water should not continue to be listed for the sole reason that it was on a previous list. An older listing, made under a previous methodology—or made before the state had established a clear listing methodology—may no longer be sufficient to satisfy the requirements of the current methodology. If so, it should not be included in the new 303(d) List.

You can petition your state to delist your water, or submit information during the next listing cycle and request that it be removed from the list. A delisting request is best supported by new data indicating that the water is now in attainment. Even if you have no new data, however, you can challenge a listing if it was based on insufficient data, old data, or no data at all, provided you can demonstrate that the flaws in the state's analysis constitute "good cause" under the regulations.

In order to determine whether your water should be delisted, you should understand your state's listing methodology and any data quality requirements your state has adopted. In addition, you should request and evaluate the data used by the state when it made the original impairment determination. You might wish to consider a delisting request in any of the following circumstances:

- New data or information are available that demonstrate that the water is now attaining standards.
- The water is not attaining standards, but the impairment is caused by physical characteristics rather than a pollutant or pollutants.
- The state listed the water based on an unpromulgated numeric interpretation of a narrative criterion.
- The state did not comply with applicable statutes or regulations governing assessment and listing of waters.
- The state did not comply with its own listing methodology.
- The state used data that did not satisfy its data quality requirements (for example, not enough data, unrepresentative data, inaccurate or unverified data, or old data).
- The state evaluated the data incorrectly.

[49] 40 *CFR* 130.7(6)(iv).
[50] *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA TMDL 01-03, Jul. 21, 2003) (the 2004 Listing Guidance).

Integrated Water Quality Monitoring and Assessment Reports

EPA has issued guidance to assist states in developing their 303(d) Lists, and has recommended that those lists be combined with the 305(b) Reports and submitted as one document called an "Integrated Water Quality Monitoring and Assessment Report" or "Integrated Report."[51]

EPA recommends that states divide their waters into five listing categories, which together make up the Integrated Report. EPA generally describes the categories as follows:

- Category 1: All designated uses are met;
- Category 2: Some of the designated uses are met but there are insufficient data to determine if remaining designated uses are met;
- Category 3: Insufficient data to determine whether any designated uses are met;
- Category 4: Water is impaired or threatened but a TMDL is not needed…;
- Category 5: Water is impaired or threatened and a TMDL is needed.[52]

Category 5 is the state's 303(d) List.

EPA Approval

The CWA requires states to submit their 303(d) Lists to EPA for approval:

> 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.[53]

TMDL Development

The CWA requires states to develop TMDLs for impaired waters included on the 303(d) List or in Category 5 of the state's Integrated Report. TMDLs must be designed to meet either water quality standards or the statutory thermal requirements:

> (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

[51] *Id.*
[52] 2004 Listing Guidance at p. 3.
[53] CWA 303(d)(2); 33 USC 1313(d)(2).

> 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.[54]

Listing Issues

If your water has been included on the 303(d) List as impaired and requires a TMDL, you should evaluate whether the listing decision was appropriate. If not, you may wish to consider challenging the list before you enter the permitting stage of the process.

Narrative Listings

Because the numeric values developed as "interpretations" of narrative criteria are generally not promulgated as actual water quality standards, there are legal issues you can raise if your state uses those values in listing decisions. The primary argument is that the use of narrative criteria in this way violates the procedural "due process" rights of the affected parties.

There have been only a few cases in which legal issues surrounding narrative criteria have been addressed by a court. For example:

- A Tennessee court held that an agency acted improperly when it issued nitrogen limits in permits based on the need to protect against "organic enrichment," because the organic enrichment test was being used as a water quality criterion, but had not been promulgated as a rule. The agency later adopted an emergency rule establishing a nutrient criterion, so the reviewing court dismissed the case as moot.[55]

- A West Virginia court held that the state could not use its narrative criteria as the basis for including waters with "biological impairments" on its 303(d) List. This opinion was later reversed on jurisdictional grounds.[56]

Many states list waters using general assessments of their narrative criteria, rather than numeric interpretations of the narratives. This practice is problematic, because it is not possible to objectively assess attainment of a narrative criterion without a valid translator mechanism. As noted above in the discussion of narrative criteria, EPA's position is that although translators should be developed, states may not postpone listing decisions in the absence of translators. In other words, states must assess attainment of narrative criteria and list waters if those criteria are exceeded, even if no translator has been developed. Once a water is listed based on a

[54] CWA 303(d)(1); 33 USC 1313(d)(1). *See also* 40 *CFR* 130.7(c).
[55] *City of Cookeville v. Tennessee Water Quality Control Board*, No. 02-3694-III (Davidson Cty, Tenn. Chancery Ct. Jul. 31, 2003) (bench decision); *dismissed as moot*, 2004 Tenn. App. LEXIS 759 (2004).
[56] *Monongahela Power Co. v. Chief, Office of Water Resources*, No. 99-AA-66 (Cir. Ct. Kanawha Cty, W.Va. May 1, 2001), *rev'd on other grounds*, 567 S.E.2d 629 (W. Va. 2002).

narrative criterion, the expectation is that a TMDL will be developed. It can be difficult, however, to determine how to develop a TMDL with objective waste load allocations (WLAs) to achieve a subjective narrative criterion.

Fish Consumption Advisories

Mercury, PCBs, and dioxins are the most common pollutants identified in fish consumption advisories. The assumptions concerning levels of exposure and human health risks, which are used by the state health agency to develop such advisories, can be more conservative than those used by the state environmental agency to develop its water quality criteria. In fact, some states have issued statewide "precautionary" advisories, based on the presumption that all fish within the state contain mercury, PCBs, or dioxins above acceptable levels.

Because fish advisories are developed for different purposes, using different methods than those used to establish water quality criteria, states should be careful when considering such advisories during the listing process. In 2000, EPA issued guidance to assist states in the proper use of advisories when assessing waterbodies for support of designated uses.[57] EPA allows states to use fish advisories to make listing decisions, but identifies specific situations where it is not appropriate to determine that a water is impaired based solely on an advisory:

- Generic statewide or regional precautionary advisories, based on data collected from a subset of water bodies, should not serve as a basis for listing. In other words, a generic advisory should not be used to determine that a particular water is impaired unless fish tissue data has been collected from that water.

- A water should not be listed as impaired if the exposure and risk assumptions underlying the fish advisory are more protective than those used to develop the state's water quality criteria for the protection of human health.

Because of the narrative due process issues discussed above, however, it is not clear that the EPA approach to listings based on fish consumption advisories is appropriate. So if your water is listed based on an advisory, you may be able to raise the due process arguments discussed above.

"Expected To Meet"

Even if a water is clearly impaired by a pollutant, the state should consider whether other reductions—outside the TMDL program—will allow the water to meet standards. For example, if reductions in atmospheric deposition can be achieved through the Clean Air Act (CAA), or if the Resource Conservation and Recovery Act (RCRA) or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) programs will be used to clean up contaminated soil, groundwater, or sediment that is contributing to your impairment, those controls should be considered in determining whether a TMDL is required. In addition, natural processes such as deposition of clean sediments may alleviate impairments caused by contaminated sediments.

If the water is "expected to meet" standards through other programs, it may not require a TMDL. As discussed above, EPA has established Category 4 of the Integrated Report for waters that are impaired but do not need a TMDL. Category 4B is a subsection of Category 4, and is designed for waters where "other required control measures are expected to result in the attainment of WQSs in a reasonable period of time."[58]

In order to justify removing an impaired water from the 303(d) List, or Category 5, based on the "expected to meet" argument, other pollution control requirements must be anticipated to address all water-pollutant combinations and attain all water quality standards within a reasonable period of time. Documentation

[57] *Guidance: Use of Fish and Shellfish Advisories and Classifications in 303(d) and 305(b) Listing Decisions* (EPA, Oct. 24, 2000).
[58] *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA TMDL 01-03, Jul. 21, 2003) at p. 5.

submitted to EPA must demonstrate that the relevant control measures will address all pollutant sources, and must establish a clear link between the control mechanisms and the water quality standards.

EPA also requires states to estimate the time in which standards are expected to be attained. EPA explains a "reasonable period of time" as follows:

> Factors that may influence the length of this time frame may depend on the severity of the impairment, the cause of the impairment (*e.g.*, point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (*e.g.*, conservative, reactive), the size and complexity of the water body (a simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, a tidally-influenced coastal water), the nature of the control action, cost, public interest, etc.[59]

Under prior EPA listing guidance, some regions have taken a very narrow view of the "reasonable period of time" requirement, and would not allow an "expected to meet" listing for a water that would take decades or longer to reach attainment. It is not clear, however, how other regions or EPA Headquarters would interpret this requirement, particularly given the relatively flexible interpretation in the 2004 Listing Guidance. EPA has indicated that TMDLs may be approvable even if they will not be achieved for decades.

Challenging a Listing Determination

As noted above, if these or other issues lead you to believe that your water has been listed in error, you should consider challenging the listing before the permit process begins. This includes being involved in the listing process and commenting on the state's draft. After a 303(d) List becomes final, you may have both state and federal opportunities for challenge. Depending on the administrative and civil procedures available in your state, a listing challenge may start with administrative appeal or petition for review of the list. State civil remedies may include a civil appeal or a declaratory judgment action on the listing issue you have raised. At the federal level, you can urge EPA not to approve the 303(d) List as to your water, and if EPA has approved the list, you can challenge that approval in federal court.

PART 2: PERMITTING

Now that you know what an impaired water is, what does it mean for your NPDES permit if your facility discharges to an impaired water? Because states often believe they have little flexibility in issuing permits on impaired waters, an impairment determination could mean more stringent restrictions on the discharge, limits on your ability to modify or expand your facility, or even discharge prohibitions. The second part of this manual describes permitting requirements generally, how to address permitting issues that arise for dischargers to impaired waters, and how to obtain relief from permit requirements that you cannot meet.

The Permitting Process

In order to help you understand how permits are developed, this section of the manual describes the procedures for calculation of water quality-based effluent limitations, which should be followed regardless of whether the discharge is to an impaired water.

[59] *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (EPA TMDL 01-03, Jul. 21, 2003) at p. 7.

Water Quality-Based Effluent Limitations

The CWA requires the establishment of effluent limitations as necessary to comply with water quality standards:

> In order to carry out the objective of this chapter there shall be achieved—
>
> (C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations (under authority preserved by section 1370 of this title) or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter.[60]

Federal regulations similarly require the imposition of any requirements necessary to achieve water quality standards.[61] The "necessary" requirements are determined as follows:

> When determining whether a discharge causes, has the reasonable potential to cause or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.[62]

Fact Sheets

Your permitting agency is required to document the basis for any limitations or other conditions included in your draft NPDES permit, either in a fact sheet or briefing statement. EPA's general regulations require the development of fact sheets for draft permits in certain situations, and describe the relevant contents as follows:

> (a) A fact sheet shall be prepared for every draft permit for a major … NPDES facility …, for every NPDES draft permit that incorporates a variance or requires an explanation under §124.56(b), … and for every draft permit which the Director finds is the subject of wide-spread public interest or raises major issues. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. The Director shall send this fact sheet to the applicant and, on request, to any other person.
>
> (b) The fact sheet shall include, when applicable:
>
> (1) A brief description of the type of facility or activity which is the subject of the draft permit;
>
> (2) The type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged.
>
> ***

[60] CWA 301(b)(1)(C); 33 USC 1311(b)(1)(C) (emphasis added).
[61] 40 *CFR* 122.44(d).
[62] 40 *CFR* 122.44(d)(1)(ii).

(4) A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record required by §124.9 (for EPA-issued permits);

(5) Reasons why any requested variances or alternatives to required standards do or do not appear justified;

(6) A description of the procedures for reaching a final decision on the draft permit, including:

(i) The beginning and ending dates of the comment period under §124.10 and the address where comments will be received;

(ii) Procedures for requesting a hearing and the nature of that hearing; and

(iii) Any other procedures by which the public may participate in the final decision.

(7) Name and telephone number of a person to contact for additional information.

(8) For NPDES permits, provisions satisfying the requirements of §124.56.[63]

Accordingly, for most NPDES permits, the agency must specify the basis for any permit conditions, and must describe the available opportunities for participation in the permitting process. EPA regulations also impose some additional requirements for draft NPDES permits, as follows:

In addition to meeting the requirements of §124.8, NPDES fact sheets shall contain the following:

(a) Any calculations or other necessary explanation of the derivation of specific effluent limitations and conditions or standards for sewage sludge use or disposal, including a citation to the applicable effluent limitation guideline, performance standard, or standard for sewage sludge use or disposal as required by §122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

(b)(1) When the draft permit contains any of the following conditions, an explanation of the reasons that such conditions are applicable:

(i) Limitations to control toxic pollutants under §122.44(e) of this chapter [technology-based controls for toxic pollutants];

(ii) Limitations on internal waste streams under §122.45(i) of this chapter [when limits on the discharge point are infeasible];

(iii) Limitations on indicator pollutants under §125.3(g) of this chapter [technology-based limits for pollutants removed during treatment];

(iv) Limitations set on a case-by-case basis under §125.3(c)(2) or (c)(3) of this chapter, or pursuant to Section 405(d)(4) of the CWA [technology limits based on best professional judgment];

[63] 40 *CFR* 124.8.

(v) Limitations to meet the criteria for permit issuance under §122.4(i) of this chapter [water quality-based requirements for new discharges to impaired waters for which a TMDL has been developed], or

(vi) Waivers from monitoring requirements granted under §122.44(a) of this chapter [technology-based monitoring requirements for pollutants not present or only present at background levels].

(2) For every permit to be issued to a treatment works owned by a person other than a State or municipality, an explanation of the Director's decision on regulation of users under §122.44(m) [for privately owned treatment works].

(c) When appropriate, a sketch or detailed description of the location of the discharge or regulated activity described in the application; and

(d) For EPA-issued NPDES permits, the requirements of any State certification under §124.53 [state certification under CWA 401].[64]

Thus, for NPDES fact sheets, agencies must include the calculations underlying any effluent limitations, and must also explain why certain limits or conditions are applicable to the discharge. It is particularly important for dischargers to impaired waters that the permitting agencies adequately describe the determinations and calculations made to justify the permit limits and other conditions. If your fact sheet does not adequately describe how your limits were derived, or if you believe that the justification set forth in the fact sheet is erroneous, you should object during the comment period.

Permitting Issues

If your water is listed as impaired and is scheduled for TMDL development, there are a number of issues to consider in determining when your permit will be issued and what conditions that permit will include. The goal in evaluating these issues is to determine whether some flexibility is available that might keep you from facing extremely stringent permit limits that may not be achievable, and that cannot be revised later when the TMDL is developed. First, you should consider when your permit should be issued, and whether the agency should wait until the TMDL is developed. If the agency insists on issuing the permit during the interim period, other issues to consider are whether a watershed approach might be beneficial, whether the original impairment determination is still valid, whether other programs are available to bring the water into attainment, whether your discharge will actually influence the water's attainment status, whether voluntary or non-numeric controls are adequate to control your discharge, how any numeric limits will be calculated, and whether compliance schedules are available to give you more time to meet more stringent limits. This section also describes antidegradation and backsliding issues you may face if you are discharging to an impaired water, and briefly discusses stormwater permitting on impaired waters.

Timing

If your TMDL is scheduled for development fairly quickly, you can urge your state to hold off on the permit until the TMDL is completed. The state may require some demonstration that your existing discharge is not posing a severe threat to the receiving water in the meantime, but this approach can conserve resources for all parties until the necessary reductions on which permits must be based have been clearly defined.

On the other hand, you may have operational or other business reasons to encourage the state to issue your permit quickly. For example, if you are planning significant expansion or other changes to your facility that cannot be accomplished under your current permit, it may be in your best interest to obtain a new permit despite a pending TMDL.

[64] 40 *CFR* 124.56.

Watershed Permitting Approach

Watershed permits consolidate and coordinate selected NPDES provisions for a defined geographic area. This involves combining or coordinating two or more regulated discharges that otherwise would be covered by separate NPDES permits under a single permit mechanism. In January 2003, EPA issued a policy statement supporting the development and implementation of such permits on a widespread basis.[65] The policy described the following four types of watershed permits, which were further defined in subsequent implementation guidance:

- Watershed-Based General Permit: Common Sources. One permit is issued to a category of point sources within a watershed, and permit requirements reflect watershed-specific water quality standards.

- Watershed-Based General Permit: Collective Sources. One permit is issued to a cross-section of selected point sources within a watershed, and the permit requirements reflect watershed-specific water quality standards.

- Watershed-Based Individual Permit: Multiple Permittees. Several point sources within a watershed are covered under one permit.

- Integrated Municipal NPDES Permit. One permit bundles all NPDES permit requirements for a municipality into a single permit, focusing on matching the permit coverage to jurisdictional boundaries.[66]

EPA, state regulators, and permit holders are interested in watershed permitting in order to streamline multiple permits, implement more cost-effective technologies and management practices, and encourage early and meaningful collaboration and cooperation among key stakeholders. Watershed permitting can provide states with increased flexibility in evaluating and addressing the contributions of different groups of sources. In addition, a watershed approach may allow for more collaboration among stakeholders, as well as an opportunity to implement a water quality trading program. For example, Oregon has issued a collective permit covering the NPDES and municipal separate sewer system activities of five different entities in the Portland area to address bacteria, nutrient, and temperature impairments.[67]

A watershed approach, however, may complicate the permitting process. If your state is pursuing a watershed approach that will include your impaired water, you should again consider timing issues. Many of the steps required to develop a watershed permitting approach are similar to those required to develop a TMDL, including an evaluation of all sources and calculation of wasteload allocations. So you may wish to ask the state to delay issuance of a permit with more stringent requirements until the TMDL can be completed and incorporated into the watershed plan.

There are also other issues to consider if your state intends to issue a watershed permit that will cover your facility. First, as in the TMDL process, you should be sure that the agency is appropriately evaluating all sources and apportioning any necessary reductions fairly. Second, you need to clearly understand how the watershed permit will be enforced. States may choose to impose collective requirements—in the form of discharge limitations, study requirements, or other conditions—on all dischargers or a group of similar dischargers. The watershed permit should specify how individual dischargers can be subject to enforcement if those requirements are not met. Third, the permit should indicate how process or other changes can be made at individual facilities within the context of a watershed permit.

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[65] *Watershed-Based National Pollutant Discharge Elimination System (NPDES) Permitting Policy Statement* (EPA, Jan. 7, 2003).
[66] *Watershed-Based National Pollutant Discharge Elimination System (NPDES) Permitting Implementation Guidance* (EPA-833-B-03-044, Dec. 17, 2003).
[67] *National Pollutant Discharge Elimination System Watershed-Based Discharge permit Nos. 101141-44 and MS4* (Oregon Department of Environmental Quality, Jan. 31, 2004).

Verification of Impairment Determination

If you and/or the state do not wish to delay issuance of your permit, there are a number of factors to evaluate before appropriate limits can be calculated. Even if your receiving water has been included on the state's 303(d) List, you should consider whether the listing is appropriate as your permit is being developed. Your permit writer is required to determine—independently of the 303(d) List—whether the water is actually impaired before a permitted wasteload allocation is established for your discharge. That determination should be supported in detail in the fact sheet accompanying your draft permit.

There are two questions you should ask when evaluating a listing decision: First, was the receiving water correctly assessed as impaired? This issue involves a number of the concepts included in Part 1 of this manual, such as whether the appropriate standards and criteria were used to assess your water, whether the state followed its listing methodology when it determined that your water was impaired, and whether the impairment determination was justified based on the available data. Second, is there new information that supports the conclusion that the water is no longer impaired? New data or information that would constitute "good cause" for delisting, as discussed above, can be presented to the permit writer. If you can show that the listing decision was or is now incorrect, you should use that information not only to petition for delisting or recategorization of the receiving water, but also to demonstrate to your permit writer that the water should not be treated as impaired during permit development.

Other Controls

Even if your receiving water was correctly assessed as impaired, the existence of other control measures that will reduce loadings to the water may be sufficient to demonstrate to your permit writer that no further reductions are necessary in your permit. This option is related to the Category 4B listing option discussed above. CAA, RCRA, CERCLA or even nonpoint source control programs that are being or will be used to remedy the impairment on your water, no further reductions from your facility may be necessary. If so, your permit limits should not be reduced.

Reasonable Potential Calculations

If your receiving water is actually impaired, and other reductions are insufficient to address the impairment, your permit writer should determine whether your discharge must be limited by calculating whether the discharge has a reasonable potential to cause or contribute to an exceedance of water quality standards.[68] This is called an RPE calculation, and should be set forth explicitly in the fact sheet accompanying your permit.[69]

Is Your Facility a Minor Source?

The first step of the RPE process is to determine whether your facility is a minor source. If so, no statistical analysis should be necessary to demonstrate that there is no RPE. Federal regulations require the permit writer to account for:

> existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.[70]

[68] 40 *CFR* 122.44(d)(1).
[69] 40 *CFR* 122.44(d)(1)(vi)(C)(2) and 124.56.
[70] 40 *CFR* 122.44(d)(1)(ii).

This provision has been interpreted to mean that the permit writer may use best professional judgment (BPJ) as a screening tool to determine whether it is necessary to go through the full RPE statistical analysis.[71] States have different approaches to the use of BPJ in this manner. Therefore, you should check your state's water quality standards, guidance documents, and policy statements to determine the approach your state uses, and how BPJ can be applied during the RPE process.

If Not Minor, Does Your Facility Have RPE Based on Existing Data?

If your facility is not a minor source of the pollutant causing the impairment in your receiving water, a more detailed statistical analysis of existing data is necessary to calculate RPE. The RPE process is set forth in detail in the *Technical Support Document for Water Quality-Based Toxics Control* (EPA, March 1991) (the TSD). The statistical analysis described in the TSD, however, is highly conservative; less conservative methods are available to determine RPE. Regardless of the method used, federal regulations require the permit writer to include the basis of the RPE determination in the fact sheet accompanying your permit.[72]

Varying interpretations of certain data can drastically change the outcome of an RPE calculation. For example, states assign different values for non-detect data (instances where analysis fails to detect the presence of a material) during the RPE process. Some states assign non-detects a value of zero; others assign a value equal to the detection limit; still others assign a value equal to a fraction of the detection limit. In addition, some states may allow the exclusion of non-representative data from the calculation, while others require their inclusion.

Your permit writer should complete the statistical analysis, if necessary, by comparing the pollutant concentrations in your facility's effluent to the ambient stream concentrations, to determine whether your effluent may cause or contribute to an exceedance of water quality standards. If so, your permit must include water quality-based effluent limitations for the pollutant in question. If your effluent is calculated to have no RPE, application of limits in your permit are not justified, regardless of whether your receiving water is impaired.

Remember, however, that states take different approaches to permitting on impaired waters. Some states have required dischargers on impaired waters to receive effluent limitations in their permits regardless of any RPE analysis. Other states do not require limits as long as the discharge level is below the existing ambient level in the water. EPA has approved this latter approach, so you should encourage your state to do the same if its regulations don't already allow it.

Should You Collect More Data?

If your permit writer has conducted an RPE analysis using existing data and found that a limit is necessary, you have the option to collect more data and have your RPE recalculated. A larger data set will generally decrease the safety factor included in the RPE calculation, which can lower your projected effluent quality (PEQ). If your PEQ falls below the level expected to cause or contribute to an exceedance of water quality standards, the additional data may allow the permit writer to remove the limits from your permit. You may also wish to gather new data if you feel that the data used to calculate RPE is outdated or of poor quality.

When Reductions in Your Discharge Are Required

If your permit writer determines that reductions on your discharge are necessary to address pollutant issues, there are a number of approaches you can explore for implementing those reductions.

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[71] *See, e.g., Addendum to the National Pollutant Discharge Elimination System Memorandum of Agreement Between the State of Indiana and the United States Environmental Protection Agency Region 5 Concerning Indiana's Great Lakes Water Quality Standards and Implementation Procedures Rulemaking* (Apr. 2000).

[72] 40 *CFR* 122.44(d)(1)(vi)(C)(2) and 124.56.

Voluntary Measures

Best Management Practices

If you are discharging to an impaired water, the permit writer may seek to include best management practices (BMPs) or other voluntary measures, even if you have demonstrated that no reductions on your discharge are required. Your permit may require you to prepare a plan to reduce discharges, or simply certify that there are no known or suspected operations that could reasonably be expected to discharge the pollutant in question. States can reasonably require you to monitor your influent and/or effluent for pollutants causing impairments in your receiving water, as well as whole effluent toxicity (WET). Your permit writer may also ask you to evaluate possible sources and control measures. Provided your facility has no RPE, however, what—if any—reduction measures are implemented should remain within your discretion. Mandatory implementation of specific pollutant reduction measures are beyond the scope of the state's permitting authority in the absence of RPE, and should not be required in your permit.

The legal authority to impose mandatory reduction measures is limited by the provisions of the CWA concerning TMDLs and permit conditions.[73] As discussed above, the CWA requires the development of TMDLs "at a level necessary to meet the applicable water quality standards."[74] Similarly, permitted dischargers can be subject only to such requirements as are "necessary to meet water quality standards."[75] If you can demonstrate that reductions in discharges are not necessary to achieve standards, then the CWA does not authorize your state to require such reductions in a TMDL or as a condition in your permit.

Pollutant Minimization Programs

Moreover, it is not clear that the state or EPA has the authority to impose permit conditions that require development and implementation of minimization plans. Permitting authority is limited to reductions imposed at the point of discharge to surface water, rather than at in-plant locations. Although the Great Lakes Initiative rule included mandatory pollutant minimization program (PMP) requirements, such requirements may legally be imposed only on dischargers within the Great Lakes Basin. In addition, courts have held that EPA has no authority to require reductions at in-plant sources of pollutants, but can only set limits that are to be achieved by the source at the point of eventual discharge to waters of the United States.[76]

Are Numeric Limits Required?

If it is clear that your facility has RPE, your permit must contain effluent limitations.[77] This does not necessarily mean that a numeric mercury limit will be required. An "effluent limitation" is defined as any restriction imposed on quantities, discharge rates, and concentrations of pollutants discharged from point sources.[78] This definition encompasses non-numeric restrictions on your discharge.

BMPs, as discussed above, are one type of non-numeric restriction that can be used to control or reduce the discharge of pollutants. Federal regulations clearly support the use of BMPs when they are reasonably necessary to achieve water quality standards, or when numeric limitations are not feasible for some reason.[79] If you can demonstrate that mercury reductions at your facility are best achieved through BMPs, you can argue that your permit writer is not required to include numeric limits in your permit. Keep in mind, however, that any such requirements must be mandatory rather than voluntary.[80]

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[73] CWA 301, 303(d), and 402; 33 USC 1311, 1313(d), and 1342.
[74] CWA 303(d)(1)(C); 33 USC 1313(d)(1)(C).
[75] CWA 301(b)(1)(C); 33 USC 1311(b)(1)(C).
[76] *See, e.g., American Iron & Steel Institute v. EPA*, 115 F.3d 979 (D.C. Cir. 1997).
[77] 40 *CFR* 122.44(d)(1)(iii).
[78] 40 *CFR* 122.2.
[79] 40 *CFR* 122.44(k).
[80] 40 *CFR* 122.44(d)(1)(iii).

If your permit writer insists on including numeric limits rather than BMPs and other non-numeric reduction measures, be sure that the fact sheet adequately documents how the permit writer determined that the numeric limits are feasible. In addition, if a TMDL is being developed on your water, you should insist on a reopener that will allow your limit to be revised after the final WLA is determined.

What Will Your Permit Limits Be?

In developing a permit limit on an impaired water where a TMDL is scheduled, the permit writer should keep in mind that the permitting and TMDL processes should be complementary. In other words, a permit writer should not apply limits that are more stringent than necessary merely because the limits were calculated prior to the establishment of a final WLA in a TMDL. The TMDL will evaluate the loadings coming from all significant sources, and will then allocate the necessary loading reductions among those sources. States have a great deal of discretion in deciding how to allocate reductions. In some cases, where a particular point source is only a minor contributor to total loadings, it may receive an allocation that is at, near, or even above its current discharge, because the needed reductions are being obtained elsewhere.

If the permit writer is cognizant of this issue, he or she may refrain from applying final limits in your permit before the TMDL process has determined whether the implementation of other control measures can achieve standards without restricting your discharge, as discussed above. A reopening provision can be beneficial, because it will allow your limit to be revised after the final WLA is determined through the TMDL process. This type of provision ensures that numeric permit limits can be revised consistent with your state's antidegradation policy and backsliding requirements, discussed in more detail below.

Maintain Existing Limits Until TMDL is Done

If the TMDL for your receiving water is scheduled to be developed in the near future—for example, within the next five years—then you can argue that your permit limits should remain constant while the TMDL is being developed. The TMDL will determine the amount of any reduction necessary, at which point the permit can be modified. If the permit were to be issued before TMDL completion, and included a limit lower than the eventual TMDL allocation, you might be required to install costly control devices to meet a limit that might not be needed after the TMDL is developed. In addition, you could face backsliding issues if you later tried to obtain less stringent permit limits, even if the less stringent limits were consistent with the TMDL. Backsliding issues are discussed in more detail below.

If your previous permit contained a limit for the pollutant causing the impairment, you can argue that the concentration should remain the same in your renewal permit. Keeping the permit limit constant while the TMDL is pending will avoid spending resources to calculate allocations that may ultimately be revised significantly during the TMDL process. EPA, however, may not be willing to approve this approach. Currently, there is no definitive guidance on the issue.

Performance-Based Limits

Rather than keeping the final limits the same in your renewal permit, the permit writer may be more comfortable establishing interim limits at existing discharge levels. Performance-based limits can protect a water from degradation while the state is working on the TMDL that will result in new water quality-based effluent limits. The permit can then specify that the final discharge limits will be set according to the WLAs established in the TMDL. This approach can also be used if your existing permit does not contain a limit for the parameter in question. As long as your TMDL is scheduled for development relatively soon, keeping your discharges at existing levels until the TMDL is completed should not cause any further harm to your receiving water. In determining appropriate interim limits using this approach, your permit writer should rely on historical performance data, and should set the interim limits at levels that your facility can meet. The procedures for calculating such limits are set forth in EPA guidance, and generally are based on a certain percentile (for

example, the 99th or 95th percentile) of the statistical distribution of daily maximum or monthly average values, as well as the variability of the dataset (coefficient of variation and variability factors).[81]

Less Stringent Limits Than Current Permit

As noted above, for minor sources, a TMDL may result in an allocation that is at or even above current discharge levels, provided that all necessary reductions will be obtained from other sources. Before the TMDL is completed, however, it may be very difficult to convince your permit writer to increase your discharge levels.

Criteria End-of-Pipe (No Mixing Zones)

Permitting agencies may be reluctant to allow mixing zones for discharges to impaired waters. Mixing zones allow a discharge to exceed applicable criteria in a limited area before mixing with the receiving water. It is generally expected that criteria will be met at the edge of the mixing zone. Although there is no question that it is more difficult to justify a mixing zone in an impaired water, because the applicable criteria are not met outside the mixing zone, it may be possible to obtain one in certain circumstances.

As noted above, the CWA and EPA regulations require only such limits as are "necessary to meet" water quality standards.[82] This language does not require that an effluent limitation, even if necessary to meet water quality standards, must ensure immediate results. Rather, Congress intended this provision to play a carefully limited role: "Where the Administrator can identify a direct link between a discharge source and water quality, the Administrator is authorized to tighten controls on the polluter."[83] Congress explained further:

> Section 301(b)(1)(C) provides adequate authority to apply new information to existing water quality requirements and upgrade effluent limits accordingly. … In other words, whenever the Administrator determines that application of the best practicable treatment technology requirements of Phase I will not provide for implementation of existing water quality standards for interstate or intrastate streams, he must tighten the requirements against a source of discharge or group of sources.[84]

This general intent to "upgrade effluent limits" and "tighten requirements" should not dictate application of water quality criteria end-of-pipe.

A mixing zone may be appropriate for your discharge as long as it is consistent with requirements "necessary" to meet water quality standards in your receiving water. For example, if reductions made elsewhere in the water –through reductions from other dischargers, nonpoint source controls, or other regulatory programs such as CERCLA—will allow standards to be attained regardless of your discharge, elimination of your mixing zone should not be considered necessary. In addition, if your discharge is only a *de minimis* source of the pollutant in question (such that your discharge does not cause or contribute to the impairment), your mixing zone should not need to be eliminated.

Under the general provisions of CWA Section 301(b)(1)(C), a state has the discretion to determine that mixing zones are appropriate for a particular discharge to an impaired water, as part of its overall plan to reduce pollutant loadings from the sources that are significant contributors to the impairment. In addition, mixing zones are specifically contemplated in determining whether a permit limit is "necessary:"

> When determining whether a discharge causes, has the reasonable potential to cause or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority

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[81] *Technical Support Document for Water Quality-Based Toxics Control* (the TSD) (EPA-505-2-90-001, Mar. 1991) at Appendix E.
[82] CWA 301(b)(1)(C); 33 USC 1311(b)(1)(C). *See also,* 40 *CFR* 122.44(d).
[83] 92 Cong. Senate Report 414, *9 (Public Works Committee, Oct. 28, 1971).
[84] *Id.* at *44.

> shall use procedures which account for … where appropriate, the dilution of the effluent in the receiving water.[85]

In addition, at least one state has determined that the inclusion of a water on the state's 303(d) List does not automatically mean that the water has no assimilative capacity that would allow a mixing zone.[86]

Once the state or EPA issues a TMDL, the TMDL will dictate which dischargers must reduce their loadings. Because the TMDL may determine that reductions from other point and nonpoint sources are sufficient to allow the receiving water to meet standards, elimination of the mixing zone in an interim permit may require significant expenditures in capital equipment and operation and maintenance costs to achieve load reductions from your facility that ultimately may prove to be unnecessary. Particularly if your current permit includes a mixing zone, you should resist any attempts by your state to eliminate that mixing zone before your TMDL is developed.

Compliance Schedules

Federal regulations authorize the use of compliance schedules and interim limits, as follows:

> The permit may, when appropriate, specify a schedule of compliance leading to compliance with CWA and regulations.
>
> (1) *Time for compliance.* Any schedules of compliance under this section shall require compliance as soon as possible, but not later than the applicable statutory deadline under the CWA.
>
> (3) *Interim dates.* Except as provided in paragraph (b)(1)(ii) of this section, if a permit establishes a schedule which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.[87]

If you are facing a new permit limit that you cannot immediately comply with, be sure to request an appropriate compliance schedule.

The regulations do not limit compliance schedules to a certain length of time, so long as compliance is achieved "as soon as possible." EPA has recognized that compliance schedules may extend beyond a single permit term, but have required interim limits to become effective when the permit expires.[88]

Antidegradation Issues on Impaired Waters

Antidegradation issues can complicate the issuance of permits on impaired waters, depending on how your state has interpreted federal antidegradation requirements.

Federal Provisions

The CWA contains a provision prohibiting the degradation of waters that meet or exceed standards:

> 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

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[85] 40 *CFR* 122.44(d)(1)(ii).
[86] California State Water Resources Control Board Order WQ 2001-06 (Mar. 7, 2001) ("The Board agrees that a Section 303(d) listing alone is not a sufficient basis on which to conclude that a water body lacks assimilative capacity for an impairing pollutant").
[87] 40 *CFR* 122.47(a).
[88] *See, e.g., EPA Region 9 Draft Guidance for Permitting Discharges into Impaired Waterbodies in Absence of a TMDL* (May 9, 2000).

> 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.[89]

This CWA requirement on its face applies only to "waters identified under paragraph (1)(A)," or waters included on the state's 303(d) List, despite the fact that such waters are listed because they are *not* meeting standards. However, the Supreme Court and EPA appear to have interpreted the requirement to establish an antidegradation policy much more broadly, as applying to all waters regardless of listing status.[90]

The federal antidegradation regulations applicable to impaired waters include the following language:

> The State shall develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy pursuant to this subpart. The antidegradation policy and implementation methods shall, at a minimum, be consistent with the following:
>
> (1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
>
> (4) In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act.[91]

Great Lakes states are also subject to the federal Water Quality Guidance for the Great Lakes System, codified at 40 *CFR* Part 132. The Guidance was adopted pursuant to CWA Section 118(c)(2), which requires EPA to provide guidance on antidegradation policies to the Great Lakes states.[92] Such states are required to adopt antidegradation policies consistent with the EPA guidance.[93]

State Antidegradation Policies

State antidegradation policies may vary, but at least some states interpret their antidegradation policies to prohibit any increased loadings to impaired waters until a TMDL is in place. For example, the South Carolina Policy states that:

> [w]hen the available assimilative capacity of a waterbody is not sufficient to ensure maintenance of water quality standards for a parameter of concern with an additional load to the waterbody, then the Department will not allow a permitted net increase of loading for the parameter of concern or pollutants affecting the parameter of concern. This no net increase will be achieved by the reallocation of existing total load(s) or by meeting the applicable water quality standard(s) and the end-of-pipe. Until such time that a TMDL is developed for the parameter of concern for the waterbody, no discharge will be allowed to cause or contribute to further degradation of the waterbody.[94]

In states with similar policies, unless a reallocation of existing loads can be accomplished before the TMDL is developed, permittees will generally receive end-of-pipe limits equal to the water quality criterion. You may be able to protect yourself by insisting on a reopening provision in your permit, which will allow your limit to be revised after the final WLA is determined through the TMDL process.

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[89] CWA 303(d)(4)(B); 33 USC 1313(d)(4)(B).
[90] *See PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700 (1994); 40 *CFR* 131.12.
[91] 40 *CFR* 131.12(a).
[92] CWA 118(c)(2)(A); 33 USC 1268(c)(2)(A).
[93] CWA 118(c)(2)(C); 33 USC 1268(c)(2)(C).
[94] *Antidegradation Implementation for Water Quality Protection in South Carolina* (South Carolina Department of Health and Environmental Control, Bureau of Water, July 1998) at p. 3.

Backsliding (and Antidegradation) Issues

As discussed above, one of the primary concerns when obtaining a permit on an impaired water is that, due to backsliding concerns, a discharger may be unable to obtain less stringent limits after the TMDL is developed, even if such limits would be consistent with the WLA established for the discharger in the final TMDL. Because the antidegradation policy is implicated in the backsliding analysis, antidegradation must also be considered when discussing backsliding.

Backsliding Requirements

The general prohibition against backsliding as it concerns water quality-based limits is contained in CWA Section 402(o), which states that:

> [i]n the case of effluent limitations established on the basis of section 1311(b)(1)(C) of this title or section 1313(d) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title.[95]

Similar language is generally contained in state water quality statutes.

Pursuant to that language dischargers may not obtain less stringent permit limits—even if such limits would be authorized by a later-developed TMDL—except in compliance with CWA Section 303(d)(4), which, as discussed above, has been interpreted to require state antidegradation policies.

Antidegradation Requirements

In order to demonstrate that any less stringent limit is "in compliance with section 1313(d)(4)," as required by CWA Section 402(o), it must be determined whether the less stringent limit "is subject to and consistent with the antidegradation policy established under" CWA Section 303.[96] As noted above, state approaches to antidegradation on impaired waters may differ. Some states may allow a less stringent limit consistent with its antidegradation policy if the discharge does not cause or contribute to the existing impairment. If so, the RPE analysis discussed above may be used to justify a less stringent limit. Other states, however, may prohibit any new or increased discharges—including less stringent limits—until a TMDL is developed. If your state takes this approach, backsliding cannot be satisfied using antidegradation, and you should explore the exceptions discussed below.

Backsliding Exceptions

If the backsliding requirements cannot be satisfied through compliance with the antidegradation policy, you may be able to qualify for one of the five exceptions, set forth as follows:

> (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
>
> (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or

[95] CWA 402(o)(1); 33 USC 1342(o)(1).
[96] CWA 303(d)(4)(B); 33 USC 1313(d)(4)(B).

> (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section;
>
> (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
>
> (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or
>
> (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).[97]

Of special concern to dischargers on impaired waters waiting for TMDLs to establish final WLAs, the exception for new information may include such revised WLAs:

> Subparagraph (B) shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitations, except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters, and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of this chapter or for reasons otherwise unrelated to water quality.[98]

In the case of a later-developed TMDL, the cumulative effect of the final WLAs should result in a "decrease in the amount of pollutants discharged into the concerned waters," such that water quality standards can be met. Further, if more stringent limits have already been imposed on a discharger in an interim permit, and the final WLAs would allow those limits to be relaxed, there should be no question that "such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge…" Thus, you may be able to argue that a less stringent limit based on revised WLAs contained in a TMDL should be considered new information that qualifies for an exception to the general backsliding prohibition.

Finally, "allowable" backsliding is limited as follows:

> In no event may a permit with respect to which paragraph (1) applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 1313 of this title applicable to such waters.[99]

Again, there should be no question—in the case of a permit limit based on a final TMDL—that implementation of such a limit will not result in a violation of water quality standards.

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[97] CWA 402(o)(2); 33 USC 1342(o)(2).
[98] CWA 402(o)(2); 33 USC 1342(o)(2).
[99] CWA 402(o)(3); 33 USC 1342(o)(3).

Stormwater Permits

Historically, many stormwater discharges were considered to be nonpoint sources, but in 1990, EPA promulgated new regulations that defined many industrial stormwater discharges as point sources subject to NPDES permits. Permitting for stormwater, however, has proved very difficult. The highly variable conditions associated with wet weather discharges, such as the intensity and duration of a rainfall event, or the fluctuation of pollutants in runoff and receiving waters, make accurate and representative sampling a difficult and expensive task. In addition, EPA has recognized that calculating appropriate numeric limits for stormwater discharges is technically challenging.[100] As a result, EPA regulations and related guidance have allowed water quality-based effluent limitations for stormwater to be expressed as BMPs or other similar requirements, rather than numeric limits.[101] Nevertheless, some states do attempt to regulate stormwater discharges through numeric limits, which can be especially problematic for discharges to impaired waters. Designing treatment or other measures to control pollutants in intermittent and unpredictable stormwater discharges is a daunting task; designing controls to meet extremely stringent numeric limits on an impaired water can be even more difficult. Therefore, you should encourage your state not to impose numeric limits in your interim permit.

Relief from Permit Limits

If your permit writer does not agree that necessary reductions can be implemented through BMPs or other non-numeric measures, you may be facing a stringent numeric limit that will pose significant compliance concerns at your facility. In these cases, other remedies may be available to provide some relief, such as variances, site-specific criteria, and UAAs.

Variances

If your permit includes a water quality-based limit that your facility cannot meet, you may wish to request a variance. Most states have established procedures to allow dischargers to request variances from the underlying water quality standards on which the limits are based. EPA allows a variance to be granted if the discharger can demonstrate one of the following conditions:

(1) Naturally occurring pollutant concentrations prevent the attainment of a use;

(2) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State or Tribal water conservation requirements to enable uses to be met;

(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;

(4) Dams, diversions or other types of hydrological modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of a use;

(5) Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the

[100] *Questions and Answers Regarding Implementation of an Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits*, 61 Fed. Reg. 57,425 (EPA, Nov. 6, 1996).
[101] *See, e.g., Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs* (EPA, Nov. 22, 2002).

like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by Sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.[102]

These are the same conditions established in federal regulations for conducting a UAA, which was discussed in more detail earlier.[103] However, EPA expects that the demonstration required to qualify for a variance will be less rigorous than the demonstration necessary to support removal of a designated use. Unlike a UAA, a variance is specific to a particular pollutant and discharger. A variance also is not permanent—it is limited to a stated period of time—and a discharger is generally expected to show that renewals are warranted.

As discussed above, some states have taken a very conservative approach in permitting such discharges—permit limits may be set equal to or even below the water quality criterion, with no allowance for mixing. If your state takes this approach, one option to obtain relief from a limit that your facility cannot meet is to request a variance. If you will receive a permit before you submit a variance request—or before a decision is made on your variance request—remember to request a compliance schedule in your permit to allow time for the variance issue to be resolved before the relevant permit limit becomes effective.

Some states have determined that for certain pollutants (such as mercury and chlorides), a statewide or multiple discharger variance is necessary. The purpose of this type of variance is to streamline the request and review process. It can be appropriate in situations where several dischargers face similar compliance obstacles, and the same general approach can be taken by all of them to reduce discharges to the extent practicable. For example, Ohio established a statewide variance to prevent substantial and widespread social and economic impact.[104] Michigan and Wisconsin have used similar approaches, which are also being considered in other states.

Site-Specific Criteria

As discussed briefly above, many states also provide for the development of site-specific modifications to water quality criteria and values, so long as the modifications are protective of designated uses, human health, and aquatic life. Such site-specific criteria must be based on sound scientific rationales and methods. For example, a facility may be able to request a site-specific modification that incorporates a dissolved metal translator or water effects ratio developed for the specific receiving water, or a revision based on the species actually present in the receiving water instead of the more sensitive species used to calculate the national value. EPA is currently developing additional guidance on site-specific relief.

Site-specific criteria are often developed in the context of permit negotiations, and may be used as the basis of water quality-based effluent limitations. In this situation, the new criteria may not be incorporated into the state's general water quality standards, but may be applicable only to certain permits. If so, you may be required to request and justify continued application of a particular site-specific criterion with each permit renewal application.

Use Attainability Analyses (UAAs)

It may be possible to demonstrate that the currently applicable water quality standard—on which the impairment determination for your water is based—is not attainable. If so, that data can be used to revise the designated use and applicable criteria, rather than imposing reductions through permits that will never allow the water to meet standards. The requirements for conducting a UAA are discussed in more detail earlier in this manual.

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[102] *EPA Water Quality Standards Handbook: Second Edition* (EPA-823-B-94-005, Aug. 1994); 40 *CFR* Part 132, Appendix F, Procedure 2 (for Great Lakes dischargers only).
[103] 40 *CFR* 131.10(g).
[104] *Ohio Mercury Variance Guidance* (OEPA, Jun. 23, 2000).

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