

WATER QUALITY STANDARDS HANDBOOK

DRAFT CHAPTER:

Water Quality Standards Variances



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List of Acronyms and Abbreviations

BMPs	Best Management Practices
CFR	Code of Federal Regulations
CSO	Combined Sewer Overflow
CWA	Clean Water Act
ELGs	Effluent Limitation Guidelines
EPA	U.S. Environmental Protection Agency
FCA	Financial Capability Assessment
GLI	Great Lakes Initiative
HAC	Highest Attainable Condition
HAU	Highest Attainable Use
MDV	Multiple Discharger WQS Variance
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
PWS	Public Water Supply
POTWs	Publicly Owned Treatment Works
PPCPs	Pharmaceutical and Personal Care Products
QAPP	Quality Assurance Project Plan
TBELs	Technology-Based Effluent Limits
TMDLs	Total Maximum Daily Loads
UAA	Use Attainability Analysis
WLA	Wasteload Allocation
WQBELs	Water Quality-Based Effluent Limitations
WQS	Water Quality Standards

6 INTRODUCTION

As discussed in [Draft Chapter 2: Designated Uses](#) of this Handbook, the objective of the [Clean Water Act](#) (CWA) as stated in [CWA Section 101\(a\)](#) “is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” CWA Section 101(a)(2) further states, “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved...”. In light of these objectives, [CWA Section 303](#) requires that states and authorized Tribes¹ develop water quality standards (WQS) for navigable waters within their jurisdiction and such WQS must protect the uses specified in CWA Section 101(a)(2) unless shown to be unattainable.

A WQS variance is a tool that provides time to states, territories, and authorized Tribes to incrementally improve water quality when and where the designated use and associated criterion are shown to be unattainable for a period of time. This tool can be particularly helpful if there is uncertainty as to what designated use may be ultimately attainable in the waterbody at the time the WQS variance is adopted. A WQS variance is a time-limited designated use and associated criterion that provides states, authorized Tribes, and dischargers² the time and flexibility to make incremental water quality improvements (also referred to as “incremental water quality progress”) reflecting the best water quality that can be attained in the given time period and that is adopted with transparent and accountable measures on the progress that is expected to occur. In 2015, the U.S. Environmental Protection Agency finalized the WQS variance regulation at [40 Code of the Federal Register \(CFR\) 131.14](#), which established an explicit framework for the adoption of WQS variances.

WQS variances serve the national goal in Section 101(a)(2) of the CWA and the ultimate objective of the Act to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” because WQS variances are “... narrow in scope and duration and are designed to make progress toward water quality goals.”³ The WQS variance regulation strikes a balance between providing flexibility to states, authorized Tribes, and dischargers and ensuring transparency and accountability on how the waterbody will be restored and maintained. Specifically, a WQS variance provides a legal

¹ Hereafter referred to as “states and authorized Tribes.” “State” in the CWA and this document refers to a state, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. “Authorized Tribe” refers to those federally recognized Indian Tribes with authority to administer a CWA WQS program.

² For the purposes of this chapter, unless specified otherwise, the terms “discharger” and “permittee” are used interchangeably to refer to a point source subject to a National Pollutant Discharge Elimination System (NPDES) permit or [CWA Section 401](#) certification condition.

³ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51035 (August 21, 2015).

basis to derive less stringent⁴ water quality-based effluent limits (WQBELs)⁵ for the duration of the WQS variance and for the specific waterbody and pollutant identified in the WQS variance, while requiring incremental improvements in water quality to occur during the WQS variance term. In addition, the regulation requires that states and authorized Tribes provide the public with an opportunity to offer input on the WQS variance during required public hearings and WQS variance reevaluations for WQS variances longer than five years.

Protecting water resources from changing conditions, such as increased water temperatures; more frequent and severe droughts; increases in extreme wet weather events; increased stormwater runoff due to growing urbanization; and water withdrawals for agricultural, industrial, and municipal purposes, depends on the ability to “maintain and restore,” as well as enhance, the waterbody’s resilience to stressors. However, past management strategies may not be adequate to mitigate the impacts of stressors to a waterbody.⁶ Using WQS to maintain or build a margin of safety in water quality affords a waterbody increased resilience in the face of future stressors.

The WQS program provides a holistic approach to promote system resilience and facilitates efficient coordination and implementation of water quality management actions. This chapter presents key considerations when structuring a WQS variance. Carefully structuring WQS variances can contribute to increasing or maintaining waterbody resilience to changing conditions through actions that make incremental improvements to water quality. For example, subsection 6.3.2.1 of this chapter discusses how a state or authorized Tribe may choose to include additional Pollutant Minimization Program (PMP) activities in a WQS variance. PMP activities could provide additional information on how to manage waterbodies to build waterbody resilience to stressors such as studying pollutant loadings or sources, or activities that support waterbody resiliency through novel pollutant reduction strategies.

WQS also provide a key opportunity to ensure that states, authorized Tribes, and dischargers are maximizing opportunities to improve water quality in areas used by overburdened and underserved communities. For example, when identifying and adopting the highest attainable condition (HAC) in the WQS variance, it is critical that states and authorized Tribes consider how the water is being used by the affected community, including overburdened and underserved communities who may often rely on local waters for food, recreation, economic opportunities, and overall benefits to quality of life. States and authorized Tribes can obtain the information they need to determine whether and how to adopt WQS variances through meaningful public engagement. This chapter describes key areas where public input could be valuable when adopting WQS variances.

⁴ Less stringent than a WQBEL based on the underlying designated use and associated criterion.

⁵ For the purposes of this chapter, unless specified otherwise, “WQBEL” in the context of implementing the WQS variance in an NPDES permit includes any limitations and requirements necessary to implement the WQS variance. See [40 CFR 131.14\(c\)](#).

⁶ EPA. 2011. *Aquatic Ecosystems, Water Quality, and Global Change: Challenges of Conducting Multi-stressor Global Change Vulnerability Assessments*. EPA, Office of Research and Development. Washington, DC 20460. EPA/600/R-11/011F. August 2011. <https://cfpub.epa.gov/ncea/global/recordisplay.cfm?deid=231508>.

6.1 BACKGROUND

6.1.1 Purpose of WQS Variances and Summary of Federal WQS Variance Regulation

For many years, the EPA has encouraged states and authorized Tribes to utilize WQS variances, as appropriate, to implement actions that will improve water quality when and where the designated use and associated criterion are unattainable for a period of time. To provide national consistency and regulatory certainty on adopting WQS variances, the EPA finalized revisions to its WQS variance regulation⁷ in 2015 at [40 CFR Part 131](#). In addition, the 1995 “Water Quality Guidance for the Great Lakes System” (i.e., Great Lakes Initiative [GLI] rulemaking at [40 CFR Part 132](#)) contains some additional provisions on WQS variances applicable to states and authorized Tribes covered by that regulation.

[40 CFR 131.14](#) establishes an explicit framework for the adoption of WQS variances that states and authorized Tribes can use to implement adaptive management approaches⁸ to improve water quality. The regulation provides certainty to states, authorized Tribes, the regulated community, and the public that WQS variances are a legal WQS tool and provides requirements to ensure that WQS variances will only be used when the designated use and associated criterion are unattainable for a period of time.⁹

A WQS variance is “a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the WQS variance” ([40 CFR 131.3\(o\)](#)). All WQS variances are WQS; therefore, to be effective for CWA purposes, they must be adopted¹⁰ and submitted to the EPA for review and approval under [CWA Section 303\(c\)](#).¹¹ WQS variances must meet the

⁷ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51020 (August 21, 2015). EPA issued its proposed rule at *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54518 (September 4, 2013).

⁸ Adaptive management is a concept generally recognized as exploring alternative ways to meet management objectives, predicting the outcomes of alternatives based on the current state of knowledge, implementing one or more of these alternatives, monitoring to learn about the impacts of management actions, and using the results to update knowledge and adjust management actions. See EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category 8: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-300, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>. For additional discussion on adaptive management approaches in the context of WQS variances, see section 6.3.2.3 of this chapter.

⁹ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51035 (August 21, 2015).

¹⁰ A WQS must be a legally binding provision adopted or established pursuant to state or Tribal law. [CWA Section 303\(a\)-\(c\)](#) uses the terms “adopt,” “law,” “regulations,” and “promulgate” when referring to WQS and the EPA’s regulation ([40 CFR 131.3\(i\)](#)) specifies that WQS are “provisions of state or federal law.” The EPA considers documents incorporated by reference into state or Tribal law to be legally binding provisions adopted or established pursuant to state or Tribal law. Please see Chapters 1 and 7 of this Handbook for a discussion on the EPA’s authority and duty to review and approve or disapprove new or revised WQS.

¹¹ [CWA Section 303\(c\)\(2\)-\(3\)](#) and [40 CFR 131.21\(c\)](#).

requirements of 40 CFR Part 131, including 40 CFR 131.14, and the public participation requirements specified in [40 CFR 131.20\(b\)](#) and [40 CFR 25.5](#). The state or authorized Tribe must review a WQS variance on a triennial basis, just like any other WQS.¹² This triennial review requirement is independent of the requirement at [40 CFR 131.14\(b\)\(1\)\(v\)](#) to reevaluate, at a specified frequency of no less than every five years, the HAC of a WQS variance with a term of greater than five years. For more information on triennial reviews, see section 6.3.4.4 of this chapter and [Chapter 7: Water Quality Standards and the Water Quality-Based Approach to Pollution Control](#) of this Handbook. For more information on reevaluations for WQS variances with a term of greater than five years, see section 6.3.4 of this chapter.

Further, the EPA distinguishes WQS variances, as described in the regulation and in this Handbook, from variances as described in the EPA's permitting regulation at [40 CFR 122.2](#) and [40 CFR 125.3](#).¹³ Those types of variances are related to certain National Pollutant Discharge Elimination System (NPDES) Program permit requirements and effluent guideline modifications and are not WQS variances.

As mentioned above, both 40 CFR 131.14 and the GLI at 40 CFR Part 132 contain provisions for WQS variances. For receiving waters that drain into the Great Lakes Basin, states and authorized Tribes must adopt WQS variances consistent with both the GLI and 40 CFR 131.14. In such situations where both apply, the state or authorized Tribe must adhere to the more stringent of the two regulations.¹⁴



¹² [CWA Section 303\(c\)\(1\)](#) and [40 CFR 131.20\(a\)](#).

¹³ *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54531 (September 4, 2013).

¹⁴ *Ibid.*

Where a discharger is facing challenges meeting WQBELs based on the applicable WQS, there are many options and resources available as a path forward. The EPA recommends states, authorized Tribes, and dischargers first explore technical and financial assistance options to address compliance challenges and improve facility operations. For example, as one component of the EPA's [Lagoon Wastewater Treatment Systems Action Plan \(2022\)](#),¹⁵ the EPA's [First Stop Toolbox for Lagoons](#) is a good resource for small communities with lagoon wastewater treatment systems to diagnose non-compliance issues and potential paths forward. Where technical and financial assistance are not sufficient to remedy the compliance challenges, states and authorized Tribes may pursue WQS variances to achieve incremental improvements in water quality while allowing time for advances in treatment technologies, pollutant control practices, or other changes in circumstances that may provide for attainment of the underlying designated use and criterion in the future.

A WQS variance is a useful tool when working towards meeting the CWA goals because it applies only for a defined term, retains the underlying designated use and associated criteria for all pollutants with the sole exception of those specified in the WQS variance, and requires dischargers to make as much incremental water quality progress as feasible toward the underlying designated use and criterion during the defined term. However, where incremental water quality progress is not feasible, a state or authorized Tribe may consider whether a designated use revision is appropriate, consistent with [40 CFR 131.10](#). See section 6.5.1 of this chapter for more information on WQS variances and designated use revisions. See [Draft Chapter 2: Designated Uses](#) of this Handbook for further discussion of designated uses and the requirements for designated use revisions.

Where the WQBEL based on the designated use and associated criterion is achievable, but the discharger needs additional time to modify or upgrade treatment facilities to meet its WQBEL, an NPDES permit compliance schedule consistent with [40 CFR 122.47](#) may be the appropriate tool. See section 6.4.2.2 of this chapter for more information on WQS variances and permit compliance schedules.

Where one or more criteria for a particular waterbody or waterbody segment is more stringent than necessary to achieve the designated use, the state or authorized Tribe may consider developing and adopting site-specific criteria consistent with [40 CFR 131.11](#). See section 6.5.2 of this chapter for information on WQS variances and site-specific criteria.

6.1.2 WQS Variances and Maintaining Currently Attained Water Quality

While the WQS variance regulation at [40 CFR 131.14](#) has similar provisions as the regulation governing designated use revisions ([40 CFR 131.10](#)), 40 CFR 131.14 does not prohibit a WQS variance where the designated use is also an existing use because “[u]nlike a designated use change which changes the ultimate desired condition for a

¹⁵ EPA. 2022. *Lagoon Wastewater Treatment Action Plan: Supporting Small, Rural and Tribal Communities*. (EPA-832-B2-2022). https://www.epa.gov/system/files/documents/2022-10/Lagoon%20Action_Plan_FINAL.pdf.

water body, the purpose of a WQS variance is to provide a mechanism that will facilitate incremental progress toward achieving the currently adopted designated use (and thus the existing use, if one is not being attained) in an accountable and transparent manner.”¹⁶ Further, [40 CFR 131.14\(b\)\(1\)\(ii\)](#)¹⁷ ensures that water quality continues to make progress towards meeting the CWA objective and protects the ability of a downstream water to meet its applicable WQS by requiring that the WQS variance not result in any lowering of the currently attained ambient water quality. This provision includes an exception when a state or authorized Tribe adopts a WQS variance for the purpose of facilitating lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities ([40 CFR 131.14\(b\)\(2\)\(i\)\(A\)\(2\)](#)). For example, such a WQS variance could allow a temporary lowering of the currently attained water quality due to the temporary flush of sediments when a dam is removed because this WQS variance would also facilitate long-term improvements for both the downstream waters and the waterbody subject to the WQS variance by restoring the natural hydrology.



¹⁶ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category 8: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-315.
<https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

¹⁷ The EPA notes that [Appendix F to 40 CFR 132.2](#) similarly addresses the concern about preventing the lowering of currently attained water quality by stating that the use of WQS variances “shall not apply to new Great Lakes dischargers or recommencing dischargers.” For more information, see the EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category 8: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-322, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

6.2 WQS VARIANCE APPLICABILITY AND SCOPE (40 CFR 131.14(a) AND 131.14(b)(1)(i))

States and authorized Tribes have the flexibility to adopt a WQS variance for a single discharger, multiple dischargers, or a waterbody or waterbody segment, depending upon the case specific situation ([40 CFR 131.14\(a\)](#)). To ensure that WQS variances serve the purposes of the CWA, the EPA WQS regulation at [40 CFR 131.14\(b\)\(1\)](#) provides specific requirements describing when, where, and how WQS variances apply.

First, once approved by the EPA, a WQS variance applies for the purposes of developing NPDES permit limits and requirements under [CWA Section 301\(b\)\(1\)\(C\)](#) for the permittees and/or waterbody or waterbody segments for which the state or authorized Tribe has adopted the WQS variance.¹⁸ It only applies for the specific pollutant(s) or water quality parameter(s) addressed by the WQS variance¹⁹ and only for the term specified in the WQS variance.²⁰ A certifying entity may also use a WQS variance when issuing certifications under [CWA Section 401](#).²¹

Second, to ensure that the state or authorized Tribe continues to make progress towards achieving the [CWA Section 101\(a\)](#) objective, it is important that its WQS reflect the ultimate water quality goal. Therefore, the EPA's regulation at [40 CFR 131.14\(a\)\(2\)](#) requires that the state or authorized Tribe retain the underlying designated use and criterion in its WQS so that it continues to be the basis for:

- Deriving NPDES permits for all other dischargers not covered by the WQS variance,
- Identifying threatened and impaired waters under [CWA Section 303\(d\)](#), and
- Establishing total maximum daily loads (TMDLs).

Please see section 6.4 of this chapter for more information on implementing WQS variances. In addition, “[a]ll other applicable standards not specifically addressed by the WQS variance remain applicable.”²²

¹⁸ [40 CFR 131.14\(a\)\(1\)](#) and [40 CFR 131.14\(a\)\(3\)](#).

¹⁹ [40 CFR 131.14\(b\)\(1\)\(i\)](#).

²⁰ [40 CFR 131.14\(b\)\(1\)\(iv\)](#).

²¹ [40 CFR 131.14\(a\)\(3\)](#).

²² [40 CFR 131.14\(a\)\(2\)](#).

6.2.1 WQS Variances and Technology-Based Effluent Limits (TBELs) (40 CFR 131.14(a)(4))

Technology-based effluent limits (TBELs) represent the minimum level of control that must be imposed in a permit issued under Section 402 of the [CWA](#). TBELs are required under CWA Sections 301(b) and [306](#) and can be imposed in a permit using one of three methods described at [40 CFR 125.3\(c\)](#). The EPA considers “technology-based effluent limits required under Section 301(b)” to include existing technology-based permit effluent limitations whether derived based on nationally promulgated Effluent Limitation Guidelines (ELGs) or, in the absence of a promulgated ELG, derived on a case-by-case basis.

The WQS variance regulation specifies “[a] State may not adopt WQS variances if the designated use and criterion addressed by the WQS variance can be achieved by implementing technology-based effluent limits required under sections 301(b) and 306 of the Act.”²³ Thus, in a situation where WQS can be attained by implementing TBELs, a WQS variance cannot be used, and the discharger must implement those TBELs. For more information on water quality- and technology-based permit limits, visit the EPA’s [NPDES Permit Limits webpage](#).²⁴

6.2.2 Discharger-Specific WQS Variances: Single and Multiple Dischargers

Typically, a state or authorized Tribe adopts a single discharger WQS variance for a specific pollutant or water quality parameter. When determining the basis to justify the WQS variance and identify the HAC, the state or authorized Tribe will evaluate the facts specific to that discharger and receiving waterbody. The state or authorized Tribe can then tailor the WQS variance to the specific challenges the discharger is facing and the actions the discharger will implement to make incremental progress toward the HAC during the term of the WQS variance. This approach allows for targeted public outreach and engagement on each WQS variance and ensures that the public has discharger-specific information when providing input on the WQS variance during the public hearing.

However, the EPA recognizes that a state or authorized Tribe may have multiple dischargers experiencing similar WQS attainment challenges in meeting their WQBELs based on the designated use and criterion for the same pollutant, regardless of whether they are located on the same waterbody. In such instances, a state or authorized Tribe can adopt single discharger WQS variances for as many dischargers as needed, or it could instead adopt a multiple discharger WQS variance (MDV).²⁵ An MDV must meet all the requirements of [40 CFR 131.14](#). Adopting an MDV also involves some additional considerations for identifying the dischargers, waterbody or waterbody segment(s) and the HAC, as discussed in the remainder of this subsection.

²³ [40 CFR 131.14\(a\)\(4\)](#).

²⁴ NPDES Permit Limits webpage: <https://www.epa.gov/npdes/npdes-permit-limits>.

²⁵ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51036 (August 21, 2015).

An MDV can administratively streamline the adoption of WQS variances for similarly situated dischargers that share specific characteristics or economic or technical considerations. To support adoption of an MDV, a state or authorized Tribe would provide a single technical rationale and discharger-specific documentation. Appropriate use of an MDV is highly dependent on considerations such as the applicable pollutants, parameters, dischargers, waterbody conditions, current effluent conditions, actions needed to achieve the pollutant reductions, and community characteristics.²⁶ For this reason, an MDV may not be appropriate or practical for all situations.

For example, an MDV may be appropriate if five publicly owned treatment works (POTWs) face similar economic challenges meeting their WQBELs for the same pollutant(s) or water quality parameter(s), have similar construction and existing treatment systems, and are situated on similar types of waterbodies in communities with similar economic situations, size, and demographics such that the cost of installing the pollutant control technology needed to meet the pollutant limits would cause substantial and widespread economic and social impact in all five communities at that point in time. However, an MDV may not be appropriate or practical for a diverse group of facilities (i.e., differing facility, waterbody, or community characteristics).



Discharger-specific WQS variances, whether for single or multiple dischargers, must identify the permittee(s) subject to the WQS variance and the waterbody or waterbody segment to which the WQS variance applies ([40 CFR 131.14\(b\)\(1\)\(i\)](#)). For an MDV, the EPA generally expects states and authorized Tribes to satisfy this requirement by including a list of the dischargers that will be covered and the name and location of the waterbody or waterbody segment(s) receiving the discharge. This approach ensures that the public has the full list of dischargers covered by the WQS variance when providing input on the WQS variance before the state or authorized Tribe submits the MDV to the EPA. Once the EPA reviews and approves an MDV, the state or authorized Tribe may implement the MDV in the NPDES permit for each listed discharger.

²⁶ EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-290, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>; *Water Quality Standards Regulatory Revisions*. 80 Fed. Reg. 51036, 51040 (August 21, 2015).

However, where the state or authorized Tribe does not have all the discharger-specific information to identify all the dischargers that need the WQS variance at the time of adoption, the state or authorized Tribe would include the known dischargers, and the applicable waterbody or waterbody segment, in the WQS variance, consistent with 40 CFR 131.14(b)(1)(i). To cover the unknown dischargers, the state or authorized Tribe may include eligibility requirements in the WQS variance. Specifically, “[a]s an alternative to identifying the specific dischargers at the time of adoption of a WQS variance for multiple dischargers, states and authorized tribes may adopt specific eligibility requirements in the WQS variance. This will make clear what characteristics a discharger must have in order to be subject to the WQS variance for multiple dischargers.”²⁷

As the EPA further explained in the preamble to the 2015 WQS regulation, “It is EPA’s expectation that states and authorized Tribes that choose to identify the dischargers in this manner will subsequently make a list of the facilities covered by the WQS variance publicly available (e.g., posted on the state or authorized tribal Web site).”²⁸ To maintain public transparency, the state or authorized Tribe should update this list as dischargers are determined to meet the eligibility requirements and subsequently receive coverage under the MDV. The EPA also expects the state or authorized Tribe to specify in the MDV where the public may find this list.



It is critical for the eligibility requirements to be well-justified and sufficiently detailed to ensure an objective determination that only those dischargers that meet the eligibility requirements will receive coverage under the MDV. Thus, these eligibility requirements should include:²⁹

1. A description of the specific characteristics of the discharge and discharger necessary for the WQS variance justification to apply (e.g., type of discharger [public or private], industrial classification, facility size and/or effluent quality, treatment train [existing or needed], or pollutant treatability), and

²⁷ *Water Quality Standards Regulatory Revisions*. 80 Fed. Reg. 51036 (August 21, 2015).

²⁸ *Ibid.*

²⁹ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-321, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

2. Sufficient information to demonstrate that the designated use and associated criterion is not feasible to achieve for a discharger meeting the characteristics in #1, consistent with the “supporting documentation” requirements at [40 CFR 131.14\(b\)\(2\)](#). For example:
 - a. Where [40 CFR 131.10\(g\)\(6\)](#) is used, a description of the specific community financial and socioeconomic characteristics used to demonstrate that attaining the designated use and criterion is infeasible, and/or
 - b. Where the demonstration is influenced by the type of receiving water, the characteristics of the receiving water that was used to demonstrate that attaining the designated use and criterion is infeasible, (e.g., flow rates, size, water levels, hydrologic modifications, etc.).

All WQS variances, including MDVs, must still meet 40 CFR 131.14(b)(1)(i) to identify the waterbody or waterbody segment(s) subject to the WQS variance. To meet this requirement for known dischargers in an MDV, the state or authorized Tribe must include the waterbodies or waterbody segment(s) impacted by the dischargers listed. To meet this requirement for the unknown dischargers in an MDV using eligibility requirements, the state or authorized Tribe must specify in the MDV the potential receiving waterbodies or waterbody segment(s) to which the WQS variance may apply. This will help ensure that the public, including downstream communities and those with environmental justice concerns, are made aware of where a WQS variance could affect their local waterbody so they may effectively provide input on the WQS variance and can meaningfully engage early and often in the WQS variance process.

In addition, the state or authorized Tribe must still identify the HAC of the MDV, consistent with [40 CFR 131.14\(b\)\(1\)\(ii\)](#). Thus, when using eligibility requirements to identify the dischargers subject to the WQS variance, the state or authorized Tribe must provide adequate documentation that the adopted HAC reflects the greatest pollutant reduction achievable for any discharger meeting the eligibility requirements. See section 6.3.2 of this chapter for information on identifying the HAC.

Once approved by the EPA, the MDV, including the eligibility requirements, is the applicable WQS and must be used for implementing NPDES permitting requirements for the term of the WQS variance. At the time of NPDES permitting, the permitting authority would determine whether a discharger meets the eligibility requirements, and thus is subject to the MDV, before implementing the MDV into the discharger’s permit. Because the EPA does not need to take an additional WQS approval action in this instance, the EPA expects the permitting authority to document in the NPDES permit fact sheet how each discharger meets the eligibility requirements. Accordingly, the EPA encourages states and authorized Tribes using eligibility requirements to maximize public notice, outreach, engagement, and opportunity to comment on whether the discharger qualifies for coverage under the MDV, as documented in the permit fact sheet, during the permit issuance or renewal process. This is particularly important in situations where the public may have a strong interest to provide information and participate in the decision (e.g., downstream communities and those with environmental justice concerns).

To streamline the permitting process when using eligibility requirements, a state or authorized Tribe should consider identifying in the WQS variance the information that a discharger must submit to the state or authorized Tribe (e.g., as part of its NPDES permit renewal request) to demonstrate that it meets the eligibility requirements for the MDV. The EPA retains NPDES permit oversight over permitting authority decisions to incorporate a WQS variance into a discharger's NPDES permit, including when such decisions are based on a determination that a discharger met the eligibility requirements to be subject to a WQS variance.

Because WQS variances are dependent upon discharger-specific characteristics and circumstances, it is very important that the permitting and WQS programs closely collaborate during the WQS variance development and implementation process. This is especially important when using an MDV with eligibility requirements because the permitting authority determines whether a discharger meets the eligibility requirements specified in the applicable WQS. Collaboration between the permitting and WQS programs will ensure that any WQS variance is structured in a manner consistent with the EPA's regulation. As with any WQS revision, states and authorized Tribes should also work closely with their EPA regional WQS counterpart.



Table 6-1 provides considerations for comparing the two types of discharger-specific WQS variances.

TABLE 6-1: CONSIDERATIONS FOR DISCHARGER-SPECIFIC WQS VARIANCES		
1.	Single Discharger WQS Variance	<ul style="list-style-type: none"> WQS variance justification and HAC requirements based on facility-specific analysis and data. Reflects a customized plan to achieve incremental progress during the term of the WQS variance for the facility. Public knows the discharger being covered by the WQS variance in advance of the public hearing process for each WQS variance.
2.	Multiple Discharger WQS Variance (MDV)	<ul style="list-style-type: none"> Similarly situated dischargers can be evaluated as a group and identified based on facility-specific analysis and data. Public knows the dischargers being covered by the WQS variance in advance of the public hearing process for the MDV. WQS rulemaking burden is reduced compared to adopting many single discharger WQS variances. <p><u>MDV using Eligibility Requirements</u></p> <ul style="list-style-type: none"> State or authorized Tribe identifies the characteristics of the group of dischargers (i.e. eligibility requirements) that would meet the justification used for the WQS variance. Determination of whether a discharger meets the eligibility requirements to be covered by the WQS variance is determined during that discharger's permitting process. Dischargers are covered by the WQS variance only when facility-specific analysis and data show it meets the eligibility requirements. A complete list of covered facilities is made publicly available. WQS rulemaking burden is reduced compared to adopting many single discharger WQS variances.

See subsection 6.3.1.3 of this chapter for a discussion of additional requirements and recommendations for demonstrating the need for an MDV. See subsection 6.3.3 of this chapter for additional considerations for the term of an MDV.

6.2.3 Waterbody or Waterbody Segment WQS Variances

States, authorized Tribes, and dischargers often pursue discharger-specific WQS variances where it is infeasible for a discharger to comply with a WQBEL based on the designated use and criterion for a particular pollutant for a period of time. However, there may be situations where the waterbody or waterbody segment is not attaining the designated use and criterion for a specific pollutant(s) or water quality parameter(s) due to the contributions of both point and nonpoint sources (NPS),³⁰ and a holistic approach could be used to make feasible progress toward achieving that designated use and criterion. In such a situation, a state or authorized Tribe may find a WQS variance for the waterbody or waterbody segment to be useful. This type of WQS variance is referred to as a “waterbody WQS variance.” While a discharger-specific WQS variance applies only to those permittees identified in the WQS variance, a waterbody WQS variance applies to the waterbody itself rather than to any specific permittee or source. “A waterbody variance provides time for the state or [authorized] tribe to work with both point and nonpoint sources to determine and implement adaptive management approaches on a waterbody/watershed scale to achieve pollutant reductions and strive toward attaining the waterbody’s designated use and associated criteria.”³¹

Just like any WQS variance, a waterbody WQS variance is only applicable for CWA Section 402 purposes and for issuing certifications under CWA Section 401, while the underlying designated use and criterion remain in place for other CWA purposes that relate to the long-term goals of the waterbody such as CWA Section 303(d). Therefore, when a permitting authority is implementing the waterbody WQS variance in an NPDES permit, it must consider the HAC specified in the waterbody WQS variance when deriving permit limits for dischargers to that waterbody or waterbody segment.³² For example, a state or authorized Tribe could adopt a waterbody WQS variance for a persistent organic pollutant in a situation where all dischargers to the waterbody are already implementing pollutant control technologies with the greatest pollutant reduction that is feasible. In such a case, the state or authorized Tribe has the option of adopting an HAC for a waterbody WQS variance that requires the permittees to maintain the greatest pollutant reduction achievable with their currently installed pollutant control technology while the PMP adopted in the WQS variance is implemented to make further water quality progress ([40 CFR 131.14\(b\)\(1\)\(ii\)\(B\)\(2\)](#)). Subsection 6.3.2.2 provides more detail on identifying the HAC for a waterbody WQS variance and subsection 6.3.2.3 provides more detail on identifying PMP activities.

³⁰ A [nonpoint source](#) (NPS) is any source of water pollution that does not meet the legal definition of “point source” in Section 502(14) of the [CWA](#). NPS pollution is pollution caused when rainfall or snowmelt, moving over and through the ground, picks up and carries natural and human-made pollutants, depositing them into lakes, rivers, wetlands, coastal waters, and ground waters.

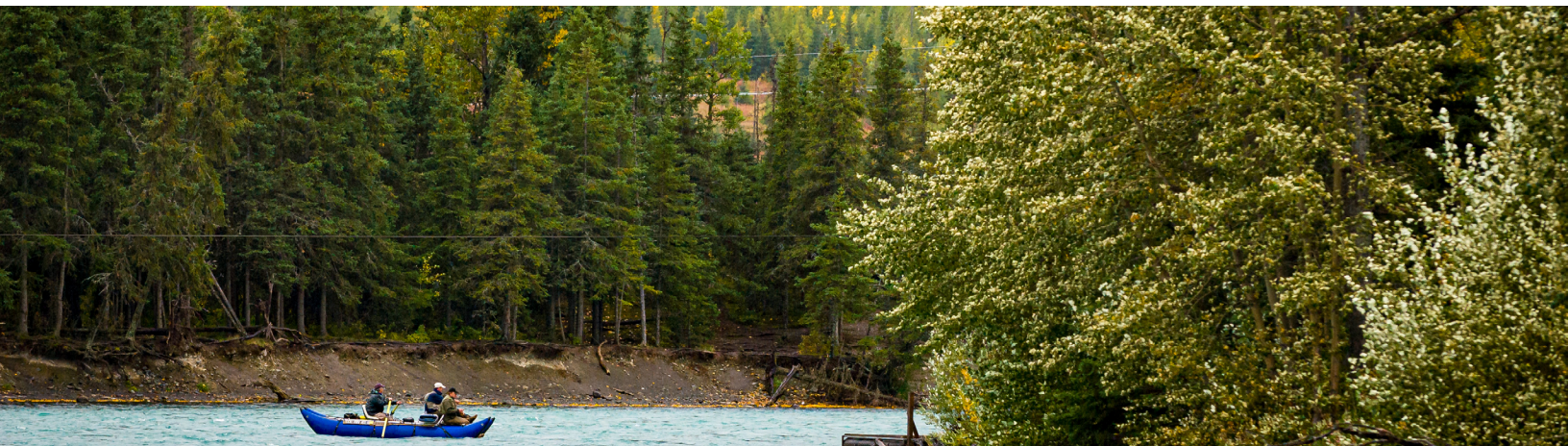
³¹ *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54532 (September 4, 2013).

³² [40 CFR 131.14\(c\)](#). See also EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-318, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

Additional Requirements for Waterbody WQS Variances

To increase transparency and consideration of multiple sources of pollution, including NPS, the regulation at [40 CFR 131.14\(b\)\(2\)\(iii\)\(A\)](#) requires states and authorized Tribes to provide to the public for comment documentation that identifies “any cost-effective and reasonable best management practices for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and water body or waterbody segment(s) specified in the WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion.” “Nonpoint sources can have a significant bearing on whether the designated use and associated criteria for the water body are attainable. It is essential for states and authorized tribes to consider how controlling these sources through application of cost-effective and reasonable best management practices (BMPs) could impact water quality before adopting such a WQS variance. Doing so informs the highest attainable condition, the duration of the WQS variance term, and the state’s or authorized tribe’s assessment of the interim actions that may be needed to make water quality progress.”³³ Understanding the contribution of NPS of pollutants is also an important part of increasing public transparency by providing the public with information about the potential impact of controlling NPS pollutants and helping inform the WQS variance reevaluation process. See section 6.3.2.2 of this chapter for more information identifying the HAC for a waterbody WQS variance, and section 6.3.4 of this chapter for more information on the WQS variance reevaluation process.

In addition, for any subsequent waterbody WQS variance, the state or authorized Tribe must document whether and to what extent any BMPs were implemented and the water quality progress that was achieved during the previous waterbody WQS variance ([40 CFR 131.14\(b\)\(2\)\(iii\)\(B\)](#)) (see section 6.3.5 of this chapter). This documentation will help states and authorized Tribes work with the public to determine if there are additional opportunities to implement BMPs and reduce pollutant loads in a subsequent waterbody WQS variance.³⁴



³³ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

³⁴ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-367 to 369, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

It is important to note that [40 CFR 131.14](#) does not require states and authorized Tribes to implement NPS controls or otherwise regulate sources of NPS pollutants. When establishing the requirements of a waterbody WQS variance, states and authorized Tribes have sole discretion to decide whether to include requirements for NPS control actions for particular NPS. However, it is important for states and authorized Tribes to understand the pollutant contributions from NPS when considering a waterbody WQS variance regardless of the source of those contributions. For example, waterbody impairment as a result of chloride loading is a water quality issue throughout many urban watersheds in cold climates. Often, the seasonality and timing of the chloride exceedances indicate that the impairments are caused by the application of road salt for deicing purposes. After being applied to roads and walking surfaces, road salt may enter surface waters either directly through runoff or as part of permitted discharges after entering storm sewers or combined sewer collection systems. In this situation, it would be important for a state or authorized Tribe to understand both the point source and NPS contributions of chloride when considering whether a waterbody WQS variance is appropriate and identifying any NPS BMPs that could be included in the waterbody WQS variance and implemented to achieve the greatest reduction of chloride over the term of the WQS variance.



6.3 WQS VARIANCE REQUIREMENTS

6.3.1 Demonstrating the Need for a WQS Variance

The state or authorized Tribe is required to demonstrate the need for a WQS variance ([40 CFR 131.14\(b\)\(2\)\(i\)](#)). The regulation does not require this demonstration to be part of the WQS variance itself; but requires it to be provided to the EPA as part of the state or authorized Tribe’s supporting documentation.

The EPA review under [CWA Section 303\(c\)](#) involves determining whether “the State standards which do not include the uses specified in section 101(a)(2) of the Act are based upon appropriate technical and scientific data and analysis”([40 CFR 131.5\(a\)\(7\)](#)). What constitutes “appropriate technical and scientific data and analysis” to demonstrate the need for a WQS variance can vary depending on the specific circumstances, such as the applicable designated use, the type of WQS variance, the number of permittees affected, and the characteristics of the parameter and waterbody or waterbody segment to which the WQS variances applies. For example, a single discharger WQS variance usually includes an evaluation of a single parameter for a single discharger for a limited period of time while an MDV or waterbody WQS variance would usually include an evaluation of a single parameter for multiple dischargers and thus may be more complex and require more time and resources to develop a streamlined WQS variance covering more than one discharger.³⁵



³⁵ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51041 (August 21, 2015).

6.3.1.1 WQS Variances to CWA Section 101(a)(2) Uses and Subcategories of Such Uses

For a WQS variance that applies to a [CWA Section 101\(a\)\(2\)](#) use or a subcategory of such uses,³⁶ states and authorized Tribes must demonstrate that the designated use and associated criterion are not feasible to attain throughout the term of the WQS variance on the basis of one³⁷ of the seven regulatory factors specified in [40 CFR 131.14\(b\)\(2\)\(i\)\(A\)](#):

1. Naturally occurring pollutant concentrations prevent the attainment of the 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 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 hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way that would result in the attainment of the use.
5. Physical conditions related to the natural features of the water body, such as a lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to the water quality, preclude attainment of aquatic life protection uses.
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.
7. Actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented.

States and authorized Tribes may consider any factor in 40 CFR 131.14(b)(2)(i)(A)(1 or 2) to demonstrate the need for a WQS variance. The following discussion focuses on Factors 2, 3, 6, and 7. The EPA recommends that states and authorized Tribes work closely with their EPA regional WQS counterparts after developing a draft rationale for how such factors may demonstrate the need for a WQS variance in light of the regulatory requirements.

³⁶ Uses specified in [CWA Section 101\(a\)\(2\)](#), referred to as “101(a)(2) uses,” are those uses that provide for the protection and propagation of fish (including aquatic invertebrates), shellfish, and wildlife, and recreation in and on the water (e.g., aquatic life use, recreation use) or a subcategory of such uses (e.g., warm water aquatic life use, cold water aquatic life use, and primary contact recreation).

³⁷ States and authorized Tribes may choose to identify more than one factor that affects the feasibility of attaining the designated use. However, to be consistent with the EPA’s regulation and to demonstrate the need for the WQS variance, the state or authorized Tribe must demonstrate that one factor on its own precludes attainment of the designated use during the term of the WQS variance. A state or authorized Tribe cannot use portions of different factors together if one factor is not fully satisfied.

“Factor 2”

Factor 2 can be used to demonstrate the need for a WQS variance where “[n]atural, 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 water conservation requirements to enable uses to be met” throughout the term of the WQS variance ([40 CFR 131.10\(g\)\(2\)](#)). Factor 2 consists of two related clauses. The first is “natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use,” and the second is “unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met.”

Reading 40 CFR 131.10(g)(2) in its entirety, Factor 2 would not apply to situations that result in high flow conditions. Although the first part of the clause separately specifies “low” flow conditions, the second clause clarifies that for Factor 2 to be considered as the basis for demonstrating a use is not attainable during the term of the WQS variance, a state or authorized Tribe must evaluate whether the applicable flow conditions in the first clause (i.e., natural flow conditions, ephemeral flow conditions, intermittent flow conditions, or low flow conditions) can be *compensated for* by a sufficient volume of effluent flow. Thus, Factor 2 applies to situations where the absence of sufficient flow makes a use unattainable during the term of the WQS variance. Factor 2 requires a state or authorized Tribe to consider whether this insufficient flow can be addressed by effluent discharges. For example, an effluent discharge creates a perennial flow in what naturally would be an ephemeral or intermittent water and the augmented flow now supports certain fish species or life stages. In this situation, because the insufficient flow can be addressed by the effluent discharge, a state or authorized Tribe may not use Factor 2 to justify a WQS variance in order to temporarily remove the applicable aquatic life use to obtain less stringent NPDES permit limitations for a discharger.

Giving meaning to only the first clause could allow a state or authorized Tribe to use Factor 2 to justify the need for a WQS variance in circumstances where higher flows or water levels preclude attainment of a designated use without consideration of whether those higher flows or water levels could be addressed in a way that would still enable uses to be met. This reading of Factor 2 would be inconsistent with the goals and requirements of the CWA, including those at CWA Section 101(a)(2) to provide for the protection and propagation of fish, shellfish, and wildlife and provide for recreation in and on the water, wherever attainable, and the intent of a WQS variance to make incremental progress in water quality.

Consideration of high flows might be relevant to other factors used to demonstrate the need for a WQS variance, such as Factors 3 or 4. However, similar to how Factor 2 requires consideration of whether insufficient flow conditions or water levels can be compensated for by effluent discharges, Factors 3 and 4 would require an evaluation of whether those high flow conditions could be remedied or restored during the term of the WQS variance, respectively.

It is also important to note that Factor 2 may be considered for WQS variances where the insufficient flow is a result of anthropogenic activities, such as water withdrawals, but actions will be taken to minimize the impact of such activities on the designated use. The EPA recommends that a state or authorized Tribe works closely with its EPA regional WQS counterpart if it is interested in a WQS variance for such a situation.



“Factor 3”

Factor 3 can be used to demonstrate the need for a WQS variance where the “[h]uman 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”³⁸ throughout the term of the WQS variance. First, to show that “human caused conditions or sources of pollution prevent the attainment of the use,” the state or authorized Tribe should:

1. Evaluate the different sources of the human caused conditions or pollution (including point, nonpoint, and legacy sources),
2. Determine the extent to which the condition or pollution is anthropogenic (to address how the conditions or sources of pollution are “human caused”), and
3. Characterize the impact of the condition or pollution on the designated use (to address how such conditions or sources of pollution “prevent the attainment of the use”).

Second, the state or authorized Tribe must show that the human caused conditions or sources of pollution might preclude attainment of the designated use because they either “cannot be remedied,” or “would cause more environmental damage to correct than to leave in place.”

³⁸ [40 CFR 131.10\(g\)\(3\)](#).

To show human caused conditions or sources of pollution “cannot be remedied,” there are two key principles:

1. “Cannot be remedied” means neither the state or authorized Tribe nor any discharger(s) can remedy the human caused conditions or sources of pollution in the waterbody during the term of the WQS variance. The state or authorized Tribe is responsible for demonstrating that the human caused condition or sources of pollution cannot be remedied after taking into consideration controls for the different, contributing sources of pollution. Before adopting a WQS variance, the state or authorized Tribe needs to determine whether there are actions that it could take to remedy all or portions of the human caused condition or source(s) of pollution; and
2. The state, authorized Tribe, or discharger would need to consider whether any pollutant reduction options,³⁹ implemented alone or together (whether at the same time or sequentially) would remedy the condition or sources of pollution. Options to consider would include installing pollutant control technology, minimizing the pollutant from entering the effluent or the waterbody directly, and relocating or eliminating the discharge. The state, authorized Tribe, or discharger should also consider the associated timeframe needed to implement such remedies.

The state or authorized Tribe’s Factor 3 “cannot be remedied” demonstration should evaluate the following types of available information:⁴⁰

- Monitoring data to determine the current ambient conditions,
- Data or maps showing the geographical extent of the pollution, and
- Engineering studies and literature of the relevant pollutant reduction options and BMPs that could be implemented, and documentation that none of the options or practices, if implemented, would result in attaining the applicable designated use and criterion during the term of the WQS variance.

To show the human caused condition or sources of pollution “would cause more environmental damage to correct than to leave in place,” one application of this factor could be where controlling the pollutant itself would cause environmental damage. For example, dredging a waterbody to remove contaminated sediment may be needed to attain the designated use. However, doing so may stir up the pollutant in the sediment and release the pollutant into the waterbody column, thus causing more environmental damage to the waterbody for a period of time as compared to leaving the contaminated sediment in place. Whether such a scenario justifies a WQS variance using this portion of Factor 3 would be determined on a case-by-case basis based on the site-specific circumstances.

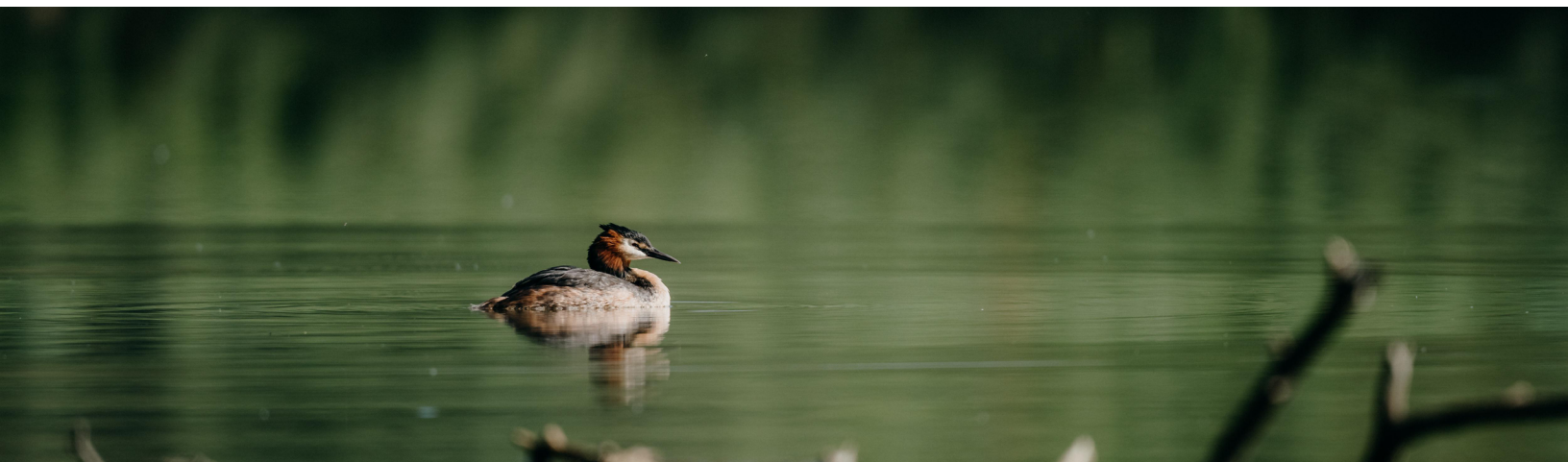
A different application of this factor could involve waters impacted by Combined Sewer Overflows (CSOs). Where CSO communities have or will achieve significant reductions in their CSOs in accordance with their approved Long Term Control Plan but monitoring

³⁹ Pollutant reduction options include both pollutant control technologies and pollution prevention and source reduction measures.

⁴⁰ *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54535 (September 4, 2013).

indicates that the community still cannot achieve the WQBEL necessary to protect the recreation use, states may believe there are more environmentally beneficial alternatives to additional CSO controls. On January 19, 2024, the EPA issued a memo⁴¹ to provide considerations for the EPA’s review of revisions to state⁴² recreational uses and associated bacteria criteria based on a demonstration that “[h]uman caused conditions or sources of pollution prevent the attainment of the use and ... would cause more environmental damage to correct than to leave in place.” This memo does not limit what factors a state or authorized Tribe could pursue to demonstrate the need for a WQS variance in a CSO impacted waterbody. Rather this memo describes how the EPA regions could advise states wishing to use this aspect of Factor 3 for CSO impacted waters and how to evaluate a related WQS submission. Specifically, the EPA’s review would evaluate, among other things, whether (1) clear and measurable data show implementing specified non-CSO control alternatives would have a greater environmental benefit to the recreation use than only controlling CSOs, (2) such non-CSO control alternatives would not occur if the community were required to implement additional CSO controls, and (3) the non-CSO control alternatives will, in fact, be implemented if the EPA approves the WQS revision.

The EPA recommends that states and authorized Tribes coordinate with the relevant EPA regional WQS contact if pursuing the “would cause more environmental damage” aspect of Factor 3.



The state or authorized Tribe’s Factor 3 “environmental damage” demonstration should include, among other things, consideration and evaluation of the following types of available information:⁴³

- Monitoring data to determine the current ambient water quality conditions,
- Data or maps showing the geographical extent of the pollution within the same waterbody,

⁴¹ Nagle, D.G. EPA. 2024. Memorandum: CSO Temporal Recreation Uses or WQS Variances based on 40 CFR 131.10(g) (3). Office of Science and Technology, Washington DC., <https://www.epa.gov/system/files/documents/2024-02/cso-temp-recreational-memo-1-19-2024.pdf>.

⁴² This memo is directed to states and territories only because there are no Tribes with responsibility for CSOs. For simplicity, the term “states,” as used in this memo, includes any territories with responsibility for CSOs.

⁴³ *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54535 (September 4, 2013).

- Engineering studies and literature of the relevant pollutant reduction options and BMPs that could be implemented in the waterbody during the term of the WQS variance,
- Description, with supporting information from scientific literature, of the environmental impacts to the waterbody associated with the pollutant reduction options and BMPs, and
- A comparison of the environmental impacts to the ecosystem and/or public health to the benefits of attaining the designated use and associated criteria, in the same geographic area of that waterbody.

“Factor 6”

Factor 6 can be used to justify the need for a WQS variance when “[c]ontrols more stringent than those required by Sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.”⁴⁴ This is a commonly used factor to demonstrate the need for a discharger-specific WQS variance. In *Upper Missouri Waterkeeper v. EPA*, the Ninth Circuit Court of Appeals held “that the EPA’s regulations reasonably interpret the Clean Water Act as allowing consideration of compliance costs when the agency approves water quality standards⁴⁵ and variance requests.”⁴⁶

The EPA’s guidance on considering economics for WQS decisions is found in two main documents: [*Interim Economic Guidance for Water Quality Standards: Workbook \(1995\)*](#)⁴⁷ (hereafter referred to as “1995 Interim Economic Guidance”) and [*Clean Water Act Financial Capability Assessment Guidance \(2024\)*](#)⁴⁸ (hereafter referred to as “FCA Guidance”). The 1995 Interim Economic Guidance provides guidance to the public and private sectors on the types of information that a state or authorized Tribe should consider when determining whether the cost of implementing pollutant reduction options to meet permit requirements derived from the designated use and criterion “would cause substantial and widespread economic and social impact” to the affected community and/or discharger. The FCA Guidance supplements the public sector sections of the 1995 Interim

⁴⁴ [40 CFR 131.10\(g\)\(6\)](#).

⁴⁵ *Upper Missouri Waterkeeper v. EPA*, 15 F.4th 966, 974 (9th Cir. 2021). The Ninth Circuit explained that under EPA’s regulation “compliance costs may be considered only when designating the uses to be protected by water quality standards. Once those uses have been designated, States must adopt water quality *criteria* adequate to protect those uses, ‘based on sound scientific rationale.’” *Id.* at 972, n.1. See also *Mississippi Comm’n on Nat. Res. v. Costle*, 625 F.2d 1269, 1277 (5th Cir. 1980) Upholding EPA’s determination that “while economic factors are to be considered in designating uses, those factors are irrelevant to the scientific and technical factors considered in setting criteria to meet those uses.”

⁴⁶ *Upper Missouri Waterkeeper* at 974. The Court reasoned that while the agency “could perhaps have interpreted” the [CWA Section 101\(a\)\(2\)](#) goal that water quality that provides for the protection of aquatic life and recreation be achieved “wherever attainable” to refer only to technological feasibility, “it seems far more plausible that Congress used the term in the sense reflected in the EPA’s regulations—as including an assessment of whether achieving the necessary water quality is economically feasible, given the costs that would be imposed on the affected communities.”

⁴⁷ EPA. 1995. *Interim Economic Guidance for Water Quality Standards: Workbook*. EPA, Office of Water. Washington, DC 20460. March 1995. EPA-823-95-002. <https://www.epa.gov/system/files/documents/2024-01/interim-economic-guidance-water-quality-standards-workbook-1995.pdf>.

⁴⁸ EPA. 2024. *Clean Water Act Financial Capability Assessment Guidance*. EPA-800-B-24-001. EPA, Office of Water, Washington, DC 20460. March 2024. <https://www.epa.gov/system/files/documents/2023-01/cwa-financial-capability-assessment-guidance.pdf>.

Economic Guidance with additional indicators and analyses for low-income residents, an Expanded Economic Impact Matrix, and recommendations to consider when making WQS decisions. The FCA Guidance does not revise the recommended methodology in the private sector sections of the 1995 Interim Economic Guidance. The EPA's [Economic Guidance for Water Quality Standards webpage](https://www.epa.gov/wqs-tech/economic-guidance-water-quality-standards) also provides spreadsheet tools for the public and private sector analyses to help guide the user through the steps to successfully implement the FCA Guidance and 1995 Interim Economic Guidance.⁴⁹

It is important to note that a Factor 6 evaluation is not a cost-benefit analysis. A Factor 6 evaluation only determines if the pollutant control technology needed to meet WQS would cause substantial and widespread economic and social impact in a specific circumstance. To meet the requirements of Factor 6, the cost of additional pollutant controls must be both substantial and widespread. The EPA recommends first performing an analysis to determine if the cost of additional pollutant controls would result in a substantial impact. If the analysis suggests the cost would have a substantial impact, then the state or authorized Tribe should perform a separate analysis to determine if the substantial impact would be widespread.

For public sector dischargers (e.g., POTWs), a “substantial impact” refers to the economic impact on the community, taking into consideration socioeconomic conditions, if the discharger is required to implement additional pollutant controls necessary to comply with WQS. For private sector dischargers, a substantial impact refers to significant changes to the discharger’s business viability if required to implement additional pollutant controls necessary to comply with WQS.⁵⁰



⁴⁹ *Economic Guidance for Water Quality Standards webpage*: <https://www.epa.gov/wqs-tech/economic-guidance-water-quality-standards>.

⁵⁰ EPA. 1995. *Interim Economic Guidance for Water Quality Standards: Workbook*. EPA, Office of Water. Washington, DC 20460. March 1995. EPA-823-95-002. <https://www.epa.gov/system/files/documents/2024-01/interim-economic-guidance-water-quality-standards-workbook-1995.pdf>.

The 1995 Interim Economic Guidance suggests a series of financial tests to help determine whether additional pollutant control costs could result in a substantial impact. For the public sector, first calculate a municipal preliminary screener, which evaluates the impact the cost of additional pollutant controls would have on a household and thus “screens” for situations where additional analyses may not be warranted. A secondary test further evaluates the potential for a substantial impact by examining indicators related to the community’s financial health.

For the private sector, the 1995 Interim Economic Guidance recommends evaluating several indicators related to the potential impact of pollutant control measures on profit, liquidity, solvency, and leverage. Profit is the income to the owner(s) of a company; liquidity is a measure of how easily a company can pay its short-term bills; solvency is a measure of a company’s ability to meet its fixed and long-term obligations, and leverage is a measure of how much money a company is capable of borrowing.

Section III of the FCA Guidance recommends an expanded multi-step approach for public sector entities to determine if requiring additional pollutant controls could result in a substantial impact. In addition to the Initial Economic Impact analyses recommended in the 1995 Interim Economic Guidance, the FCA Guidance recommends states and authorized Tribes do the following:

- **Calculate a Lowest Quintile Poverty Indicator Score:** The FCA Guidance recommends evaluating a set of six socioeconomic statistics from the United States Census Bureau to assess the severity and prevalence of poverty in a community’s service area and incorporate that information into the assessment of economic impacts.
- **Perform a Financial Alternatives Analysis:** The FCA Guidance recommends investigating a variety of potential funding sources and alternative financial mechanisms that could minimize financial impacts to residents living in overburdened and/or low-income communities so that these residents also enjoy the benefits of infrastructure investments and improved water quality.
- **Combine the analysis recommended in the 1995 Interim Economic Guidance with the additional analyses recommended in the FCA Guidance:** The FCA Guidance recommends combining the analytical results from the 1995 Interim Economic Guidance with the additional analytical results recommended in the FCA Guidance using the expanded Economic Impact Matrix.



Finally, the FCA Guidance provides recommendations on how to interpret the combined analytical results to determine if additional pollution controls necessary to meet WQS would result in a substantial economic impact to a public sector discharger.

“Widespread impacts” for both public and private dischargers refer to how a substantial impact could affect the community or surrounding area. The 1995 Interim Economic Guidance recommends evaluating potential changes to various socioeconomic indicators of a community to determine if a substantial impact is likely to also be widespread. For example, a decrease in household income, decrease in commercial development, lower property values, or an increase in unemployment could negatively affect the ways in which people in a community live, work, play, relate to one another, and organize their activities. For many POTWs, the cost of additional pollutant controls is passed on directly to households and businesses through increases in wastewater treatment rates. Although low-income segments of a community would disproportionately experience substantial adverse economic impact, a significant community-wide increase in wastewater treatment rates would likely have broad adverse impacts on the economic wellbeing throughout the community. Therefore, if a state or authorized Tribe can demonstrate that the additional cost to a POTW would be funded by a large proportion of households and businesses in the community, it is reasonable to conclude that such a substantial economic impact to the community would also be widespread.

When evaluating widespread impacts for private entities, a state or authorized Tribe should assess current economic conditions to determine how the substantial impact to the business would impact the surrounding community. Widespread impacts include, but are not limited to, a decrease in tax revenue due to reduced operation or closure of a facility, increased unemployment, lower property values, lower economic activity due to worker relocation, and the loss of future community economic development opportunities.

When determining whether the cost of additional pollutant controls necessary to meet WQS would result in substantial and widespread economic and social impact, a state or authorized Tribe should evaluate a variety of pollutant reduction options and their financial impacts. Some pollutant reduction options may not result in attaining the designated use but nonetheless have the potential to reduce the pollutant loadings to the waterbody. Such an analysis can help the state or authorized Tribe determine the HAC when seeking a WQS variance. See section 6.3.2 of this chapter for additional information on determining the HAC when justifying a WQS variance based on Factor 6.

As described in the FCA Guidance, federal funding initiatives and programs, such as the State Revolving Fund loans and Water Infrastructure Finance and Innovation Act provide, in total, billions of dollars for state, local, territorial, and Tribal governments to pursue infrastructure needs related to clean water. These resources present a historic opportunity for communities to address long-standing clean water needs. The EPA is working with communities to identify funding sources and financing strategies that can be used to reduce costs to complete necessary projects. In addition, state, local, and Tribal governments’ equitable support of communities with limited resources can

help those communities meet the challenges of funding necessary water infrastructure improvements, especially where there are disadvantaged and lower income communities with environmental justice, compliance, enforcement, and other concerns.⁵¹



“Factor 7”

In addition to the six factors contained in [40 CFR 131.10\(g\)](#), the EPA included a seventh factor in 40 CFR 131.14(b)(2)(i)(A), referred to as “Factor 7,” to accommodate situations where a state or authorized Tribe expects a time-limited exceedance of a criterion when implementing efforts to remove a dam or other significant activities associated with wetland, lake, or stream reconfiguration or restoration in order to facilitate restoration of the natural physical features of a waterbody.⁵² The EPA explained in the preamble to the 2015 WQS regulation that “States and authorized tribes may only use this factor to justify the time necessary to remove the dam or the length of time in which wetland, lake, or stream restoration activities are actively on-going.”⁵³ For example, a WQS variance based on Factor 7 should only allow time for the temporary flush of sediments when a dam is removed and should not include the time it takes for the waterbody to reach equilibrium after the initial flush of sediment following dam removal. While NPDES permittees or federal license or permit holders may not be directly impacted by a WQS variance based on Factor 7, a state or authorized Tribe may rely on such a WQS variance when determining whether to issue a [CWA Section 401](#) certification related to an application for a federal license or permit.⁵⁴ Section 6.4.3 of this chapter discusses the relationship between WQS variances and CWA 401 certification. It is important to note that Factor 7 is not included in 40 CFR 131.10(g) and thus may only be used to demonstrate the need for a WQS variance, not a designated use change.

⁵¹ EPA. 2023. *Clean Water Act Financial Capability Assessment Guidance*, EPA-800-B-21-001. EPA, Office of Water, Washington, DC 20460. February 2023. <https://www.epa.gov/system/files/documents/2023-01/cwa-financial-capability-assessment-guidance.pdf>.

⁵² *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54535 (September 4, 2013). See also *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015).

⁵³ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015).

⁵⁴ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037-38 (August 21, 2015). See also *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54535 (September 4, 2013).

6.3.1.2 WQS Variances to “Non-101(a)(2)” Uses

CWA Section 303(c)(2)(A) directs states and authorized Tribes to take into consideration the use and value of waters for “...public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and...navigation.” CWA Section 101(a)(2) establishes an interim goal that, *wherever attainable* [emphasis added], water quality provides for the protection and propagation of fish, shellfish and wildlife, and recreation in and on the water. Those uses addressed in CWA 303(c)(2)(A) but not CWA Section 101(a)(2), such as public water supplies, agricultural, industrial, and navigation are considered to be “non-101(a)(2) uses” and are defined in the regulation at [40 CFR 131.3\(q\)](#). See [Draft Chapter 2: Designated Uses](#), subsections 2.1.1 and 2.2.2 of this Handbook for more discussion on CWA 101(a)(2) uses and non-101(a)(2) uses.

A state or authorized Tribe must submit documentation to the EPA for WQS variances to non-101(a)(2) uses demonstrating how its consideration of the use and value of the water for those designated uses listed in [40 CFR 131.10\(a\)](#) supports the WQS variance and its term.⁵⁵ Alternatively, this requirement can also be satisfied by demonstrating that attaining the designated use and associated criterion is not feasible during the term of the WQS variance. When evaluating the attainability of non-101(a)(2) uses, states and authorized Tribes may use one of the regulatory factors specified in 40 CFR 131.14(b)(2)(i)(A), as described in section 6.3.1.1, but are not limited to these factors.⁵⁶ In the context of a WQS variance, the use and value demonstration would acknowledge that the waterbody has use and value for the non-101(a)(2) use in the long term, and that while that use is not attainable for a period of time, incremental progress can be made towards attaining the designated non-101(a)(2) use.

The EPA encourages states and authorized Tribes to work closely with the EPA when developing a WQS variance for a non-101(a)(2) use, and recommends they consider a suite of information including, but not limited to:⁵⁷

- Relevant descriptive information (e.g., identification of the designated use that is under consideration, location of the waterbody, overview of land use patterns, available water quality data and/or stream surveys, physical information, information from public comments and/or public meetings, anecdotal information, and other relevant information),
- Attainability information (e.g., factors described at 40 CFR 131.14(b)(2)(i)(A), as applicable), and
- Value and/or benefits (e.g., environmental, social, cultural, and/or economic) associated with granting a WQS variance or not.

⁵⁵ [40 CFR 131.14\(b\)\(2\)\(i\)\(B\)](#).

⁵⁶ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

⁵⁷ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51026-27 (August 21, 2015).

6.3.1.3 Considerations When Demonstrating the Need for Multiple Discharger WQS Variances

In developing the demonstration of need for an MDV,⁵⁸ states and authorized Tribes should consider the following four principles:⁵⁹

1. The MDV must meet the same [40 CFR 131.14](#) regulatory requirements as a single discharger WQS variance. A discharger that would not qualify for an individual WQS variance would not qualify for an MDV.
2. When considering an MDV, the EPA expects states and authorized Tribes to account for as much individual discharger-specific information related to the WQS variance as possible. This would include determining whether dischargers are experiencing the same attainability challenges for the same pollutant(s) to meet the requirements at [40 CFR 131.14\(b\)\(1\)\(i\)](#).
3. The EPA recommends that the state or authorized Tribe only group dischargers where the dischargers share specific characteristics or technical and economic scenarios. This ensures that the EPA and the public can evaluate and provide constructive input on each MDV based on the facts specific to each group. The more homogeneous a group is in terms of the characteristics affecting attainability of the designated use and criterion, the more credible the required supporting documentation for the demonstration of need will be. For example, a state or authorized Tribe could group permittees based on specific characteristics that the dischargers share (e.g., type of discharger [public or private], industrial classification, permittee size and/or effluent quality, treatment train [existing or needed], pollutant treatability, community financial and socioeconomic characteristics, whether or not the permittee can achieve a level of effluent quality comparable to the other permittees in the group, and/or waterbody or watershed characteristics) and conduct a separate analysis for each group.
4. States and authorized Tribes should consider a single discharger WQS variance if a certain discharger does not fit with any of the group characteristics (e.g., private versus public dischargers, large versus small permittee, advanced treatment system versus basic treatment system, or permittees with a parent company versus those without).

⁵⁸ [40 CFR 131.14\(b\)\(2\)\(i\)](#).

⁵⁹ EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-290 to 3-291, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

6.3.1.4 Considerations When Demonstrating the Need for Waterbody WQS Variances

In demonstrating the need for a waterbody WQS variance, states and authorized Tribes should understand that while a discharger-specific WQS variance applies only to the permittee(s) identified in the WQS variance, a waterbody WQS variance applies to the waterbody itself. Therefore, the demonstration of need for a waterbody WQS variance does not focus on any specific source or sources but rather comprehensively evaluates the sources of the pollutant to the waterbody and the extent to which the sources can be controlled to a level to achieve the designated use.⁶⁰ If the waterbody has an applicable TMDL, the TMDL may provide useful information for the state or authorized Tribe. See section 6.4.4 of this chapter for more information on waterbody assessment and TMDLs.

6.3.2 Identifying the Highest Attainable Condition (HAC) (40 CFR 131.14(b)(1)(ii))

The purpose of a WQS variance is to provide states and authorized Tribes with time to make incremental water quality improvements, where the designated use and criterion are unattainable for a period of time. Making incremental progress requires an understanding of what is incrementally attainable. Incremental progress in the context of WQS variances means implementing feasible pollutant reduction options⁶¹ to reduce pollutant loadings to the receiving water. The EPA's regulation requires states and authorized Tribes to identify the HAC for the waterbody or waterbody segment reflecting the greatest feasible incremental progress that can be made during the WQS variance term.

“The requirements shall represent the highest attainable condition of the applicable water body or waterbody segment applicable throughout the term of the WQS variance...”⁶²

The HAC is the condition of the waterbody or effluent that “...is both feasible to attain and closest to the protection afforded by the designated use and criteria.”⁶³ This is a critically important element of a WQS variance because it forms the basis of the WQS variance interim requirements. This description of HAC is parallel to the definition of the highest attainable use (HAU) as “the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Act and attainable,

⁶⁰ EPA's Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-318, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

⁶¹ Pollutant reduction options could include both pollutant control technologies, and pollution prevention and source reduction measures.

⁶² 40 CFR 131.14(b)(1)(ii).

⁶³ Water Quality Standards Regulatory Clarifications, 78 Fed. Reg. 54534 (September 4, 2013) and EPA's Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-298, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

based on the evaluation of the factor(s) in §131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability” (40 CFR 131.3(m)). Similarly, a state or authorized Tribe would consider the factor(s) that preclude attainment of the designated use and criterion during the term of the WQS variance, and/or any other information or analyses that were used to justify the WQS variance, to determine the highest condition that could be attained during the term of the WQS variance. For example, if a state or authorized Tribe justifies the WQS variance by demonstrating that it would cause substantial and widespread economic and social impact to implement a pollutant control technology to meet a WQBEL based on the underlying designated use and criterion, then the HAC would be based on what can be done to reduce the pollutant loadings in a manner that would not cause substantial and widespread economic and social impact. While the documentation required to demonstrate the need for a WQS variance depends upon whether the WQS variance is to a 101(a)(2) or non-101(a)(2) use, the requirement to identify the HAC applies equally to any WQS variance.

It is important to note that the HAC is the interim water quality (i.e., interim use and/or interim criterion) or interim effluent condition that applies throughout the WQS variance so that water quality requirements drive incremental progress.⁶⁴ However, the EPA’s WQS variance regulation does not require the HAC to be achieved until the end of the WQS variance term.⁶⁵ The regulatory objective is to attain the highest quality of the receiving water or discharger effluent feasible (i.e., the HAC) after any permittees subject to the WQS variance implement all the WQS variance requirements during the WQS variance term. In *Upper Missouri Waterkeeper v. EPA*, the Ninth Circuit Court of Appeals held that the WQS variance regulation, particularly [40 CFR 131.14\(b\)\(1\)\(iv\)](#), “provide[s] that the highest attainable condition specified in the variance shall apply throughout (or during) the variance’s term, from the beginning of the term to the end. But those provisions do not state that an individual discharger must be in compliance with the highest attainable condition on day one. Instead, the EPA’s variance regulation unambiguously provides that compliance with the highest attainable condition is not required at the onset.”⁶⁶ A permit compliance schedule could be the appropriate legal mechanism to provide time for the permittee to meet the HAC by the end of the WQS variance term. See section 6.4.2.2 of this chapter for a discussion of when and how a permit compliance schedule may be used in conjunction with a WQS variance.

“must specify the highest attainable condition of the water body or waterbody segment as a quantifiable expression...”⁶⁷

The WQS regulation requires the state or authorized Tribe to identify the HAC as a “quantifiable expression.”⁶⁸ Requiring a quantifiable expression of the HAC facilitates

⁶⁴ See [40 CFR 131.14\(b\)\(1\)\(ii\)](#).

⁶⁵ See [40 CFR 131.14 \(b\)\(1\)\(iv\)](#): “The term of the WQS variance must only be as long as necessary to achieve the highest attainable condition...”.

⁶⁶ *Upper Missouri Waterkeeper v. EPA*, 15 F.4th 966, 975 (9th Cir. 2021) (emphasis in original) (Noting that [40 CFR 131.14\(b\)\(1\)\(iv\)](#) “makes clear that the purpose of a variance is to provide the time needed to achieve this attainable interim standard, which means, of course, that compliance with the highest attainable condition is required by the end of the variance’s term, not at the beginning.”).

⁶⁷ [40 CFR 131.14\(b\)\(1\)\(ii\)](#).

⁶⁸ *Ibid*.

development of NPDES permit limits and requirements, provides clear expectations of water quality progress, and ensures that a WQS variance results in measurable water quality progress.

In most cases, the EPA expects that states and authorized Tribes will specify the HAC as a concentration of a pollutant or pollutant parameter at issue. Concentration is often a relatively stable measure of the pollutant or pollutant parameter in an NPDES permittee's discharge, and thus the EPA expects concentration will likely be the method the permitting authority would use to specify the WQBEL in an NPDES permit.⁶⁹ To address situations where a concentration-based HAC may not adequately characterize the attainment issue, the regulation "...provides states and authorized tribes with the flexibility to express the HAC as numeric pollutant concentrations in ambient water, numeric effluent conditions, or other quantifiable expressions of pollutant reduction."⁷⁰ For example, expressing the HAC with regard to CSOs could include a maximum number of overflows, a percentage of time attaining the underlying designated use, or high flow/velocity cutoffs suspending a WQS.⁷¹ See section 6.4.2 of this chapter for further information on implementing WQS variances in NPDES permits.



Considerations for WQS Variances to Narrative Criteria

The EPA recognizes that states and authorized Tribes also rely on narrative criteria to protect certain designated uses. A permitting authority may translate a narrative criterion into protective numeric WQBELs in a wide variety of situations (e.g., POTWs, industrial discharges, stormwater discharges, etc.). Where the discharger is experiencing challenges complying with this WQBEL, it is important to determine the cause of the excursion to determine the appropriate path forward. As discussed earlier in this chapter, there may be several technical and financial assistance options available to address the compliance challenges. Where technical and financial assistance are not sufficient to remedy the compliance challenges, then the state or authorized Tribe may choose to consider whether a WQS variance to the narrative criterion can be justified consistent with [40 CFR 131.14](#).

The EPA's regulation does not preclude WQS variances for designated uses with narrative criteria. However, a WQS variance to narrative criteria must still meet the requirements at 40 CFR 131.14. The EPA's regulation requires the "[i]dentification of the

⁶⁹ EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-337, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

⁷⁰ Ibid.

⁷¹ Ibid.

pollutant(s) or water quality parameter(s)...to which the WQS variance applies.”⁷² It is also essential to identify the specific pollutants or parameters to which the WQS variance will apply in order to conduct an analysis of pollutant reduction options when demonstrating the need for the WQS variance.⁷³

A state or authorized Tribe is also required to identify the HAC as a quantifiable expression that applies throughout the term of the WQS variance ([40 CFR 131.14\(b\)\(1\)\(ii\)](#)). Thus, even where the WQS variance is to a designated use protected by a narrative criterion, the HAC must still be quantifiable. The EPA has stated that “[A] quantifiable expression of the HAC is necessary and important even for narrative criteria because such an expression helps ensure that there will be water quality improvements (a key purpose of a variance) during the term of the variance. For pollutants with narrative criteria, the state or authorized tribe can perform studies during the analysis to support the justification of the WQS variance to identify, for example, the current level of water quality and a percent reduction that is achievable during the term of the WQS variance and use that information to articulate a ‘quantifiable expression’ in the WQS variance.”⁷⁴ To determine the quantifiable HAC, states and authorized Tribes should conduct an analysis of the pollutant reduction options to determine the ambient water quality or effluent quality that is feasible to achieve by the end of the WQS variance term.

6.3.2.1 Identifying the HAC for Discharger-Specific WQS Variances

For a discharger-specific WQS variance, the state or authorized Tribe must specify the HAC in the WQS variance as a quantifiable expression that is one of the following options ([40 CFR 131.14\(b\)\(1\)\(ii\)\(A\)](#)):

- Option 1** - The highest attainable interim criterion,
- Option 2** - The interim effluent condition that reflects the greatest pollutant reduction achievable, or
- Option 3** - If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State [or authorized Tribe] adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Program.

The HAC reflects the condition that results from implementing feasible pollutant reduction options, considering those options identified to reduce pollutant loadings but not enough to attain the designated use, per [40 CFR 131.14\(b\)\(2\)](#).

Regardless of the HAC adopted, once the WQS variance is approved by the EPA, the HAC becomes the applicable WQS during the term of the WQS variance that

⁷² [40 CFR 131.14\(b\)\(1\)\(i\)](#).

⁷³ [40 CFR 131.14\(b\)\(2\)\(i\)](#).

⁷⁴ EPA’s Response to Comments, *Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-342, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

the permitting authority must use when implementing the WQS variance for the discharger(s) subject to the WQS variance ([40 CFR 131.14\(c\)](#)).

HAC Expressed as Option 1 (“HAC1”)

For a discharger-specific WQS variance, states and authorized Tribes may express the HAC as an interim criterion without specifying the modified designated use it supports. This is because “...the level of [designated use] protection afforded by meeting the highest attainable interim criterion in the immediate area of the discharge(s) results in the highest attainable interim use at that location. Therefore, the highest attainable interim criterion is a reasonable surrogate for both the highest attainable interim use and interim criterion when the WQS variance applies to a specific discharger(s).”⁷⁵

To determine the highest attainable interim criterion, states and authorized Tribes should conduct an analysis of pollutant reduction options to calculate/model what instream ambient water quality condition is feasible to achieve after implementing such options. It is important to account for seasonal fluctuations in pollutant concentration and the impacts of other sources on the instream ambient water quality when determining the HAC.

Where there is more than one pollutant source on the waterbody, the determination of HAC1 can be more complicated than the calculations/modeling needed for determining HAC2 due to the various pollutant sources affecting the ambient water quality. The EPA has found that using HAC2 allows states and authorized Tribes to more easily and accurately reflect what is feasible for a specific facility to implement for the greatest pollution reduction.



⁷⁵ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015).

HAC Expressed as Option 2 (“HAC2”)

A state or authorized Tribe may choose to specify the HAC as “...a numeric effluent condition that reflects the highest attainable condition for a specific permittee(s) during the term of the variance. Adopting a numeric effluent condition that reflects the highest attainable condition is reasonable because the resulting instream concentration reflects the highest attainable interim use and interim criterion and, therefore, the interim numeric effluent condition is acting as a surrogate for the interim use and interim criterion.”⁷⁶

To determine the highest attainable interim effluent condition, states and authorized Tribes should determine which pollutant reduction options are feasible to implement, and of those feasible options, which would reduce pollutant loadings to the greatest extent. The “interim effluent condition representing the greatest pollutant reduction achievable” is the interim effluent condition that the state or authorized Tribe expects the permittee to achieve once the feasible pollutant control measures (including technology) are installed and operational. If a permittee cannot immediately meet the WQBEL based on HAC2, the permitting authority may include a compliance schedule⁷⁷ in the permit, consistent with [40 CFR 122.47](#), to provide time to achieve the revised WQBEL. Generally, a compliance schedule must “require compliance as soon as possible.”⁷⁸ Where a permit compliance schedule is longer than one year, the NPDES permit must include interim requirements and dates for their achievement.⁷⁹ See section 6.4.2.2 of this chapter for more information on WQS variances and NPDES permit compliance schedules.

HAC Expressed as Option 3 (“HAC3”)

Where “no additional feasible pollutant control technology can be identified,” the HAC may be expressed as HAC3: “...the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Program.”⁸⁰ A WQS variance using HAC3 can provide a mechanism for states and authorized Tribes to continue making water quality improvements when the designated use and criterion is unattainable for a period of time, even when the discharger has implemented all feasible pollutant control technologies. HAC3 is comprised of two parts:

1. A quantifiable expression of either the interim criterion or interim effluent condition reflecting the greatest pollutant reduction achievable with optimization of the currently installed technology, and
2. Adoption and implementation of a Pollutant Minimization Program.

⁷⁶ *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54534 (September 4, 2013).

⁷⁷ See definition of “schedule of compliance” at [40 CFR 122.2](#).

⁷⁸ [40 CFR 122.47\(a\)\(1\)](#).

⁷⁹ [40 CFR 122.47\(a\)\(3\)](#).

⁸⁰ [40 CFR 131.14\(b\)\(1\)\(ii\)\(A\)\(3\)](#).

The PMP must reflect “...a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings,”⁸¹ thus driving pollutant reductions to achieve the HAC. As explained in the EPA’s 2015 Response to Comments, “Characterizing the HAC as both the interim effluent condition (or interim criterion) that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the state or authorized tribe adopts the WQS variance, and the adoption and implementation of a PMP meets EPA’s goal for the HAC to be both quantifiable and future reaching to drive progress towards the underlying WQS.”⁸²



The following paragraphs describe the two portions of HAC3 in greater detail.

A Quantifiable Expression Where “No Additional Feasible Pollutant Control Technology Can Be Identified”

HAC3 can be used where the state or authorized Tribe cannot identify a feasible pollutant control technology option for the facility to install that would reduce the discharge of the pollutant in question. Two reasons why no additional feasible pollutant control technology can be identified include:

1. There is no additional pollutant control technology available to treat the effluent to reduce the pollutant loads any further (e.g., the discharger has already installed the available pollutant control technologies), or
2. While an additional pollutant control technology may exist, it is not feasible for the facility to install (e.g., it cannot be added to the existing treatment works, or would cause substantial and widespread economic and social impact).

⁸¹ [40 CFR 131.3\(p\)](#).

⁸² EPA’s Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-340, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

In further elaborating on [40 CFR 131.14\(b\)\(1\)\(ii\)\(A\)\(3\)](#), “...this rule provides options for articulating the highest attainable condition using the greatest pollutant reduction achievable with *optimization of currently installed pollutant control technologies* [emphasis added] and adoption and implementation of a Pollutant Minimization Program (PMP).”⁸³ Since finalizing 40 CFR 131.14, the EPA has received questions about the term “optimization.” Stakeholders have asked whether “optimization” means that the pollutant control technology—specifically, a wastewater treatment system—is properly operated and maintained or whether it means the discharger has invested in improving the performance of currently installed technology to gain additional improvements in effluent quality. In the context of 40 CFR 131.14, “optimization” means that the quantifiable portion of HAC3 represents the effluent quality the currently installed wastewater treatment system will achieve if properly operated and maintained. This is parallel to the NPDES permitting regulation, which requires that “The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.”⁸⁴

Thus, the EPA expects the quantifiable portion under HAC3 to reflect the properly operated and maintained condition of the pollutant control technology, such as the wastewater treatment system(s), and not be based, for example, on inadequate wastewater treatment system performance due to poor operation or inadequate maintenance. A state or authorized Tribe could quantifiably characterize the discharger’s current effluent condition “at the time the State adopts the WQS variance” based on the monitoring data associated with past NPDES permit compliance to accurately determine the interim criterion or interim effluent condition under HAC3.⁸⁵

In contrast, where the state or authorized Tribe and discharger can identify additional ways to improve the performance of the currently installed pollutant control technology beyond activities needed for the proper operation and maintenance of the facility, and thus improve effluent quality, the state or authorized Tribe may include those activities as part of the PMP.

“Adoption and Implementation of a Pollutant Minimization Program”

In the context of 40 CFR 131.14, a PMP is broadly defined as “a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings” ([40 CFR 131.3\(p\)](#)). Pollutant control activities⁸⁶ “...represent a

⁸³ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015).

⁸⁴ [40 CFR 122.41\(e\)](#).

⁸⁵ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, Pg.3-340, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

⁸⁶ EPA recognizes a typo in its preamble at *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015) where it referred to “pollutant control technologies.” EPA intended to say, “pollutant control activities.” It would be circular to say that where there is “no additional feasible pollutant control technology,” the state must adopt a PMP with activities that are pollutant control technologies.

broad set of pollutant reduction options, such as process or raw materials changes and pollution prevention technologies, practices that reduce pollutants prior to entering the wastewater treatment system, or best management practices for restoration and mitigation of the water body.”⁸⁷ In the context of HAC3, while the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the currently installed technology provides a benchmark for dischargers to maintain, the PMP drives incremental improvements in water quality. As such, where a state or authorized Tribe wishes to express the HAC as HAC 3, the WQS variance it adopts must include the PMP and the set of PMP activities that dischargers must implement.⁸⁸ As an adopted component of the WQS variance, a PMP is a requirement that is “...necessary to implement the WQS variance [and] shall be included as enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance.”⁸⁹

Therefore, a WQS variance would not simply include language stating that a PMP or PMP activities will be identified and/or developed after adoption of the WQS variance. To be consistent with 40 CFR 131.3(p) and 131.14, the state or authorized Tribe would need enough information to identify the source(s) of pollutant loading and activities that would result in reducing or minimizing those pollutant loadings before the WQS variance is adopted.

In addition, the PMP must include the activities that will be implemented to “prevent and reduce pollutant loadings,” not just activities to study pollutant loadings or sources (40 CFR 131.3(p)). However, the state or authorized Tribe may choose to include the latter activities in the PMP in addition to those that prevent and reduce pollutant loadings. For example, it may be particularly useful to include activities that study pollutant loadings or sources to support climate resiliency strategies, including the study of anticipated changes to climate-sensitive indicators such as temperature, water level and flow, and water chemistry. Such studies or investigations may be a critical component of achieving effective reductions under a PMP. Therefore, where such studies or investigations could result in additional information about pollutant sources or reduction options, the EPA recommends including them in the PMP along with follow-up actions to utilize the results as a part of implementing the PMP.



⁸⁷ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015).

⁸⁸ [40 CFR 131.14\(b\)\(1\)\(ii\)\(A\)\(3\)](#) and [40 CFR 131.14\(b\)\(2\)\(ii\)](#).

⁸⁹ [40 CFR 131.14\(c\)](#).

Section 6.3.2.3 of this chapter discusses additional considerations when developing a PMP. States and authorized Tribes must also reevaluate the PMP activities when reevaluating the WQS variance, consistent with [40 CFR 131.14\(b\)\(1\)\(v\)](#), to determine if conditions have changed and/or additional pollutant control activities are feasible to implement. See section 6.3.4 of this chapter for additional discussion on WQS variance reevaluations.

6.3.2.2 Identifying the HAC for Waterbody and Waterbody Segment WQS Variances

As discussed in section 6.3.1.4, while a discharger-specific WQS variance applies only to those permittees identified in the WQS variance, a waterbody WQS variance applies to the waterbody itself. Therefore, a state or authorized Tribe's assessment of the HAC for this type of WQS variance should involve a comprehensive evaluation of the sources of the pollutant to the waterbody including the extent to which the sources can be controlled to reflect the greatest pollutant reduction achievable.

For a WQS variance applicable to a waterbody or waterbody segment, the HAC must be specified in the WQS variance as a quantifiable expression that is one of the following ([40 CFR 131.14\(b\)\(1\)\(ii\)\(B\)](#)):

1. The highest attainable interim use and interim criterion, or
2. If no additional feasible pollutant control technology can be identified, the interim use and interim criterion that reflect the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State [or authorized Tribe] adopts the WQS variance, and the adoption and implementation of a PMP.

As discussed in Section 6.2.3, “[n]onpoint sources can have a significant bearing on whether the designated use and associated criteria for the water body are attainable. It is essential for states and authorized tribes to consider how controlling these sources through application of cost-effective and reasonable BMPs could impact water quality before adopting such a WQS variance. Doing so informs the highest attainable condition...”⁹⁰ Thus, the EPA expects a waterbody WQS variance to consider pollutant loadings from a wide variety of sources that may exist on the waterbody, including NPS discharges. It is more accurate to reflect the HAC for a waterbody WQS variance as an interim designated use and interim criterion because a waterbody WQS variance reflects a time-limited change applicable to the entire waterbody while actions are taken to make incremental improvements.

As noted in section 6.2.3 of this chapter, the regulation at 40 CFR 131.14 does not compel states and authorized Tribes to implement specific NPS controls or otherwise regulate NPS of pollutants to attain WQS.⁹¹ However, where a state or authorized Tribe wishes to work with its NPS on controls they could and would implement to make

⁹⁰ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

⁹¹ EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-367 to 368, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

incremental waterbody improvements, a waterbody WQS variance could be a useful tool. When adopting a WQS variance, states and authorized Tribes must also identify and document “...any cost-effective and reasonable best management practices for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and water body or waterbody segment(s) specified in the WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion” ([40 CFR 131.14\(b\)\(2\)\(iii\)\(A\)](#)). This documentation can facilitate identification of the PMP activities included in the waterbody WQS variance.



HAC Expressed as Option 1 (“Waterbody HAC1”)

For a waterbody WQS variance with the HAC expressed as option 1 (hereafter referred to as “waterbody HAC1”), the HAC would be the highest attainable instream condition (i.e., designated use and criterion) considering both point and nonpoint sources of the pollutant. A state or authorized Tribe might calculate/model the highest attainable instream condition in a manner similar to a reverse TMDL calculation. That is, instead of starting with the applicable water quality criteria and then allocating loadings to point and nonpoint sources, the state or authorized Tribe would identify the greatest pollutant reductions achievable in the loadings of each of the pollutant sources and calculate or model what water quality criterion and designated use would result from those combined reductions.

HAC Expressed as Option 2 (“Waterbody HAC2”)

For a waterbody WQS variance with the HAC expressed as option 2 (hereafter referred to as “waterbody HAC2”), the EPA expects the quantifiable portion of the HAC to reflect the instream condition (i.e., designated use and criterion) at the time of adoption that accounts for both “the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance”⁹² and the impact of NPS discharges at the time the WQS variance is adopted. This can be determined based on waterbody monitoring data. In addition to this quantifiable portion of the HAC, the regulation requires that a PMP must be adopted as a component of the WQS variance HAC and specify the activities that will be implemented to prevent

⁹² [40 CFR 131.14\(b\)\(1\)\(ii\)\(B\)\(2\)](#).

and/or reduce pollutant loadings to achieve the HAC.⁹³ The state or authorized Tribe should describe in the supporting documentation how implementing the combination of pollutant reduction options will result in the HAC for that waterbody. A waterbody HAC2 could provide an opportunity for the state or authorized Tribe to work closely with point and nonpoint sources to specify in the WQS variance the actions that will be implemented to prevent or reduce pollutant loadings as part of a holistic and transparent strategy to achieve incremental water quality improvements in the waterbody.

Just as with a discharger-specific HAC3, discussed in Section 6.3.2.1 of this chapter, the permitting authority must use both the quantifiable expression of the “greatest pollutant reduction achievable” and the PMP included in the WQS variance to derive NPDES permit limits and requirements per 40 CFR 131.14(c) because both components make up the entirety of the HAC, which is part of the applicable WQS.⁹⁴ Section 6.3.2.3 of this chapter discusses additional considerations when developing PMPs.

6.3.2.3 Identifying PMP Activities for Either Discharger-Specific or Waterbody WQS Variances

The state or authorized Tribe has discretion to determine the pollutant minimization activities, including the flexibility to include PMP activities that go beyond what the permittee can implement at the facility site. Pollutant control activities⁹⁵ “...represent a broad set of pollutant reduction options such as process or raw materials changes and pollution prevention technologies, practices that reduce pollutants prior to entering the wastewater treatment system, or best management practices for restoration and mitigation of the water body.”⁹⁶ This means that the state or authorized Tribe can identify PMP activities that would reduce pollutant loadings to a waterbody itself and not only the permittee’s effluent. Therefore, the PMP can consist of a mix of feasible activities that will prevent or reduce pollutant loadings, whether it is at the permitted facility or offsite.

When developing a PMP, the state or authorized Tribe and permittee should first consider pollutant control activities that will reduce the loading of the pollutant from the permittee’s effluent into the receiving water and quantify those reductions. Then, the state or authorized Tribe and permittee may consider whether PMP activities implemented offsite might reduce the pollutant load into the receiving water. An example could include construction of buffers along the banks of the receiving water to control runoff of the relevant pollutant. The permittee subject to the WQS variance will still ultimately be responsible for the implementation of the PMP activities through its NPDES permit, but the state or authorized Tribe could commit to implement certain activities, or the

⁹³ 40 CFR 131.14(b)(1)(ii)(B)(2).

⁹⁴ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-312, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

⁹⁵ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015) used the term “technologies” rather than “activities.” This was a typographical error we are correcting here and in EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

⁹⁶ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015).

permittee could enter into binding agreements with a third party to implement the activities on behalf of the permittee, such as a nonpoint source trading agreement.

A state or authorized Tribe may find an adaptive management approach useful when identifying and implementing PMP activities. “[A]daptive management can be useful in the context of a WQS variance because it involves continuous feedback between the interpretation of new information and management actions that can be key to targeting actions where they will actually be effective.”⁹⁷ Additionally, where there are several facilities implementing similar PMP activities (whether for single or multiple discharger WQS variances), the state or authorized Tribe should conduct cross-facility comparisons to determine if there are permittees that are seeing greater progress and whether there are insights from those facilities that could be applied to other facilities.

To ensure that all activities in the PMP continue to facilitate water quality improvements in the receiving water, the state or authorized Tribe should include monitoring and evaluation requirements in the PMP. For example, a state or authorized Tribe could include a requirement to collect monitoring data (under a quality assurance project plan (QAPP)) to evaluate water quality improvements implemented as a part of the PMP. Once part of the WQS variance, such monitoring and evaluation requirements would be included in the applicable NPDES permit. Such requirements provide a means to verify and quantify pollutant reductions and inform adjustments or improvements to PMP activities as part of an adaptive management approach and would allow the state or authorized Tribe to communicate to the public the effectiveness of its WQS variance approach.

In summary, the EPA recommends states and authorized Tribes use the following process when determining appropriate PMP activities that prevent or reduce pollutant loadings to the receiving water:

1. Identify any PMP activities, including those at the facility site and those offsite, that will prevent or reduce pollutant loadings to the receiving water.
2. Refine the list of potential PMP activities based on the impact to pollutant loadings and time the PMP activities will take to implement. This evaluation may also inform the sequence by which the state or authorized Tribe requires the discharger to implement such activities.
3. Determine and specify who will be implementing each activity, including any binding agreements the discharger has or will have with a third party to implement any of the PMP activities.
4. Describe and document how and to what extent the selected PMP activities will prevent or reduce the pollutant.
5. Identify appropriate monitoring, evaluation, and reporting requirements to include in the PMP.

⁹⁷ EPA's Response to Comments, *Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-300, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

6.3.2.4 Analyses for Identifying the HAC for a CWA Section 101(a)(2) Use or Subcategory of Such Use

Similar to the determination of the HAU⁹⁸ for a designated use revision, the HAC for a WQS variance to a CWA Section 101(a)(2) use is based on the evaluation of the factor precluding attainment of the designated use and criterion during the term of the WQS variance and any other information or analyses that were used to evaluate attainability. For example, where the state or authorized Tribe demonstrates that a use cannot be attained due to substantial and widespread economic and social impacts consistent with [40 CFR 131.10\(g\)\(6\)](#), the state or authorized Tribe then determines the HAC by considering the condition that is attainable without incurring costs that would cause a substantial and widespread economic and social impact. As such, performing an analysis of what is not feasible to attain (e.g., the level of pollutant control that would cause substantial and widespread economic and social impacts) informs the state's or authorized Tribe's determination of the HAC (e.g., the level of pollutant control would not cause substantial and widespread economic and social impacts).⁹⁹

Some states have found it easiest to evaluate attainability and determine the HAC in one analysis. This analysis looks at the range of available pollutant control technologies and pollution prevention and source reduction measures to reduce the pollutant loadings. While some of the pollutant reduction options may enable a discharger to meet its WQBEL based on the designated use and associated criterion, the analysis would also evaluate the options that may reduce pollutant loads to a lesser extent for the purpose of determining the HAC. The analysis evaluates considerations such as economic feasibility, technological feasibility, and/or environmental impacts to determine the overall feasibility of implementing the pollutant reduction option and the expected effluent quality. The state or authorized Tribe then uses the results of the analysis to determine which factor precludes implementation of the pollutant control option needed to meet the WQBEL, as well as to determine the HAC based on the pollutant reduction option(s) that are both feasible to implement and provide water quality protection closest to the CWA Section 101(a)(2) uses.

Regardless of the factor used to demonstrate the need for the WQS variance, in cases where the analysis determines that there is no feasible pollutant control technology that can be identified, the state or authorized Tribe could express the HAC as HAC3 or waterbody HAC2.

The following subsections describe additional considerations for identifying the HAC expressed as HAC1, HAC2, or waterbody HAC1 for a WQS variance based on Factors 2, 3, 6, and 7.

⁹⁸ EPA's regulation at [40 CFR 131.3\(m\)](#) defines the HAU as "the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in Section 101(a)(2) of the Act and attainable, *based on the evaluation of the factor(s) in § 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability.*" [emphasis added].

⁹⁹ EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-345, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

Consideration for Identifying the HAC: Factor 2

As discussed in section 6.3.1.1 of this chapter, Factor 2 applies only to situations where the absence of sufficient flow makes a use unattainable during the term of the WQS variance. Thus, to determine the HAC that is closest to the protection afforded by the designated use and criteria in this scenario, the state or authorized Tribe should evaluate the pollutant reduction options that the state or authorized Tribe and dischargers could implement during the WQS variance term despite the natural, ephemeral, intermittent or low flow condition, or water level that was shown to preclude attainment of the use, provided that insufficient flow could not be compensated for by the discharge.



Considerations for Identifying the HAC: Factor 3

As discussed in section 6.3.1.1 of this chapter, there are two ways for a state or authorized Tribe to demonstrate a WQS variance based on Factor 3: either the human caused conditions or sources of pollution (1) “cannot be remedied,” or (2) “would cause more environmental damage to correct than to leave in place.” In either scenario, the HAC is based on using the same rationale that was used to demonstrate the need for the WQS variance. Thus, to determine the HAC that is closest to the protection afforded by the designated use and criteria where the state or authorized Tribe can demonstrate that the human caused conditions or sources of pollution cannot be remedied, it should evaluate the actions that the state or authorized Tribe and dischargers could implement to remedy as much of the human caused conditions or sources of pollution as possible during the term of the WQS variance.

Where the state or authorized Tribe can demonstrate that the human caused conditions or sources of pollution “would cause more environmental damage to correct than to leave in place,” to determine the HAC that is closest to the protection afforded by the designated use and criteria, the state or authorized Tribe and dischargers should evaluate the pollutant reduction options that the state or authorized Tribe and dischargers could implement during the WQS variance term that would cause less environmental damage than the environmental damage that would have been caused by implementing actions to meet the designated use. The EPA anticipates providing additional information on how to determine and identify the HAC when using this aspect of Factor 3. Please coordinate with the appropriate EPA regional WQS contact.

Considerations for Identifying the HAC: Factor 6

As discussed in section 6.3.1.1 of this chapter, a state or authorized Tribe might adopt a WQS variance because requiring the discharger to meet the WQBEL of an NPDES permit based on the designated use and criterion would result in substantial and widespread economic and social impact to the affected community.¹⁰⁰ To determine the HAC that is closest to the protection afforded by the designated use and criteria for a discharger-specific WQS variance based on Factor 6, the state or authorized Tribe and discharger should conduct an analysis of pollutant reduction options that the discharger could install and/or implement during the term of the WQS variance without resulting in substantial and widespread economic and social impacts. Table 6-2 represents an example of the results from a hypothetical analysis of pollutant control technologies, based on a framework developed by a state. In this example, the framework looks at whether pollutant control technology options are technologically feasible (e.g., viable to install at the facility), and economically feasible (i.e., would not cause substantial and widespread economic and social impact to the discharger/community).

TABLE 6-2: EXAMPLE OF RESULTS FROM A HYPOTHETICAL ANALYSIS OF POLLUTANT CONTROL TECHNOLOGIES					
Ranked Pollutant Control Technology Options	Expected Effluent Quality	Meets WQBEL?	Technologically Feasible?	Economically Feasible?	
Option 1	<1 mg/L	Yes	No	No	<div> <div>higher water quality</div> <div>↑</div> <div>↓</div> <div>lower water quality</div> </div>
Option 2	1.5 mg/L	Yes	Yes	No	
Option 3*	3 mg/L	No	Yes*	Yes*	
Option 4	5 to 7 mg/L	No	Yes	Yes	

In this example, the state or authorized Tribe has chosen to express the HAC as the interim effluent condition that reflects the greatest pollution reduction achievable (i.e., HAC2). Based on the hypothetical analysis shown in Table 6-2, both pollutant control

¹⁰⁰ [40 CFR 131.10\(g\)\(6\)](#).

technology Option 3 and Option 4 are economically feasible to install (i.e., the cost will not cause substantial and widespread economic and social impact). The state or authorized Tribe selected Option 3 as the HAC because that option provides the best resulting effluent quality (i.e., highest water quality) while being technologically and economically feasible. While both Options 1 and 2 could allow the discharger to meet the WQBEL, they are economically infeasible for the discharger to install. Therefore, the “interim effluent condition representing the greatest pollutant reduction achievable” would be 3 mg/L in this example.

Considerations for Identifying the HAC: Factor 7

Factor 7 ([40 CFR 131.14\(b\)\(2\)\(i\)\(A\)\(2\)](#)) is specific to WQS variances. As described in section 6.3.1.1 of this chapter, this factor may only be used to demonstrate the need for a WQS variance during the time needed to remove a dam or when restoration/reconfiguration activities are taking place.¹⁰¹ Under this factor, the HAC that is closest to the protection afforded by the designated use and criteria is the quantifiable expression of the condition achievable while the restoration efforts are underway.

6.3.2.5 Analyses for Identifying the HAC for Non-101(a)(2) Uses

One note of difference between an HAU and an HAC is that while [40 CFR 131.10\(g\)](#) only requires states and authorized Tribes to identify the HAU when removing or revising a use specified in CWA Section 101(a)(2) or a subcategory of such a use, 40 CFR 131.14(b)(1)(ii) requires states and authorized Tribes to adopt an HAC regardless of the designated use in question in order to ensure feasible water quality progress during the term of the WQS variance. As discussed in section 6.3.1.2, requesting a WQS variance for a non-101(a)(2) use acknowledges that while there is a use and value for the non-101(a)(2) use in the waterbody in the long term, it is not attainable for a period of time; however, incremental progress could be made towards attaining the designated use. Therefore, where a state or authorized Tribe chooses to use one of the seven factors at 40 CFR 131.14(b)(2)(i)(A) to demonstrate why a non-101(a)(2) use is not attainable for the WQS variance term, please refer to section 6.3.2.4 of this chapter for a discussion on determining the corresponding HAC. However, states and authorized Tribes are not limited to the factors listed at [40 CFR 131.14\(b\)\(2\)\(i\)\(A\)](#) when justifying the need for a WQS variance to a non-101(a)(2) use. Therefore, where a state or authorized Tribe determines that another condition is limiting attainability of the non-101(a)(2) use, the state or authorized Tribe should still ensure that the HAC “...is both feasible to attain and closest to the protection afforded by the designated use and criteria,”¹⁰² based on the condition limiting attainability.

¹⁰¹ [40 CFR 131.14\(b\)\(2\)\(i\)\(A\)\(2\)](#).

¹⁰² *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54534 (September 4, 2013).

6.3.3 Determining the Term of the WQS Variance

Requirements for determining the term for all WQS variances are set forth in regulation and described in this section. Additional requirements apply for WQS variances with a term of greater than five years, as discussed in section 6.3.4 of this chapter.

A state or authorized Tribe must specify the term of a WQS variance ([40 CFR 131.14\(b\)\(1\)\(iv\)](#)). States and authorized Tribes have the option to specify the term of the WQS variance as “an interval of time from the date of EPA approval or a specific date.” In either case, the federal regulation requires the term of the WQS to “only be as long as necessary to achieve the highest attainable condition.”¹⁰³

The justification for the term of the WQS variance must reflect only the time necessary to plan, implement, and evaluate the activities necessary to achieve the HAC.¹⁰⁴ “Explicitly requiring the state or authorized Tribe to document the relationship between the pollutant control activities and the WQS variance term ensures that the term is only as long as necessary

Example: A State or Authorized Tribe Accounting for the Time Needed to Evaluate the Efficacy of Intermittent or Streamflow-Paced Discharge

In this example scenario, a discharger may switch from a continuous discharge to an intermittent discharge and install a gauging station to monitor the flow. In addition to time for planning and installing the gauging station, the WQS variance term would include the time needed to evaluate how the waterbody responds to the changes in flow.

to achieve the highest attainable condition and that water quality progress is achieved throughout the entire WQS variance term.”¹⁰⁵ In determining the term of a WQS variance, states and authorized Tribes should account for time needed to efficiently structure and plan sequential or overlapping activities, secure funding, collect and evaluate data on the efficacy of the pollutant control activities, and document improvements in water quality to guide upcoming decisions at critical milestones to ultimately achieve the adopted HAC.

States or authorized Tribes are required to provide supporting documentation justifying the term of the WQS variance “by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance” ([40 CFR 131.14\(b\)\(2\)\(ii\)](#)). Therefore, to justify that the term is “only as long as necessary to achieve the highest attainable condition,” the supporting documentation should explain why it will take the proposed length of time to implement the activities, monitor water quality, and evaluate the outcome of the activities based on the water quality monitoring. The state or authorized Tribe could provide this explanation by including, for example, a document outlining the time needed for each of the steps to plan,

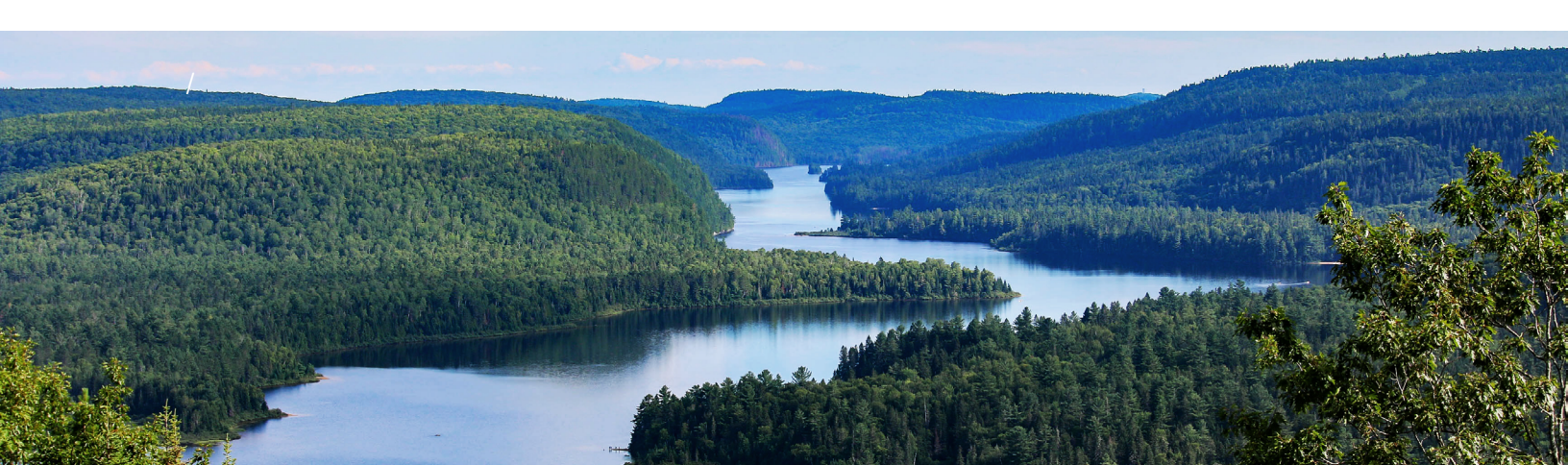
¹⁰³ [40 CFR 131.14\(b\)\(2\)\(ii\)](#).

¹⁰⁴ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

¹⁰⁵ *Ibid.*

implement, and evaluate the pollutant reduction activities, and the sequencing of these steps. The document should be clear whether the activities are new discrete activities or ongoing activities throughout the term of the WQS variance. For any WQS variance that includes a PMP consistent with [40 CFR 131.14\(b\)\(1\)\(ii\)\(A\)\(3\)](#) or [131.14\(b\)\(1\)\(ii\)\(B\)\(2\)](#), the state or authorized Tribe would need to specify not only the pollutant minimization activities and the implementing entity, but also the timeline for implementing those activities. The following are sources of data or information that could be used to support and document the term of the WQS variance to include monitoring and evaluating activities to achieve the HAC:

- Time-lapse modeling,
- Peer-reviewed literature which could provide research-based estimates of pollutant attenuation over time throughout the system,
- TMDL monitoring and modeling,
- Remedial or removal clean up times for actions impacting the waterbody which could provide estimates for pollutant loading over time from other sources on the waterbody,
- Estimates of time needed to install, test, evaluate, and optimize new treatment technologies or operational practices,
- Estimates of time needed to implement, and evaluate the results of, specific types of NPS BMPs (e.g., from pilot projects, literature, or similar projects in other locations),
- Hydrologic cycle timeframes-to evaluate the PMPs during wet and dry (or cold and warm) conditions and assess long term results,
- Information from other compliance-related activities,
- Information from the evaluation of other WQS variances similar to that being proposed,
- Source tracking tools which could be used to ascertain point source contributors versus NPS (e.g., bacterial DNA; surrogate indicators like caffeine or Pharmaceutical and Personal Care Products (PPCPs)), and
- Load duration curves to tease out potential improvements at point sources.



Example: Determining the Term of a WQS Variance

State A has determined that installing the pollutant control technology that would allow the City POTW to attain its WQBEL based on the underlying designated use and criterion would cause substantial and widespread economic and social impacts on the surrounding community. The state identifies the next best economically feasible technology (i.e., pollutant control technology that would not cause substantial and widespread economic and social impacts) and expresses the HAC as HAC2 reflecting the effluent condition that will be achieved after the POTW implements that technology.

The state proposes the term of the WQS variance be seven years because they can document that it will take the community approximately two years to secure funding, two years to obtain bids and hire a contractor, two years to finalize designs and install the pollutant control technology, and one more year to fine-tune the treatment and achieve the full effects of chemical precipitation and filtration removal reflected in the effluent.

The EPA recommends that where the state or authorized Tribe “...does not have sufficient information to identify the highest attainable condition that would be achieved” during the WQS variance term, it should adopt a shorter WQS variance term reflecting the HAC that is supported by the available information, including the pollutant control activities identified in the WQS submission.¹⁰⁶ A state or authorized Tribe could choose to adopt a subsequent WQS variance as more data are gathered and additional pollutant control activities are identified.

Term of an MDV: Additional Considerations

As a reminder, the term of the WQS variance can be either “an interval of time from the date of EPA approval or a specific date.”¹⁰⁷ Where there are multiple dischargers in an MDV with different permit cycles, a state or authorized Tribe could take one of two approaches to identify the term of the MDV:

1. Specify one term that applies to all dischargers for which an MDV is applicable, regardless of when the NPDES permits are issued.

For example, if the term is expressed as “10 years from the date of EPA approval” and the WQS variance is implemented in a discharger’s NPDES permit upon permit reissuance three years after the EPA approves the MDV, the discharger will have seven years to meet the MDV requirements. Note that the permitting authority may, at the request of a permittee, modify a permit to implement the MDV as soon as the EPA approves it so that the discharger has the full length of the MDV term to implement the interim requirements ([40 CFR 124.5\(a\)](#) and [40 CFR 122.62\(a\)\(3\)\(i\)](#)).

¹⁰⁶ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

¹⁰⁷ [40 CFR 131.14\(b\)\(1\)\(iv\)](#).

2. Specify different terms for the different dischargers where all dischargers subject to the MDV are known at the time of adoption and a state or authorized Tribe can demonstrate that each of those known dischargers needs a different amount of time to achieve the same HAC.

For example, a state has determined it will take discharger A seven years to achieve the HAC and dischargers B and C will each need ten years to achieve the same HAC. The WQS variance term would be expressed as “seven years from EPA approval” (or a specific date) for Discharger A and “ten years from EPA approval” (or a specific date) for Dischargers B and C.

See section 6.4.2.1 of this chapter for further discussion of the relationship between the WQS variance term and an NPDES permit term.

6.3.4 **Reevaluations for WQS Variances with a Term of Greater than Five Years**

The EPA’s regulation requires reevaluations for WQS variances with a term longer than five years to ensure “active, thorough, and transparent reevaluations” of the applicable WQS variance by a state or authorized Tribe where a longer WQS variance can be justified.¹⁰⁸

[40 CFR 131.14\(b\)\(1\)\(iii\)](#), [131.14\(b\)\(1\)\(v\)](#), and [131.14\(b\)\(1\)\(vi\)](#) specify how states and authorized Tribes must structure their WQS variance reevaluation. The structure requires states and authorized Tribes to regularly evaluate the WQS variance and acquire updated information, including public input, so that states and authorized Tribes can ensure the WQS variance represents the HAC throughout the WQS variance term and continues to drive incremental water quality improvements.

Under the EPA’s regulation, the WQS variance with a term greater than five years must include the following:

- A “specified frequency to reevaluate the highest attainable condition using all existing and readily available information and a provision specifying how the State intends to obtain public input on the reevaluation.” These reevaluations must occur (i.e., be completed) at least once every five years after EPA approval and the results must be submitted to the EPA within 30 days of completion of the reevaluation,¹⁰⁹
- A statement providing that the HAC is “either the highest attainable condition identified at the time of the adoption of the WQS variance, or the highest attainable condition later identified during any reevaluation... whichever is more stringent”,¹¹⁰ and

¹⁰⁸ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51039 (August 21, 2015).

¹⁰⁹ [40 CFR 131.14\(b\)\(1\)\(v\)](#).

¹¹⁰ [40 CFR 131.14\(b\)\(1\)\(iii\)](#).

- A provision specifying that “the WQS variance will no longer be the applicable WQS for purposes of the Act if the State does not conduct a reevaluation consistent with the frequency specified in the WQS variance or the results are not submitted to EPA” within 30 days of completion of the reevaluation.¹¹¹

While [40 CFR 131.14](#) does not specify a maximum WQS variance term limit, the 1995 GLI specifies that a “WQS variance shall not exceed five years or the term of the NPDES permit, whichever is less” ([40 CFR Appendix F to Part 132 3.B.](#)). Where both 40 CFR 131.14 and Part 132 apply, the state or authorized Tribe must adhere to the more stringent of the two regulations. Therefore, where a state or authorized Tribe adopts a WQS variance applicable to a waterbody that flows to the Great Lakes, the WQS variance could not exceed five years.¹¹²

6.3.4.1 Reevaluate at Least Every Five Years (40 CFR 131.14(b)(1)(v))

To provide sufficient assurance that a state or authorized Tribe will actively reevaluate a WQS variance with a term greater than five years at a reasonable and predictable interval, a state or authorized Tribe must specify the frequency by which it will reevaluate the WQS variance, which must occur (i.e., be completed) no less frequently than every five years after EPA approval (40 CFR 131.14(b)(1)(v)). Requiring a reevaluation at least every five years ensures that the state or authorized Tribe and the public assess updated information and changed circumstances to determine whether the HAC, including PMP activities where applicable, represents the greatest pollutant reduction achievable throughout the WQS variance term.

States and authorized Tribes have the discretion to establish a reevaluation frequency for each WQS variance coordinated with permit reissuances, triennial reviews, at significant interim milestones or decision points, or any other frequency they choose, provided the reevaluation occurs no less frequently than every five years from the EPA’s approval of the WQS variance. States and authorized Tribes can use this flexibility to reevaluate a WQS variance in different ways to minimize the administrative burden that may be associated with WQS variance reevaluations.¹¹³ Aligning the reevaluations with either permit reissuance or triennial review, for example, would ensure the most up to date information is available for those processes. See section 6.3.4.4 of this chapter for further discussion.

To conduct a reevaluation using existing and readily available information as required by 40 CFR 131.14(b)(1)(v), states and authorized Tribes should proactively search for new or updated data and information. “New or updated data and information” include, but are not limited to, new information on pollutant control technologies, changes in pollutant sources, flow or water levels, economic conditions, and BMPs that impact the highest

¹¹¹ [40 CFR 131.14\(b\)\(1\)\(vi\).](#)

¹¹² *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51040 (August 21, 2015).

¹¹³ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

attainable condition.”¹¹⁴ The state or authorized Tribe must also specify how it intends to obtain public input (e.g., public meeting/webinar, public comment period, etc.) on the reevaluations.¹¹⁵ Public input during the reevaluation need not be a public hearing as defined by [40 CFR 25.5](#).

The reevaluation should consider the following information:

1. The status of the progress made in implementing pollutant control technologies and/or PMP activities to achieve the HAC,
2. Monitoring data to show the extent of any water quality progress,
3. An evaluation of whether there are any new feasible pollutant control technologies available or any additional PMP activities that would result in greater pollutant reductions than the current HAC, and
4. Determination whether a more stringent HAC is attainable based on the data and information gathered.

The state or authorized Tribe may wish to specify in the WQS variance that the discharger(s) provide these types of information to facilitate the reevaluation.

When a state or authorized Tribe has adopted an MDV, the reevaluation must still occur at the frequency specified in the WQS variance (at least once every five years), regardless of the timing of permit reissuance. Thus, there will be one reevaluation schedule for an entire MDV.

The state or authorized Tribe must submit the results of the reevaluation to the EPA within 30 days of completion of the reevaluation.¹¹⁶ The results would include the evaluation of the HAC and whether a more stringent HAC, including any additional PMP activities, has been identified. The permitting authority “must refer to the reevaluation results when reissuing NPDES permits to ensure the permit implements any more stringent applicable WQS that the reevaluation provides.”¹¹⁷ See section 6.4.2 of this chapter for discussion of implementing a WQS variance in an NPDES permit.



¹¹⁴ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51039 (August 21, 2015).

¹¹⁵ [40 CFR 131.14\(b\)\(1\)\(v\)](#).

¹¹⁶ *Ibid.*

¹¹⁷ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51039 (August 21, 2015).

The EPA does not take action to review and approve or disapprove the results of a WQS variance reevaluation under CWA Section 303(c)(3). However, because the results of the reevaluation are important to ensure that reissued permits continue to derive from and comply with applicable WQS, the EPA analyzes the reevaluation results to ensure the reevaluation was conducted according to the requirements of the WQS variance and the WQS variance remains consistent with 40 CFR 131.14.¹¹⁸ The EPA retains its NPDES oversight authority¹¹⁹ to ensure permits derive from and comply with the applicable WQS, including any limitations and requirements based on an updated HAC after a reevaluation.

6.3.4.2 Most Stringent HAC as the Applicable WQS (40 CFR 131.14 (b)(1)(iii))

For a WQS variance with a term greater than five years, the state or authorized Tribe must include a provision in the WQS variance that specifies the HAC applicable during the WQS variance term shall be “either the highest attainable condition identified at the time of the adoption of the WQS variance, or the highest attainable condition later identified during any reevaluation... whichever is more stringent.”¹²⁰ The EPA recognizes there may be some instances where pollutant controls and activities are more effective than indicated by the information available at the time of WQS variance adoption. Therefore, this required provision requires states and authorized Tribes to work with the public to evaluate water quality progress and adjust the HAC to be more stringent as needed without additional rulemaking. The provision must be self-implementing so that if any reevaluation yields a more stringent attainable condition, that condition becomes the applicable HAC without additional WQS action by the state or authorized Tribe or the EPA. This provides the public certainty that the state or authorized Tribe remains accountable for ensuring that the HAC remains focused on making incremental progress towards eventually attaining the designated use and criterion even with a long WQS variance term. Upon permit reissuance, the permitting authority will use the results of the reevaluation to ensure the WQBEL (and permit terms and conditions) is based on the more stringent applicable interim WQS consistent with [40 CFR 122.44\(d\)\(1\)\(vii\) \(A\)](#). The EPA explained that “States and authorized tribes can facilitate this coordination by publishing and making accessible the results of the reevaluations.”¹²¹

This self-implementing provision can only apply where the HAC becomes more stringent. If a state or authorized Tribe believes that the reevaluation shows the HAC is no longer attainable by the end of the WQS variance term and wishes to make it less stringent, the state or authorized Tribe would need to adopt a revised WQS variance consistent with 40 CFR 131.14 and obtain EPA approval before it can be used for NPDES permitting decisions or CWA Section 401 certifications.¹²²

¹¹⁸ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015) and EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-354, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

¹¹⁹ [40 CFR 123.44](#).

¹²⁰ [40 CFR 131.14\(b\)\(1\)\(iii\)](#).

¹²¹ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 & 51039 (August 21, 2015).

¹²² *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51037 (August 21, 2015) and EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg.3-356, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

More information on the relationship between WQS variances and NPDES permits is discussed in section 6.4.2 of this chapter.

6.3.4.3 When the Reevaluation is Not Completed or Results Are Not Submitted (40 CFR 131.14(b)(1)(vi))

To ensure that states and authorized Tribes remain accountable for reevaluating the WQS variance consistent with the regulation, a state or authorized Tribe must include a provision in the WQS variance that specifies the WQS variance will no longer be the applicable WQS for CWA purposes if the state or authorized Tribe does not complete the reevaluation of the WQS variance according to the specified frequency, or does not submit the results to the EPA within 30 days of completion (40 CFR 131.14(b)(1)(vi)). In such cases, “subsequent NPDES WQBELs for the associated permit must be based on the underlying designated use and criterion rather than the highest attainable condition, even if the originally specified variance term has not expired.”¹²³ The EPA’s long-standing interpretation, as reflected in practice, has been that the WQS variance will again become the applicable WQS once the state or authorized Tribe completes the reevaluation and submits the results to the EPA.¹²⁴ The EPA retains its NPDES oversight authority to ensure permits derive from and comply with the applicable WQS, including any limitations and requirements based on an updated HAC after a reevaluation.

6.3.4.4 Aligning Reevaluation with Triennial Review or NPDES Permit Reissuance

As described above, states and authorized Tribes can determine the frequency of reevaluation for any WQS variance as long as the reevaluation frequency does not exceed five years from the date of EPA approval. However, for administrative efficiency, the EPA anticipates that many states and authorized Tribes will choose to align WQS variance reevaluations with either their triennial review or NPDES permit reissuance. It is important to note that where a state or authorized Tribe chooses to synchronize a WQS variance reevaluation with permit reissuance or triennial review, the reevaluation must still occur on schedule even if there is a delay with permit reissuance or with the triennial review.¹²⁵

The following examples outline hypothetical scenarios for how a state or authorized Tribe might align the WQS variance reevaluation with either their triennial review or NPDES permit reissuance.

Example 1: Aligning WQS Variance Reevaluation with Triennial Reviews

Figure 6-1 shows how WQS variance reevaluations could work if a state or authorized Tribe chooses to establish a three-year reevaluation schedule synchronized to its triennial review schedule. To make this hypothetical scenario simple, it assumes the WQS variance applies to

¹²³ *Water Quality Standards Regulatory Revisions*. 80 Fed. Reg. 51038 (August 21, 2015).

¹²⁴ O’Connor, D. EPA. October 31, 2017. Letter to Montana Department of Environmental Quality: EPA Action on Montana’s Variance Rules. Region 8, Office of Water Protection, Denver, CO.

¹²⁵ *Water Quality Standards Regulatory Revisions*. 80 Fed. Reg. 51039 (August 21, 2015).

a single discharger for a single pollutant, starts at the beginning of the discharger's permit cycle, and that the state or authorized Tribe conducts and submits the results of each reevaluation to the EPA according to the specified schedule. This illustration represents a hypothetical scenario where a state or authorized Tribe adopts, and the EPA approves, a WQS variance with a 20-year term and a reevaluation frequency of three years after EPA approval and every three years after that to align with the triennial review schedule.

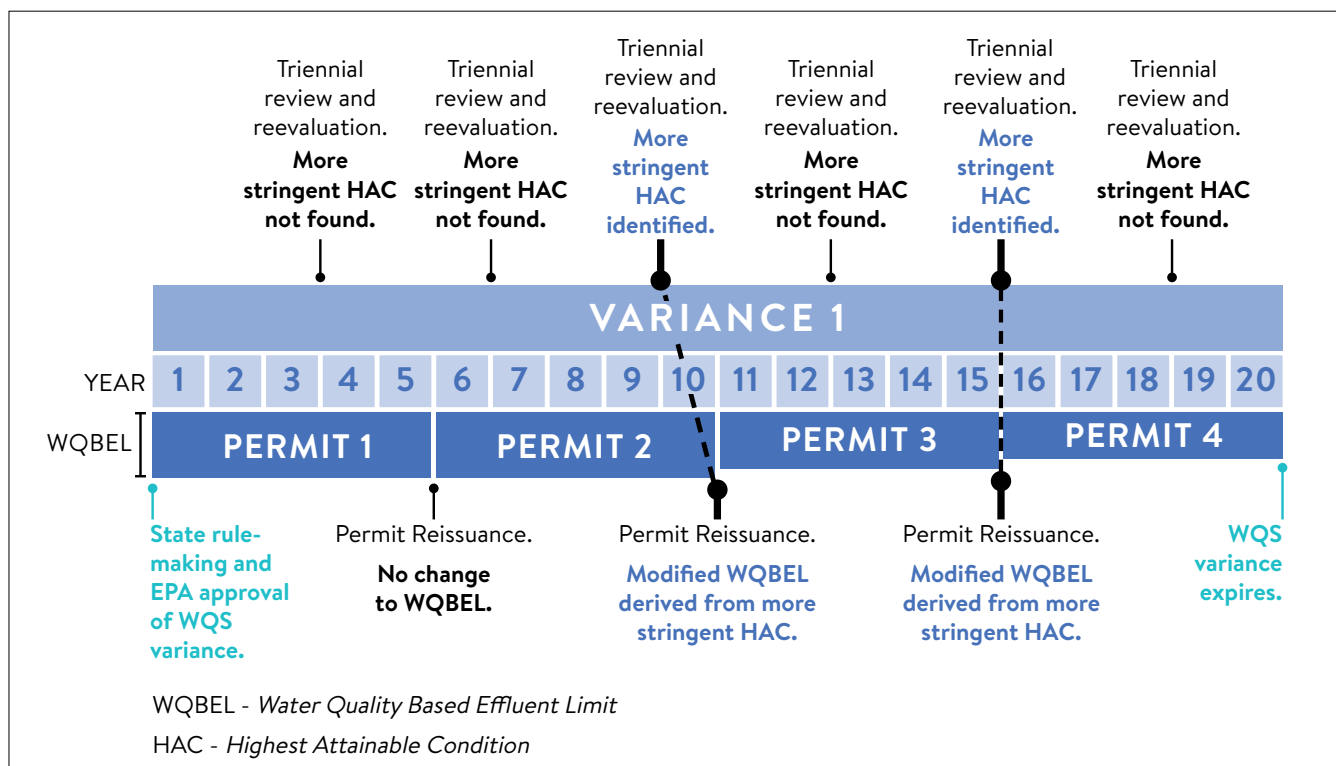


Figure 6-1. Example Diagram of Aligning WQS Variance Reevaluation with Triennial Review

During the first permit cycle of the WQS variance, the state or authorized Tribe reevaluates the WQS variance at the same time it performs its triennial review and finds no new data or information that suggests the permittee is capable of attaining a more stringent HAC. The state or authorized Tribe submits the results of the reevaluation to the EPA within 30 days of completing the reevaluation, as required by 40 CFR 131.14(b) (1)(v), and makes the results publicly available (e.g., on the state's or authorized Tribe's website). A state or authorized Tribe could streamline its permit reissuance process by also sending the results of the reevaluation to the permitting authority at the same time so there is no need for the permitting authority to look for the information at the time of permit reissuance.

At Year 5 when "Permit 1" is about to be reissued, the permitting authority refers to any reevaluation that occurred after the permit was last issued to determine if a more stringent HAC was identified. In this hypothetical example, the reevaluation did not find new data or information indicating a more stringent HAC. Upon referring to the results of the reevaluation, the permitting authority reissues the permit, here labeled "Permit 2," based on the same HAC used for "Permit 1."

During the permit cycle labeled “Permit 2,” the state or authorized Tribe reevaluates the WQS variance at each triennial review (i.e., Years 6 and 9). In this example, the WQS variance reevaluation that occurred during the triennial review at Year 9 resulted in data and information that indicates a more stringent HAC is attainable. At Year 10 when “Permit 2” is being reissued, the permitting authority refers to the latest WQS variance reevaluation that occurred since the permit was last issued. The permitting authority sees that the most recent reevaluation identified a more stringent HAC. Therefore, the permitting authority establishes a permit limit for “Permit 3” on the basis of the more stringent HAC. This more stringent permit limit is illustrated as the blue rectangle labeled “Permit 3” with a decreased height as compared to the rectangle representing “Permit 1” and “Permit 2.”

The same process occurs for “Permit 3” and “Permit 4.” The WQS variance is reevaluated during each triennial review. When the permit is being reissued, the permitting authority refers to the most recent WQS variance reevaluation that occurred since the last permit was issued and incorporates a more stringent HAC, if identified, as the basis for the reissued permit limit. More information on incorporating a WQS variance into an NPDES permit is found in section 6.4.2 of this chapter.

Example 2: Aligning WQS Variance Reevaluation with NPDES Permit Reissuance

Figure 6-2 shows how WQS variance reevaluations could work if a state or authorized Tribe chooses to establish a reevaluation schedule synchronized to the NPDES permit cycle. To make this hypothetical scenario simple, it assumes the WQS variance applies to a single discharger for a single pollutant, starts at the beginning of the discharger’s permit cycle, and that the state or authorized Tribe conducts and submits the results of each reevaluation according to the specified schedule. This illustration represents a hypothetical scenario where a state or authorized Tribe adopts, and the EPA approves, a WQS variance with a 20-year term and a reevaluation frequency of four years after EPA approval and every five years after that. The scenario is the same as the scenario illustrated in Example 1 above, except that the WQS variance reevaluation occurs one year prior to NPDES permit reissuance (i.e., four years after EPA approval and every five years after that) instead of during each triennial review to ensure the permitting authority has any needed information prior to permit reissuance. If a state or authorized Tribe chooses to link the WQS variance reevaluation to its NPDES permitting process, the state or authorized Tribe must still include the WQS variance in the public hearing conducted as part of the WQS triennial review.¹²⁶

¹²⁶ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51039 (August 21, 2015).

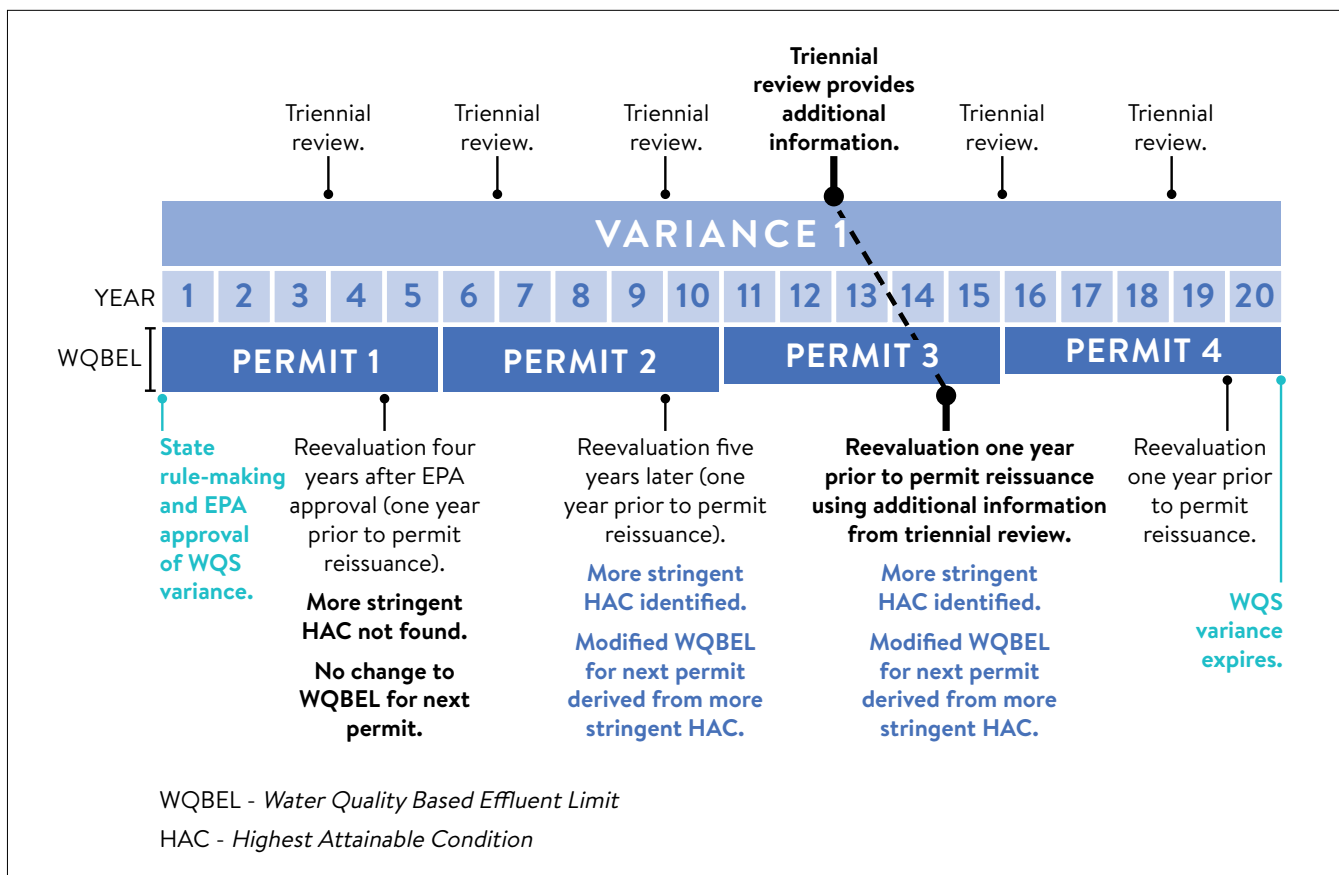


Figure 6-2. Example Diagram of Aligning WQS Variance Reevaluation with Permit Reissuance

Starting at the far left of the figure, the state or authorized Tribe adopts, and the EPA approves, the WQS variance. The permitting authority then establishes the WQBEL for that pollutant based on the HAC, as specified in the WQS variance.

In Year 3 of the first permit cycle, the state or authorized Tribe conducts a triennial review. WQS variances, like any other WQS, are included in the triennial review process, and the EPA expects states and authorized Tribes to use any information that comes to light in the triennial review to inform the reevaluation of the WQS variance and the subsequent permit reissuance. In this example, the first triennial review did not provide any new data or information about the HAC.

At Year 4, one year prior to when the permit is due to be reissued, the state or authorized Tribe conducts a reevaluation. In this hypothetical scenario, the state or authorized Tribe does not find any new data or information indicating a more stringent HAC during the first reevaluation. Noting the reevaluation results did not identify a more stringent HAC, the permitting authority reissues the permit based on the same HAC that was used for “Permit 1.”

In Years 6 through 9 during the second permit cycle labeled “Permit 2,” the state or authorized Tribe conducts two triennial reviews, and again no new data or information is identified or brought to the state or authorized Tribe’s attention related to the HAC.

At Year 9, one year prior to the permit being reissued, the state or authorized Tribe reevaluates the WQS variance, and determines that information shows the permittee can attain a more stringent HAC. The permitting authority uses this newly applicable WQS as the basis for the NPDES permit limit when it reissues the permit. This more stringent permit limit is illustrated as the blue rectangle labeled “Permit 3” with a decreased height as compared to the rectangle representing “Permit 1” and “Permit 2.”

In Years 11 through 14 during the third permit cycle, the state or authorized Tribe performs a triennial review. Unlike the previous three triennial reviews, however, in this hypothetical example the public provides new data or information to the state or authorized Tribe during the triennial review that shows greater pollutant reduction may be feasible by the permittee. The state or authorized Tribe will use this information during the next reevaluation at Year 14 to confirm whether a more stringent HAC is attainable. If so, then this would be the applicable WQS for “Permit 4.”

The reevaluation and triennial review schedules continue as planned until Year 19. At Year 19, the state or authorized Tribe again conducts the scheduled reevaluation and, in preparation for the WQS variance to expire, assesses the situation to determine what the path forward should be. Subsequent WQS variances are discussed in section 6.3.5 of this chapter.

6.3.5 Subsequent WQS Variances

Before a WQS variance expires, a state or authorized Tribe will need to determine its next steps. There are three scenarios that could occur once a WQS variance expires:

1. The state or authorized Tribe finds that the underlying designated use and criterion are now attainable, and the discharger is able to achieve its WQBEL. The discharger may need a permit compliance schedule to provide time to implement known steps to achieve the WQBEL.
2. The state or authorized Tribe determines that the designated use and criterion remain unattainable for a period of time, but additional water quality progress can still be made. In this case, it can pursue adopting a subsequent WQS variance consistent with [40 CFR 131.14](#).
3. The state or authorized Tribe determines that the designated use and criterion remain unattainable, but no additional incremental water quality progress can be made beyond what was achieved through the previous WQS variance. In this case, it may pursue revising the designated use consistent with [40 CFR 131.10](#). See [Draft Chapter 2: Designated Uses](#) of this Handbook for additional information on designated uses.

Where the state or authorized Tribe determines that a subsequent WQS variance is an appropriate next step, the state or authorized Tribe should recognize that the circumstances may have changed and the justification for the WQS variance and/or the HAC may differ from the previous WQS variance. The state or authorized Tribe may use data and information collected during the previous WQS variance term to inform a

subsequent WQS variance; however, the subsequent WQS variance must still meet the requirements of 40 CFR 131.14 and [40 CFR 131.20\(b\)](#). The EPA's regulation does not limit the number of subsequent WQS variances a state or authorized Tribe can adopt for the same waterbody or discharger as long as each WQS variance is justified and provides for incremental water quality improvements through the HAC.

Any subsequent waterbody WQS variance “must include documentation of whether and to what extent best management practices for nonpoint source controls were implemented to address the pollutant(s) or water quality parameter(s) subject to the WQS variance and the water quality progress achieved” ([40 CFR 131.14\(b\)\(2\)\(iii\)\(B\)](#)). Because waterbody WQS variances relate to the entire waterbody or waterbody segment and require consideration of both point and nonpoint sources of a pollutant, such information is important for states, authorized Tribes, and interested stakeholders in evaluating whether it is appropriate to adopt a subsequent WQS variance and what the conditions of any such WQS variance should be.



6.4 IMPLEMENTING WQS VARIANCES

6.4.1 State and Authorized Tribe WQS Variance General Policies

40 CFR 131.14 explicitly authorizes states and authorized Tribes to adopt WQS variances. As a result, states and authorized Tribes are not required to adopt their own WQS variance authorizing provisions before making use of WQS variances, although they may choose to do so. The EPA recommends that states and authorized Tribes consider adopting WQS variance policies to streamline the process, ensure consistency, and make their expectations transparent. WQS variance policies can be used to specify:

- The conditions under which the state or authorized Tribe will consider adopting WQS variances,
- The information dischargers must gather, analyze, and provide in order for the state or authorized Tribe to develop, adopt, and submit to the EPA a WQS variance consistent with 40 CFR 131.14,
- The process the state or authorized Tribe will follow to develop and adopt WQS variances, including how the public can provide input, and
- Any general requirements or procedures for WQS variance reevaluations.

If a state or authorized Tribe adopts a general WQS variance policy as a binding provision, such a policy would be considered a general policy under [40 CFR 131.13](#) that the EPA would review and approve or disapprove under [CWA Section 303\(c\)](#). The EPA strongly recommends that states and authorized Tribes work closely with their EPA regional WQS counterpart when developing WQS variance policies.

It is important to note that the EPA's approval of any WQS variance general policy does not convey automatic approval to any WQS variance adopted in accordance with such policies. The EPA will review each WQS variance independently to determine and document whether it is consistent with 40 CFR 131.14. WQS variance general policies are discussed further in [Chapter 5: General Policies](#) of this Handbook.

While the EPA's WQS variance regulation at 40 CFR 131.14 became effective October 20, 2015, the EPA recognizes that some states and authorized Tribes may have CWA-effective WQS variances and WQS variance policies and/or procedures approved prior to the effective date. Because binding WQS variance policies and procedures dictate how

future WQS variances will be developed, the EPA’s preamble to the rule specified that “where state and authorized tribes have them and they are inconsistent with this rule, those states and authorized tribes must review such policies and/or procedures prior to, or simultaneously with, adopting the first WQS variance after the effective date of the final rule.”¹²⁷ Doing so will ensure that any applicable WQS variance is adopted consistent with both CWA-effective WQS variance policies or procedures and 40 CFR 131.14 and will provide an accurate road map for the adoption of future WQS variances. The EPA strongly encourages states and authorized Tribes to engage the public during triennial reviews so the public may provide information needed to inform any revisions to the WQS variances or WQS variance policies and procedures.

6.4.2 NPDES Permits

Once adopted by the state or authorized Tribe and approved by the EPA, the WQS variance “shall be the applicable standard...for the purposes of developing NPDES permit limits and requirements under 301(b)(1)(C).”¹²⁸ The NPDES permit regulation requires NPDES permit limitations to derive from and comply with all applicable WQS ([40 CFR 122.44\(d\)\(1\)\(vii\)\(A\)](#)). Therefore, where the EPA approves a WQS variance, it becomes the applicable WQS from which the permitting authority must derive NPDES permit limitations. An NPDES permit cannot implement a WQS variance unless or until the EPA approves the WQS variance under CWA Section 303(c).¹²⁹ Further, “A WQS variance serves as the applicable water quality standard for implementing NPDES permitting requirements pursuant to 40 CFR 122.44(d)...for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance” ([40 CFR 131.14\(c\)](#)).

To meet the requirements at both [40 CFR 122.44\(d\)](#) and 131.14(c), a permitting authority must ensure that any permit includes limitations necessary to achieve the applicable HAC, including PMP activities, during the term of the WQS variance. Effective and early coordination between the NPDES and WQS programs will facilitate WQS variance implementation, such as coordination on the following:

- Identifying and addressing any permitting concerns early in the WQS variance development process,
- Specifically and accurately describing the WQS variance interim requirements, including PMP activities, that the discharger must meet and implement during the WQS variance term,
- Documenting discharger monitoring and performance data to facilitate determination of the HAC, and
- Providing useful information to inform any WQS variance reevaluation using data gathered through the permit reissuance process, such as monitoring and performance data (see section 6.3.4.1 of this chapter).

¹²⁷ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51040 (August 21, 2015).

¹²⁸ [40 CFR 131.14\(a\)\(3\)](#).

¹²⁹ See also [40 CFR 131.21\(c\)](#).

Where a permittee is subject to enforcement action(s) for non-compliance and is interested in requesting a WQS variance, the permittee and state or authorized Tribe should consult with their EPA regional counterparts to determine the best way to proceed.

The following sections discuss the interconnectivity between WQS variances and NPDES permits in more detail.



6.4.2.1 Relationship Between the WQS Variance Term and NPDES Permit Term

WQS variances must include the term of the WQS variance, and the term must be only as long as necessary to achieve the HAC ([40 CFR 131.14\(b\)\(1\)\(iv\)](#)). Once approved by the EPA, the term of the WQS variance is part of the applicable WQS. WQBELs must derive from and comply with “all applicable water quality standards,” (40 CFR 122.44(d)(1)(vii) (A)) and “Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance”([40 CFR 131.14\(c\)](#)). However, NPDES permits are issued on a standard five-year cycle that may not align with the term of a WQS variance. The EPA recommends that the permitting authority and state or authorized Tribal WQS program work together to coordinate permit issuance or permit renewal with the term of any related WQS variance, where possible, to streamline implementation. See section 6.3.4.4 of this chapter for discussion of aligning WQS variance reevaluation with NPDES permit issuance or renewal.

The EPA's preamble to the 2015 WQS regulation addressed how a permitting authority would proceed where the WQS variance term and NPDES term do not align. At 80 Fed. Reg. 51040, the EPA said "[i]f information is available to the permitting authority indicating that the term of a WQS variance will end during the permit cycle, the permitting authority must develop two WQBELs: one WQBEL¹³⁰ based on the highest attainable condition applicable throughout the WQS variance term, and another WQBEL based on the underlying designated use and criterion to apply after the WQS variance terminates. Including two sets of WQBELs that apply at different time periods in the permit ensures that the permit will derive from and comply with WQS throughout the permit cycle. If the state or authorized Tribe adopts, and EPA approves, a subsequent WQS variance during the permit term to replace an expiring WQS variance, the new WQS variance would constitute 'new regulations' pursuant to §122.62(a)(3)(i), and the permitting authority could modify the permit to derive from and comply with the subsequent WQS variance. At the request of the permittee, the permitting authority can also utilize the Permit Actions condition specified in §122.41(f) to modify a permit and revise the WQBEL to reflect the new WQS variance."¹³¹

Thus, consistent with the preamble to the final rule and both 40 CFR 131.14 and 40 CFR 122.44(d)(1)(vii)(A), permitting authorities need to include two WQBELs: one WQBEL based on the HAC applicable throughout the WQS variance term, and another WQBEL based on the underlying designated use and criterion to apply after the WQS variance expires. Including two WQBELs in the relevant NPDES permit does not preclude the state or authorized Tribe from adopting a subsequent WQS variance that could be implemented in the NPDES permit after EPA approval.

If the permitting authority, where authorized by state regulation or [40 CFR 122.6](#), administratively continues an expired NPDES permit that implements a WQS variance by including two WQBELs, with one based on the underlying designated use and criteria, and the permit remains administratively continued when the WQS variance expires, it does not "administratively continue" the term of the WQS variance. Instead, the WQBEL based on the underlying WQS would become applicable once the WQS variance expires, as identified in the NPDES permit. If a state or authorized Tribe adopts, and the EPA approves, a subsequent WQS variance, the permittee may receive an adjusted WQBEL implementing the newly applicable WQS variance upon permit reissuance¹³² and can move forward making incremental progress consistent with the WQS variance requirements. The EPA recommends states and authorized Tribes prioritize NPDES permits implementing WQS variances for timely reissuance to avoid a situation in which the more stringent WQBEL based on the underlying WQS becomes effective in an administratively continued permit despite the EPA approval of a subsequent WQS variance.

¹³⁰ Including any permit limitations and requirements necessary to implement the WQS variance.

¹³¹ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51040 (August 21, 2015). See also [40 CFR 124.5](#) and [40 CFR 122.62\(a\)\(3\)\(i\)](#).

¹³² A permit cannot be modified if it has expired and, as a result, is administratively continued. See 40 CFR 122.6 ("When EPA is the permitting-issuing authority, *the conditions of an expired permit* continue in force under 5 U.S.C. 558(c) until the effective date of a new permit if...") (emphasis added).

The EPA acknowledges it took a different position in its [*Response to Comments, Water Quality Standards Revisions, Chapter 3 Issue Category 8: WQS Variances* \(2015\)](#).¹³³

In the Response to Comments, the EPA articulated that the permitting authority would need to include two WQBELs where “information is available to the permitting authority indicating that the term of a WQS variance will end during the permit cycle.” However, the EPA said “On the other hand, there might be a situation where the state or authorized tribe adopts, and EPA approves, a WQS variance with a specific duration (as required by section 131.14(b)(1)(iv)) that is set to match the 5 year permit cycle or is longer than one permit cycle and, subsequently, the permit expires and is administratively continued (as may be authorized under state or Federal regulations)” in which case “If the administratively continued permit is in effect when the WQS variance expires, the WQBELs in the permit remain the applicable requirement.” Upon further reflection, because the term of the WQS variance is a part of the applicable WQS, at the time the WQS variance is adopted and approved it will be known when the WQS variance will expire. Therefore, the NPDES permitting authority has all the information it needs to ensure that the NPDES permit includes two WQBELs to address when the variance is in effect and when it expires and thus always derives from and complies with the applicable WQS, even if the NPDES permit is administratively continued. This approach is consistent with the preamble language and is parallel to the expectations under [40 CFR 122.47](#) that the permit terms and conditions include the final effluent limit to be achieved once a permit compliance schedule has expired, even where that date is beyond the permit term.

6.4.2.2 WQS Variances and NPDES Permit Compliance Schedules

There is often confusion regarding when it is appropriate to use a WQS variance versus an NPDES permit schedule of compliance¹³⁴ (“compliance schedule”) as described at 40 CFR 122.47. A WQS variance and an NPDES permit compliance schedule are two distinct tools each with its own purpose. A WQS variance may be appropriate to address situations where the applicable designated use and criterion are unattainable for a period of time and there is uncertainty as to what designated use and criterion may be ultimately attainable, but incremental water quality progress can be made. A permit compliance schedule, on the other hand, may be appropriate when the WQBEL based on the applicable designated use and criterion is achievable, but the discharger needs additional time to meet its WQBEL, such that it is possible to identify an enforceable sequence of requirements such as actions or operations that will lead to compliance with the applicable permit requirements “as soon as possible.”^{135, 136, 137}

¹³³ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-326.

¹³⁴ [40 CFR 122.2](#) and [CWA Section 502\(17\)](#).

¹³⁵ Hanlon, J.A. EPA. 2007. Memorandum: Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits. Office of Wastewater Management, Washington DC. https://www3.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf.

¹³⁶ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51039 (August 21, 2015).

¹³⁷ [40 CFR 122.47\(a\)\(1\)](#).

On May 10, 2007, the EPA issued a memo specifically to provide a framework for EPA review of permits consistent with the CWA and its implementing regulations.¹³⁸ Additionally, the EPA promulgated a new regulatory provision at [40 CFR 131.15](#) specifying that “[i]f a State intends to authorize the use of schedules of compliance for water quality-based effluent limits in NPDES permits, the State must adopt a permit compliance schedule authorizing provision. Such authorizing provision is a water quality standard subject to EPA review and approval under section 303 of the Act and must be consistent with sections 502(17) and 301(b)(1)(C) of the Act.”

The three main differences between a permit compliance schedule and a WQS variance are summarized in Table 6-3.

TABLE 6-3: SUMMARY COMPARISON OF PERMIT COMPLIANCE SCHEDULE AND WQS VARIANCE		
	Permit Compliance Schedule	WQS Variance
Purpose	A permit compliance schedule provides time for a permittee to complete actions needed to achieve a WQBEL.	A WQS variance provides time to make incremental water quality progress and attain the HAC while evaluating whether or not the designated use and criteria are attainable in the future.
Requirements	A permit compliance schedule must contain an enforceable sequence of requirements such as actions and operations, leading to compliance with a final WQBEL (based on the designated use and criterion) “as soon as possible.” See CWA Section 502(17) and 40 CFR 122.47 .	A WQS variance is a time-limited designated use and criterion that reflects the HAC to drive incremental water quality improvements and serves as the basis for WQBELs. The WQS variance term is only as long as necessary to achieve the HAC.
Mechanism	A permit compliance schedule is a condition included in a permit, by the permitting authority consistent with CWA Section 502(17) and 40 CFR 122.47; a compliance schedule can be changed if the requirements of 40 CFR 122.62(a)(4) and 40 CFR 122.47 are met.	A WQS variance is a new WQS adopted by the state or authorized Tribe and must be approved by the EPA consistent with CWA Section 303(c) and 40 CFR 131.14 ; a subsequent WQS variance can be obtained if it meets the requirements of 40 CFR 131.14.

¹³⁸ Hanlon, J.A. EPA. 2007. Memorandum: Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits. Office of Wastewater Management, Washington DC. https://www3.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf.

Although a WQS variance and permit compliance schedule are two different tools, they can be used together. As discussed earlier, the HAC becomes the applicable WQS upon EPA approval of the WQS variance, but it is not expected to be attained until the end of the WQS variance term. While the HAC is the new basis for a WQBEL, a permittee may not be able to meet the WQBEL based on the HAC upon permit issuance. For example, a permittee may still need additional time to install or upgrade pollutant control technology. In this case, the permit authority could include a permit compliance schedule, consistent with 40 CFR 122.47, to provide time to implement the specific actions that will lead to compliance with the WQBEL based on the HAC.¹³⁹

However, where the state or authorized Tribe has adopted an HAC that relies on implementation of a PMP to drive forward progress (e.g., [40 CFR 131.14\(b\)\(1\)\(ii\)\(A\)\(3\)](#)), it is likely that the permittee would be able to immediately comply with the WQBEL based on the quantifiable portion of the HAC, since it reflects the greatest pollutant reduction achievable with the currently installed technology. Therefore, a permit compliance schedule would not be needed, and the permittee would focus its efforts during the WQS variance term on implementing the PMP activities incorporated in the permit.

Figure 6-3 uses a hypothetical example to illustrate how a permit compliance schedule can be used to meet the interim requirements of a discharger-specific WQS variance. In this example, the state or authorized Tribe adopted a more stringent criterion for a pollutant, thus requiring a more stringent WQBEL. The EPA approved a 15-year WQS variance to achieve the HAC. However, the permittee cannot meet the WQBEL based on the HAC upon issuance of the permit implementing the WQS variance. The term of the WQS variance represents when the HAC can be feasibly achieved based on actions that need to be taken during the term of the WQS variance. Therefore, the term also reflects when the WQBEL based on the HAC can feasibly be achieved. Thus, the permitting



¹³⁹ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51039 (August 21, 2015).

authority grants a permit compliance schedule for the same amount of time, consistent with the regulatory requirement that compliance be required “as soon as possible.”¹⁴⁰

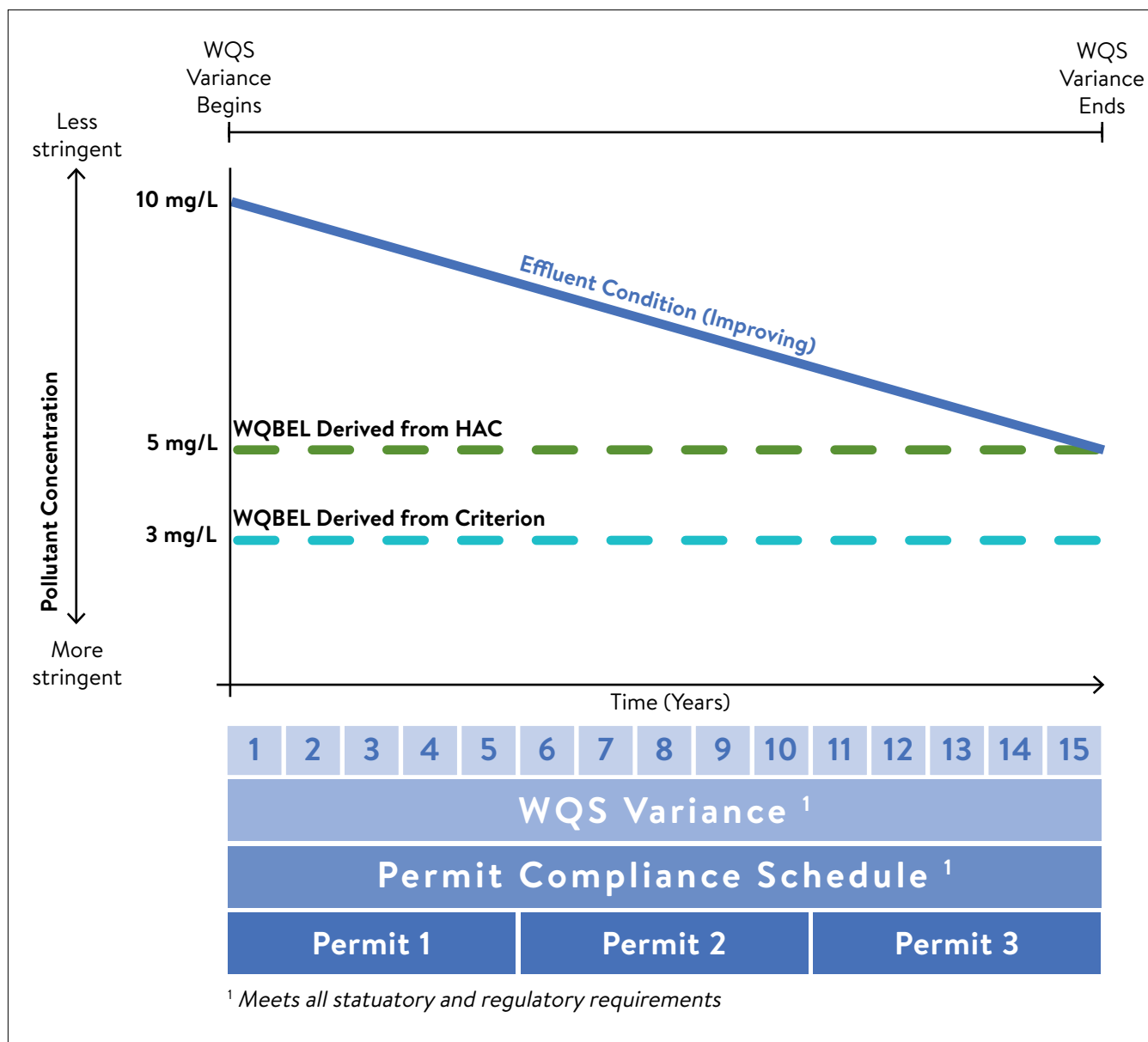


Figure 6-3. Example of a Permit Compliance Schedule Used with a WQS Variance

The enforceable sequence of required actions or operations in the permit compliance schedule results in progressively better effluent quality shown, for illustrative purposes only, as a descending solid blue line in the figure, until the effluent quality meets the WQBEL based on the HAC specified in the permit by the end of the 15-year WQS variance term and associated compliance schedule. Notice in this example that the WQBEL based on the HAC for each permit cycle does not change over the course of the 15-year WQS variance, indicating that no new information in the WQS variance reevaluations showed a more stringent HAC was attainable. The permit compliance schedule allows the permittee to remain in compliance with its permit throughout the three permit terms of the 15-year WQS variance.

¹⁴⁰ 40 CFR 122.47(a)(1).

6.4.3 CWA Section 401 Certification

[CWA Section 401](#) gives a state or authorized Tribe the ability to grant, grant with conditions, deny, or waive certification for federally licensed or permitted activities that may discharge into navigable waters. CWA Section 401 certifications ensure that federally licensed or permitted projects (e.g., [CWA Section 402](#) and [Section 404](#) permits issued by the EPA or the Army Corps of Engineers, Federal Energy Regulatory Commission licenses for hydropower facilities and natural gas pipelines, and Rivers and Harbors Act Section 9 and 10 permits) comply with applicable water quality requirements. “States and other certifying entities may also use an approved WQS variance when issuing certifications under section 401 of the Act” ([40 CFR 131.14\(a\)\(3\)](#)). This means that states or authorized Tribes have the discretion to decide whether to rely on a WQS variance in issuing a CWA Section 401 certification.

For example, adopting a WQS variance prior to issuing a CWA Section 401 certification may facilitate a state’s or authorized Tribe’s ability to issue a certification (possibly with conditions, as per CWA Section 401(d)) that allows a federal license or permit to be issued as long as it is consistent with the applicable WQS variance.¹⁴¹ “Without a WQS variance, the state or authorized tribe’s only options might be to deny certification which prevents issuance of the federal license or permit, or waive certification and allow the license or permit to be issued without conditions. If a state or authorized tribe issues a CWA 401 certification based on an approved WQS variance, EPA recommends that the state or tribe consider whether to include the applicable interim requirements from the WQS variance as conditions of its certification.”¹⁴²

6.4.4 Waterbody Assessment and TMDLs

[CWA Sections 305\(b\)](#) and 303(d) set out mechanisms and processes for states and authorized Tribes to assess whether a waterbody is meeting applicable WQS, identify whether a waterbody is impaired, and determine which waters require TMDLs. TMDLs are developed to allocate the loading capacity of pollutants in a manner that will attain and maintain applicable WQS, including designated uses and criteria. In contrast, WQS variances are time-limited and pollutant specific tools to make incremental water quality progress towards attaining the designated use and criterion where they are attainable for that period of time. Therefore, states and authorized Tribes are required to retain in their WQS the underlying designated use and criterion, which are used as the basis for waterbody assessments, listing of impaired waters, and TMDL ([40 CFR 131.14\(a\)\(2\)](#)). Further, a WQS variance is only applicable for the purposes of developing NPDES permit limits and when issuing certifications under Section 401 of the CWA ([40 CFR 131.14\(a\)\(3\)](#)). As a result, states and authorized Tribes cannot use a WQS variance as the basis for the assessment and listing of impaired waters under CWA Section 303(d) or to develop a TMDL. This ensures that even where a WQS variance has been adopted, states and

¹⁴¹ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51038 (August 21, 2015).

¹⁴² *Ibid.*

authorized Tribes continue to identify which waters are not attaining designated uses and criteria that reflect the ultimate desired condition for the waterbody. This transparency is critical so that the public understands which waters are not attaining WQS.¹⁴³

WQS variances also do not obviate the need to establish a TMDL for an impaired water. CWA Section 303(d)(1)(A) directs states to include with their Section 303(d) list submission to the EPA, “a priority ranking” for impaired waters still requiring TMDLs that “tak[es] into account the severity of the pollution and the uses to be made of such waters.” States and authorized Tribes have flexibility in setting the priority ranking for any particular waterbody provided that they have taken into account the statutory factors and followed the relevant statutory and regulatory requirements.¹⁴⁴ States and authorized Tribes may take into consideration the existence of an approved WQS variance, as well as any incremental water quality improvements that occur under the WQS variance when prioritizing such waters for TMDLs. For example, when the EPA approves an MDV on the same impaired water or approves a WQS variance applicable to a waterbody or waterbody segment, the progress made by implementing the WQS variance may help inform the development of a future TMDL. Therefore, where the WQS variance can result in significant incremental water quality improvements on the waterbody, a state or authorized Tribe may consider assigning the waterbody a lower priority for TMDL development until after the incremental improvements from the WQS variance have been realized.¹⁴⁵



¹⁴³ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-324. <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

¹⁴⁴ [40 CFR 130.7\(b\)\(4\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-130/section-130.7(b)(4)).

¹⁴⁵ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-324. <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

WQS Variances, TMDLs, and NPDES Permits

The WQBEL of any NPDES permit must be consistent with the assumptions and requirements of any available wasteload allocation (WLA) in an EPA-approved or EPA-established TMDL ([40 CFR 122.44\(d\)\(1\)\(vii\)\(B\)](#)). However, this does not preclude a state or authorized Tribe from adopting a WQS variance where justified consistent with [40 CFR 131.14](#). All WQBELs in an NPDES permit must derive from and comply with all applicable WQS ([40 CFR 122.44\(d\)\(1\)\(vii\)\(A\)](#)) and a WQS variance is an applicable WQS. If the state or authorized Tribe adopts and the EPA approves a WQS variance for the same pollutant addressed by the WLA, the WLA would not be available (or applicable) to the permittee subject to a WQS variance because a WLA in the TMDL is based on the underlying designated use and criterion (and not the HAC established in a WQS variance). Rather, the WQS variance would become the applicable WQS for NPDES permitting purposes while the WQS variance is in effect and must derive from and comply with the applicable HAC. The EPA further explained in its preamble to the 2015 Final Rule that “Upon termination of the WQS variance, the NPDES permit must again derive from and comply with the underlying designated use and criterion and be consistent with the assumptions and requirements of the WLA (as it is again ‘available’).”¹⁴⁶



¹⁴⁶ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51040 (August 21, 2015).

6.5 WQS VARIANCES, DESIGNATED USE REVISIONS, AND SITE-SPECIFIC CRITERIA

6.5.1 WQS Variances and Designated Use Revisions

It is important to understand that the purpose of a WQS variance is different from that of a designated use revision. A WQS variance is only appropriate when the designated use is unattainable for a period of time and incremental water quality improvements can be made. On the other hand, where the state or authorized Tribe can demonstrate that a designated use (that is not an existing use) cannot be attained and can identify a different designated use that may be ultimately attainable (i.e., HAU), the state or authorized Tribe should not seek a WQS variance but instead perform the required analysis for a designated use revision (i.e., a use attainability analysis (UAA)¹⁴⁷ for [CWA Section 101\(a\)\(2\)](#) uses or a “use and value” demonstration for non-101(a)(2) uses).¹⁴⁸ See [Draft Chapter 2: Designated Uses](#) of this Handbook for more information on designated uses and designated use revisions.

Because the goal of a WQS variance is to make incremental progress toward eventually attaining a designated use that is unattainable for a period of time, it is important to ensure that the protections provided by all other criteria related to the underlying designated use are maintained and the underlying goal remains in place. Therefore, unless the state or authorized Tribe adopts, and the EPA approves, a revision to the underlying designated use and criterion consistent with [40 CFR 131.10](#) and [131.11](#), the state or authorized Tribe must retain the underlying designated use and criterion addressed by the WQS variance in their standards to apply to all other permittees not addressed in the WQS variance, for identifying threatened and impaired waters under [CWA Section 303\(d\)](#), and for establishing a TMDL.¹⁴⁹ In addition, “all other applicable standards not specifically addressed by the WQS variance remain applicable.”¹⁵⁰

¹⁴⁷ [40 CFR 131.3\(g\)](#): A “use attainability analysis is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in § 131.10(g).”

¹⁴⁸ EPA’s *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Variances*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-293, <https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344>.

¹⁴⁹ *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51036 (August 21, 2015) and 40 CFR 131.14(a)(2).

¹⁵⁰ [40 CFR 131.14\(a\)\(2\)](#).

6.5.2 WQS Variances and Site-Specific Criteria

In some situations, site-specific criteria would be more appropriate than a WQS variance. States and authorized Tribes often apply water quality criteria to a wide range of waterbodies and conditions without doing individual waterbody assessments. Therefore, if the water quality criteria in a waterbody are not being met but the designated use is being attained, it is possible the criteria might be more stringent than is needed to protect the designated use due to chemical, physical, or biological characteristics of the individual waterbody. When a state or authorized Tribe determines that one or more criteria for a particular waterbody or waterbody segment is more stringent than necessary to protect the designated use, the state or authorized Tribe may develop and adopt site-specific criteria to provide protection appropriate for the individual chemical, physical, and/or biological waterbody conditions. Under such circumstances site-specific criteria may also afford dischargers relief from unnecessarily stringent WQBELs. Once approved by the EPA, the site-specific criteria become the applicable WQS that would be used by the permitting authority to derive WQBELs. Site-specific criteria are discussed further in [Chapter 3: Water Quality Criteria](#) of this Handbook.



6.6 WQS VARIANCES AND TRIBAL RESERVED RIGHTS

The EPA promulgated “Water Quality Standards Regulatory Revisions To Protect Tribal Reserved Rights” on May 2, 2024.¹⁵¹ The contents of this WQS Handbook chapter as it applies to [40 CFR 131.9](#) are appropriate for consideration during any state or authorized Tribal WQS adoption, revision, and implementation, as well as the implementation of federally promulgated WQS. For more information on protecting Tribal reserved rights, see the [Revising the Federal Water Quality Standards Regulation to Protect Tribal Reserved Rights website](#).¹⁵²



¹⁵¹ *Water Quality Standards Regulatory Revisions to Protect Tribal Reserved Rights*, 89 Fed. Reg. 35717 (May 2, 2024). <https://www.govinfo.gov/content/pkg/FR-2024-05-02/pdf/2024-09427.pdf>.

¹⁵² <https://www.epa.gov/wqs-tech/revising-federal-water-quality-standards-regulation-protect-tribal-reserved-rights>.

6.7 FEDERAL PROMULGATIONS FOR STATES AND TRIBES

As a matter of policy, the EPA prefers that states and authorized Tribes adopt their own WQS. However, under Section 303(c)(4) of the [CWA](#) and [40 CFR 131.22](#), the EPA must promptly propose federal WQS if either of the following conditions occur:

- The EPA determines that a new or revised WQS submitted by a state or authorized Tribe is not consistent with CWA requirements and 40 CFR Part 131, and the state or authorized Tribe does not adopt changes the EPA specifies within 90 days from that disapproval.
- In any case where the EPA Administrator determines that a new or revised WQS is necessary to meet CWA requirements and 40 CFR Part 131.

In either situation, should the EPA propose federal WQS, it must promulgate federal WQS within 90 days of such a proposal unless the state or authorized Tribe adopts, and the EPA approves, the WQS prior to the deadline. The EPA's promulgation of federal WQS for states and Tribes can be found at [40 CFR Part 131, Subpart D](#) (See [Chapter 6: Procedures for Review and Revision of Water Quality Standards](#) of this Handbook for more information on federal promulgations). Please see the [Federally Promulgated Water Quality Standards for Specific States, Territories, and Tribes website](#)¹⁵³, for a full listing of EPA federal promulgations.

WQS variances remain available to states and Tribes where the EPA promulgates designated uses and/or water quality criteria to protect designated uses under CWA Section 303(c)(4). Such WQS variances must be consistent with [40 CFR 131.14](#) and are only applicable for CWA purposes once approved by the EPA. Therefore, the guidance and recommendations of this WQS Handbook chapter are applicable for the adoption, revision, and implementation of any WQS variance.

¹⁵³ <https://www.epa.gov/wqs-tech/federally-promulgated-water-quality-standards-specific-states-territories-and-tribes>.

6.8 ADDITIONAL RESOURCES

The EPA developed a [WQS Variances website](https://www.epa.gov/wqs-tech/water-quality-standards-variances)¹⁵⁴ to provide information and additional resources to help states and authorized Tribes navigate the requirements of [40 CFR 131.14](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-131.14). The website includes links to:

1. [WQS Variance Overview Presentation](https://www.epa.gov/wqs-tech/water-quality-standards-variances-overview-4-2024.pdf)¹⁵⁵

This WQS Variance Overview presentation explains the basics of WQS variances and how a WQS variance can help to make water quality improvements.

2. [WQS Variance Infographics](https://www.epa.gov/wqs-tech/water-quality-standards-variances-infographics)¹⁵⁶

The EPA developed a series of WQS variance infographic to explain the basics of WQS variances. These infographics are written in plain language to help states and authorized Tribes effectively communicate to stakeholders what a WQS variance is, how a WQS variance can be used to gain incremental improvements in water quality, and how interested stakeholders can get involved.

3. [WQS Variance Building Tool](https://www.epa.gov/wqs-tech/water-quality-standards-variance-building-tool)¹⁵⁷

The WQS Variance Building Tool is designed to help states and authorized Tribes determine whether a WQS variance is appropriate for a particular situation. If so, the tool helps the entity navigate the requirements at 40 CFR 131.14 to determine what a WQS variance would look like and what additional information must be documented and submitted to the EPA to support the WQS variance. The draft regulatory language that results from the use of this tool is intended as a regulatory framework for the state or authorized Tribe to use as a starting point when drafting a WQS variance. States and authorized Tribes may tailor the draft regulatory language to include additional information that more accurately captures the case-specific facts of the individual WQS variance or fits a desired format as long as all federal requirements are met. The final regulatory language and all necessary supporting documentation can then be adopted and submitted to the EPA for [CWA Section 303\(c\)](https://www.epa.gov/cwa/cwa-section-303c) review.

Use of this tool and resulting draft regulatory language does not guarantee EPA approval. The EPA encourages early and frequent coordination between a state or authorized Tribe and their EPA regional WQS counterpart before adopting the WQS variance to provide the best chance that the submission meets the requirements of the CWA and the EPA's regulation. Refer to the EPA's website for [relevant contact information](https://www.epa.gov/wqs-tech/forms/contact-us-standards-water-body-health-regulations-and-resources#tab-1).¹⁵⁸

¹⁵⁴ <https://www.epa.gov/wqs-tech/water-quality-standards-variances>.

¹⁵⁵ <https://www.epa.gov/system/files/documents/2024-05/wqs-variances-overview-4-2024.pdf>.

¹⁵⁶ <https://www.epa.gov/wqs-tech/water-quality-standards-variances#anchor-2>.

¹⁵⁷ <https://www.epa.gov/wqs-tech/water-quality-standards-variance-building-tool>.

¹⁵⁸ <https://www.epa.gov/wqs-tech/forms/contact-us-standards-water-body-health-regulations-and-resources#tab-1>.

The EPA has also developed several resources to accompany the WQS Variance Building Tool. These include a collection of frequently asked questions that will help highlight what information a state or authorized Tribe should be thinking about before they begin using this tool. There are also checklists for a state or authorized Tribe to use to determine if it has met the regulatory requirements for a WQS variance applicable to specific dischargers and has included all of the required supporting documentation in its WQS variance submission to the EPA.

- [Water Quality Standards Variance Building Tool – Frequently Asked Questions \(2017\)](#),¹⁵⁹
- [Checklist For Evaluating State Submission of Discharger-Specific Water Quality Standards Variances \(2017\)](#),¹⁶⁰ and
- [Checklist for Water Quality Standards Variance Supporting Documentation Requirements \(2017\)](#)¹⁶¹



¹⁵⁹ <https://www.epa.gov/sites/production/files/2017-07/documents/variance-building-tool-faqs.pdf>.

¹⁶⁰ <https://www.epa.gov/sites/production/files/2016-03/documents/checklist-evaluating-discharger-specific.pdf>.

¹⁶¹ <https://www.epa.gov/sites/default/files/2017-07/documents/checklist-variance-supporting-documentation.pdf>.