

1. Introduction

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1. Introduction

This document outlines an iterative process, a series of steps, for improving states', territories', and authorized tribes' monitoring and assessment programs. The first step is documentation of the decision making process for attainment of water quality standards (WQS) and making that process available to the public. The second step is ensuring that monitoring designs provide data to support management decisions, including the WQS attainment status of waters. The third step is updating decision making methodologies as more high-quality data become available.

This document will provide information to states and other jurisdictions responsible for collecting data and information on water quality that are used for

- Determining the status of attainment for waters within their jurisdiction
- Identifying waters that are impaired and need to be included in Category 5 of the *Integrated Water Quality Monitoring and Assessment Report* (i.e., the Clean Water Act Section 303(d) list). Hereinafter Integrated Water Quality Monitoring and Assessment Report is referred to as the Integrated Report.

1.1 What Is the Objective of This Document?

The immediate objective of this document is to provide a framework for states, territories, interstate commissions, and authorized tribes to document the decision making processes used to assess WQS attainment. This framework includes the organizational structure for documenting the state's assessment and listing methodology and also provides information on the content of these methodologies. For example, it describes each of the types of data that support water quality decision making and how they are used to support different water quality determinations.

In the short term, this framework will promote better documented water quality assessments and greater transparency in decision making about WQS attainment, and will foster greater participation among organizations involved in water quality monitoring and assessment. Over the long term, these efforts should result in more comprehensive, more efficient, and more effective water quality monitoring programs. Clearly, this is an ongoing process, involving continual fine-tuning and improvement of not just the states' water quality assessment methodologies and monitoring programs, but also of the framework and information on methodologies, to keep pace with advances in water quality assessment techniques and increasing technical expertise.

CALM does not attempt to reproduce the volumes of existing technical guidance on water quality monitoring. Instead, it builds upon the previous efforts of the State/EPA 305(b) consistency workgroup and presents a framework for integrating old and new guidance documents into a consolidated monitoring, assessment, and listing methodology. Wherever possible, this document includes citations (and links to web pages) to additional references and resources on data quality, data interpretation, monitoring design, and other technical issues related to water quality assessments and listing decisions. This approach encourages the functional integration of monitoring, data documentation and sharing, and data analysis and

interpretation, among state programs and other partners. It is also designed to encourage consistency of program implementation among EPA regions throughout the country.

1.2 Organization and Format of the Document

This document is formatted as a series of questions that states, territories, interstate commissions, and authorized tribes need to answer to document their current methodology. For each of these questions, the document provides some context about why the question is relevant and some examples of appropriate ways to answer it. The examples are drawn primarily from existing guidance and state programs or proposals. The questions may already be addressed through existing state, territory, tribal monitoring strategy documents, quality assurance project plans, and/or WQS implementation procedures. To the extent these other documents describe the assessment and listing methodology, the states' work is essentially done and can merely be cross-referenced or compiled into a single assessment and listing methodology.

The remainder of this document is organized into three parts. Part A deals with WQS attainment decisions and identification of impaired waters and is organized according to the types of data that may be used to support these decisions. Within each of these chapters, the document sets forth questions for states about how they define data quality requirements and how they utilize and interpret data to make decisions about whether a water is impaired or WQS have been attained.

Part B deals with designing a comprehensive monitoring program to assess the extent to which waters are attaining WQS and to identify the waters that are impaired. This part addresses the overall design of water quality monitoring programs, including documenting monitoring goals and data quality objectives for the type, amount, and scale of data needed. One chapter explores options for extending monitoring programs over time to cover all water resource types, including lakes, rivers, wetlands, estuaries, and coastal waters. It presents information on using probability-based sampling design to generate statewide characterizations of the extent of waters attaining WQS or impaired. Another chapter describes a targeted or followup stage of sampling designs for making attainment/impairment decisions about specific drainage areas, waterbodies, or segments.

Part C describes approaches for reporting on WQS attainment for the full inventory of waters in the Integrated Report. This part addresses the documentation used to communicate the findings and the basis of attainment/impairment decisions. It provides different options for presenting findings at different scales relevant to the sampling design. For example, the Integrated Report may contain one section that presents the overall extent of water quality conditions based on statewide probability designs, followed by a series of watershed or basin-level sections that present the results of finer scale monitoring to identify impaired waters based on site-specific information.

The question-and-answer format of this document provides a framework for a consolidated assessment and listing methodology, as well as information, including examples, about ways to

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respond to the questions. The examples given are not exclusive, so that flexibility is allowed to reflect legitimate variations among states, territories, and authorized tribes in the WQS adopted and assessment methodologies employed. Not all states, territories, and authorized tribes currently have programs that reflect the information and examples described in the document. EPA regional office staff will encourage states, territories, and authorized tribes to define the improvements needed in their programs, and to develop an implementation plan and timeline for making these changes.

1.3 References

U.S. EPA. 2001. 2002 Integrated Water Quality Monitoring and Assessment Report Guidance Memorandum. Robert H. Wayland III, Director, Office of Wetlands, Oceans and Watersheds. November 19, 2001.