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Standard Guide for QC of Screening Methods in Water¹

This standard is issued under the fixed designation D6850; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers general considerations for the quality control (QC) practices for use with screening methods for organic and inorganic constituents in water. Methods are provided by various standard setting bodies, governmental agencies, as well as many domestic and international manufacturers.

1.2 This guide provides general QC procedures that are applicable to a broad range of screening methodologies. These procedures help to ensure the quality of data that is generated. Additional, method-specific or project specific requirements may be necessary. This guide also includes general considerations regarding proper utilization of screening methods.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D1129 Terminology Relating to Water

D1193 Specification for Reagent Water

D4840 Guide for Sample Chain-of-Custody Procedures

¹ This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.05 on Inorganic Constituents in Water.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

D5172 Guide for Documenting the Standard Operating Procedures Used for the Analysis of Water (Withdrawn 2024)³

D5847 Practice for Writing Quality Control Specifications for Standard Test Methods for Water Analysis

D5905 Practice for the Preparation of Substitute Wastewater

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms used in this standard, refer to Terminology D1129 and Practice D5847.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *action level, n*—a concentration of the analyte of concern at which some further action is required or suggested.

3.2.2 *batch, n*—a set (group) of samples analyzed along with QC samples; the quality of the sample-set's results is indicated by the results from the QC samples.

3.2.2.1 *Discussion*—The number of samples in the batch is defined by the task group responsible for the method. See Practice D5847 for definition and discussion of batch and batch size.

3.2.3 *false negative, n*—a negative response for a sample that contains the target analyte(s) at or above the stated action level.

3.2.4 *false positive, n*—a positive response for a sample that contains the target analyte(s) below the stated action level.

3.2.5 *qualitative method, n*—a validated method that detects presence or absence of an analyte at a specified screening limit.

3.2.6 *screening limit, n*—the concentration of analyte that can be determined with a given certainty.

3.2.6.1 *Discussion*—The task group responsible for the method establishes the value of the screening limit.

3.2.7 *screening method, n*—a method that is used to separate or categorize samples.

3.2.7.1 *Discussion*—An example would be a method that provides results that would be used to separate samples into: (1) those that contain an analyte and (2) those that do not contain and analyte above or below a specified action level.

³ The last approved version of this historical standard is referenced on www.astm.org.