



Designation: D8272 – 19

Standard Guide for Development and Optimization of D19 Chemical Analysis Methods Intended for EPA Compliance Reporting¹

This standard is issued under the fixed designation D8272; 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 identifies procedures for use in developing and optimizing new or modified Subcommittees D19.05 and D19.06 test methods intended for regulatory compliance reporting in EPA drinking water and wastewater programs. This guide may also be useful for developing test methods for emerging contaminants that may not yet have regulatory requirements.

1.2 This guide also cites statistical procedures that are useful in the single laboratory characterization and optimization and in the inter-laboratory studies (ILSs).

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 guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this guide may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

1.5 *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.*

1.6 *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 Recom-*

mendations 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
 - D1141 Practice for the Preparation of Substitute Ocean Water
 - D2777 Practice for Determination of Precision and Bias of Applicable Test Methods of Committee D19 on Water
 - D4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents
 - D5847 Practice for Writing Quality Control Specifications for Standard Test Methods for Water Analysis
 - E178 Practice for Dealing With Outlying Observations
 - E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method
 - E1169 Practice for Conducting Ruggedness Tests
 - E1488 Guide for Statistical Procedures to Use in Developing and Applying Test Methods
 - E1601 Practice for Conducting an Interlaboratory Study to Evaluate the Performance of an Analytical Method
 - E2857 Guide for Validating Analytical Methods
 - E2935 Practice for Conducting Equivalence Testing in Laboratory Applications
 - E3080 Practice for Regression Analysis
- #### 2.2 Code of Federal Regulations (CFR) Standard:³
- 40 CFR Part 136, Appendix B Definition and Procedure for the Determination of the Method Detection Limit

3. Terminology

3.1 Definitions:

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

¹ This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.02 on Quality Systems, Specification, and Statistics.

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

³ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.