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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Practice for Reporting Results of Analysis of Water [1]

This standard is issued under the fixed designation D 596; 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.

This standard has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

1. Scope

1.1 This practice provides guidelines for the reporting of results of water analyses, including drinking water, wastewater, process water, ground water, and surface water, to laboratory clients in a complete and systematic fashion. Adequate documentation must be provided on the sample analyzed, the methods of analysis used, the results obtained, the precision and bias of the measurements, and related quality assurance information.

1.2 Results of chemical analysis of water shall be reported as a weight/volume ratio, such as milligrams per litre (mg/L), milliequivalents per litre (meq/L), etc., when concentration is being determined.

1.3 Results of other tests, such as pH, radioactivity, or turbidity, shall be reported as specified in the individual test methods.

1.4 The values stated in SI units are to be regarded as the standard.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 933 Practice for Reporting Results of Examination and Analysis of Water-Formed Deposits [2]

D 1129 Terminology Relating to Water [3]

D 2777 Practice for Determination of Precision and Bias of Applicable Methods of Committee D-19 on Water [3]

D 3856 Guide for Good Laboratory Practices in Laboratories Engaged in Sampling and Analysis of Water [3]

D 4210 Practice for Intralaboratory Quality Control Procedures and a Discussion on Reporting Low-Level Data [3]

D 4460 Practice for Calculating Precision Limits Where Values are Calculated from Other Test Methods [4]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance With Specifications [5]

ES 16 Practice for Generation of Environmental Data Related to Waste Management Activities [6]

3. Terminology

3.1 Definitions—For definition of terms used in this practice, refer to Terminology D 1129 and Practice ES 16.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *milliequivalent per litre (meq/L)*—a weight-volume measurement obtained by multiplying the concentration expressed in moles per litre by the ionic charge or by the change in oxidation number of the substance in a defined reaction.

3.2.2 *milligrams per litre (mg/L)*—a weight-volume measurement that expresses the concentration of a solute in milligrams (10^{-3} g) in a litre of solution.

3.2.3 *micrograms per litre (µg/L)*—a weight-volume measurement that expresses the concentration of a solute in micrograms (10^{-6} g) in a litre of solution.

3.2.4 *surrogates*—compounds that are similar to analytes of interest in chemical composition and behavior, separation, and measurement, but that are not normally found in environmental samples. These compounds are added to blanks, standards, samples, or spiked samples prior to analysis to confirm the proper operation of the analytical system.

4. Significance and Use

4.1 The proper use of analytical data requires adequate documentation of the source and history of the sample, laboratory performing the analysis, method of analysis, date of analysis, precision and bias of the measurements, and related quality assurance information.

4.2 Tables are included for interconversion of data between units in common use.

4.3 Other information on reporting results may be included in individual test methods for the analysis of water.

4.4 For corresponding information regarding the reporting of results for water-formed deposits, see Practice D 933.

[1] This practice is under the jurisdiction of ASTM Committee D-19 on water and is the direct responsibility of Subcommittee D19.02 on General Specifications, Technical Resources, and Statistical Methods.

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[2] *Annual Book of ASTM Standards*, Vol 11.02.

[3] *Annual Book of ASTM Standards*, Vol 11.01.

[4] *Annual Book of ASTM Standards*, Vol 04.03.

[5] *Annual Book of ASTM Standards*, Vol 14.02.

[6] See 1991 *Annual Book of ASTM Standards*, Vol 11.04.