



Designation: D5792 – 10 (Reapproved 2023)

Standard Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives¹

This standard is issued under the fixed designation D5792; 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 practice covers the process of development of data quality objectives (DQOs) for the acquisition of environmental data. Optimization of sampling and analysis design is a part of the DQO process. This practice describes the DQO process in detail. The various strategies for design optimization are too numerous to include in this practice. Many other documents outline alternatives for optimizing sampling and analysis design. Therefore, only an overview of design optimization is included. Some design aspects are included in the practice's examples for illustration purposes.

1.2 DQO development is the first of three parts of data generation activities. The other two aspects are (1) implementation of the sampling and analysis strategies, see Guide [D6311](#); and (2) data quality assessment, see Guide [D6233](#).

1.3 This guide should be used in concert with Practices [D5283](#), [D6250](#), and Guide [D6044](#). Practice [D5283](#) outlines the quality assurance (QA) processes specified during planning and used during implementation. Guide [D6044](#) outlines a process by which a representative sample may be obtained from a population, identifies sources that can affect representativeness, and describes the attributes of a representative sample. Practice [D6250](#) describes how a decision point can be calculated.

1.4 Environmental data related to waste management activities include, but are not limited to, the results from the sampling and analyses of air, soil, water, biota, process or general waste samples, or any combinations thereof.

1.5 The DQO process is a planning process and should be completed prior to sampling and analysis activities.

1.6 This practice presents extensive requirements of management, designed to ensure high-quality environmental data. The words “must” and “shall” (requirements), “should”

(recommendation), and “may” (optional), have been selected carefully to reflect the importance placed on many of the statements in this practice. The extent to which all requirements will be met remains a matter of technical judgment.

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

1.7.1 *Exception*—The values given in parentheses are for information only.

1.8 *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.*

1.9 *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

[C1215](#) Guide for Preparing and Interpreting Precision and Bias Statements in Test Method Standards Used in the Nuclear Industry

[D5283](#) Practice for Generation of Environmental Data Related to Waste Management Activities: Quality Assurance and Quality Control Planning and Implementation

[D5681](#) Terminology for Waste and Waste Management

[D6044](#) Guide for Representative Sampling for Management of Waste and Contaminated Media

[D6233](#) Guide for Data Assessment for Environmental Waste Management Activities (Withdrawn 2016)³

¹ This practice is under the jurisdiction of ASTM Committee [D34](#) on Waste Management and is the direct responsibility of Subcommittee [D34.01.01](#) on Planning for Sampling.

Current edition approved Nov. 1, 2023. Published November 2023. Originally approved in 1995. Last previous edition approved in 2015 as D5792 – 10 (2015). DOI: 10.1520/D5792-10R23.

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