



Standard Guide for Data Assessment for Environmental Waste Management Activities¹

This standard is issued under the fixed designation D6233; 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 a practical strategy for examining an environmental project data collection effort and the resulting data to determine if they will support the intended use. It covers the review of project activities to determine conformance with the project plan and impact on data usability. This guide also leads the user through a logical sequence to determine which statistical protocols should be applied to the data.

1.1.1 This guide does not establish criteria for the acceptance or use of data but instructs the assessor/user to use the criteria established by the project team during the planning (data quality objective process), and optimization and implementation (sampling and analysis plan) process.

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

1.3 *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:²

- D4687 Guide for General Planning of Waste Sampling
- D5088 Practice for Decontamination of Field Equipment Used at Waste Sites
- D5283 Practice for Generation of Environmental Data Related to Waste Management Activities: Quality Assurance and Quality Control Planning and Implementation
- D5792 Practice for Generation of Environmental Data Re-

lated to Waste Management Activities: Development of Data Quality Objectives

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *bias, n*—a systematic error that is consistently negative or consistently positive.

3.1.2 *characteristic, n*—a property of items in a sample or population which can be measured, counted, or otherwise observed.

3.1.3 *composite sample, n*—a physical combination of two or more samples.

3.1.4 *confidence limit, n*—an upper and/or lower limit(s) within which the true value is likely to be contained with a stated probability or confidence.

3.1.5 *continuous data, n*—data where the values of the individual samples may vary from minus infinity to plus infinity.

3.1.6 *data quality objectives (DQOs), n*—DQOs are qualitative and quantitative statements derived from the DQO process describing the decision rules and the uncertainties of the decision(s) within the context of the problem(s).

3.1.7 *data quality objective process, n*—a quality management tool based on the scientific method and developed to facilitate the planning of environmental data collection activities.

3.1.8 *discrete data, n*—data made up of sample results that are expressed as a simple pass/fail, yes/no, or positive/negative.

3.1.9 *heterogeneity, n*—the condition of the population under which all items of the population are not identical with respect to the parameter of interest.

3.1.10 *homogeneity, n*—the condition of the population under which all items of the population are identical with respect to the parameter of interest.

3.1.11 *population, n*—the totality of items or units under consideration.

¹ This guide 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 Feb. 1, 2009. Published March 2009. Originally approved in 1998. Last previous edition approved in 2003 as D6233-98(2003). DOI: 10.1520/D6233-98R09.

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.