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Standard Guide for Laboratory Subsampling of Media Related to Waste Management Activities[1]

This standard is issued under the fixed designation D 6323; 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 common techniques for obtaining representative subsamples from a sample received at a laboratory for analysis. These samples may include solids, sludges, liquids, or multilayered liquids (with or without solids).

1.2 The procedures and techniques discussed in this guide depend upon the sample matrix, the type of sample preparation and analysis performed, the characteristic(s) of interest, and the project specific instructions or data quality objectives.

1.3 This guide includes several sample homogenization techniques, including mixing and grinding, as well as information on how to obtain a specimen or split laboratory samples.

1.4 This guide does not apply to air or gas sampling.

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

1.6 *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:*

C 702 Practice for Reducing Samples of Aggregate to Testing Size[2]

C 859 Terminology Relating to Nuclear Materials[3]

D 346 Practice for the Collection and Preparation of Coke Samples for Laboratory Analysis[4]

D 2234 Test Methods for Collection of a Gross Sample of Coal[5]

D 4547 Guide for Sampling Waste and Soils for Volatile Organic Compounds[5]

D 4823 Guide for Core Sampling Submerged Unconsolidated Sediments[5]

D 5743 Practice for Sampling Single or Multilayered Liquids, With or Without Solids, in Drums or Similar Containers[6]

D 5792 Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives[6]

D 5956 Guide for Sampling Strategies for Hetergeneous Wastes[6]

D 6051 Guide for Composite Sampling and Field Subsampling for Environmental Waste Management Activities[6]

3. Terminology

3.1 *contaminant unit*, *n*—the largest particle size that contains the contaminant of interest

3.1.1 *Discussion*—The contaminant of concern, as defined by the project objectives, may be associated with all the particle sizes or associated with only a certain particle size or sizes. At the time of waste generation, discharge or spill, the particle size of this contaminant of concern may be on the atomic or molecular scale, such as solvent spill into sand, or a macro scale, such as lead acid batteries at a dump site. The contaminant unit may also be in-between these scales, such as lead particles encapsulated in coal. In practice, the contaminant unit may change if the contaminant unit becomes absorbed or adsorbed to particles larger than the contaminant unit. It is the size of the contaminant unit at the time of subsampling, not at the time of generation, that is referred to as the contaminant unit.

3.2 *maximum allowable particle size*, *n*—the largest lineal dimension of a sample's individual particles accepted for a given sample mass.

3.2.1 *Discussion*—The maximum allowable particle size is sometimes referred to as the allowable particle size. A simple method of measurement is a sieve.

3.3 *multilayered sample*, *n*—a sample consisting of two or more clearly differentiated components.

3.3.1 *Discussion*—Multilayered samples are those with two or more distinct visual layers of material. These layers may be the result of differences in density, such as liquid/liquid layers (for example, chlorinated solvents and water, water and oil), liquid/solid layers (for example, sludge), solid/solid layers (for

[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.

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[2] *Annual Book of ASTM Standards*, Vol 04.02.

[3] *Annual Book of ASTM Standards*, Vol 12.01.

[4] *Annual Book of ASTM Standards*, Vol 05.05.

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

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

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