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An American National Standard

Standard Guide for Sample Chain-of-Custody Procedures[1]

This standard is issued under the fixed designation D 4840; 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 contains a comprehensive discussion of potential requirements for a sample chain-of-custody program and describes the procedures involved in sample chain-of-custody. The purpose of these procedures is to provide accountability for and documentation of sample integrity from the time samples are collected until sample disposal.

1.2 These procedures are intended to document sample possession during each stage of a sample's life cycle, that is, during collection, shipment, storage, and the process of analysis.

1.3 Sample chain-of-custody is just one aspect of the larger issue of data defensibility (see 3.2.2 and Appendix X1).

1.4 A sufficient chain-of-custody process, that is, one that provides sufficient evidence of sample integrity in a legal or regulatory setting, is situationally dependent. The procedures presented in this guide are generally considered sufficient to assure legal defensibility of sample integrity. In a given situation, less stringent measures may be adequate. It is the responsibility of the users of this guide to determine their exact needs. Legal counsel may be needed to make this determination.

1.5 Because there is no definitive program that guarantees legal defensibility of data integrity in any given situation, this guide provides a description and discussion of a comprehensive list of possible elements of a chain-of-custody program, all of which have been employed in actual programs but are given as options for the development of a specific chain-of-custody program. In addition, within particular chain-of-custody elements, this guide proscribes certain activities to assure that if these options are chosen, they will be implemented properly.

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:* [2]

D 1129 Terminology Relating to Water

D 3325 Practice for Preservation of Waterborne Oil Samples

D 3370 Practices for Sampling Water from Closed Conduits

D 3694 Practices for Preparation of Sample Containers and for Preservation of Organic Constituents

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

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

D 4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents

2.2 *U.S. EPA Standard:*

U.S. EPA Good Automated Laboratory Practices [4]

3. Terminology

3.1 *Definitions:* For definitions of terms used in this guide, refer to Terminology D 1129.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *custody*—physical possession or control. A sample is under custody if it is in possession or under control so as to prevent tampering or alteration of its characteristics.

3.2.2 *data defensibility*—a process that provides sufficient assurance, both legal and technical, that assertions made about a sample and its measurable characteristics can be supported to an acceptable level of certainty. See Appendix X1 for a discussion of the elements of a data defensibility process.

3.2.3 *sample*—a portion of an environmental or source matrix that is collected and used to determine the characteristics of that matrix.

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

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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] Withdrawn.

[4] Available from Superintendent of Documents, Government Printing Office, Washington, DC.

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