



Designation: E1864 – 02

Standard Practice for Evaluating Quality Systems of Organizations Conducting Facility and Hazard Assessments for Lead in Paint, Dust, Airborne Particulate, and Soil in and around Buildings and Related Structures¹

This standard is issued under the fixed designation E1864; 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 quality system requirements, competency and qualifications, to include minimum requirements for training, sampling design, personnel and equipment, duties, responsibilities, and services of organizations engaged in providing lead assessment services to determine the extent of lead and lead-based paint contamination.

1.2 Organizations evaluated using this practice shall engage in one or more of the following assessment activities: sampling design, sample collection, field testing, data validation, and report writing and recommendations.

1.3 This practice has been developed consistent with the appropriate requirements of Guide E994 and ISO 9001 and ISO Guide 25 25.

1.4 Where the testing function exists, it must be evaluated using Practice E1583.

1.5 This practice is meant to be used with Guide D4840, Practices D5438, E1553, E1727, E1728, and E1729, and Terminology E1605.

1.6 For information and guidance in applying this practice, see EPA 600/8–91/214 and EPA 600/R-93/200.

1.7 This practice contains notes that are explanatory and are not part of the mandatory requirements of the practice.

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

¹ This practice is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.23 on Lead Hazards Associated with Buildings.

Current edition approved July 10, 2002. Published July 2002. Originally approved in 1997. Last previous edition approved in 1997 as D1864 – 97. DOI: 10.1520/E1864-02.

2. Referenced Documents

2.1 ASTM Standards:²

D4840 Guide for Sample Chain-of-Custody Procedures

D5283 Practice for Generation of Environmental Data Related to Waste Management Activities: Quality Assurance and Quality Control Planning and Implementation

D5438 Practice for Collection of Floor Dust for Chemical Analysis

E994 Guide for Calibration and Testing Laboratory Accreditation Systems General Requirements for Operation and Recognition³

E1187 Terminology Relating to Conformity Assessment³

E1553 Practice for Collection of Airborne Particulate Lead During Abatement and Construction Activities³

E1583 Practice for Evaluating Laboratories Engaged in the Determination of Lead in Paint, Dust, Airborne Particulates, and Soil Taken From and Around Buildings and Related Structures (Withdrawn)³

E1605 Terminology Relating to Lead in Buildings

E1727 Practice for Field Collection of Soil Samples for Subsequent Lead Determination

E1728 Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination

E1729 Practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination

2.2 ISO Standards:⁴

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

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

ISO 9001 Quality Systems-Model for Quality Assurance in Design/Development, Production, Installation and Servicing

ISO Guide 25 General Requirements for the Competence of Calibration and Testing Laboratories

ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories

2.3 *EPA Documents*:⁵

EPA 600/8-91/214 (1991) Standard Operating Procedures for Measurement of Lead in Paint Using the Scitec Map-3 X-Ray Fluorescence Spectrometer

EPA 600/R-93/200 (1993) Standard Operating Procedures for the Field Analysis of Lead in Paint, Bulk Dust, and Colorimetric Measurement

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology **E1187**.

4. Significance and Use

4.1 This practice provides the basic criteria to be used by accreditation bodies and others in evaluating the quality system, qualifications, and competency of organizations engaged in conducting facility and hazard assessments to determine the presence of lead contamination in paint, dust, airborne particulate, and soil in and around buildings and related structures.

4.1.1 The criteria provided should be supplemented by additional specific criteria and requirements.

4.2 This practice is for organizations that may be comprised of one or more individuals (7.4.4).

4.3 This practice is intended to provide objective guidelines and criteria for judging the quality system, capabilities, and competence needed by organizations to conduct facility and hazard assessments to determine the presence and extent of lead contamination in paint, dust, airborne particulate, and soil in and around buildings and related structures.

4.4 This practice is also intended to be used by assessment organizations in the development and implementation of their quality systems. An organization may request or perform an evaluation of its own in-house facilities in accordance with this practice.

5. Quality Policy

5.1 A quality policy is a formal statement signed by top management that states the commitment by top management and staff to provide sound and reliable services to its customers.

5.2 The management of the organization providing environmental assessment services shall define and document its quality policy, quality objectives, and commitment to quality.

5.3 The organization shall ensure that its quality policy includes recognition of the needs and expectations of its customers. The organization shall also ensure that its quality policy is understood, implemented, and maintained at all levels within the organization.

6. Organization

6.1 The organization providing environmental assessment services shall be legally identifiable, that is, it shall meet the applicable legal requirements of the governmental jurisdiction in which it conducts business. It shall be organized and shall operate so that its facilities and resources meet the requirements of this practice.

6.2 The organization shall meet the following requirements:

6.2.1 Have an organizational structure, including quality system, that enables it to maintain the capability to perform satisfactorily ASTM and other designs, tests, procedures, or methods for the assessment of facilities and the associated hazards to determine the presence and extent of lead in paint, dust, airborne particulate, and soil in and around buildings.

6.2.2 Have managerial staff with the authority and resources needed to discharge their duties.

6.2.3 For organizations having more than one person, provide supervision by individuals familiar with the assessment and testing activities and their objectives. The ratio of supervisory to nonsupervisory personnel shall be so as to ensure adequate supervision.

6.2.4 Define the responsibility, authority, and interrelationship of all personnel who manage, perform, and verify work affecting quality, particularly for personnel who need the organizational freedom and authority to perform the following:

6.2.4.1 Initiate action to prevent the occurrence of assessment deficiencies;

6.2.4.2 Identify and record any assessment quality problems;

6.2.4.3 Initiate, recommend, or provide solutions through designated channels;

6.2.4.4 Verify the effective implementation of solutions; and

6.2.4.5 Stop the assessment activities until the deficiency or unsatisfactory condition has been corrected.

6.2.5 Identify the organizational verification requirements, provide adequate resources, and assign trained personnel for verification activities. Where possible, these verification activities shall include the following:

6.2.5.1 Sample design, sample collection, data validation, reporting, and audits of the quality system shall be conducted by personnel independent of those having direct responsibility for the work being performed and audited.

6.2.6 Be able to demonstrate, on request from the persons or organizations evaluating its competence, that it is capable of performing the services and tests for which it is being evaluated.

6.2.7 Be organized so that staff members are not subject to undue pressure or inducement that might influence their judgment or results of their work.

6.2.8 Be organized so that confidence in its independence of judgment and integrity is maintained at all times (7.4.4).

6.2.9 Be organized so that staff members are aware of both the extent and limitations of their responsibilities.

6.2.10 Have a technical manager or director (however named) who has overall responsibility for the technical operations of the organization and has demonstrated competence in environmental lead assessment activities through education or professional experience, or both.

⁵ Available from Environmental Protection Agency, Washington, DC.

6.2.11 Have a quality manager (however named) who has responsibility for the quality system and its implementation. The quality manager shall have authority and responsibility for ensuring that the requirements of this practice are implemented and maintained.

NOTE 1—The quality manager may also be the technical manager in some organizations with limited staff. Whenever possible, the quality and technical manager positions are to be filled independently by two individuals.

6.2.12 Where possible, nominate deputies in the case of absence of the technical or quality manager.

6.2.13 Have a documented policy and procedure to ensure the protection of the client's confidential information.

6.2.14 Be able to demonstrate, on request from the persons or organizations evaluating its competence, that it complies with the relevant and appropriate federal, state, and local requirements.

7. Quality System

7.1 The organization shall establish, maintain, and operate under a documented quality system as a means of ensuring that its operations are appropriate to provide assessment services. (See Practice D5283.)

7.1.1 The quality assurance (QA) program shall be designed to ensure the required degree of completeness, representativeness, and comparability needed to meet the data quality objectives of each specific project.

7.1.2 The organization's quality system must include the critical elements of quality system document control (see Section 8), sample design, sample site identification, sampling control, testing control, data validation, field documentation, corrective action, performance evaluation, and project completeness.

7.1.3 The quality system shall be documented in a quality manual and supporting quality system documentation that includes, but is not limited to, standard operating procedures and operations notebooks. This documentation shall be available for use by the staff. The quality system documents shall be maintained current under the responsibility of the quality manager.

NOTE 2—The quality system documentation usually consists of more than one document.

7.2 The quality manager shall have direct access to top management.

7.3 The quality manual shall contain information or reference procedures regarding the following:

7.3.1 The structure of the organization, which may be described using appropriate charts.

7.3.2 The operational and functional duties and services pertaining to quality to provide the individuals involved with knowledge of the extent and limitations of their responsibility.

7.3.3 Procedures for staff training and documentation of training and proficiency.

7.3.3.1 These procedures shall identify the training needs and provide for the training of all personnel performing activities affecting quality.

7.3.3.2 Personnel performing specific assigned tasks shall be qualified on the basis of appropriate education, training, or experience, or some combination thereof, as required.

7.3.3.3 Appropriate records of training that demonstrate and document competency shall be developed and maintained.

7.3.4 Specific quality procedures for each method or procedure, as appropriate to the work being performed.

7.3.5 Establishing and maintaining procedures for controlling and verifying the sampling design to ensure that project data quality objectives are met.

7.3.5.1 Design input requirements shall be identified and documented and their selection reviewed for adequacy. Incomplete, ambiguous, or conflicting requirements shall be resolved.

7.3.5.2 The design output shall be documented and expressed in terms of requirements, calculations, and analyses. The design output shall meet the design input requirements; contain or reference acceptance criteria; conform to appropriate regulatory requirements, regardless of whether these have been stated in the input information; and identify those characteristics of the design that are crucial to meeting the project design objectives.

7.3.5.3 The organization shall plan, establish, and document designs and assign competent personnel for verifying designs. Design verification shall establish that the design output meets the design input requirement by means of design control measures such as holding and recording design reviews; undertaking qualification tests and demonstrations; conducting alternative calculations; and comparing the new design with similar proven design, if available.

7.3.6 The organization shall establish and maintain procedures for contract review and for the coordination of these activities. Each contract shall be reviewed to ensure the following:

7.3.6.1 For new work, the organization has the appropriate resources before commencing work.

7.3.6.2 The requirements are defined and documented adequately.

7.3.6.3 Any requirements differing from those in the contract are resolved.

7.3.6.4 The organization has the capability to meet contractual requirements.

7.3.6.5 Records of such contract reviews are maintained.

7.3.7 Regular use of reference materials, where applicable and appropriate, for the validation of field measurements of lead, and blind and double blind evaluation of lead laboratory services.

7.3.8 Arrangement for feedback and for documentation of corrective action whenever design, sampling, or testing discrepancies, or some combination thereof, in specified protocols or other errors are detected. These arrangements require using procedures that address the following:

7.3.8.1 Investigating the cause of deficiencies and the corrective action needed to prevent recurrence.

7.3.8.2 Analyzing all work operations, quality records, and customer complaints to detect and eliminate potential causes of deficiencies.

7.3.8.3 Initiating preventive actions for dealing with problems to a level corresponding to the risk involved.