Designation: E 1864 – 02

An American National Standard

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 Structures[1]

This standard is issued under the fixed designation E 1864; 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 E 994 and ISO 9001 and ISO Guide 25.

1.4 Where the testing function exists, it must be evaluated using Practice E 1583.

1.5 This practice is meant to be used with Guide D 4840, Practices D 5438, E 1553, E 1727, E 1728, and E 1729, and Terminology E 1605.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 4840 Guide for Sample Chain-of-Custody Procedures[2]

D 5283 Practice for Generation of Environmental Data Related to Waste Management Activities: Quality Assurance and Quality Control Planning and Implementation[3]

D 5438 Practice for Collection of Floor Dust for Chemical Analysis[4]

E 994 Guide for Calibration and Testing Laboratory Accreditation Systems General Requirements for Operation and Recognition[5]

E 1187 Terminology Relating to Conformity Assessment[5]

E 1553 Practice for the Collection of Airborne Particulate Lead During Abatement and Construction Activities[4]

E 1583 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[6]

E 1605 Terminology Relating to Lead in Buildings[6]

E 1727 Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques[7]

E 1728 Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination[7]

E 1729 Practice for Field Collection of Dried Paint Samples for Lead Determination by Atomic Spectrometry Techniques[7]

2.2 *ISO Standards:*[8]

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:*[9]

EPA 600/8–91/214 (1991) Standard Operating Procedures

[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.

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[2] *Annual Book of ASTM Standards*, Vol 11.01.

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

[4] *Annual Book of ASTM Standards*, Vol 11.03.

[5] *Annual Book of ASTM Standards*, Vol 14.02.

[6] *Annual Book of ASTM Standards*, Vol 04.11.

[7] *Annual Book of ASTM Standards*, Vol 04.12.

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

[9] Available from Environmental Protection Agency, Washington, DC.

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 E 1187.

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.

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 D 5283.)

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 risks encountered.

7.3.8.4 Applying controls to ensure that corrective actions are taken and that they are effective.

7.3.8.5 Implementing and recording changes in procedures resulting from corrective actions.

7.3.9 Procedures for dealing with technical and other complaints.

7.3.10 Arrangements for permitting departures from documented assessment policies, sample design protocols, specified sample collection procedures, specified testing procedures, or validation procedures, or some combination thereof.

7.3.11 Procedures for correcting or amending original reports and other related documentation.

7.4 The organization shall arrange for internal quality audits of its activities at appropriate intervals (at least annually) to verify that its has implemented its documented quality system effectively and that its operations comply with the requirements of its documented quality system.

7.4.1 These audits shall be planned and documented.

7.4.2 The audits and follow-up actions shall be conducted in a timely manner in accordance with documented procedures.

7.4.3 Such audits shall be conducted by trained and qualified staff who are, wherever possible, independent of the activity to be audited.

7.4.4 An independent audit shall be performed if one person holds the technical and quality manager positions (6.2.6 and 6.2.7).

7.4.5 Where the audit findings cast doubt on the correctness or validity of the organization's assessment results (sampling design, sample collection, field testing, reporting, or validation procedures, or some combination thereof), the organization shall take immediate corrective action and shall immediately notify, in writing, any client whose work may have been affected.

7.5 The organization's management shall conduct management reviews of its quality system at appropriate intervals (at least annually) to ensure its continuing suitability and effectiveness and to introduce any necessary changes or improvements.

7.6 All audit and management review findings and any corrective actions that arise from them shall be documented. The quality manager shall ensure that these actions are discharged within the agreed upon timescale.

7.7 The organization providing assessment services shall normally perform the services for which it contracts to undertake.

7.7.1 If the organization subcontracts any part of the services, the work shall be placed only with an organization that meets the requirements of this practice.

7.7.1.1 The organization shall ensure and must be able to demonstrate that its subcontractors are competent to perform the activities in question and comply with the same criteria of competence and, where applicable, the same regulations as the contracted organization with respect to the work being subcontracted.

7.7.1.2 The organization shall advise the client in writing of its intention to subcontract any portion of a project to another party.

7.7.1.3 The organization shall record, document, and retain details of its investigation of the competence and compliance of its subcontractors to the requirements of this practice and shall maintain a register of all subcontractors and subcontracting.

7.8 The organization's operations shall be conducted consistent with applicable regulatory requirements including, but not limited to, health and safety.

8. Document Control

8.1 The organization shall establish and maintain procedures for controlling all documents and data that relate to the requirements of this practice. These documents shall be reviewed and approved for adequacy by authorized personnel prior to issue. This control shall ensure that the following occurs:

8.1.1 The pertinent issues of appropriate documents are available at all locations where operations essential to the effective functioning of the quality system are performed;

8.1.2 Obsolete documents are removed promptly from all points of issue or use;

8.2 Changes to documents shall be reviewed and approved by the same personnel/groups that performed the original review and approval unless specifically designed otherwise;

8.2.1 The designated personnel/groups shall have access to pertinent background information upon which to base their review and approval;

8.2.2 Where practicable, the nature of the changes shall be identified in the document or the appropriate attachments;

8.2.3 A master list or equivalent document control procedure shall be established to identify the current revision of documents in order to preclude the use of non-applicable documents; and

8.2.4 Documents shall be re-issued as necessary.

9. Staff

9.1 The organization shall have sufficient personnel, having the necessary education, training, technical knowledge, and experience for their assigned functions, to provide the services necessary for conducting assessment activities in determining the lead in paint, dust, airborne particulate, and soil in and around buildings and related structures.

9.2 The organization shall ensure that the training of its personnel is kept up to date.

9.3 Records on the relevant qualifications, training, skills, and experience of the technical personnel shall be maintained by the organization.

10. Facilities and Equipment

10.1 *Facilities*—The organization providing field services shall have a secure facility for holding and storing equipment samples, and records and adequate space for the calibration and maintenance of sampling devices, equipment, and tools.

10.2 *Equipment and Reference Materials*—The organization shall be furnished with all items of sampling equipment, procedures, reference materials, and other supplies required for the correct performance of assessment services to its clients. The organization shall conduct monitoring to ensure compliance with prescribed sampling conditions.

10.2.1 *Maintenance, Records, and Calibration*:

10.2.1.1 All equipment shall be maintained properly. Procedures shall be available for proper maintenance of those facilities and equipment that require periodic maintenance.

10.2.1.2 Records shall be maintained on each major item of equipment. Each record shall include the following, as appropriate:

(1) Name of the item of equipment;

(2) Manufacturer's name, type or model identification, and serial number;

(3) Date received and date placed in service;

(4) Current location (custody);

(5) Condition when received (new, used, or reconditioned);

(6) Copy of manufacturer's instructions, where available;

(7) For equipment subject to calibration, the records including the date of last calibration, calibration reports, and maximum period of time between successive calibrations;

(8) Details of maintenance conducted and planned; and

(9) History of any damage, malfunction, modification, or repair.

10.2.2 All federal, state, and local equipment licensing requirements must be addressed specifically.

11. Sampling Procedures

11.1 The organization shall have adequate documented instructions on the following: the calibration, use, and operation of all sample collection devices, equipment, computer systems, and tools used for sampling of lead in paint, dust, airborne particulate, and soil in and around buildings and related structures; and the handling and shipping of samples, where the absence of such instructions could jeopardize the validity of the field sampling results.

11.1.1 All instructions, standards, manuals, and reference data relevant to the work of the assessment organization shall be maintained current and be readily available to the staff.

11.1.2 Where methods are not specified, the organization shall select methods and procedures that have been published as international or national standards and those published by reputable technical organizations or in relevant scientific texts or journals.

11.1.3 Where it is necessary to use methods that have not been established as standards, they shall be subject to agreement with the client, fully documented and validated, and available to the client and other recipients of the relevant reports.

11.2 All instructions, methods, other standards, manuals, and reference data relevant to the performance of field sampling procedures shall be maintained up to date and be readily available to the staff.

11.3 The organization shall use field sampling procedures that are appropriate to the determination of lead in a given matrix (for example, paint chip or soil sample). Competency with the methods shall have been demonstrated.

11.4 Where sampling data are recorded on computerized systems that are used to document field sampling, these systems shall be validated initially and periodically. The stability and ruggedness of the systems shall be such that the data obtained are valid. This requires that the capability to detect malfunctions in hardware or software during program execution and operation is provided and, once recognized, requires that appropriate corrective actions are taken.

11.5 The organization shall use field sample collection procedures that are appropriate for the determination of lead in a given matrix (for example, paint chip or soil sample); see Table 1. Sampling personnel shall have demonstrated competence with the methods.

11.6 Documented procedures shall exist for the purchase, reception, and storage of consumable materials used for the technical operations of the assessment organization.

TABLE 1 Field Sample Collection Methods Typically Performed for the Determination of Lead

Field Sample Collection	Practice Designation
Paint chips	Practice E 1729
Settled dust: wipe	Practice E 1728
Settled dust: vacuum	Practice D 5438
Soil	Practice E 1727

12. Calibration and Field Test Methods

12.1 All measuring and testing equipment having an effect on the accuracy or validity of calibrations or tests shall be calibrated or verified, or both, before being put into service. The organization shall have an established program for initial and re-calibration or verification, or both, of its sampling, measuring, and testing equipment.

12.2 Each item of equipment, including reference materials, shall be labeled, marked, or identified otherwise regarding its calibration status.

12.3 As a minimum, calibration shall be verified during each day of use before making determinations using X-ray fluorescence (XRF), electrochemical, colorimetric, and other analytical field methods.

12.4 The calibration program shall be designed, operated, and documented to ensure that measurements are traceable to certified national standards or international standards of measurements.

12.4.1 Whenever applicable, calibration certificates shall indicate the traceability to national standards of measurement and shall provide the measurement results and associated uncertainty of measurement or a statement of compliance with an identified metrological specification, or both.

12.4.2 Reference standards of measurement shall be calibrated by a body that can provide traceability to a national standard of measurement. Where appropriate, there shall be a program of calibration and verification for reference standards.

12.4.3 Where relevant, reference standards and measuring and testing equipment shall be subjected to inservice checks between calibrations and verifications.

NOTE 3—Standard reference materials (SRMs) for lead in paint, lead film, and lead in soil are available from the National Institute for Standards and Technology (NIST), Gaithersburg, MD 20899. Examples of certified reference materials are bag house dust, paint film, paint sludge, and paint blasting waste, which are available from laboratory supply houses.

12.5 Calibration and verification shall be performed in accordance with documented methods.

12.6 Where computers or automated equipment are used for the capture, processing, manipulation, recording, reporting, storage, or retrieval of calibration, test data, or sampling data, the organization shall ensure that the following occurs:

12.6.1 All requirements of this practice are met.

12.6.2 Computer software is documented and adequate for use.

12.6.3 Procedures are established and implemented for protecting the integrity of data; such procedures shall include, but are not limited to, the integrity of data entry or capture, data storage, data transmission, and data processing.

12.6.4 Computer and automated equipment is maintained to ensure proper functioning and is provided with the environmental and operating conditions necessary to maintain the integrity of calibration and test data.

12.6.5 It establishes and implements appropriate procedures for the maintenance of security of data, including the prevention of unauthorized access to, and the unauthorized amendment of, computer records.

13. Sample Handling

13.1 The organization shall have a documented system for uniquely identifying the sampling sites to ensure that there can be no confusion regarding the location of the sampling site, testing site, or identity of the sample collected.

NOTE 4—For this purpose, diagrams, drawings, or pictures, or some combination thereof, are recommended.

13.2 At all stages of field sample collection, storage, and handling, documented precautions shall be followed to prevent confusion in the test site and testing data loss and deterioration or damage to the collected samples, which would invalidate the results.

13.3 There shall be unambiguous procedures for the collection, custody, storage, shipping, retention, and disposal of the samples containing lead (see Guide D 4840). Criteria for the acceptability of samples or materials to be submitted for testing shall be defined.

13.4 Where items have to be stored or conditioned under specific environmental conditions, these conditions shall be maintained, monitored, and recorded where necessary.

13.5 In cases in which sub-sampling of samples is required, the field sampling plan shall document and specify the appropriate procedures and statistical techniques to select the subspecimens.

14. Records

14.1 The organization shall establish and maintain procedures for the identification, collection, indexing, filing, storage, maintenance, and disposition of quality records. The record system shall contain sufficient information to permit the verification of any issued report based on the assessment services rendered.

14.2 Quality records shall be maintained to demonstrate achievement of the required quality and effective operation of the quality system. Pertinent subcontractor records shall be an element of these records.

14.3 All quality records shall be legible and identifiable to specific projects. For a period dictated by the authority having jurisdiction or a minimum of ten years, it shall retain a record of the sampling design, sampling plan, all original observations, laboratory testing data, field testing data, calculations and derived data, calibrations, certificates for calibration and reference standards, quality control data, equipment use and maintenance records, and final reports.

14.3.1 Quality records shall be stored and maintained in such a way that they are readily retrievable in facilities that provide a suitable environment for minimizing deterioration or damage and preventing loss.

14.3.2 Retention times of quality records shall be established and recorded. Where agreed upon contractually, quality records shall be made available for evaluation by the purchaser or his representative for an agreed upon period.

14.4 All records and reports shall be held secure and in confidence to the client, unless otherwise specified or required by law.

14.5 The records shall include the identity of personnel involved in sample design, sample collection, field testing, calibration, data validation, and report writing.

15. Report

15.1 The work conducted shall be summarized by an assessment report that presents the observations, conditions, laboratory data, field testing data, quality control data, and all other relevant information accurately, clearly, and unambiguously.

15.2 As appropriate, include at least the following information in such reports:

15.2.1 Name and address of the organization providing the assessment services;

15.2.2 Unique identification of the assessment report and of each page of the report;

15.2.3 Name and address of the client;

15.2.4 Description and identification of the services performed or contracted/subcontracted to include field testing data and supporting laboratory data reports;

15.2.5 Date(s) of performance of the field aspects of the assessment services;

15.2.6 Identification of any field testing, laboratory testing, and field sampling specifications and procedures, together with the required quality control data, detection limit or uncertainty, or some combination thereof, of each;

15.2.7 Where appropriate, the description of the sampling or subsampling procedures, including those to be performed by the laboratory;

15.2.8 Any deviations, additions to, or exclusions from the field sampling and testing plan requirements (that is, procedures) and any other information relevant to a specific test or task;

15.2.9 Measurements, examinations, and derived results supported by tables, graphs, sketches, or photographs, as appropriate;

15.2.10 A statement concerning the field testing, laboratory testing, and sample collection uncertainty as it relates to the determinations and recommendations for dealing with lead in paint, dust, airborne particulate, and soil in and around buildings and related structures;

15.2.11 The name and title of a person(s) accepting technical responsibility for original or corrected assessment reports and date of issue; the person must have sufficient authority to be able to control all factors having an influence on the results and must be able to communicate regarding the technical details of the final assessment report;

15.2.12 Where relevant, a statement to the effect that the results relate only to the specific project and its scope;

15.2.13 A statement that the report shall not be reproduced except in full, without the written approval of the assessment organization;

15.3 Where a test report contains results performed by subcontractors, identify these results clearly.

15.4 Include corrections and additions.

15.4.1 Corrections or additions to an assessment report after issue shall be made only by a further document that meets all relevant requirements of this section.

15.4.2 The organization shall notify clients promptly, in writing, of any event such as the identification of defective testing devices, measuring equipment, sampling devices, or deficient sampling design, collection, or testing procedures, or some combination thereof, that casts doubt on the validity of the results given in any assessment report or amendment to an assessment report.

16. Outside Support and Supplies

16.1 Where an assessment organization procures outside services and supplies, other than those referred to in this practice, in support of the assessment services it provides, the organization shall use only those outside support services and supplies that are of adequate quality to sustain confidence in the assessment organization's services.

16.2 Where no independent assurance of the quality of outside support services or supplies is available, the assessment organization shall have procedures to ensure that purchased equipment, materials, and services comply with specific requirements. Whenever possible, the assessment organization shall ensure that the purchased equipment and consumable materials are not used until they have been inspected, calibrated, or otherwise verified as complying with any standard specifications relevant to the calibrations or tests concerned.

16.3 The assessment organization shall maintain records of all suppliers from whom it obtains support services or supplies required for its assessment operations.

17. Complaints

17.1 The organization shall have documented policies and procedures for the resolution of complaints received from clients or other parties regarding the organization's activities. A record shall be maintained of all complaints and of the actions taken by the assessment organization.

17.2 Where a complaint, or any other circumstance, raises doubt concerning the organization's compliance with the organization's policies or procedures, or with the requirements of this practice or otherwise concerning the quality of the services performed, the organization shall ensure that those areas of activity and responsibility involved are audited promptly in accordance with this practice.

18. Statistical Techniques

18.1 The organization shall have procedures for identifying and implementing adequate statistical techniques required for verifying the acceptability of the sampling design in meeting project data quality objectives.

19. Keywords

19.1 airborne particulate; buildings; dust; lead testing; measurement; organization accreditation; sample; sampling; soil; structures; test methods