

ASCLD/LAB-*International*

Supplemental Requirements for the Accreditation of Forensic Science Testing Laboratories

2011 Edition

Corresponds to ISO/IEC 17025:2005

ASCLD/LAB-*International* is a program of the
American Society of Crime Laboratory Directors / Laboratory Accreditation Board
ASCLD/LAB

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Introduction

General requirements for the accreditation of testing laboratories are found in ISO/IEC 17025: 2005, *General requirements for the competence of testing and calibration laboratories*. This document supplements ISO/IEC 17025:2005 and contains specific supplemental accreditation requirements for forensic science testing laboratories.

Supplemental requirements for accreditation may be found in Sections 4 and 5 of this document and follow the numbering scheme of ISO/IEC 17025:2005. Within those sections, the phrase "*No Supplemental Requirements*" means that the American Society of Crime Laboratory Directors / Laboratory Accreditation Board – International program (ASCLD/LAB–*International*) has no requirements for accreditation in addition to the requirements specified in ISO/IEC 17025:2005. Within sections where supplemental requirements exist, only the supplemental requirements appear and are numbered appropriately.

Throughout this document, "*shall*" means that compliance with the supplemental requirement is mandatory to achieve accreditation. A requirement may not apply to the work conducted in some laboratories. In such instances, the requirement shall be regarded by ASCLD/LAB-*International* as "*not applicable*."

In this document, notes (appearing as "NOTE") are intended to provide clarification or examples and do not constitute an additional accreditation requirement.

1 Scope

1.2.1 Forensic science refers to the examination of crime scenes, recovery of evidence, laboratory examination/analysis, interpretation of findings and presentation of the conclusions reached for investigative or intelligence purposes or for use in court.

The broad field of forensic science involves the examination/analysis of a wide range of items and substances. ASCLD/LAB-*International* offers accreditation in the disciplines of forensic science listed in the table below as approved by the ASCLD/LAB Delegate Assembly. Accreditation in additional disciplines may be offered by ASCLD/LAB-*International* in the future, but only after a formal extension of scope process is completed in accordance with ASCLD/LAB bylaws and operating procedures. Within each discipline of forensic science, the following table also includes a list of general forensic science categories of testing currently accredited by ASCLD/LAB-*International*. **The list of categories of testing is not intended to be exhaustive.** A decision to recognize and accredit laboratory activities in other categories of testing may be made by ASCLD/LAB after recognizing an appropriate relationship of the activity to one of the primary disciplines of accreditation.

The accreditation certificate issued by ASCLD/LAB-*International* shall specify the *Field*, *Discipline(s)* and *Category(ies)* of Testing.

Field of Accreditation: Forensic Science Testing

NOTE The following table is not intended to be an exhaustive list. In some cases, the relationship of a category of testing to a particular discipline may vary from laboratory to laboratory. For example, "impression evidence" may be considered by the laboratory to be a category of testing of any one of several disciplines. ASCLD/LAB will work with each laboratory at the time of application and assessment to determine appropriate placements of categories of testing.

Discipline	Categories of Testing
Drug Chemistry	Controlled Substances Quantitative Analysis General Chemical Testing Clandestine Laboratory Analysis
Toxicology	Human Performance Forensic Toxicology Forensic Urine Drug Testing Post-Mortem Forensic Toxicology
Trace Evidence	Fire Debris Explosives Gunshot Residue Paint Fibers and textiles Glass Hair General Physical and Chemical Analysis
Biology	Body Fluid Identification DNA Nuclear DNA Mitochondrial Individual Characteristic Database Bloodstain Pattern Analysis
Firearms/Toolmarks	Firearms Toolmarks Individual Characteristic Database
Questioned Documents	Document Examination
Latent Prints	Latent Print Processing Latent Print Comparison Individual Characteristic Database
Crime Scene	Crime Scene Investigation Crime Scene Reconstruction Clandestine Laboratory Investigation Bloodstain Pattern Analysis
Digital & Multimedia Evidence	Computer Forensics Video Analysis Audio Analysis Image Analysis

Categories of testing which may be assigned to one or more of the Disciplines listed above	Impression Evidence Serial Number Restoration
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2 References

American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB), *Accreditation Manual*, 2008.

International Laboratory Accreditation Cooperation (ILAC), *ILAC Guide 19 – Guidelines for Forensic Science Laboratories*, 2002.

International Organization for Standardization / International Electrotechnical Commission (ISO/IEC), *ISO/IEC 9000 - Quality management systems — Fundamentals and vocabulary*, 2000.

ISO/IEC, *ISO/IEC 17025 – General requirements for the competence of testing and calibration laboratories*, 2005.

ISO/IEC, *ISO/IEC 17000 - Conformity assessment — Vocabulary and general principles*, 2004.

U.S. Department of Justice (DOJ), Federal Bureau of Investigation (FBI), *Quality Assurance Standards for Forensic DNA Testing Laboratories*, 2009.

U.S. DOJ, FBI, *Quality Assurance Standards for DNA Databasing Laboratories*, 2009.

3 Terms and definitions

3.1 The following list identifies words (to include forms of the same word) used in this document, and in ISO/IEC 17025:2005, which require a laboratory to address the requirement in **writing**:

Define, schedule, policy, procedure, instructions, method, specify, appoint, authorize, designate, program and record

NOTE "Writing" may be in hardcopy or electronic format.

3.2 See Appendix A (of this document) - *Glossary*

4 Management requirements

4.1 **Organization**

4.1.1 NOTE ASCLD/LAB automatically recognizes publicly funded government laboratories as meeting 4.1.1.

4.1.4.1 The laboratory shall have a laboratory director, whose responsibilities and authorities shall be defined.

4.1.4.1.1 The laboratory director shall possess sufficient authority to make and enforce decisions.

4.1.5 NOTE 2 The laboratory or its parent agency should have a formal written budget. The budget should be adequate to meet the objectives of the laboratory.

4.1.5.a NOTE The laboratory director should have a minimum of a baccalaureate degree in a natural science, criminalistics or a closely related field and at least five years of forensic science experience performing casework in one of the ASCLD/LAB-*International* accredited disciplines. If the director lacks a scientific background, then there should be support within management by personnel with appropriate scientific background. Additional education in management or business administration by college course work or short training courses (or both) is recommended and the laboratory director should have at least two years of experience in management.

4.1.5. f.1 Each subordinate shall be accountable to one and only one immediate supervisor for each category of testing.

4.1.5. h.1 The laboratory shall designate technical responsibility for each discipline. Each designee shall have appropriate technical training and technical experience in the discipline.

NOTE A person may be technically responsible for more than one discipline.

4.1.5.i NOTE A laboratory director should recognize the impact a quality manager can have on the successful implementation of a management system and of continuously improving its effectiveness. Appropriate personnel selection for this position should address an ability to communicate well and work effectively with all levels of laboratory personnel. The laboratory director may serve as quality manager. The responsibilities of the quality manager should include the following:

- Maintaining and updating the Quality Manual
- Monitoring laboratory practices to verify continuing compliance with policies and procedures related to quality
- Evaluating instrument calibration and maintenance records
- Periodically assessing the adequacy of test report review activities
- Ensuring validation of new technical procedures
- Investigating technical problems, propose corrective actions, and verify their implementation
- Administering proficiency testing and evaluating results
- Selecting, training, and evaluating internal auditors
- Scheduling and coordinating management system audits
- Evaluating results of management system audits
- Maintaining training records of laboratory personnel
- Recommending training to improve the quality of laboratory personnel
- Proposing corrections and improvement in the management system

4.1.7 The laboratory shall designate a health and safety manager (however named) who, irrespective of other duties and responsibilities, shall have defined responsibility and authority for ensuring that a health and safety program is implemented and followed at all times.

NOTE The health and safety manager may be any member of the laboratory, including the laboratory director, or may be an individual from and designated by the laboratory's parent agency.

4.1.8 Key management and top management shall be defined by the laboratory.

4.2 Management system

4.2.1 NOTE When the laboratory is part of a larger organization, some management system elements may be in other documents.

4.2.2 NOTE 2 A written statement of objectives fulfills a need for direction through a careful analysis of what the director and the parent organization believe are the appropriate functions of the laboratory and the direction in which it should be moving.

4.2.2.1 The *ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists* shall be incorporated into or directly referenced in the quality manual (however named) as part of the laboratory management's commitment to good professional practice.

NOTE The *ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists* are provided as Appendix B to this document and are also available at www.asclcd-lab.org.

4.2.2.2 Top management shall ensure that the *ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists* are reviewed annually with all laboratory personnel. A record of the review shall be maintained.

4.3 Document control

4.3.1 General - *No Supplemental Requirements*

NOTE 3 Equipment and software manuals maintained only for general reference purposes are not subject to document control requirements. In this context, "general reference purposes" means that laboratory personnel are not required by the laboratory to follow specific procedures or instructions contained in the equipment or software manual.

4.3.2 Document approval and issue - *No Supplemental Requirements*

4.3.3 Document changes - *No Supplemental Requirements*

4.4 Review of requests, tenders and contracts - *No Supplemental Requirements*

4.4.1 NOTE 4 "Request" is the process utilized by a customer when seeking analysis by the laboratory. For example, a submission form or letter accompanying the evidence when submitted to the laboratory listing examination/analysis sought by the customer is one form of a request. "Tender" is the laboratory's response to the customer regarding their request. This may include an automated notification. "Contract" is the agreement between the laboratory and the customer, and a fee for service is not specifically required.

4.5 Subcontracting of tests and calibrations - *No Supplemental Requirements*

4.5.1 NOTE 1 If a laboratory system operates under a uniform management system, a transfer of evidence from one system laboratory to another system laboratory will not be considered subcontracting.

NOTE 2 A laboratory is responsible for defining what "competent" subcontractor means. This can include, but does not require, being accredited to ISO/IEC 17025:2005.

4.6 Purchasing services and supplies - *No Supplemental Requirements*

- 4.6.2 NOTE Documents which can be used for defining specifications can include purchasing documents and analytical methods.
- 4.7 **Service to the customer - *No Supplemental Requirements***
- 4.8 **Complaints**
- 4.8.1 The laboratory policy and procedure for the resolution of complaints shall cover complaints concerning quality related aspects of the management system submitted by laboratory personnel.
- 4.9 **Control of nonconforming testing and/or calibration work - *No Supplemental Requirements***
- 4.10 **Improvement - *No Supplemental Requirements***
- 4.11 **Corrective Action**
- 4.11.1 **General - *No Supplemental Requirements***
- 4.11.2 **Cause analysis - *No Supplemental Requirements***
- 4.11.3 **Selection and implementation of corrective actions - *No Supplemental Requirements***
- 4.11.4 **Monitoring of corrective actions - *No Supplemental Requirements***
- 4.11.5 **Additional audits - *No Supplemental Requirements***
- 4.12 **Preventive action - *No Supplemental Requirements***
- 4.13 **Control of records**
- 4.13.1 **General - *No Supplemental Requirements***
- 4.13.2 **Technical records**
- 4.13.2.2 NOTE When a test result or observation is rejected, the reason(s) should be recorded.
- 4.13.2.2.1 Examination records shall reflect, at a minimum, the starting and ending dates of the testing.
- 4.13.2.3.1 Any change made to existing hardcopy examination records shall be initialed by the person making the change.
- 4.13.2.3.2 Any change made to completed examination records generated and/or maintained in an electronic form shall be tracked. Examination records shall be considered completed prior to any technical or administrative review of the records.

NOTE In this context, "tracked" means sufficient information to determine what was changed and who made the change.

4.13.2.4 The laboratory procedure shall identify what records will be maintained in case records.

NOTE A laboratory case record consists of both examination and administrative records which may be received or generated by the laboratory.

4.13.2.5 Records to support conclusions shall be such that in the absence of the analyst (however named), another competent reviewer could evaluate what was done and interpret the data.

NOTE Examples of ways to record the basis for conclusions derived from evidence examination/analysis, include, but are not limited to: a narrative description of the examination/analysis process and observations made, photographs, photocopies, diagrams, drawings, worksheets.

4.13.2.5.1 Records to support conclusions in the latent print discipline shall meet all applicable requirements in Appendix C - *Latent Print Examination Records*, in addition to meeting all applicable examination record requirements specified in Section 4.13.

4.13.2.5.2 When instrumental analyses are conducted, operating parameters shall be recorded.

NOTE Operating parameters may be documented in a test method, recorded in a log book, recorded in the examination record, etc.

4.13.2.6 The laboratory's unique case identifier and the analyst's handwritten initials (or secure electronic equivalent of initials or signature) shall be on each page of examination records.

NOTE 1 Examination records, such as instrumental data, which bear the unique identifier and initials on an original record, may be copied for filing in multiple places without the necessity of placing original identifiers on each copy.

NOTE 2 The electronic equivalent of handwritten initials or signature is acceptable when the laboratory can demonstrate that the electronic signature is secure and can only be applied by the individual whom the electronic initials or signature represent.

NOTE 3 It is recommended that when examination records consists of multiple pages, a page numbering system indicating total number of pages be used (e.g., page __ of __).

4.13.2.7 When examination records are prepared by an individual(s) other than the analyst (however named) who interprets the findings, prepares the test report and/or testifies concerning the records, the handwritten initials (or secure electronic equivalent of initials or signature) of that individual(s) shall be on the page(s) of examination records representing his/her work.

NOTE It should be clear from the case record who performed all stages of the examination/analysis.

4.13.2.8 All administrative records, received or generated by the laboratory, for a specific case, shall be identified with the unique case identifier used by the laboratory.

NOTE The unique identifier may be hand written or electronically generated. Multi-paged administrative records which are bound together in some manner may be identified by a unique identifier on the front page of the record.

4.13.2.9 The unique identifier for each case for which data was generated shall be appropriately recorded on the printout when data from multiple cases is recorded on a single printout.

NOTE The printout may be kept in a single file and referenced in all files for which data was generated.

4.13.2.10 When examination records are recorded on both sides of a page, each side shall be treated (identified and initialed) as a separate page.

4.13.2.11 Examination records shall be of a permanent nature.

NOTE Generally, handwritten notes and observations should be in ink. Exceptions may be made when environmental conditions, such as extreme cold or rain, prevent the use of inks. Pencil (including color) may be appropriate for diagrams or making tracings.

4.13.2.12 When an independent check on a critical finding is carried out, it shall be conducted by an individual having expertise gained through training and casework experience in the category of testing, and a record of the review shall be made to indicate that the critical finding has been checked and agreed to, by whom, and when the check was performed.

NOTE Such checks, are often referred to as "verifications."

4.13.2.13 Where abbreviations or symbols specific to the laboratory are used in examination records, the meaning of the abbreviations or symbols shall be clearly defined by the laboratory.

4.14 Internal audits

4.14.1.1 Internal audits shall be conducted at least annually.

4.14.1.2 Records of internal audits shall be retained through one ASCLD/LAB-*International* cycle of accreditation or five years, whichever is longer.

4.14.5 The laboratory shall submit an Annual Report to ASCLD/LAB within thirty (30) calendar days following the laboratory's accreditation anniversary date.

4.15 Management reviews

4.15.1.1 Management reviews shall be conducted at least annually.

4.15.1.2 Records of management reviews shall be retained through one ASCLD/LAB-*International* cycle of accreditation or five years, whichever is longer.

5 Technical Requirements

5.1 General

5.1.3 The laboratory shall have a procedure for routinely checking the reliability of its reagents.

NOTE The routine recorded use of appropriate controls is a suitable method to ensure the continued reliability of reagents.

5.1.3.1 Reagents prepared in the laboratory shall be labeled with, at a minimum, the identity of the reagent and the date of preparation or lot number. Records shall be maintained identifying who made the reagent and that its reliability was tested and the reagent worked as expected. The reliability testing shall occur before use or, if appropriate, concurrent with the test.

5.2 Personnel

5.2.1 NOTE 3 Records should be sufficiently detailed to provide evidence that staff performing particular tasks have been properly trained and that their subsequent ability to perform these tests has been formally assessed.

5.2.1.1 The laboratory shall have a documented training program that shall be used to train the individual in the knowledge, skills, and abilities needed to perform the testing. The laboratory's management system shall include procedures for retraining and maintenance of skills and expertise.

NOTE 1 The training program should be sufficiently detailed to provide evidence that staff performing particular tasks have been properly trained and that their subsequent ability to perform these tests has been formally assessed.

NOTE 2 The training program may be an outline which references more detailed training modules contained in other laboratory documents.

NOTE 3 Past work experience and training may be substituted for the training program to the extent that it has been demonstrated to be relevant and sufficient.

NOTE 4 Laboratories should ensure that training programs cover the process of sampling submitted evidence and the appropriate use of any approved sampling plan(s).

5.2.1.2 Where applicable, training programs shall also include training in the presentation of evidence in court.

5.2.1.3 Training shall include the application of ethical practices in forensic sciences, a general knowledge of forensic science, and applicable criminal and civil law and procedures.

5.2.2 NOTE 1 The laboratory's policy on employee development should address the various opportunities available to employees, such as participation in professional organizations; attendance of technical and/or professional development courses, conferences and seminars.

NOTE 2 The development program should state how employees can participate in it and should identify the procedures to be followed when applying for such training. Any special laboratory criteria for selection of personnel should be stated. It is important that the program demonstrate planning for the development of individual employees, laboratory sections and the laboratory as a whole. The laboratory should foster an atmosphere wherein employees are encouraged to improve their knowledge and skills, to grow as individuals, and to fully develop their potential.

NOTE 3 The laboratory should have a clearly written and well understood procedure for conducting personnel evaluations and setting individual objectives.

5.2.6 Technical personnel qualifications

5.2.6.1 Education

NOTE (Reference 5.2.6.1.1, 5.2.6.1.2 and 5.2.6.1.3 except those performing DNA analysis) A qualified individual, whose degree is in a field other than a natural science or a closely related field, but who has taken extensive course work in biology and/or chemistry and has numerous years of experience may meet the educational requirements on a case-by-case basis as determined by ASCLD/LAB. This note is not applicable to newly hired personnel.

5.2.6.1.1 Analysts (however named) working in the Drug Chemistry and Trace Evidence disciplines of forensic science shall possess a baccalaureate or an advanced degree in a natural science or a closely related field.

5.2.6.1.2 Analysts (however named) working in the Toxicology discipline of forensic science shall possess a baccalaureate or an advanced degree in a natural science, toxicology, or a closely related field.

5.2.6.1.3 Analysts (however named) working in the Biology discipline of forensic science shall possess a baccalaureate or an advanced degree in a natural science or a closely related field and, if performing DNA analysis and where applicable, shall meet the educational requirements of the *Quality Assurance Standards for Forensic DNA Testing Laboratories* and *Quality Assurance Standards for DNA Databasing Laboratories*.

5.2.6.1.4 Analysts (however named) working in the Firearms/Toolmarks, Questioned Documents, Latent Prints, Digital & Multimedia Evidence, and Crime Scene disciplines of forensic science shall meet the educational requirement(s) specified in the job description.

NOTE The laboratory should require a baccalaureate degree with science courses for any analyst (however named) working in the Firearms/Toolmarks, Questioned Documents, Latent Prints, Digital & Multimedia Evidence, or Crime Scene disciplines.

5.2.6.1.5 Technicians (however named) working as technical support in any discipline shall meet the educational requirement(s) specified in the job description.

5.2.6.2 Competency testing

5.2.6.2.1 All analysts (however named), regardless of academic qualifications or past work experience, shall satisfactorily complete a competency test in each category of testing prior to assuming responsibility for laboratory casework or crime scene duties.

NOTE Satisfactorily completing a competency test means achieving the intended results. Failure to achieve the intended results would require review or retraining until testing achieves the intended results.

5.2.6.2.2 For any laboratory personnel whose job responsibility includes test report writing, a competency test shall include, at a minimum:

- Examination of sufficient unknown samples to cover the anticipated spectrum of assigned duties and evaluate the individual's ability to perform proper testing methods;

- A written test report to demonstrate the individual's ability to properly convey results and/or conclusions and the significance of those results/conclusions; and
- A written or oral examination to assess the individual's knowledge of the discipline, category of testing, or task being performed.

5.2.7 The laboratory shall maintain or provide access to literature resources such as relevant books, journals and other literature dealing with each discipline.

NOTE 1 A system or procedure should exist to encourage a review of appropriate new literature by laboratory personnel.

NOTE 2 A forensic library may be located in multiple locations and electronic storage and/or access is permitted as one form of library materials as long as all appropriate personnel have a reasonable means of access.

5.3 Accommodation and environmental conditions

5.3.1 NOTE There should be adequate space provided in the laboratory for the storage of supplies, equipment and tools; writing test reports and other official communications; records, reference works and other necessary documents; facilitating the operation of instruments and equipment; and storing accessories near instruments and equipment. Functional areas should be located to facilitate the use of equipment and instruments.

5.3.4.1 The laboratory shall have a policy and procedure that addresses laboratory security to ensure that:

- a) Access to the operational areas of the laboratory is controllable and limited. Visitors shall not have unrestricted access to the operational areas of the laboratory.
- b) All entrance/exit points and the entire outer perimeter of the laboratory has security control at all times.
- c) Internal areas requiring limited/controlled access have a lock system.
- d) Accountability of all keys, magnetic cards, etc., is documented and their distribution limited to those individuals designated by the laboratory director to have access.
- e) The laboratory is monitored during vacant hours by an intrusion alarm or by security personnel.
- f) Evidence storage areas are secured to prevent theft or interference and there is limited, controlled access. The storage conditions shall be such as to prevent loss, deterioration and contamination and to maintain the integrity and identity of the evidence. This applies both before and after examination/analysis has been performed.

NOTE 1 Laboratories should have a fire detection system.

NOTE 2 For 5.3.4.1 b, suspended ceilings which may permit undetected entry into the laboratory are considered part of the perimeter.

NOTE 3 For 5.3.4.1 f, proper security can be achieved by storing the evidence in locked cabinets, refrigerators, vaults, or rooms. Evidence storage space may be shared by laboratory personnel. It is not necessary to place locks on refrigerators and freezers which are maintained in rooms and/or areas which are secure and restricted.

5.3.6 The laboratory shall have and demonstrate use of a health and safety program.

NOTE Use of a health and safety program could be demonstrated by safety training records, safety inspections, and documentation of preventive action taken by the laboratory management, or action to address safety issues/concerns expressed by laboratory personnel.

5.4 Test and calibration methods and method validation

5.4.1 General - *No Supplemental Requirements*

5.4.2 Selection of methods - *No Supplemental Requirements*

5.4.3 Laboratory-developed methods - *No Supplemental Requirements*

5.4.4 Non-standard methods - *No Supplemental Requirements*

5.4.5 Validation of methods

5.4.5.2 **NOTE 4** Validation studies can be conducted by the scientific community (as in the case of standard or published methods) or by the forensic science laboratory itself (as in the case of methods developed in-house or where significant modifications are made to previously validated methods).

5.4.5.4 Prior to implementation of a validated method new to the laboratory, the reliability of the method shall be demonstrated in-house against any documented performance characteristics of that method. Records of performance verification shall be maintained for future reference.

5.4.6 Estimation of uncertainty of measurement

See the most current, published version of *ASCLD/LAB Policy on Measurement Uncertainty* (available at www.ascl-d-lab.org). Conformance with the most current, published policy is required to achieve and maintain accreditation.

5.4.7 Control of data

5.4.7.1 **NOTE** Calculations and data transfers which do not form part of a validated electronic process should be checked (See also ISO/IEC 17025:2005 – 5.4.7.1). The case record should include an indication that such checks have been carried out and by whom. It is preferable for a second person to perform the check.

5.4.7.2.1 Laboratories shall implement appropriate measures to prevent unauthorized access to computer systems used for examining digital evidence.

5.5 Equipment - *No Supplemental Requirements*

5.6 Measurement traceability

See the most current, published version of *ASCLD/LAB Policy on Traceability of Measurement Results, Reference Standards and Reference Materials* (available at www.ascl-d-lab.org). Conformance with the most current, published policy is required to achieve and maintain accreditation.

- 5.6.1 **General**
- 5.6.1.1 Procedures to check calibration of equipment shall be established depending on the specific requirements of the testing being carried out. It will normally be necessary to check calibration after any shut down, whether deliberate or otherwise and following service or other substantial maintenance. In general, calibration check intervals shall not be less stringent than manufacturers' recommendations.
- 5.6.2 **Specific requirements**
- 5.6.2.1 **Calibration** - *No Supplemental Requirements*
- 5.6.2.2 **Testing** - *No Supplemental Requirements*
- 5.6.3 **Reference standards and reference materials**
- 5.6.3.1 **Reference standards** - *No Supplemental Requirements*
- 5.6.3.2 **Reference materials**
- 5.6.3.2.1 Reference collections of data or items/materials encountered in casework which are maintained for identification, comparison or interpretation purposes (for example, mass spectra, motor vehicle paints or headlamp lenses, drug samples, typewriter print styles, wood fragments, bullets, cartridges, DNA profiles, frequency databases) shall be fully documented, uniquely identified and properly controlled.
- 5.6.3.3 **Intermediate checks** - *No Supplemental Requirements*
- 5.6.3.4 **Transport and storage** - *No Supplemental Requirements*
- 5.7 **Sampling** - *No Supplemental Requirements*
- 5.7.1 **NOTE 3** The process of sampling evidence is unique for each discipline and, where appropriate, should be documented in the operations and/or analytical procedures of the laboratory.
- 5.8 **Handling of test and calibration items**
- 5.8.1.1 Forensic science laboratories shall be able to demonstrate that the evidence examined and reported on was that submitted to the laboratory. A "chain of custody" record, which reflects the receipt of evidence and all internal transfers, shall be maintained. Each person shall acknowledge by a signature, initials, equivalent identification, or secure electronic equivalent, at the time of transfer, when they take possession of evidence or transfer evidence to a storage location. The

chain of custody shall include the date of receipt or transfer and a description or unique identifier of the evidence.

5.8.1.1.1 When evidence is subdivided in the laboratory, sub-items shall be tracked through a documented chain of custody record to the same extent that original items of evidence are tracked.

5.8.1.1.2 The laboratory shall ensure that evidence accepted and stored in the laboratory is properly sealed.

NOTE It is recognized that not all evidence can be sealed (for example, bulky items like furniture, etc.).

5.8.4.1 All evidence not in the process of examination/analysis shall be maintained in a secured, limited-access storage area under proper seal.

5.8.4.2 The laboratory shall have a procedure which describes the measures taken to secure unattended evidence which is in the process of being examined.

5.8.4.2.1 Laboratory policy concerning evidence in the process of examination/analysis cannot be opened and shall be based upon a justifiable expectation of frequent examination/analysis.

NOTE Evidence such as fingerprints and projectiles in unsolved cases that are subject to frequent requests for comparison may be treated as "evidence in the process of examination/analysis" and may be stored unsealed in a secure limited access area.

5.8.4.3 Each item of evidence shall be marked for identification in such a manner as to ensure that it is uniquely identifiable and traceable to the unique case number. If the evidence does not lend itself to marking, its proximal container or identifying tag shall be marked.

5.8.4.4 When evidence, such as latent prints and impressions, can only be recorded or collected by photography and the impression itself is not recoverable, the photograph or negative of the image shall be treated as evidence.

5.8.4.5 Evidence collected from a crime scene by laboratory personnel shall be protected from loss, cross transfer, contamination and/or deleterious change, whether in a sealed or unsealed container, during transportation to an evidence facility. Where appropriate, further processing to preserve, evaluate, document, or render evidence safe shall be accomplished prior to final packaging. Evidence collected from a crime scene shall be appropriately identified, packaged and entered into the evidence control system as soon as practical.

5.8.4.6 The laboratory shall have a procedure for the operation of individual characteristic databases.

5.8.4.6.1 The laboratory shall specify whether individual characteristic database samples are treated as evidence, reference materials, or examination records.

5.8.4.6.1 a Individual characteristic database samples treated as evidence shall meet chain-of-custody (5.8.1.1), evidence sealing and protection (5.8.4.1), evidence storage (5.8.4.2), and evidence marking (5.8.4.3) requirements.

NOTE Individual characteristic database samples include test fired ammunition produced in the laboratory, known blood or standard biological samples, and the ten print cards (or their electronic image equivalents which are commonly referred to as records) of known individuals.

5.8.4.6.1 b Individual characteristic database samples not treated as evidence shall meet 5.8.4.6.2 through 5.8.4.6.4.

5.8.4.6.2 Each individual characteristic database sample under the control of the laboratory shall be uniquely identified.

NOTE Agencies contributing to individual characteristic databases may use various methods to accomplish uniquely identifying database samples. In the case of automated fingerprint identification systems (AFIS), such methods include state or local identification numbers, arrest/booking numbers, name, dates or other information that in combination accomplishes this goal.

5.8.4.6.3 Individual characteristic database samples under the control of the laboratory shall be protected from loss, cross transfer, contamination and deleterious change. Individual characteristic database samples shall be treated in a manner that reasonably ensures their utility as comparison materials.

NOTE Changes to electronic fingerprint records that are undertaken for the purpose of improving the quality of information associated with the record (for example, "rolled print substitutions", consolidation of records) are not loss or deleterious change events under this standard provided that the lab has procedures for meeting examination record requirements for fingerprint records used for identifications (not eliminations) in latent print casework.

5.8.4.6.4 Access to individual characteristic database samples under the control of the laboratory shall be restricted to those persons authorized by the laboratory director.

NOTE Such authorized persons may include computer technicians (however named) who are not employees of the laboratory or agency, but who are responsible for equipment repair, database maintenance, improvement, etc. of a database that is under the control of the laboratory.

5.9 Assuring the quality of test and calibration results

5.9.1 **NOTE 2** Analytical performance should be monitored by operating quality control schemes which are appropriate to the type and frequency of testing undertaken by the laboratory. The range of quality control activities available to laboratories includes the use of:

- reference collections;
- certified reference materials and internally generated reference materials;
- statistical tables;
- positive and negative controls;
- control charts;
- replicate testing;
- alternative methods;
- repeat testing;
- spiked samples, standard additions and internal standards;
- independent checks (verification) by other authorized personnel.

Depending on the particular test being performed, the laboratory may make use of one or several of these examples to demonstrate that the test or examination/analysis is "under control."

The quality control procedures necessary in any particular area of work should be determined by the laboratory responsible for the work, based on best professional practice. The procedures should be documented and records should be retained to show that all appropriate QC measures have been taken, that all QC results are acceptable or, if not, that remedial action has been taken.

5.9.1.1 Appropriate controls and standards shall be specified in the methods and their use recorded in the case record.

NOTE "Standards" in this context would include drug reference materials and similar items used in test methods.

5.9.3 The laboratory shall have a documented program of proficiency testing.

5.9.3.1 When participating in proficiency testing programs, the laboratory's own approved test methods shall be used.

NOTE 1 The laboratory's overall performance in proficiency testing programs should be reviewed regularly and, where necessary, corrective action should be taken.

NOTE 2 Proficiency tests should not be subject to policies adopted by the laboratory for efficiency or expediency of casework. All parts of a proficiency test provided by an approved test provider should be examined as completely as the laboratory's procedures allows.

NOTE 3 The laboratory should employ technical review, verification and administrative review policies during proficiency testing as they are normally applied to casework.

5.9.3.2 The laboratory proficiency testing program shall comply with the *ASCLD/LAB Proficiency Testing and Review Program*.

NOTE The *ASCLD/LAB Proficiency Testing and Review Program* document is available at www.asclclab.org.

5.9.3.3 Each analyst (however named) and technical support personnel engaged in testing activities shall successfully complete at least one internal or external proficiency test per calendar year in his/her forensic science discipline(s).

NOTE 1 Successfully completing a proficiency test means either obtaining the correct response or completing corrective actions pursuant to laboratory policy and/or directives from an ASCLD/LAB Proficiency Review Committee (PRC).

NOTE 2 Proficiency testing using reexamination/reanalysis or blind techniques are acceptable forms of internal proficiency testing.

NOTE 3 The requirement for technical support personnel meeting this proficiency test requirement applies even though the technical support person may not furnish results/conclusions.

5.9.3.3.1 Where applicable, DNA analysts and technical support personnel performing DNA analysis shall comply with proficiency test requirements of the *Quality Assurance Standards for Forensic DNA Testing Laboratories* and *Quality Assurance Standards for DNA Databasing Laboratories*.

NOTE The requirement for technical support personnel meeting this proficiency test requirement of the *Quality Assurance Standards for Forensic DNA Testing Laboratories* and *Quality Assurance Standards for DNA Databasing Laboratories* applies even though the technical support person may not furnish results/conclusions.

5.9.3.3.2 Each analyst (however named) and technical support personnel (however named) engaged in testing activities shall successfully complete at least one proficiency test during each five-year accreditation cycle, in each category of testing appearing on the laboratory's Scope of Accreditation, in which the individual performs testing. To satisfy this requirement, the laboratory shall have a documented schedule for proficiency testing which is being followed by each analyst and technical support person.

NOTE The requirement for technical support personnel meeting this proficiency test requirement applies even though the technical support person may not furnish results/conclusions.

5.9.3.4 The laboratory shall participate annually in, and successfully complete, at least one external proficiency test for each discipline of forensic science in which it provides services. ASCLD/LAB approved test providers shall be used where available. Whenever there is not an ASCLD/LAB approved test provider available, the laboratory shall locate and use a source of an external test in the discipline.

5.9.3.5 The laboratory shall maintain records of proficiency testing and the documentation of a laboratory's proficiency testing program shall include, at a minimum:

- The test set identifier
- How samples were obtained or created
- Identity of the person taking the test
- Date of analysis and completion
- Originals or copies of all data and notes supporting the conclusions (full details of the examinations/analyses undertaken and the results and conclusions obtained)
- The proficiency test results
- Any discrepancies noted
- An indication that performance has been reviewed and feedback provided to the analyst (however named)
- Details of the corrective actions taken (when necessary)

NOTE The laboratory should establish criteria for the evaluation of proficiency tests.

5.9.3.6 Proficiency testing records shall be retained not less than one full ASCLD/LAB-*International* accreditation cycle or five years, whichever is longer.

5.9.4 The laboratory shall establish a procedure for the technical review of examination records and test reports. The procedure shall ensure that the conclusions of analysts (however named) are reasonable, within the constraints of validated scientific knowledge, and supported by the examination records. The procedure shall define the scope of the technical review, establish the parameters of the review process, specify how technical reviews are documented, and describe a course of action to be taken if a discrepancy is found. Technical reviews shall be carried out on a sample of completed case records as defined by laboratory procedure.

NOTE The sampling rate may vary depending upon the situation, as defined by laboratory policy or procedure. For example, a new analyst (however named) may have 100% of cases reviewed while a very experienced analyst may have only a few cases reviewed each month.

5.9.4.1 At a minimum, the technical review shall include a review of all examination records and the test report to ensure:

- Conformance with proper technical procedures (test methods) and applicable laboratory policies and procedures;
- Accuracy of test reports and that the data supports the results and/or conclusions in the test report;
- Associations are properly qualified in the test report; and
- The test report contains all required information.

5.9.4.2 Technical reviews shall be conducted by individuals authorized by laboratory management based on expertise gained through training and casework experience in the category of testing being reviewed. In addition, the reviewer shall have knowledge of the laboratory's technical procedures.

NOTE The individual conducting the technical review need not be an active analyst; currently proficiency tested in the discipline (category of testing); or an employee of the laboratory.

5.9.4.3 Technical reviews shall not be conducted by the author or co-author(s) of the examination records or test report under review.

NOTE The person who verifies a critical finding (See 4.13.2.12) is not considered as authoring examination records.

5.9.5 The laboratory shall establish a procedure which requires administrative review of the case record prior to the release of each test report. Laboratory policy shall define the scope of the review, and how the administrative review is documented. Administrative reviews shall be conducted by someone other than the author(s) of the test report.

NOTE Administrative reviews, in whole or in part, may be independent of technical reviews or may be combined as one process.

5.9.5.1 At a minimum, the administrative review shall include:

- A review of the test report for spelling and grammatical accuracy;
- A review of all administrative and examination records to ensure that the records are uniquely identified according to laboratory policy and/or procedure;
- A review of the test report to ensure that all key information is included.

5.9.6 The laboratory shall have and follow a procedure whereby the testimony of all testifying personnel is monitored on an annual basis. Each individual shall be given feedback, both positive and in any area needing improvement, and the monitoring procedure shall prescribe the remedial action that is to be taken should the evaluation be less than satisfactory.

NOTE 1 Methods by which testimony monitoring may be carried out include observation of the testimony by a supervisor or a peer; review of transcripts of testimony given; having one or more officers of the court fill out and return a testimony evaluation form (checklist

and/or comment sheet) provided by the laboratory; or telephone solicitation by a laboratory director or supervisor to one or more officers of the court for responses to the evaluation form.

NOTE 2 Areas that should be evaluated include appearance, poise, performance under direct or cross-examination, ability to present information in an understandable manner to a lay jury, and most importantly a determination that the testimony given is consistent with the work documented in the case record. Neither review of transcripts or feedback from the court officials can provide the quality of evaluation that is available through direct observation; therefore, especially for new analysts (however named), supervisory observation in the courtroom is the recommended method.

5.9.7 Records of testimony monitoring shall be retained through one ASCLD/LAB-*International* cycle of accreditation or five years, whichever is longer.

5.10 Reporting the results

5.10.1 General

NOTE 3 While laboratories must report results (5.10.1), it is accepted that forensic science laboratories may not be able to include all of the items in test reports that are detailed in sub-clauses 5.10.2 and 5.10.3 of ISO/IEC 17025:2005. Forensic science laboratories may therefore elect to adopt one or more of the following means of meeting the requirements in sub-clauses of 5.10.2 and 5.10.3.

- The preparation of a test report which includes all of the information required by ISO/IEC 17025;
- The preparation of an annex to the test report which includes any additional information required by ISO/IEC 17025;
- Ensuring that the case record relating to a specific investigation contains all of the relevant information required by ISO/IEC 17025.

5.10.1.1 The laboratory shall have a policy or procedure describing reasons or conditions for not producing a test report of analytical work.

NOTE 1 Examples of a reason or condition for not producing a test report include when a case is adjudicated before the work or report is completed, or where the customer cancels a request for work before it is completed.

NOTE 2 Analytical work requiring a test report does not include research activities, training exercises, validation studies, or ten print record intercomparisons.

NOTE 3 Activities that a laboratory undertakes for the purpose of constructing an individual characteristic database or maintaining the quality and/or effectiveness of information in such a database (for example, consolidation of 10 print images in AFIS; DNA profiling of biological reference samples of known individuals for inclusion in an offender database; addition of test fired cartridge case images in NIBIN) are not considered analytical work requiring a test report.

5.10.2 Test reports and calibration certificates - *No Supplemental Requirements*

5.10.3 Test reports

5.10.3.3 The laboratory shall have procedures for controlling the release of test report information.

5.10.3.4 Laboratory personnel who issue findings, including writing test reports and providing testimony, based on examination records generated by another person(s) shall complete and document the review of all relevant pages of examination records in the case record.

NOTE Records of the review may be accomplished in a number of ways, such as initialing each page of the examination record, the use of a review checklist, or specifying the pages of the records or dates of analysis that were reviewed and relied upon.

- 5.10.3.5 When associations are made, the significance of the association shall be communicated clearly and qualified properly in the test report.
- 5.10.3.6 When comparative examinations result in the elimination of an individual or object, the test report shall clearly communicate the elimination.
- 5.10.3.7 When no definitive conclusions can be reached, the test report shall clearly communicate the reason(s).
- 5.10.4 **Calibration certificates – *Not Applicable to Testing Laboratories***
- 5.10.5 **Opinions and interpretations - *No Supplemental Requirements***
- 5.10.6 **Testing and calibration results obtained from subcontractors - *No Supplemental Requirements***
- 5.10.7 **Electronic transmission of results - *No Supplemental Requirements***
- 5.10.8 **Format of reports and certificates - *No Supplemental Requirements***
- 5.10.9 **Amendments to test reports and calibration certificates - *No Supplemental Requirements***

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Appendix A - Glossary

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Glossary

In addition to the following terms and definitions, any relevant terms and definitions given in ISO/IEC 9000:2000 apply.

Accreditation cycle – The period of time (generally five years) between the date that accreditation is granted and the date accreditation expires.

Administrative records – Records, whether electronic or hardcopy, that do not constitute data or information resulting from testing, such as case related conversations, test item (evidence) receipts, chain of custody records, description of evidence packaging and seals, incident reports, service requests, correspondence received/sent, and other pertinent information.

Administrative review – Review of case records for consistency with laboratory policy and for editorial correctness.

Analyst (however named) - An individual who conducts and/or directs the analysis of forensic casework samples, interprets data, reaches conclusions, and issues test reports concerning conclusions.

Approved test provider - A proficiency test provider which has complied with the test manufacturing guidelines and requirements established by ASCLD/LAB and has been recognized as an approved test provider by ASCLD/LAB.

Association - A relationship which is concluded to exist between individuals and/or objects based upon an examination/analysis.

Audio - A category of testing within the digital & multimedia evidence discipline which involves the examination, analysis, comparison, and/or evaluation of audio evidence.

Audit - (from ISO/IEC 17000:2004) A systematic, independent, documented process for obtaining records, statements of fact or other relevant information and assessing them objectively to determine the extent to which specified requirements are fulfilled.

Biology (forensic science discipline) - The identification, comparison or characterization of genetic information from biological materials (includes categories of testing such as DNA and body fluid identification). Screening and stain identification are considered a fundamental part of the discipline.

Case records - Administrative records, examination records, and any other applicable technical records, whether electronic or hardcopy, generated or received by a laboratory pertaining to a particular case, which may be stored in one or more locations.

Category of testing - A specific type of analysis within an accredited discipline of forensic science.

Comparative examination - Physical and/or chemical testing performed on two or more items for the purpose of determining whether or not an association between the items exist (for example: the comparative microscopic examination of two projectiles to determine if both projectiles could have been discharged from the same barrel of a weapon).

Competency test - The evaluation of a person's knowledge and ability prior to performing independent work in forensic casework.

Competent - Possessing the requisite knowledge, skills and abilities to perform a job or task.

Computer Forensics - A category of testing within the digital & multimedia evidence discipline, which involves the examination, analysis, and/or evaluation of digital evidence.

Computer systems - Includes computer and any software or peripheral devices.

Control - A test performed to demonstrate that a test method works correctly and to ensure that data are valid. Positive controls confirm that the procedure will produce the expected result. Negative controls confirm that the procedure does not produce an unintended result.

Crime/forensic laboratory - A laboratory (with at least one full-time scientist) which examines physical evidence in criminal matters, issues test reports, and provides opinion testimony with respect to such physical evidence in a court of law.

Crime scene - An area, object or person, generally external to a laboratory facility, from which evidence is identified, recorded, collected, and/or interpreted.

Crime Scene (forensic science discipline) - The identification, documentation, collection, and/or interpretation of material at a location generally external to a laboratory facility.

Crime scene reconstruction – A category of testing in the Crime Scene discipline which involves the process of determining the nature and/or sequence of events that occurred at a scene from an evaluation of physical evidence and other relevant information.

Critical consumables, supplies and services (used in ISO/IEC 17025:2005) – A consumable, supply or service which must meet one or more crucial specifications to ensure the quality of the test result. In this context, "crucial" means significant or important.

Critical finding (See 4.13.2.12) – A decision about an association between items based on observable class and individual characteristics of the items.

Customer –A person or organization which requests the testing services of the laboratory.

Director - See laboratory director

Digital & Multimedia Evidence (forensic science discipline) - Digital Evidence: The analysis of evidence stored or transmitted in binary form. Multimedia Evidence: The analysis of analog or digital media, including, but not limited to, film, tape, magnetic and optical media, and/or information contained therein.

Discipline - A major area of casework as specified by ASCLD/LAB for which a laboratory may seek accreditation.

Distance determination – The analysis and comparison of gunpowder, primer residues or shot patterns generally found on garments or other objects through which a fired projectile has passed. ASCLD/LAB does not regard distance determination as Gunshot Residue (GSR) analysis.

Drug Chemistry (forensic science discipline) - The analysis of controlled drug substances either in pure, legal or illicit dosage forms. Categories of testing include Controlled Substances, Quantitative Analysis, General Chemical Testing, and Clandestine Laboratory Analysis.

Evidence - Equivalent to "test item" as described in ISO/IEC 17025:2005 / Section 5.8. Material, regardless of form, which is received by a laboratory for the purpose of glean information relevant to a criminal investigation through examination/analysis by one or more of the laboratory's testing procedures.

Environmental conditions - Any characteristic of a laboratory facility that could reasonably be expected to impact the quality of the laboratory's work product (for example, lighting, heating, air conditioning, ventilation, plumbing, wiring, adequacy of exhaust hoods/bio-safety cabinets, etc.).

Examination/Analysis - Equivalent to a test as described in ISO/IEC 17025:2005 / Section 5.4. The procedure utilized by the laboratory analyst (however named) to obtain information from evidence in order to reach conclusions concerning the nature of and/or associations related to evidence received by the laboratory.

Examination documentation – See Examination Records

Examination records – The documentation, whether hardcopy or electronic, of procedures followed, tests conducted, standards and controls used, diagrams, printouts, photographs, observations and results of testing and examinations. Examination records constitute part of “technical records,” for the purposes of interpreting and applying 4.13.2 of ISO/IEC 17025:2005.

External proficiency test - A test prepared, provided by and reported to a source external to the laboratory, laboratory system, or the laboratory's parent organization.

Firearms/Toolmarks (forensic science discipline) - Examination and/or comparison of evidence resulting from discharge and/or use of firearms; analysis and/or comparison of marks made by various tools.

Gunshot residue (GSR) – Gunshot residue is the elemental and morphological analysis of primer residues generally collected from the hands. ASCLD/LAB does not regard distance determination as “GSR” analysis.

Image Analysis - A category of testing within the digital & multimedia evidence discipline, which involves the application of image science and domain expertise to examine and interpret the content of an image and/or the image itself.

Individual characteristic database - A computerized, searchable collection of features, generated from individual characteristic database samples, that are associated with an object or person uniquely or with a high degree of probability. To fall within the scope of the ASCLD/LAB-*International* accreditation program, the database must be under the control of the laboratory being assessed.

Individual characteristic database sample - A specimen of known origin from which individual characteristic information originates (for example, reference blood or biological specimens, fingerprints of known individuals, electronic fingerprint records, test fired ammunition.)

Instructions – Detailed documents of how to perform a specific task.

Laboratory director - The highest ranking manager within an individual laboratory.

Latent Prints (forensic science discipline) - Development and/or comparison of latent print impressions.

Limited access – Access limited to personnel authorized by the laboratory director.

Management system - The organizational structure, responsibilities, procedures, processes, and resources for implementing quality management; includes all activities which contribute to quality, directly or indirectly. Equivalent to a management system described in ISO 17025:2005 / Section 1.4, NOTE 1.

Manager - A person with the responsibility for directing and controlling an organizational unit or program.

Media - Objects on which electronic data can be stored.

Method - The course of action or technique followed in conducting a specific analysis or comparison leading to an analytical result.

Natural science - Chemistry, biology and physics.

Objective - A measurable, definable accomplishment which furthers the goals of the organization.

Policy - A guiding principle, operating practice, or plan of action governing decisions made on behalf of an organization.

Practicable (used in ISO/IEC 17025:2005) – If the laboratory is able to meet the requirement, it shall meet the requirement.

Procedure (ISO/IEC 17000:2004) A specified way to carry out an activity or a process.

Proficiency test - A test to evaluate the capability and performance of analysts (however named), technical support personnel and the laboratory; in open tests, the analysts and technical support personnel are aware that they are being tested; in blind tests, they are not aware.

Proper seal - A seal that prevents loss, cross transfer, or contamination while ensuring that attempted entry into the container is detectable. A proper seal may include a heat seal, tape seal, or a lock. As required in 5.8.4.1, the initials or other identification of the person creating the seal shall be placed on the seal or across the seal onto the container when possible.

Quality assurance - Those planned and systematic actions necessary to provide sufficient confidence that a laboratory's product or service will satisfy given requirements for quality.

Quality control - Internal activities, or activities conducted according to externally established standards, used to monitor the quality of analytical data and to ensure that it satisfies specified criteria.

Quality manager (however named) - An individual designated by top management who has the defined authority and obligation to ensure that the quality requirements of the management system are implemented and maintained.

Questioned Documents (forensic science discipline) - Examination of printed, typed or written material for the purpose of identifying the source, determining alterations or other means of gaining information about the item or the circumstances surrounding its production. Includes, but not limited to, the examination of impressions and images made by stamps and devices such as typewriters, printers and copiers, and the analysis and comparison of inks and indented writing.

Reagent - A substance used because of its known chemical or biological activity.

Scientist - A person who employs scientific methods in the examination/analysis of evidence in a forensic laboratory.

Secure area - A locked space (for example, cabinet, vault or room) with access restricted to personnel authorized by the laboratory director.

Supervisor - A person directly responsible for overseeing the work of an individual or an organizational unit.

Technical records - See 4.13.2.1, NOTE 2 in ISO/IEC 17025:2005.

Technical review - Review of all examination records and test reports to ensure the validity of scientific results and conclusions.

Technical support personnel (however named) - Individuals who perform casework related duties within the laboratory at the direction of an analyst (however named) but do not issue test reports related to conclusions reached.

Toxicology (forensic science discipline) - Analysis of biological materials for the presence of alcohol, drugs and other substances.

Trace Evidence (forensic science discipline) - The physical and/or chemical examination/analysis of materials, frequently found in limited or trace quantities. Many categories of testing, which are not specifically listed under other disciplines, may be included in the trace evidence discipline.

Video Analysis - A category of testing within the Digital & Multimedia evidence discipline, which involves the examination, comparison, and/or evaluation of video evidence.

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Appendix B – ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists

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ASCLD/LAB GUIDING PRINCIPLES OF PROFESSIONAL RESPONSIBILITY FOR CRIME LABORATORIES AND FORENSIC SCIENTISTS

*"If the law has made you a witness,
Remain a man of science.
You have no victim to avenge,
No guilty or innocent person to convict or save --
You must bear testimony within the limits of science."*

*Dr. P.C.H. Brouardel
19th Century French Medico-legalist*

Preamble

These Guiding Principles are written specifically for forensic scientistsⁱ and laboratory management. The concepts presented here have been drawn from other professional codes and suggestions made by leaders in the forensic community.ⁱⁱ The Guiding Principles have been vettedⁱⁱⁱ and adopted by the ASCLD/LAB Board of Directors and staff with the hope that laboratory management will use them in training sessions, performance evaluations, disciplinary decisions, and as guides in other management decisions. It is also important that all laboratory personnel, including forensic scientists and other laboratory employees who assist forensic scientists in their work, are equally aware of these Guiding Principles and support forensic scientists and managers by incorporating the principles into their daily work.

These Guiding Principles provide a framework for describing ethical and professional responsibilities in the forensic laboratory community. While not all inclusive, they describe key areas and provide some specific rules to supplement existing codes of ethics adopted by professional organizations and individual laboratories. The Guiding Principles are designed to promote integrity among practitioners, and to increase public confidence in the quality of laboratory services, whether or not the laboratory is accredited by any accrediting body.

ASCLD/LAB has adopted the ASCLD Guidelines for Forensic Laboratory Management Practices, many of which have been incorporated into the ASCLD/LAB accreditation standards. Those practices provide for management support of the guiding principles set forth below and are intended to create a culture of ethical behavior and professional responsibility within the laboratory. The ASCLD practices should be implemented and followed to give practical meaning to the Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists.

Professionalism

The ethical and professionally responsible forensic scientist and laboratory manager . . .

1. Are independent, impartial, detached, and objective, approaching all examinations with due diligence and an open mind.

2. Conduct full and fair examinations. Conclusions are based on the evidence and reference material relevant to the evidence, not on extraneous information, political pressure, or other outside influences.
3. Are aware of their limitations and only render conclusions that are within their area of expertise and about matters which they have given formal consideration.
4. Honestly communicate with all parties (the investigator, prosecutor, defense, and other expert witnesses) about all information relating to their analyses, when communications are permitted by law and agency practice.
5. Report to the appropriate legal or administrative authorities unethical, illegal, or scientifically questionable conduct of other laboratory employees or managers. Laboratory management will take appropriate action if there is potential for, or there has been, a miscarriage of justice due to circumstances that have come to light, incompetent practice or malpractice.
6. Report conflicts between their ethical/professional responsibilities and applicable agency policy, law, regulation, or other legal authority, and attempt to resolve them.
7. Do not accept or participate in any case on a contingency fee basis or in which they have any other personal or financial conflict of interest or an appearance of such a conflict.

Competency and Proficiency

The ethical and professionally responsible forensic scientist and laboratory manager . . .

8. Are committed to career-long learning in the forensic disciplines which they practice and stay abreast of new equipment and techniques while guarding against the misuse of methods that have not been validated. Conclusions and opinions are based on generally accepted tests and procedures.
9. Are properly trained and determined to be competent through testing prior to undertaking the examination of the evidence.
10. Honestly, fairly and objectively administer and complete regularly scheduled:
 - relevant proficiency tests;
 - comprehensive technical reviews of examiners' work;
 - verifications of conclusions.
11. Give utmost care to the treatment of any samples or items of potential evidentiary value to avoid tampering, adulteration, loss or unnecessary consumption.
12. Use appropriate controls and standards when conducting examinations and analyses.

Clear Communications

The ethical and professionally responsible forensic scientist and laboratory manager . . .

13. Accurately represent their education, training, experience, and area of expertise.
14. Present accurate and complete data in reports, testimony, publications and oral presentations.
15. Make and retain full, contemporaneous, clear and accurate records of all examinations and tests conducted, and conclusions drawn, in sufficient detail to allow meaningful review and assessment of the conclusions by an independent person competent in the field. Reports are prepared in which facts, opinions and interpretations are clearly distinguishable, and which clearly describe limitations on the methods, interpretations and opinions presented.
16. Do not alter reports or other records, or withhold information from reports for strategic or tactical litigation advantage.
17. Support sound scientific techniques and practices and do not use their positions to pressure an examiner or technician to arrive at conclusions or results that are not supported by data.
18. Testify to results obtained and conclusions reached only when they have confidence that the opinions are based on good scientific principles and methods. Opinions are to be stated so as to be clear in their meaning. Wording should not be such that inferences may be drawn which are not valid, or that slant the opinion to a particular direction.
19. Attempt to qualify their responses while testifying when asked a question with the requirement that a simple "yes" or "no" answer be given, if answering "yes" or "no" would be misleading to the judge or the jury.

i The term "forensic scientist" is used throughout this document, These Guiding Principles are meant to apply to all laboratory personnel, including technical support personnel and others who assist forensic scientists in their work.

ii The materials from which the concepts embodied in these Guiding Principles have been drawn include:

- a. ASCLD Guidelines for Forensic Laboratory Management Practices. <http://asclcd.org/files/library/labmgtguide.pdf>
- b. ASCLD Code of Ethics. <http://asclcd.org/files/library/Code of Ethics.pdf>
- c. American Academy of Forensic Sciences Code of Ethics and Conduct. www.aafs.org
- d. The Code of Ethics of the California Association of Criminalists. www.cacnews.org
- e. The Code of Ethics of the Midwestern Association of Forensic Scientists, Incorporated. www.mafs.net
- f. Schroeder, O. C., "Ethical and Moral Dilemmas Confronting Forensic Scientists," *Journal of Forensic Sciences*. Vol. 29, No. 4, Oct. 1984, pp. 966-986.

- g. Lucas, D. M., "The Ethical Responsibilities of the Forensic Scientist: Exploring the Limits," *Journal of Forensic Sciences*. Vol. 34, No. 3, May. 1989, pp. 719-729.
 - h. Peterson, J. L., Murdock, J. E., "Forensic Science Ethics: Developing an Integrated System of Support and Enforcement," *Journal of Forensic Sciences*. Vol. 34, No. 3, May 1989, pp. 749-762.
 - i. Saks, M. J., "Prevalence and Impact of Ethical Problems in Forensic Science," *Journal of Forensic Sciences*. Vol. 34, No. 3, May 1989, pp. 772-793.
 - j. Starrs, J. E., "The Ethical Obligations of the Forensic Scientist in the Criminal Justice System," *Journal of Association of Official Analytical Chemists*. Vol. 54, 1971, pp. 906-914.
- iii The draft of this document [Appendix B] was distributed to thirty (30) forensic science organizations and several legal commentators for comment. The comments received were considered and many suggestions incorporated into the final version.

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Appendix C – Latent Print Examination Records

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Latent Print Examination Records (See 4.13.2.5.1)

In the latent print discipline, examination records shall include each examination activity conducted, the sequence of those activities and the results of the activities. The activities can include the development techniques applied, controls or reagent checks used in development techniques, photography/digital imaging used, any automated fingerprint identification system (AFIS) searches conducted, known exemplar¹ capture and/or retrieval, comparisons conducted and conclusions reached.

Examination records do not have to provide a detailed description of the thought process involved in the analysis, comparison or evaluation. However, examination records shall include which prints were analyzed, compared, evaluated and conclusions reached. Examination records shall also acknowledge the existence and disposition of any captured latent prints which are not analyzed, compared or evaluated.

When individualization is made, the original or a legible reproduction of the known exemplar shall be retained as part of the case record.

Images of the latent prints determined to be of value are needed for another competent analyst (however named) to evaluate what was done or interpret the data. Narrative descriptions, diagrams and drawings of latent prints alone are insufficient. Original latent prints, or legible copies shall be maintained in the case record. While it is permissible to keep all prints, ASCLD/LAB does not require that original latent prints or legible copies of latent prints which have no value for comparison or which were not examined be maintained in the case record.

Digital images of latent prints electronically stored may be included as examination records, as defined by laboratory policy, as long as the media has the appropriate security to ensure that the images remain unchanged.

When annotations are made on original evidence, latent print lifts or photographs/digital images of latent prints, the lifts and/or photographs/digital images with the annotations or a legible copy thereof shall be retained as examination records. Annotations may include, but are not limited to, designations of latent prints of value, markings regarding an identification, charting, etc.

For those laboratories which maintain custody and control of latent print evidence, the laboratory may, by policy, define latent print lifts and photographs/digital images with annotations, to be both evidence and examination records. For laboratories which do not maintain custody and control of annotated latent evidence, legible copies of latent prints, evidence or photographs/digital images shall be included as part of the case record.

When laboratory policy and procedure allows latent print evidence to also serve as examination records, the laboratory shall handle the latent prints in a manner that requirements for evidence are met.

¹ In this appendix, the word "exemplar" refers to the known friction skin impression/image(s) used to conduct the latent print comparison(s)