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1 Scope

1.1 Scope

The following table includes a list of forensic science disciplines and categories of testing in which competency tested analysts with the Charlotte Mecklenburg Police Department Crime Lab conduct analysis. A complete list of forensic services provided by each laboratory section can be found in section SOP's.

Discipline	Categories of Testing
Drug Chemistry	Controlled Substances
Toxicology	Blood Alcohol Analysis
Trace Evidence (Chemistry)	Fire Debris
Biology	Body Fluid Identification DNA Nuclear Individual Characteristic Database - CODIS
Firearms/Toolmarks	Firearms Toolmarks Serial Number Restoration Impression Evidence Individual Characteristic Database – IBIS
Questioned Documents	Document Examination
Latent Prints	Latent Print Processing Latent Print Comparison Individual Characteristic Database - AFIS, IAFIS

2 References

2.1 References

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

American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB), *Estimating Uncertainty of Measurement Policy*, 2007.

American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB), *Measurement Traceability Policy*, 2004.

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

American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB), *Supplemental Requirements for the Accreditation of Forensic Science Testing Laboratories*, 2011.

ISO/IEC, *ISO/IEC 17025:2005(E) - General requirements for the competence of testing and calibration laboratories*, 2005.

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

3 Definitions

Administrative records – Records that do not constitute data or information resulting from testing, such as case related conversation records, property sheets, evidence packaging, incident reports, lab request forms, case related correspondence and other pertinent information.

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

Analyst – An individual who conducts and/or directs the analysis of forensic casework samples, interprets data, reaches conclusions, and issues test reports concerning conclusions. Analysts are also referred to in some forensic disciplines as examiners.

Association – A relation which is concluded to exist between objects based upon an examination/analysis.

Biology – The identification, comparison or characterization of genetic information from biological materials, including DNA, body fluid identification, screening, stain identification.

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.

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.

Control – A test performed to demonstrate that a test method works correctly and to ensure that the 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.

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

Drug Chemistry – The analysis of controlled either in pure, legal or illicit dosage forms.

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 gleaning information relevant to a criminal investigation through examination/analysis by one or more of the laboratory’s testing procedures.

Examination documentation: Includes reference to procedures followed, tests conducted, standards and controls used, diagrams, printouts, observations and results of examinations.

External proficiency: A test program managed and /or controlled independent of the laboratory system.

Firearms/Toolmarks: A forensic science discipline that examines and/or compares evidence resulting from the discharge and/or use of firearms; and or comparison of marks made by various tools.

Forensic Document Examination: A forensic science discipline that examines and/or compares evidence related to questioned and/or known documents.

Goal: A statement of purpose defining the mission of an organization.

Inconsistency: Any reported results that differ from the consensus results. Inconsistencies may be classified as administrative, systemic, analytical or interpretive.

Information management system: A system (either electronic or paper) that is capable of providing laboratory personnel with information for resource management, budgetary analysis and general laboratory management.

Internal proficiency: Proficiency testing program managed and controlled within the laboratory system.

Known sample: A specimen of an identified source acquired for the purpose of comparison with an evidence sample; synonymous with exemplar.

Latent Prints: A forensic science discipline that develops and/or compares latent print impressions.

Limited Access: Access limited to personnel authorized by the lab director.

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.

Notes: The documentation of procedures, standards, controls and instruments used, observations made, results of test performed, charts, graphs, photos, and other documents generated and used to support the examiner's conclusions.

Objective: A measurable, definable accomplishment, which furthers the goals of the Organization.

Objective Test: A documented and validated test that is under control so that it can be demonstrated that all appropriately trained staff will obtain the same results within defined limits. These defined limits relate to expressions of measurement uncertainty.

Open proficiency: A quality assurance program where the examiner is aware that the sample is a test.

Organizing: The process of identifying, specifying and assigning work, grouping work and resources into a structure and establishing a chain of command between individuals and groups.

Planning: The analysis of relevant information from the present and past and the assessment of probable future developments so that a course of action may be determined that enables the organization to meet its stated objectives.

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

Primary Mass Standard: Certified NIST traceable weights used to verify secondary mass standards. Primary mass standards will meet or exceed ANSI/ASTM E617 Class 1 standards (ex. UltraClass).

Principle: A basic rule, assumption or quality; a fixed or predetermined policy or mode of action.

Procedure: The manner in which an operation is performed; a set of directions for performing an examination or analysis - the actual parameters of the methods employed.

Proficiency tests: Tests to evaluate the competence of analysts, technical support personnel, and the quality performance of a laboratory.

Protocol: A directive listing the procedures to be followed in performing a particular laboratory examination or operation; the overall plan for analysis of a particular item of evidence.

Quality: Adhering to generally recognized standards of good laboratory practice.

Quality Assurance: The processes and systematic actions necessary to provide confidence that the laboratory's product and services will satisfy given requirements for quality.

Quality Assurance Committee (QAC): Made up of the Lab Director, Section Administrators, DNA Technical Leader and the Quality Assurance Manager. Additional members may be appointed to the Quality Assurance Committee by the Lab Director.

Quality Assurance records: Records, logs, worksheets and electronic files that provide documented support of the conformity to the quality management system. These records include, method and equipment validation documents, equipment verification records, reagent and chemical QC logs, training records, proficiency and competency test records, courtroom testimony monitoring records and audit records.

Quality Audit: A systematic examination and review to determine whether quality processes and related results comply with the forensic laboratory protocols, policies, and procedures, and whether these practices are suitable and effective in achieving the quality objectives.

Quality Control: The day-to-day techniques and activities used by the CMPD Crime Lab to consistently ensure accurate analytical results

Quality Manager: An individual designated by management who, irrespective of other responsibilities, has the defined authority and obligation to ensure that the requirements of the quality system are implemented and maintained.

Quality Manual: A collection of the CMPD Crime Lab quality system policies and objectives and how these policies and objectives will be implemented.

Quality Management System: The total organizational structure, responsibilities, procedures, processes, and resources for implementing quality management. This includes all activities that contribute to quality whether directly or indirectly.

Questioned sample: An evidence sample examined for the purpose of comparison or identification.

R-drive: The Resource computer server that is secured and maintained by Computer Technology Services and utilized to store electronic records and information by CMPD personnel.

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

Re-exam technique: A quality assurance technique whereby a previously examined sample is re-examined by a different analyst.

Reference standard: A sample (with known properties) that is acquired or prepared for calibrating equipment and or for use as a control in experiments.

Reliability: Possessing the quality of being dependable; may refer to personnel, materials or equipment.

Safety manual: A document stating the safety policy and describing the various elements of the safety system of the organization.

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

Secondary Mass Standards: Weights used in routine balance calibrations. Secondary mass standards will meet or exceed ANSI/ASTM E617 Class 2 standards.

Standards: Something established by authority, custom, or general consent as a model or example.

Standard Operating Procedure: An established or prescribed method that is routinely followed for the performance of designated operations or in designated situations.

Technical procedures: Scientific methodologies used in forensic analyses. Written procedures will be prepared for routine tests performed in the CMPD Crime Lab. The procedures used may be those developed and validated by an outside laboratory or those developed and validated in-house.

Technical review: The review of notes, data, and other documents, which form the basis for a scientific conclusion.

Testimony: The firsthand authentication of a fact; recognition of the individual's education, experience and training may allow for testimony as an expert wherein the analyst is allowed to provide an opinion from the facts.

Validation: The process of performing a set of experiments that establish the efficacy and reliability of a technique or procedure or modification thereof.

4.1 Organization

4.1.1 Legal Responsibility

The Charlotte-Mecklenburg Police Department Crime Lab is the forensic laboratory division of the Charlotte-Mecklenburg Police Department (CMPD). The CMPD is the primary law enforcement agency for the city of Charlotte and the surrounding unincorporated area of Mecklenburg County, North Carolina.

4.1.2 Quality Objectives

In an effort to meet our customers' requirements, address customer satisfaction, and to continue to supply the best forensic testing possible, the CMPD Crime Lab has established and implemented a quality management system.

The CMPD Crime Lab will use standard or internally validated methods to meet all of the requirements of the ISO 17025 quality assurance standards and the requirements of ASCLD/LAB-International Supplemental requirements for the accreditation of forensic science testing laboratories. The laboratory will also meet additional state and local requirements not addressed in these standards.

The requirements for quality in the procedures utilized and reports produced by the CMPD Crime Lab can be found in the Standard Operation Procedures and/or Quality Manual for each individual section within the CMPD Crime Lab.

4.1.3 Facility and Organization

The CMPD Crime Lab is composed of a laboratory located on the fourth floor of the CMPD Law Enforcement Center (LEC) at 601 E. Trade Street, Charlotte, North Carolina, 28202. The laboratory management system covers forensic operations whether CMPD laboratory members perform forensic services in the laboratory, at crime scenes or at other locations.

- A chart of the CMPD Crime Lab organizational structure can be found in Appendix B.
- The listing of the job descriptions can be found in Appendix C.

4.1.4 The CMPD Crime Lab Management

The Chief of Police of CMPD appoints the Director of the Crime Lab Division. The CMPD Crime Lab Director has the responsibility and authority to manage and direct the Crime Lab Division. The Director appoints and directs the CMPD

Crime Lab Section Administrators, DNA Technical Leader, and the Quality Assurance Manager.

4.1.5 Responsibility and Authority (R & A)

The staff of the CMPD Crime Lab has the R & A to carry out the requirements of the quality system. Note: The CMPD Crime Lab term "quality system" is equivalent to the ISO/IEC 17025: 2005 term "management system" and includes the quality, administrative and technical systems that govern CMPD Crime Lab operations.

a) All CMPD Crime Lab staff have the R & A to identify nonconformities and to take the actions necessary to prevent the occurrence of nonconformities relating to the official reports, analytical procedures, operational procedures and quality practices of the CMPD Crime Lab. CMPD Crime Lab staff is provided with the resources needed to carry out their duties, including the implementation, maintenance and improvement of the quality system.

   The CMPD Crime Lab management has the authority to order a deviation from an approved operational/quality procedure in order to enhance the effective functioning of the CMPD Crime Lab in a particular circumstance.

b) The management of the CMPD Crime Lab strives to ensure there is no influence on the professional judgments of employees working cases. The following policies/arrangements are in place in an attempt to insulate the staff from financial, personal, or other pressures that may affect their work:

   - The Charlotte City Council sets the annual budget for the Charlotte Mecklenburg Police Department and the Crime Lab. The Director of the CMPD Crime Lab is the point of contact for the Division on all budget matters with CMPD.
   - The management of the CMPD Crime Lab prepares, in accordance with CMPD personnel policy, performance expectations for each employee outlining the job expectations for the coming year. Managers evaluate each employee on their individual performance as compared with their individual expectations.
   - The CMPD Directive for Rules of Conduct contains specific guidelines on the acceptance of gifts or gratuities.
   - The Director and Section Administrators have the R & A to receive and take action on employee concerns within the CMPD Crime Lab. The City of Charlotte Grievance Policy HR 11 outlines provisions for employee grievances that cannot be resolved at the Lab Director level.
   - Routine casework will be assigned and worked based on section SOP's. A case may be made a priority by the section supervisor or

Laboratory Director due to a pending court date or at the request of a CMPD officer with the rank of Major or above. Section Administrators will monitor the work performed on priority cases to ensure that the time frame given the priority does not compromise established processes that result in a quality product. Section Administrators will adjust the time frame of a priority request if it becomes evident that technical requirements demand additional time for production of a quality product.

c) In accordance with the CMPD Directive for Rules of Conduct all employees are required to keep confidential all information obtained in their official capacities. Except where legally authorized, employees will not access or disclose any confidential information. Every employee has the responsibility to safeguard all confidential information obtained in his or her official capacity from unauthorized distribution. CMPD Crime Lab policies concerning dissemination of reports, documents and information are outlined in QM 4.13.1.3 and QM 5.10.3.3.

d) The CMPD Directive for Rules of Conduct enumerates regulations regarding activities outside of employment which may cast doubt on the professional, ethical, or personal integrity of its employees. These policies include, but are not limited to, abuse of official position, use of outside influence, public appearance, truthfulness, professional responsibility, and neglect of duty.

e) Organizational charts of top management of CMPD and the Crime Lab can be found in Appendix A and B.

In the organizational structure of CMPD, the overall operation of the CMPD Crime Lab is the R & A of the Director of Crime Lab.

The CMPD Crime Lab relies on CMPD support for finance, personnel, legal, public relations, legislative, staff, and professional standards services. Support services for the CMPD Crime Lab include Security and Housekeeping.

The CMPD Chief of Police is instrumental in the planning and procurement of funds for the future development of the CMPD Crime Lab.

The CMPD as an agency does not participate in the scope of the CMPD Crime Lab quality system. The CMPD Crime Lab does, however, participate in the accreditation of the CMPD by the Commission on Accreditation of Law Enforcement Agencies, Inc. (CALEA) CALEA recognizes accreditation bodies for crime labs such as ASCLD/LAB as part of its accreditation process for CMPD.

f) All CMPD Crime Lab staff have the R & A to identify and record any potential nonconformities related to the official reports, analytical procedures, operations procedures and quality practices of the CMPD Crime Lab. Completed documentation associated with an identified problem will be forwarded to the individual staff member's immediate supervisor who will forward the information to the Quality Assurance Manager. All CMPD Crime Lab staff have the R & A to ensure that solutions to problems identified in the official reports, analytical procedures, operational procedures and quality practices of the CMPD Crime Lab are effectively implemented. QM 4.9 and QM 4.11 will be utilized if an employee finds a potential nonconformity.

The analysts in each discipline will report to one Section Administrator.

g) The Director will assign appropriately trained individuals as administrators of the various sections of the laboratory. Section Administrators are chosen from those individuals who have demonstrated technical competence in their field and a potential for management.

Properly trained individuals will perform the verification activities associated with internal quality audits within the CMPD Crime Lab.

h) The Section Administrators are responsible for the overall technical management of each discipline of the lab. Management will make every reasonable effort to provide personnel, financial and physical plant resources sufficient to complete the activities required by the quality system and job descriptions of the staff of CMPD Crime Lab.

All CMPD Crime Lab Section Administrators and DNA Technical Leader have the R & A to control further processing or delivery of reports that may be impacted by nonconformities or deficiencies. If necessary, the DNA Technical Leader and/or Section Administrator(s) will advise the Lab Director and the Quality Assurance Manager of the need to suspend operations. The Director, Quality Assurance Manager, Section Administrators and DNA Technical Leaders are authorized to suspend operations for as long as necessary. The Quality Assurance Manager will be responsible for calling a meeting with the Section Administrator of the affected section and the Lab Director. The Lab Director and the Section Administrator must review the situation and determine when the suspended operations may be resumed.

i) The Lab Director will appoint an individual as Quality Assurance Manager for the CMPD Crime Lab. The Quality Assurance Manager has been granted full R & A to ensure that the management system related to

quality is implemented and followed at all times; the quality manager shall have direct access to the highest level of laboratory management. Key managerial personnel within the Crime Lab consist of the Lab Director, the Section Administrators, the Quality Assurance Manager and the DNA Technical Leader. The Lab Director will designate deputies to assume the responsibility of key managerial personnel, as needed, in their absence (QM 4.1.8). The designated deputies will have the same responsibilities and authority as the key managerial personnel during these absences.

j) Section Administrators will ensure that employees are notified of their responsibilities and expectations concerning the objectives of the CMPD Crime Lab quality system and will provide feedback on actual job performance.

k) Each Section Administrators will ensure that newly hired and transferred employees have taken part in the proper documented Safety Orientation training given by the Safety and Chemical Hygiene Officer (S&CHO) before assuming laboratory duties.

4.1.6 Communication

The CMPD Crime Lab methods of communication include staff and section meetings, email, telephone, establishment of policies and procedures, and Corrective/Preventive Action Requests. The Lab Director, Quality Assurance Manager and the Section Administrators will determine the appropriate means of conveying information concerning the quality system.

4.1.7 Safety and Chemical Hygiene

The Lab Director will appoint an individual as Safety and Chemical Hygiene Officer (S&CHO) for the CMPD Crime Lab. The S&CHO has been granted full R & A to ensure that the safety and chemical hygiene program is implemented and followed. It will be the responsibility of the S&CHO to conduct the safety audits and keep the Safety Manual up to date.

4.1.8 Top and Key Management

The top management of the CMPD Crime Lab consists of the Lab Director. The Lab Director is responsible for the overall operational oversight of the CMPD Crime Lab and its various functions.

If the Lab Director is unavailable, the Quality Manager will serve as the primary point of contact for the Crime Lab and will be responsible for general laboratory issues that arise. Each Section Administrator will be responsible for addressing any issues that directly impact their respective areas.

Each section of the laboratory will have a Section Administrator assigned to carry out the management duties and technical responsibilities of their respective sections. In the absence of the Section Administrator, a senior analyst or designated employee will be assigned to carry out the technical responsibilities of their respective Sections/Units. The Lab Director will assume the administrative duties of the section during the supervisor's absence.

In the absence of the Quality Assurance Manager, the Lab Director will take on the responsibilities and duties associated with overseeing the Quality Program.

A qualified DNA analyst may be assigned to temporarily oversee the technical operations of the DNA laboratory in the absence of the DNA Technical Leader (Biology QA 2). The selected individual will meet the minimum educational, experience and training requirements for the DNA Technical Leader as defined in Biology QA 3.3 and the FBI's QAS.

Section SOP's may address the assignment of additional deputies for various other positions within the Crime Lab that are not considered key management personnel (ex. CODIS Administrator).

Any issues related to departmental policies or activities during the absence of the Lab Director will be referred to the Lab and Evidence Bureau Major.

4.2 Quality System

4.2.1 General

The CMPD Crime Lab has established and documented a quality system in this document, Analytical Procedure Manuals, Training Manuals, and PLIMS Manual.

The CMPD Crime Lab continues to:

a) Prepare documented procedures which are consistent with the requirements of the CMPD Crime Lab Quality System and revise these procedures as needed.
b) Effectively implement the quality system and distribute the documented procedures on the Department's resource drive (R-Drive) available to all employees.

The Lab Director, Section Administrators and Quality Assurance Manager will review changes to the quality system in their Quality Assurance Committee meetings. It is the R & A of the Section Administrators to implement the changes and assist the staff in understanding any changes.

4.2.2 Policy Statement

The CMPD Crime Lab is responsible for providing scientific analysis of evidentiary material upon the request of its customers, which include: CMPD, local law enforcement partner agencies, and the criminal justice community. The CMPD Crime Lab is committed to meeting the needs and expectations of our customers utilizing a philosophy of quality and service that is consistent with the CMPD mission statement:

> *The Charlotte-Mecklenburg Police Department will build problem-solving partnerships with our citizens to prevent the next crime and enhance the quality of life throughout our community, always treating people with fairness and respect.*

The management of the CMPD Crime Lab is committed to good professional practices; providing quality of testing in servicing its customers; and adhering to good forensic laboratory principles as outlined in the *"ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists."* The management of the CMPD Crime Lab has developed and implemented an extensive quality system which incorporates the policies and procedures necessary to meet these commitments. The quality system will focus on maintaining the integrity and reliability of all laboratory processes by focusing on the following:

- Continual monitoring and improvement of services to ensure the integrity and reliability of all laboratory processes through the use of this quality policy, audit results, analysis of data, corrective and preventive actions and management review.
- Monitoring the performance of forensic analyses and examinations to ensure that results are accurate, relevant, reliable, and thorough.
- Ensuring that analysts are independent, impartial, detached, and objective when interpreting analytical data.
- Ensuring that the presentation of the results of analyses and examinations in reports and testimonies are complete, clear, objective, balanced and easily understood by its customers.
- Continuing the development of the skills and expertise of its personnel.
- Conforming laboratory policies and practices with the ASCLD/LAB accreditation standards, the ISO 17025 quality assurance standards and the *FBI Quality Assurance Standards for Forensic DNA Testing Laboratories*.

It is the policy of CMPD Crime Lab management that all laboratory operations will conform to the practices described in this Quality Manual. Therefore, all laboratory personnel will be familiar with this document and its supporting documents and will implement the contained policies and procedures in their work. Any deviations from these practices will require the expressed written permission of the Laboratory Director. Documentation of any deviation will be maintained by the Quality Manager.

Management will ensure that the *"ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists"* are reviewed annually by all laboratory personnel and documented.

4.2.3 Improvement

The CMPD Crime Lab management monitors the quality system through a variety of means, including the annual quality assurance audit, procedure reviews, proficiency testing, technical review of casework and Corrective/Preventive Action Requests. The Quality Assurance Manager monitors activities associated with the quality system and has the authority to take action as needed to improve the quality system's effectiveness.

4.2.4 Meeting Requirements

The CMPD Crime Lab Top Management will ensure that the quality system continues to meet customer and statutory requirements through validation studies, new method development and procedural changes.

The CMPD Crime Lab Section Administrators and the DNA Technical Leader will carefully consider customer and statutory requirements when forwarding policy/procedure change proposals to the Quality Assurance Manager.

All CMPD Crime Lab staff will consider the needs of the customer when processing evidence. QM 4.4 addresses establishment of the contract, special requests and deviations from expected service.

4.2.5 Supporting Manuals

The quality system (or management system) of the CMPD Crime Lab includes the Quality Manual and a series of supporting manuals covering the quality, technical, safety and operational policies of the laboratory. These manuals contain the quality requirements and technical procedures used in the laboratory and the reports produced by the laboratory. The names and content of each manual included in the quality system are listed below:

- The Quality Manual contains top tier documents for the laboratory system.
- Section SOPs and/or Section Quality Manuals contain the analytical procedures approved for use in each scientific discipline.
- The Section Training Manuals contains the training program for each discipline.
- The Safety Manual contains safety and environmental compliance policies and information.

4.2.6 Technical Management

The R & A for overall administration of CMPD Crime Lab quality activities are shared by the Lab Director, the Section Administrators, DNA Technical Leader and the Quality Assurance Manager. This group of individuals comprises the Quality Assurance Committee (QAC) for the laboratory. Additional members may be appointed to the Quality Assurance Committee by the Lab Director.

4.2.7 Integrity

The CMPD Quality Assurance Committee will assess the impact of proposed procedural changes prior to implementation in an effort to ensure that the change does not result in contradictions or conflicts with other procedures. Decisions made by the QAC must be made via unanimous vote of members or via directed verdict of the Laboratory Director. Section Administrators and the DNA Technical Leader will solicit the input of other qualified personnel as needed prior to submitting procedural change recommendations to the Quality Assurance Manager. All recommendations must be clearly documented and indicate the

reason for the needed change and list any/all other documents affected by the change.

The CMPD Crime Lab staff that is affected by any changes in policy or procedure will be notified of pending procedural changes prior to implementation. Section Administrators will ensure that training is provided as needed. Section Administrators will have necessary validation documentation on file.

4.3 Document Control

4.3.1 General

All documents that form part of the CMPD Crime Lab management system will be controlled. These include the Quality Manual, the Laboratory Safety Manual, analytical procedures (Section SOPs and QA Manuals), training manuals, section forms and work sheets; as well as drawings, software, specifications, instructions and manuals. The QA Manager will be responsible for the maintenance and control of all controlled documents. The CMPD Crime Lab follows documented procedures for control of CMPD policies as set forth in the CMPD Directives and or City of Charlotte policies.

4.3.2 Document Approval and Issue

4.3.2.1 Authority to Approve and Issue Documents

The Quality Manual, Section SOP's, Training Manuals, Safety Manual and PLIMS User Manual will be reviewed and approved by the Quality Assurance Committee.

Documents such as section forms and work sheets; as well as drawings, specifications, instructions and manuals will be approved by the Section Administrator. Forms used for the quality assurance program will be approved by the Quality Assurance Manager and forms used in the Safety Program will be approved by the Safety and Chemical Hygiene Officer.

A complete listing of the revision status of the policies and procedures within these manuals, the issuing authority, issue date and date retired is maintained by the Quality Assurance Manager on the R-drive and is available for viewing by CMPD Crime Lab staff as needed. Only the current revisions of policies and procedures are accessible to CMPD Crime Lab staff.

4.3.2.2 Control

Official working copies of the documents produced by CMPD Crime Lab are distributed on the CMPD R-Drive. All CMPD Crime Lab staff has access to the appropriate policies and procedures. Section Administrators that wish to have working hard copies need the approval of the Quality Assurance Manager to get an "Authorized Copy" that is marked so in a color other than black. No extraneous materials are to be stored in issued hard copies. Post-It® notes regarding future revisions will be allowed.

The Quality Assurance Manager will exercise control of the laboratory documents to ensure that:

a) Current revisions of documents are maintained as necessary to ensure effective functioning of the quality system.
b) Documents are reviewed annually by the QAC to ensure they are suitable and comply with current practices. Documents are revised as necessary to ensure compliance with current requirements and practices.
c) Obsolete versions of documents are removed from circulation to ensure they are not used in any way that would compromise the quality of any work product of the laboratory. Obsolete hard copies will be destroyed unless they are needed for archiving purposes to be accessed for possible future discovery requests.
d) Historical versions of documents are suitably identified by placement into a directory for archived electronic documents. If a hard copy of an archived policy or procedure is needed, it will be marked "Archived Copy" to indicate its archived status.

4.3.2.3 Issue

All documents approved for use in the laboratory will be uniquely identified by title and placed in the appropriate manual. In addition, each document will include the revision date and a document identifier that consists of an abbreviation or name of the section/discipline; page number and number of pages; and the issuing authority.

4.3.3 Document Changes

4.3.3.1 Creating/Modifying Documents

Creation and/or substantive changes to laboratory documents need to be authored by authorized lab personnel at the direction of the proper section administrator. All changes will be presented to and authorized by the Quality Assurance Committee using one of the following methods:

a) The QAC may meet to approve new analytical procedures and/or make necessary changes to the quality assurance program. Decisions made by the QAC must be made via unanimous vote of members present at the meeting or via directed verdict of the Laboratory Director. Decisions made by the QAC will be documented in meeting notes.
b) QAC votes may also be conducted via passing the materials to be added, changed or deleted via interoffice mail with a paper ballot that describes the proposed changes and has spaces for the QAC member's signature, date and check boxes to vote to approve or reject. The QA Manager will conduct these votes and be responsible for their documentation. All QAC members will vote when using this method.

c) QAC votes may also be conducted via email ballot. Proposed changes will be sent via email to the QAC members via Outlook email. The members vote via the voting accept/reject buttons provided by the Outlook program. QAC members have three working days to respond to the email ballot. Anyone not voting within that time (except the director) will be treated as though absent from a QAC meeting and no vote will count toward the total. If the director does not vote within the prescribed period, the ballot will be held open for all voters until he does. The QA Manager will conduct these votes and document the votes via the Outlook response/tracking feature showing how each member voted and when.

Forms and worksheets are not included in this requirement. Non-substantive changes to the section's analytical SOPs may be authorized by the affected Section Administrator. Safety related forms or documents other than the Laboratory Safety Manual may be authorized by the laboratory's S&CHO.

4.3.3.2 Revised Documents

Changes in all updated manuals will be highlighted showing the changed or added material. The Quality Assurance Manager will forward to affected staff via an email link to the revised documents.

The QA manager will get the appropriate signatures on the history page(s) of QAC approved documents. The signed pages will be stored by the QA manager.

4.3.3.3 Amendment of Documents

Amendments to documents will not be performed by hand.

4.3.3.4 Distribution

Approved documents will be sent via email or other electronic means to the QA manager. The QA manager will convert the documents to .pdf format, locked Word Document or Word Template for forms, electronically sign the document and post the documents in the appropriate place on the department's resource R- drive. Notification to laboratory staff of document revisions will be distributed via email that the lab employee must open to read. Once they have opened the email, they will be held responsible for the content of the new revision. Tracking of staff compliance will be accomplished via the Outlook receipt/tracking feature. Any staff member who fails to open the email and have the proper receipt sent to the QA Manager within three working days will be required to send a written email to the QA Manager stating that they have received and understand the new policy or sign off on the QA Managers read receipt copy. The QA Manager will notify the appropriate supervisor if a staff member fails to comply with proper procedures. Working copies of these documents may be disseminated to staff

members as needed for electronic submission of proposed changes to the documentation.

4.4 Review of Requests, Tenders and Contracts

4.4.1 Review

Individuals requesting analyses will do so using the service request function of PLIMS. Hard copy requests can be accepted by the Laboratory as necessary from external agencies or from CMPD investigators due to extenuating circumstances (i.e. internal affairs, rush cases etc…). Email or other forms of requests can be received from the District Attorney's office by the Chemistry Section.

Each Section Administrator will designate a person or persons to review the examination information that relates to their section on the service requests. Prior to accepting evidence for examination CMPD Crime Lab personnel will evaluate the information to ensure that:

a) The CMPD Crime Lab can adequately address the needs of the submitter utilizing methods defined in section Standard Operating Procedures (SOP's) per QM 5.4.2 that are used and understood by the appropriate personnel.
b) The CMPD Crime Lab has the capability and resources to perform the services that it is agreeing to.
c) Appropriate test methods will be selected that are capable of meeting the customer's requirements per QM 5.4.2.

Each request will be reviewed and if the request is appropriate it will be accepted and processed according to section SOP's. The CMPD Crime Lab shall resolve any differences between the request or tender and the contract prior to any work being done. The customer will be contacted if necessary and each contract will be acceptable by both the CMPD Crime Lab and the customer. If a request is not acceptable then the request will be rejected with an explanation to the requestor along with any instructions for resubmission.

4.4.2 Records of Review

Requests for lab services are accepted using the Service Request function of PLIMS. Any changes to the request, information relating to special requests or requests requiring a more comprehensive record will be maintained in PLIMS. The CMPD Crime Lab will maintain records of discussions with customers relating to the customer's requirements and the analysis of the evidence. Any records received that are hard copies must be scanned and attached to the case file in PLIMS.

4.4.3 Subcontracting of Services

The Lab Director or designee will review all contracts with subcontractors prior to being awarded to ensure that the subcontractor has the capability and resources to perform the service(s) that CMPD Crime Lab is requesting.

All subcontracting of analysis related to DNA and serology cases will follow the guidelines provided by the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories.

4.4.4 Deviations from Contract

The customer will be informed of any deviation from the expected services. This can be done through the case correspondence function in PLIMS. Any other method must be attached to the case file in PLIMS.

4.4.5 Amendment to Contract

When necessary, CMPD Crime Lab personnel may add to or cancel a Service Request in accordance with the guidelines established in Section SOP's. Any needed amendments to the contract after examination/analysis has been initiated will be communicated through the case correspondence function in PLIMS. Any other method must be attached to the case file in PLIMS.

4.4.6 Handling of Highly Confidential and/or Expedited Cases

Occasionally the Laboratory is required to analyze evidence that is of a highly confidential nature and/or expedited. The Laboratory can provide expediency and confidentiality, but the work must be conducted within the policy limits of the CMPD directives and Laboratory policies and procedures. Concerns or conflicts should be handled via the Laboratory's chain of command. The minimum requirements that must be followed are:

a) All Laboratory Quality Manuals, analytical SOPs and departmental directives (700-001 & 700-006) must be followed.
b) There must be a valid CMPD lab number and all evidence must be entered into PLIMS.

The results may be locked to one or more person(s) (generally the submitting officer and/or the officer's chain of command). The case is locked by using the "Lock Case" button in the "Case Info" tab. Once the "Lock Case" button has been selected, a message will appear in red on the Case Info screen noting that the "Case is Locked". Additional persons other than the case officer may be given access by using the "Team" button on the "Case Info" screen. The "Team" button will open a separate page where individuals may be added by selecting

their name under Available Personnel and assigning them to the Case Access Team.

After the case is worked all quality assurance checks called for in the section SOPs must be conducted prior to releasing information.

4.4.7 Criteria for Evidence Re-Examination

The CMPD Crime Laboratory will not consider re-examining evidence previously examined by another crime laboratory unless court ordered to provide this service and the service is within the scope of our laboratory capabilities or standard operating procedures.

The CMPD Crime Laboratory will not repeat an analytical procedure or examination on a piece of evidence previously conducted by our analysts unless:

a) There are facts to indicate that the section SOPs were not properly followed for the evidence in question.
b) An internal evaluation and investigation revealed that a material error was made in the original analysis.
c) For purposes of testifying for an analyst who is unable to testify.
d) There is significant reason to believe there are other scientifically accepted and appropriate tests or procedures that could enhance the previous results.

The CMPD Crime Laboratory will require the defense to file a court order for a re-examination or for additional examinations of evidence previously examined by the Laboratory. The Laboratory will require a copy of the court order which contains a list of the evidence requested for examination using our Department complaint numbers and item numbers for our files. All court orders will be reviewed with the Police Attorney's office.

4.5 Subcontracting of Tests

4.5.1 Subcontracts

The CMPD Crime Lab may choose to subcontract forensic testing to other forensic testing labs, either on a temporary or continuous basis, due to workload, lack of established protocols for a requested service, or special initiatives requiring the assistance of an outside lab. The CMPD Crime Lab will only subcontract casework to competent forensic testing laboratories that are capable of complying with nationally recognized standards (e.g., ISO 17025, ASCLD/LAB accreditation requirements, FBI Quality Assurance Standards).

When evidence is sent to an external laboratory to generate DNA data that will be entered into or searched in CODIS, the CMPD Crime Lab shall require the vendor laboratory to provide documentation of compliance with the Federal Bureau of Investigation's Quality Assurance Standards for Forensic DNA Testing Laboratories and the accreditation requirements of federal law. Documentation of the vendor laboratory's compliance with the FBI's Quality Assurance Standards and the approval of the technical specifications of the outsourcing agreement shall be maintained by the DNA Technical Leader. Outsourcing agreements with external laboratories performing DNA analysis for the CMPD Crime Lab will conform to City of Charlotte and Police Department polices.

To ensure the integrity of evidence that is mailed by the laboratory, it is the policy of the Crime Laboratory that, at a minimum, all evidence is sent via first class mail. However, other methods, such as registered mail (return receipt requested) or Fed-Ex are acceptable, as long as there is a method of tracking what is shipped.

4.5.2 CMPD Crime Lab Customers

Evidence will be submitted to other agencies at the direct request of the customer. Written communication is the preferred method however, a verbal request is acceptable if a proper communication record is filled out and retained in the case file.

Whenever the laboratory must send evidence to any other laboratory for analysis, such as the NC State Crime Laboratory, proper documentation will be made in PLIMS. The proper forms and paperwork will be completed for the respective laboratory and a copy retained in our case file. The reports issued by the analyzing laboratory will be sent directly to the CMPD Crime Lab. The CMPD Crime Lab will issue a copy of the external laboratory's report to the authorized recipients. The original report will be retained in the case file and scanned into PLIMS. All of the evidence will also be returned to CMPD Crime Lab.

4.5.3 Responsibility

The selection criteria in QM 4.5.1 have been established in an effort to ensure that the subcontracted lab is capable of producing accurate results utilizing sound quality practices.

The CMPD Crime Lab is responsible to the customer for the subcontractor's work, except in the case where the customer specifies which subcontractor is to be used.

4.5.4 Registers

The Lab Director of the CMPD Crime Lab or designee will maintain a list of all subcontractors that the CMPD Crime Lab uses for forensic testing and a record of the evidence of compliance with ISO 17025, ASCLD/LAB-*International*, and FBI's Quality Assurance Standards for the work in question.

4.6 Purchasing of Services and Supplies

4.6.1 General

The Laboratory will observe all requirements of the Charlotte Mecklenburg Police Department and the City of Charlotte relevant to purchasing supplies and services. Section Administrators or their designee are responsible for the selection, purchase, reception, verification, and storage of necessary supplies/equipment/services. Each section will store supplies/equipment in accordance with the manufacturer's suggestions unless otherwise documented. Each section will ensure that items are not used past their expiration date. Exceptions for certain costly reagents will be addressed in each section's Standard Operating Procedures (SOP's), including the re-evaluation of reagents beyond the stated manufacturer's expiration date.

4.6.2 Evaluation of Supplies

The requirements of quality control procedures found in section SOP's will be met before any critical supplies or equipment are used in casework. At a minimum the following must take place:

- Standards and reagents must be verified prior to use in casework and re-verified at periodic intervals as defined in section SOP's per QM 5.6. Certificates of Analysis provided by vendors at the time of purchase should be retained by the section as proof of suitability for use in casework.
- All purchased reagents and standards will be marked with the date of receipt, date of verification (if appropriate), the initials of the person opening and performing the verification of the reagent or standard, and an expiration date.
- Reagent Bottle Labeling – all bottles of reagents prepared in-house must be labeled with the identity of the reagent, the date of preparation or lot number, the initials of the person who prepared the reagent, and the expiration date. This policy includes reagent bottles for individual use.
- Supplies will be stored in a manner that maintains their quality at an acceptable level and complies with the Laboratory Safety Manual. This may include controlled temperature and/or humidity requirements, storage in the dark, or other specific conditions.
- Each section is responsible for storage of its supplies and will have proper storage for specific items such as acids, bases, solvents, etc.

4.6.3 Purchasing Data

All purchasing documents for items that can affect the quality of laboratory testing are reviewed and approved by the Lab Director, Section Administrators or their designee prior to submission to the supplier. Documentation for these items will be retained by the administrator of the section requesting the purchase. When ordering, vendors must be provided with the specifications of the item or service desired. This information may include the type, class, grade, specific identification through a catalog number, or other technical information.

4.6.4 Verification of Suppliers

Section Administrators shall identify suppliers of critical consumables, supplies and services which affect quality of testing. The suppliers shall be evaluated and a list maintained by the QA manager. Where possible, suppliers of critical consumables, supplies and services that are accredited by an ILAC signatory shall be used. Evaluations will be conducted annually per QM 4.15.1.

4.7 Service to the Customer

4.7.1 Customer Service and Confidentiality

The CMPD Crime Lab values and encourages communication and cooperation with the customer. The customer may meet with the analysts to discuss potential testing, view the evidence prior to testing or court appearance or review results and conclusions of testing. An Office Assistant is available in the front office to assist customers with general questions about the CMPD Crime Lab services. If a customer has specific questions or requests a specific analyst the Office Assistant will forward the call to the appropriate individual in the proper section of the lab. If that person is not available, the call will be forwarded to the Section Administrator or designated person in charge, if necessary. Where proper, the customer can be forwarded to the specific analyst's voice mail. The purpose of having a designated Office Assistant is to provide consistent quality service to the customer. The Office Assistant will not answer specific case-related questions or questions from defense attorneys seeking general expert information.

Because evidence is considered confidential the CMPD Crime Lab will not routinely permit the customer to be present during the testing process. Analysts are testing other customers' evidence in the same laboratory or in close proximity to each other. Any requests by the customer to be present during testing will be referred to the Lab Director.

The customer is responsible for communicating any need for expediting cases. If the lab cannot meet this requirement or experiences delays in processing a rush case, then the customer will be notified. See QM 4.1.5.b concerning priority cases.

Delays in routine casework will not result in communication with the customer. When the lab experiences delays due to a catastrophic system failure or the inability of vendors to continue to supply critical reagents or supplies, the Section Administrator will notify the Lab Director and Quality Assurance Manager. A decision will be made as to advising the customer of the delay and continuation of offering that service.

4.7.2 Client Satisfaction

The Crime Laboratory will obtain feedback from the customers through a number of means, including: court monitoring, meetings with officers, conversations with court officials, and customer surveys.

4.8 Complaints

4.8.1 Complaints and Resolution

The CMPD Crime Lab will address any complaint received and will strive to resolve it in a timely manner.

The laboratory employee originally receiving any communication (oral or written) about a potential problem from a customer or other laboratory employee shall document and forward those concerns to their Laboratory Director and/or Section Administrator. The Laboratory Director and/or Section Administrator will investigate the cause of the concern. If the concern is a personnel issue, then it will be addressed using the CMPD Department Directives or Code of Conduct. If the concern takes on the nature of a complaint about laboratory activities or deficiencies in the quality system then QM 4.11 will be used. If the complaint rises to the level of a corrective action then the Laboratory Director and/or Section Administrator will document the complaint on a lab Corrective/Preventative Action Request Form (CAR/PAR). The information will be forwarded to the Quality Assurance Manager.

The Quality Assurance Manager shall maintain a CAR/PAR file that contains the following information:

- Name and organization (if applicable) of complainant;
- date complaint registered;
- reason for complaint;
- Corrective Action Request # assigned;
- status of corrective action process; and
- any documentation of correspondence with the customers and/or laboratory employee(s) regarding the complaint.

The Laboratory Director, Quality Assurance Manager and/or the Section Administrator of the affected section will make every effort to investigate and resolve complaints from customers and/or laboratory employee(s).

4.9 Control of Nonconforming Testing

4.9.1 General

Nonconformities, deficiencies or departures from accepted quality standards may be identified or brought to the attention of laboratory management through a variety of avenues including but not limited to the following:

- Technical case review
- Administrative case review
- Proficiency testing
- Testimony evaluation
- Case re-examination
- Quality Audits
- Customer complaint
- Annual DNA Quality Assurance Audits
- External laboratory audits

Any staff member that becomes aware of any type of nonconformity should notify the appropriate Section Administrator and/or the Lab Director. The following policy will be implemented when any issues related to testing, or the results of testing, are identified as not conforming to laboratory procedures.

a) Laboratory analysts have the Responsibility and Authority (R & A) to monitor equipment/instrumentation and make adjustments within the guidelines of an analytical procedure. Problems that arise are brought to the immediate attention of the Section Administrator. In the event that the Section Administrator decides that the procedure/process must be suspended, the Quality Assurance Manager will be notified. The Director, Quality Assurance Manager, Section Administrators and DNA Technical Leader have the authority to halt a procedure/method/process per QM 4.1.5(h).
b) The Section Administrator has the R & A to investigate, evaluate, and remedy the situation with an analytical procedure. The Section Administrator will be notified of problems with analytical procedures, QC, calibrations, and processes in order to evaluate the significance of the problem.
c) If the Section Administrator is responsible for the nonconforming work, then the Lab Director or Quality Assurance Manager must be notified in order to act as a substitute for them in the above evaluations.
d) The Section Administrator will initiate formal corrective actions if a nonconformance exists. The Section Administrator has the R & A to make a decision about the acceptability of the nonconforming work and its impact on past, current, and future work and/or the need to repeat testing.

e) When necessary, the Section Administrator and the Lab Director will decide if the customer will be notified of delays. See QM 4.7.1.
f) The Lab Director will authorize the resumption of a procedure/process that has been halted.

Significant events or nonconformities related to an accreditation requirement that would call into question the quality of the laboratory's work or the integrity of laboratory personnel by external parties shall be disclosed to ASCLD/LAB in a timely manner. Disclosure to ASCLD/LAB will occur within thirty (30) calendar days of the laboratory director becoming aware of the event or nonconformity and recognizing that it is significant to the external parties.

Official Reports:

The product of the CMPD Crime Lab is the Official Report detailing the evidence received by the laboratory that is related to the service covered by the report and the results obtained through analytical testing performed on that evidence. QM 4.11 sets forth procedures to be followed that will allow the identification, documentation, evaluation and disposition of nonconforming reports and for notification of affected customers. Reports in which nonconformity or other unsatisfactory condition has been identified will be corrected. Once the nonconforming situation has been corrected, an amended version of the report will be produced and distributed for review and subsequent release if necessary as outlined in QM 5.10.9.

All analytical staff that have been authorized to perform technical reviews have the R & A to review a report and determine whether or not a nonconformity exists. If it is determined that nonconformity exists then the report and data will be evaluated using QM 4.11 to determine when:

- Samples will be reworked;
- the customer will be contacted to determine their acceptance of the current report; and/or,
- the report will be reworded in alternative terms.

The final product for any evidence/case which requires additional work will be inspected using the documented technical review process.

4.9.2 Corrective Action

Corrective actions will be initiated promptly when a report with incorrect results has been issued, when an employee identifies any noncompliance with the quality system, or when nonconforming work/testing could recur.

4.10 Improvement

4.10.1 Improvement Measures

The CMPD Crime Lab strives to continually improve its effectiveness. Opportunities for improvement are identified through various sources, including:

- Management reviews
- Corrective/Preventive Action Reports
- Strategic planning
- Customer surveys
- Annual quality reviews
- Internal and external audits
- Employee suggestions
- Resolution of complaints

The CMPD Crime Lab initiates improvements by updating goals, modifying work practices and implementing suggestions. The CMPD Crime Lab allocates resources as they become available in support of improvement efforts.

4.11 Corrective Action

4.11.1 General

Corrective action is a process for investigating the cause of and correcting a problem with the quality system based on audits, reviews, control of nonconforming product, employee observations, or feedback from customers. The CMPD Crime Lab has instituted a procedure for implementing corrective action as described below.

The Quality Assurance Manager has the R&A for issuance of corrective action numbers to allow subsequent tracking and the oversight of the progress of proposed actions to ensure that all are fully reviewed, appropriate personnel are informed of the final disposition, actions implemented are evaluated for effectiveness, and that any resulting changes to procedures are documented.

4.11.2 Cause Analysis

When a non-conformance is identified, an investigation will be initiated in an attempt to determine all potential causes of the problem. The individual(s) conducting the investigation must determine if a nonconformity really exists, and if it has a root cause that can be identified and isolated. If a nonconformity exists, the investigation should include determining what type (Personal or System) of nonconformity occurred and its severity or Class.

4.11.2.1 Procedure

The following is a basic procedure for investigating a possible nonconformity:

a) Determine whether or not a nonconformity has, in fact, occurred.
b) Determine, the level (Class I, II, or III) of the nonconformity.
c) If necessary have the individual, process or equipment involved be temporarily removed from casework in any area that the problem could affect casework.
d) If the error is a serious one, the chain of command and/or DA's office should be immediately notified.
e) Make a determination regarding the origin of the nonconformity; whether it was due to a system problem or due to a personal error.
f) Record relevant observations and data on a Corrective/Preventative Action Report.
g) Evaluate applicable laboratory policies and procedures and consider their effectiveness.

h) Assess the likelihood that the incident will recur or occurred previously without being discovered by the laboratory. This may involve a review of older cases.
i) Discuss relevant matters with employees able to provide insight and recommendations about what corrective actions, if any, should be taken.
j) Identify potential options for implementing corrective action.
k) Implement corrective action when appropriate.
l) Complete Corrective/Preventative Action Report and submit, along with supporting documentation, to the director for approval and filing.

4.11.2.2 Systematic v. Personal

A systemic nonconformity is defined as an error that occurred despite correctly following procedures whereas personal nonconformities are typically caused by individual(s).

a) Examples of systemic nonconformity include:

- Equipment malfunctions.
- Improper calibration of an instrument.
- Nonconformity caused by reagent problems.

b) Examples of personal nonconformity include:

- Oversights by the analyst.
- Poor decisions by the analyst.
- Failure to notify staff of changes.

4.11.2.3 Nonconformity Classification

a) Class I Nonconformity
The nature and cause of the nonconformity raises immediate concern regarding the quality of the laboratory work product which is an immediate threat to the integrity of an investigation or legal proceeding and/or are likely to materially reduce the credibility of the laboratory. Examples of Class I Nonconformities could include, but are not limited to:

- Final reports issued with incorrect results.
- Systematic technical issues that affect multiple cases or a complete analytical process.
- Inaccurate information in the final report resulting from administrative or technical errors during the processing of a case.
- Mishandling of evidence that results in a diminished ability to perform complete testing.
- Mishandling of evidence that leads to the deterioration, loss or damage to test items during storage, handling and preparation.

- Failure to successfully complete proficiency or competency tests.

b) Class II Nonconformity
The nonconformity is due to a problem that may affect the quality of the work, but is not persistent or serious enough to cause immediate concern for the overall quality of the laboratory's work product. However, the nonconformity is an unacceptably high risk to the integrity and/or accuracy of future laboratory results. Examples of Class II Nonconformities could include, but are not limited to:

- Repeated technical errors of similar type by the same individual.
- Information contained within the final report is accurate and complete, but is inadequately supported by documentation in the case file.
- Failure to meet quality control requirements; or failure to properly use quality control measures required by section SOPs.
- Use of equipment that has not been properly calibrated or checked.
- Failure to request and/or document approval of deviations from approved methods.
- Inappropriate use of reference materials, such as expired standards or standards that have not been properly validated.
- Negative court monitoring comments about an individual's performance or demeanor in the courtroom.
- Complaints against the quality, timeliness or completeness of Crime Lab services; or complaints against the activities or deficiencies in the quality system of the Crime Lab.
- Inappropriate use of controlled documents.
- Incomplete training documentation.

c) Class III Nonconformity
The nonconformity is determined to have minimal effect or significance, be unlikely to recur, not systematic, and does not significantly affect the fundamental reliability of the laboratory's work and/or are not likely to materially reduce the credibility of the laboratory. Examples of a Class III Nonconformities could include, but are not limited to:

- DNA contamination not materially affecting the outcome of a case.
- Repeated administrative errors discovered during the review process.
- Failure to complete an entry in a maintenance or service log.
- Isolated minor technical errors discovered during peer review and corrected prior to the release of the final report.
- Incomplete information in the case file that does not involve data critical to the outcome of the case.
- Incomplete administrative documentation in the case file such as conversation records, report release documentation, etc.
- Incorrect annotations, alterations, changes, and/or corrections to information contained in the case file.

4.11.2.4 Reporting Requirements

Class I: Nonconformities must be reported to the Lab Director and/or Quality Manager at the time the error is discovered. **Class II:** Nonconformities must be reported to the staff member's immediate supervisor. The Section Administrator of the section where the nonconformity originates will be responsible for documentation, initiating the corrective action process and reporting the issue to the Lab Director or QA Manager. **Class III** Nonconformities shall be handled at the professional discretion of the individual who discovered the problem. Nonconformities involving case notes or lab reports discovered in the peer review process and determined to be administrative in nature shall be corrected prior to the release of the report. Repeated errors may rise to a Class II Nonconformity and shall be brought to the attention of the Section Administrator.

4.11.3 Selection and Implementation of Corrective Actions

Based on the root cause investigation the Lab Director, Quality Assurance Manager and Section Administrator will determine the appropriate Corrective Action(s) to be taken**.** Once a corrective action is initiated, the person responsible will have thirty days to respond. The response will include a summary of the corrective action(s) to be taken to address the nonconformity and the steps that will be taken to monitor the effectiveness of the corrective action. An extension may be granted by the Lab Director based on the complexity of the issue or when factors outside of the control of the laboratory are involved.

4.11.3.1 Disposition of the Error

Emphasis will be placed on improving services by making corrections to lab processes where necessary, providing additional or remedial training where indicated, and improving personnel performance. Any case analysis error that is found to be a personal error made by the analyst will be documented in the analyst's evaluation by the immediate supervisor.

a) Class I and II Nonconformities-
   Resolution of a major problem may be handled via additional or remedial training or other action as deemed necessary by the Lab Director. If the investigation reveals that an action or omission violated department policy, the resolution will be handled according to Department Directives (200-001 Discipline, Internal Investigations and Employee Rights). Major issues must be documented properly regarding the incident and remedial actions taken.

b) Class III Nonconformities -
In general, the primary responsibility for initiation and follow-up of action rests with the analysts Section Administrator and/or the Lab Director. A minor problem may be resolved by suggestions. It will be handled through consultation unless it becomes a recurring problem. The appropriate laboratory staff should be notified of any system errors that are encountered. The reoccurrence of minor issues or minor errors that develop into Class I or Class II nonconformities will be addressed through more formal corrective action.

4.11.3.2 Procedures for Correction of Class I and II Nonconformities

The priority of the following steps and the extent of the actions taken will be determined by the investigation and the severity of the nonconformity.

a) System Errors:
All casework being done by the affected system should immediately cease. Determine the source/scope of the problem. Methods of accomplishing this can include:

- Checking of calibration, reagent and standards.
- Evaluation of equipment operation.
- Checking analytical process or methodology.

Once the source/scope of the problem is identified then:

- Determine which cases may have been affected.
- Reanalyze cases found to have been affected, if necessary.
- Notify proper chain of command and appropriate agency, if applicable.
- Issue amended reports, as necessary per QM 5.10.9.
- Fix the problem via recalibration or repair of the instrument, using fresh reagents, etc.
- Run case-like samples to verify the procedure and/or the instrument is providing proper results per SOP and/or manufacturers' specifications.

b) Personal Errors:

The director's designee (normally the Section Administrator of the affected section – unless that person is the subject of the investigation) and the QA manager will conduct a technical review of an appropriate portion of the analyst's previous production to determine if the error is isolated. Upon discovery of repeated errors it will be necessary to reanalyze the analyst's casework starting at the discovered error, and going back to the point where no errors are found regarding that type of analysis and/or the last successfully completed proficiency test. Once the source/scope of the problem is determined then:

- Notify proper chain of command and appropriate agency, if applicable.
- Issue amended reports, as necessary per QM 5.10.9.
- The analyst may be required to undergo competency testing unless a proficiency test is failed, in which case a competency test must be successfully completed before case work may be resumed per QM 5.2.6.2.
- The analyst will be required to undergo remedial training appropriate for the error.
- The analyst will have all casework in that discipline reviewed for at least 90 days following resumption of casework.
- The error will be included in the analyst's (PRD) evaluation.

4.11.4 Monitoring of Corrective Actions

Actions taken to correct non-conformities will be monitored to evaluate the effectiveness of the changes. QM 4.11.3.2 addresses measures taken to ensure that the corrective action is implemented and is effective.

4.11.5 Additional Audits

Additional audits will be performed when the Quality Assurance Manager determines the need to monitor the implementation and effectiveness of a corrective action that deals with a serious issue or universal risk to the CMPD Crime Lab quality system. These issues/risks include but are not limited to the use of proper procedures, fulfilling objectives of the lab, training, and improvements to the overall quality system.

4.12 Preventative Action

When the CMPD Crime Lab takes action to prevent future errors or instances of nonconformance, little distinction is made between actions taken reactively in response to a specific incident and actions taken proactively in the absence of a specific incident. To the extent that differences do exist; however, they can be summarized as follows:

a) When laboratory action is taken as a response to the discovery of an actual error or instance of nonconformance, documentation requirements may necessitate full adherence to the laboratory's corrective action procedures per QM 4.11.2, including the use of a laboratory Corrective/Preventative Action Report.
b) For preventative action taken in the absence of an actual error or nonconformity, the only procedures required are those set forth in the Quality Manual to govern the activation and validation of new or revised methods. However, preventative actions may be summarized using the laboratory Corrective/Preventative Action Report.
c) Depending on the seriousness of the systemic weakness that is being addressed, preventative action may rise to the level of corrective action.

4.12.1 Improvement

The Quality Manual was designed, among other things, to allow for efficiency in the consideration and implementation of new or revised methods. In many ways, the Quality Manual and the management system it sets forth are the most significant preventative action measures employed by the crime laboratory. When changes to laboratory practices are deemed necessary to prevent errors and instances of nonconformance, they are always documented and set forth in conformance with rules prescribed by the Quality Manual.

4.12.2 Effectiveness

Once a preventative action is initiated controls will be put in place to monitor its effectiveness. Any action will be listed on a Corrective/Preventative Action Report.

4.13 Control of Records

4.13.1 General Procedures

This standard sets forth guidelines for the control of case records and quality assurance records generated by the lab.

4.13.1.1 Case and Quality Records

Case records consist of both administrative and technical records, whether electronic or hardcopy, which may be received or generated by the laboratory. Examples of the documentation contained in case records are listed below.

- The Official Report produced by the analytical section of the laboratory responsible for the testing of the evidence.
- The chain of custody for evidence items associated with the request for testing.
- The Service Request for examination.
- The analyst's notes, worksheets, descriptions of the evidence, observations, drawings and photographs/images generated in the processing of a case.
- Instrumental data, charts, graphs, diagrams, printouts and quality control data associated with the testing of the evidence items.
- References to procedures followed or the testing methods used.
- A cover sheet or other documentation identifying the reviewer(s) and review related information.
- Records of case-related conversations.
- Subpoenas
- Other departmental records and/or forms specific to the case.

Hard copy case files may contain printed originals or copies of the items listed. Each analyst is responsible for ensuring that the proper documentation is contained in the case file.

Quality assurance records include documentation that supports the activities of the laboratory's management system and efforts to comply with the quality assurance program and accreditation requirements. Examples of quality assurance records include:

- Management reviews
- Calibration and maintenance files
- Proficiency and competency test files
- Reagent logs

- Security logs
- Corrective action files
- Court testimony evaluation forms
- Audit documentation
- Safety program documents
- Other files that may be required in an ASCLD-LAB audit.

All records shall be legible and be stored so as to prevent damage, deterioration or loss

4.13.1.2 Hard Copy Case Storage

All hard copy case information that contains handwritten information must be retained in a hard copy case file folder, with the exception of latent print cards where identifications are made. These will be stored by complaint number with the remaining evidence in the latent print file room. All completed case file folders are to be stored in one of the laboratory's file rooms unless properly checked out as described in section QM 4.13.1.2.2 below.

Case files from November 1996 forward are retained in "End Tab" vertical file folders. The file folder exhibits a color-coded Year/Month label placed on all section files.

The white label exhibits a unique twelve-digit complaint number derived from the Police Department's CAD system. The twelve-digit numbers denote the year, month, day, (military) time, and incident number. The second series of numbers that may be on the label is a Control Number representing an evidence property sheet listing evidence items. The Control number denotes the current calendar year and a unique transaction number issued by a P&EMD evidence computer system. This number is used, when appropriate, and primarily by the Chemistry section. The Firearm/Toolmark section uses an "F-number", which is represented by an "F" and the last digit of the calendar year, followed by an assigned sequential case file number.

The third solid colored label indicates the Laboratory sections: Green-Chemistry, Purple-Questioned Documents, Yellow-Firearm/Toolmark, Orange-Latent Fingerprints and Blue-Biology.

Below these labels may be two other solid colored labels. A red label indicates the case is a homicide, suicide or other case dealing with loss of life. In the Biology section, a brown label indicates that the case is a sexual assault and a grey label indicates that it is a gun case. In Chemistry a brown label is put on arson cases. A black label on a file tab indicates a specific file classification within a laboratory section as denoted below:

- Chemistry Section - indicates a Blood Alcohol case and black with a red stripe for Blood Toxicology.
- Biology Section- indicates a Trace case (prior to January 2008).
- Firearm/Toolmark Section- indicates that no official laboratory report was issued.
- Latent Print Section- indicates an external agency case.

For hard copy files the analyst will write or stamp the complaint number in a conspicuous location on the outside of the case folder in a place that will not be covered by a sticker. The office assistant will be responsible for ensuring that all the proper stickers and the file label are placed on the file. The office assistant will make sure that the complaint number on the file label matches the number written or stamped on the file folder by the analyst.

Case files will be stored in open vertical shelving in case file room 4001, 4002 or 4220 Case file storage room 4001 is for archived homicide and archived rape files. The files stored in these areas are not typically the end tab type and are filed by complaint number. Case files in 4220 include all Biology files from 1998 through 2005. Case file storage room 4002 is for more current case files. The files in this room are filed by section and then complaint number.

4.13.1.2.1 Case File Removal from Case File Storage

A file may be viewed in the file room(s) briefly or checked out for as long as 90 days. In any case, the office assistant or designee is the only employee authorized to place case file folders into the filing system. When an authorized employee has a need to remove a case file folder, the following procedures will be followed:

a) The employee or designee will fill out the File Checkout Form and place it in the clear sleeve of a color-coded Out-of-File Card. The color code of the Out-of-File Cards will match the color of the applicable section of the laboratory as described in QM 4.13.1.1.
b) The employee or designee will pull the file and place the color-coded Out-of-File Card in the position vacated by the file folder.
c) When the employee is finished with the file they will place the file in the to-be-filed basket.
d) The office assistant or designee will refile the case folder in the appropriate location, remove the color-coded Out-of-File Card and discard the File Check-Out form.
e) Case files may be checked out for a maximum of 90 days. If an employee desires to check out the file again after 90 days, the file must be submitted to the Quality Assurance Manager for review before the file is checked out again.
f) Section Administrators are responsible for educating their section personnel regarding the proper use of this policy.

Occasionally the need arises to briefly pull a file folder to add a communication log entry, make a copy, etc. In cases where the file will not be removed from the file room for any length of time the following procedure applies:

g) The employee pulls the file and replaces it with a color-coded Out-of-File card.
h) The employee places the file in the "To Be Filed" basket when the task has been completed.
i) The office assistant or designee will refile the folder.

Case file examination documents as described in QM 4.13.2 may not be copied except for use in court, for reference when stored in a related case file or for technical review. Examination document copies used for court or technical review should be filed with the original case file or destroyed immediately when no longer necessary. Other exceptions may be made (e.g. for departmental historic purposes); however, they must be approved by the Director.

4.13.1.2.2 Archive Requests for Hard Copy Files

Crime Laboratory staff can request the retrieval of case files as required for official business. Archived boxes will only be brought in from the storage facility with the approval of the Laboratory Director.

Archived Case File Procedures- The current case files covering the last 5 years are retained in the Crime Laboratory file room 4002 when space permits. Biology files from 1998 through 2005 are stored in room 4220. Biology files from 2006 forward are kept in file room 4002. Older case files in sections other than Biology are boxed for storage at an archive storage company. The Crime Laboratory case files will be archived as follows: At the first of each calendar year or when file storage space is needed, all known homicides, sexual assaults and questionable death investigations older than 5 years and not previously archived will be pulled. Questionable Death, Homicide and Sexual Assault cases will be stored in room 4001. All remaining case files for that year will be boxed by laboratory section in order by complaint number. Archive Record Transmittal forms provided by the company will be completed. The laboratory copies will be retained in the archived file folders in the main file room, and the boxes will be picked up by an archive storage company and stored at their facility. All other categories of case files will be eligible for destruction as authorized by the Crime Laboratory Director.

The Laboratory Office Assistant will be notified when a file is needed from the archived file storage company. The Laboratory Office Assistant will contact the in-house Archive Specialist of the Records Department of the Charlotte Mecklenburg Police Department and request in writing the archived box number that contains the case file(s) needed. The Records Department will request the

box be brought out of storage and go to the storage facility and retrieve the requested box and bring it to the Laboratory Office Assistant. Once the file is received, the Laboratory Office Assistant will contact the requesting analyst. Once the analyst picks up the file a completed File Checkout form will be placed in the analysts checked out files hanging folder in case file room 4002.

Returning Archived Files- When the file is returned, the Laboratory Office Assistant will discard the File Checkout form that is in the analysts folder and either keep the file out in a special area of the main file room for future use (as necessary) or return the file to the original archive box and have Records pick it up and take it back to the storage facility.

4.13.1.2.3 Record Retention

Case files will be retained in accordance with the CMPD Directives (800-004), the North Carolina Municipal Records Retention and Disposition Schedule and the North Carolina General Statutes (NCGS). As a general rule, laboratory case files involving felony crimes will be retained for a minimum of 20 years and laboratory case files involving misdemeanor crimes will be retained for a minimum of 3 years. Laboratory case files documenting the possession, control, storage, and testing of biological evidence will be retained to comply the with the North Carolina General Statutes addressing the preservation of biological evidence (NCGS § 15A-268).

All documents related to the quality assurance program will be retained not less than one full ASCLD/LAB-*International* accreditation cycle or five years, whichever is longer. Quality records not stored on the R-Drive will be maintained by the Quality Assurance Manager.

4.13.1.3 Confidentiality

All records are considered confidential. Customers will be provided official reports once all reviews have been completed in PLIMS. Additional case related records will be provided for court purposes on an as-needed basis. Defense counsel and other interested parties may access these records through the legal discovery process. Case records can be released given the following circumstances:

- A written request is received from the District Attorney's office for a copy of the case notes. The written request may be in the form of an email as long as the email comes directly from the prosecuting attorney. A copy of the written request will be scanned in and attached to the case file in PLIMS.
- Discovery Requests that have been reviewed by the Police Attorney's Office and processed through the prosecuting attorney's office. A copy of the Discovery Request must be retained.

- Former employees that are providing testimony in a case can receive a copy of the case file.
- The party taking control of hard copies of the case notes must fill out a Report/Case Notes Release Form for each case file he/she is obtaining.
- An auditing body as directed by the lab director.
- Case notes will not routinely be provided to investigating officers anticipating a request from the District Attorney's office.

Designated containers are provided by the Police Department for the secure disposal of all documents of a confidential or secure nature such as rough drafts of reports or out of date controlled documents. Individual sections may have marked containers for the short-term storage of confidential documents set for disposal. The personnel in each section are responsible for properly disposing of the confidential documents in the large locked container that is located in the secure hallway of the laboratory.

4.13.1.4 Electronic Security

Only authorized individuals may access electronic files such as those found in PLIMS, CODIS, AFIS, IBIS, and the R-drive. These are individuals who are trained and authorized access through the Lab Director for permission and electronic access. To request access to the controlled information systems/storage areas (for people not employed by the laboratory and/or when required by CTS) the following procedure will be followed:

a) A Request for Access to Computer Information Systems Form will be filled out and forwarded to the laboratory director.
b) The laboratory director will document his approval by completing his part of the form and then forward the form to CTS.
c) CTS will grant the appropriate permissions and complete their part of the form. The form will then be scanned and retained on the R-drive.

Where applicable, section SOP's outline when backups are completed to Individual Characteristic Databases and who performs them. Audit trails are established on all transactions on the PLIMS. All electronic records are backed up periodically throughout the day on a schedule determined by the CMPD Computer Technology Services Division and stored on an electronic system separate from the main PLIMS system.

4.13.2 Technical Records

Technical records may include the analyst's notes, charts, graphs, data, worksheets, photographs/images and other material generated in the processing of a case. Section SOP's set the guidelines for which are considered to be technical records, and what records need to be in a case file.

4.13.2.1 Record Keeping

All technical records relevant to a particular service request will be permanent in nature and stored in the appropriate case file. The case file will contain all records and data used by the analyst to reach conclusions and prepare a final report. The analyst responsible for sampling and performance of each test will be documented in the case file. All hard copy records must also be scanned and attached to the case file in PLIMS. The original captured electronic information may also be stored in the proper section folder located in the Case Notes and Photos folder on the R-drive or in Digital Crime Scene.

Examination documentation will be of sufficient detail that a technical reviewer can evaluate the test performance; interpret the data; and determine how the analyst reached the final results. Technical review documentation will contain the identity of the reviewer and the date the review was conducted.

Abbreviations are acceptable if they are readily comprehensible to a reviewer/auditor or clearly documented in the section SOPs.

4.13.2.2 Timeliness

All data used by the analyst in the generation of findings will be recorded at the time of or immediately following the examination. The date for the start of the examination and the date for the end of the examination must be recorded in the case file. Case files are considered complete once the service request is rejected, request closed or the administrative and/or technical reviews are complete.

4.13.2.3 Corrections and Changes

Nothing in the examination documentation will be obliterated, made illegible, deleted or overwritten. Changes to hard copy data will be performed by a single strikethrough of the incorrect notation. The initials of the individual making the change will accompany the change/correction written adjacent to the original location. Interlineations will be initialed. Technical records are considered complete once the analyst sends the case to administrative and/or technical review.

Corrections made to computer generated case file material will be made to the hard copy of the printed document rather than correcting it in the electronic file and reprinting it. Drafts of lab reports are exempt from this requirement.

Data from analytical testing that does not meet all CMPD Crime Lab quality standards will not be used to draw a scientific conclusion and will not be included

in the Official Report or other notification report issued by the laboratory. This data will be included in the case file along with a reason why it was not used for conclusions. Copies will be marked to show that the data is invalid.

4.13.2.4 Case Identifier

Each page of every examination document or unbound administrative document in the case file is required to bear the complaint number, lab number or F-number as a case identifier and the analyst's initials. For administrative documents that are bound together in the file by stapling or another method, only the first page must contain the case identifier. If any writing is placed on the back of a piece of paper, photograph, print out or other examination document, each side of the paper is considered to be a separate page and each must meet the above criteria. Machine generated records meet this requirement if they contain the printed case number and the analyst's handwritten and/or electronic initials. Dates should be recorded on examination documents to indicate when the work was done.

4.14 Internal Audits

4.14.1 Internal Audits

The CMPD Crime Lab will conduct internal audits by qualified and properly trained individuals to verify compliance with planned quality system components and effectiveness of the system as implemented.

The auditors will be independent, when practical, of the section being audited and have no direct responsibility for the activity being audited. Additional laboratory staff may be appointed by the Lab Director to assist the Quality Assurance Manager in the completion of the audit.

The internal audit will be completed within 30 calendar days of the laboratory's accreditation anniversary date. The Quality Manager will plan and organize the annual audit as requested by the Lab Director. The audit will include reviews as follows:

a) A review of the Quality Assurance and Administration of the laboratory including:

- Testimony reviews completed for each testifying analyst.
- Proficiency & competency tests completed during the year (check of proper completion by analysts and proper review by the director).
- Progress made on corrective actions submitted during the year.
- Staff qualifications & training records up to date
- Section analytical SOPs & archives
- Section training manuals
- The use of proper document control.

b) An inspection of case files for each analyst in each discipline for which the analyst does casework to review whether:

- Analytical SOPs were followed.
- Standards & controls were used.
- Requirements of QM 4.13 and QM 5.10 were met.
- Administrative and technical reviews were completed.

c) A physical inspection of each analytical section to review:

- Section security
- Evidence handling & storage practices
- Reagent logs and labels

- Equipment maintenance & calibration records
- Proper chain of custody being used.
- Safety equipment
- Sufficient number of cases being technically reviewed
- Document control - SOPs in section match those in the controlled document list.
- Interviews of staff member to cover areas not covered in other phases of the audit.

d) A review of the Safety and Chemical Hygiene Program will be conducted.

Following the audit the auditor(s) will brief the laboratory director regarding the results. A preliminary report will be written soon after the completion of the audit. The Lab Director will meet with each Section Administrator to discuss the preliminary findings. If a Section Administrator disputes a finding of noncompliance, the Lab Director, the Section Administrator and the QA manager will meet to discuss the finding. At that point the finding may be dropped from the list or maintained on the list as an actual noncompliance.

After all of the section administrators have met with the director and the finding disputes have been settled, the QA Manager will prepare a final audit report. The report will include the following:

- Commendable areas identified
- Problem areas identified
- Suggested actions required to correct problem areas identified.
- The degree of concern pertaining to any deficiency.
- Major defects should be highlighted.
- Any suggestions the auditor(s) have to improve the quality of laboratory operations.

The Section Administrator will be responsible for correcting any compliance problems that are discovered in the audit. He will report his actions in writing to the director and the director will discuss the problem and its resolution with the QA manager. The QA manager will ensure the corrective actions are taken in a timely manner and documented properly.

4.14.2 Corrective Action

The Section Administrator(s) responsible for the areas in which deficiencies have been identified will follow the corrective action procedures documented in QM 4.11.3.

The CMPD Crime Lab will notify customers in writing if investigations show that the laboratory results may have been affected.

At the next internal audit of each section, any corrective actions that originated/involved that section during the year will be evaluated by the Quality Assurance Manager. The Quality Assurance Manager will verify the implementation and effectiveness of the corrective action.

4.14.3 Records

The Quality Assurance Manager will maintain records of all audits conducted and all findings and corrective actions arising from these audits.

4.14.4 Review

Follow-up audit activities shall verify and record the implementation and effectiveness of the corrective actions taken.

4.14.5 Reporting

The results of the annual report to include any corrective actions will be submitted to ASCLD/LAB as one of the elements of the Performance Declaration. The Performance Declaration is typically due the first day of the month prior to the assigned surveillance activity month.

4.15 Management Review

4.15.1 Schedule and Contents

In the fourth quarter of the year, the Lab Director will conduct a review of the CMPD Crime Lab management system and testing activities to ensure their continuing suitability and effectiveness and to introduce necessary changes or improvements. The review will be summarized in a management review document, which will focus on the previous year unless otherwise noted. Section Administrators will provide input into the review document. The management review will be completed by the conclusion of the fourth quarter of the year. The outcome of this review will provide input for the CMPD Crime Lab in planning of its goals, objectives and actions for the coming year.

The Quality Assurance Manager will prepare a report that summarizes topics related to the CMPD Crime Lab quality system and policy related issues, which may include:

- Suitability of all procedures and policies.
- Changes to accreditation criteria by ASCLD\LAB.
- Outcome of internal and external audits and assessments.
- Corrective and preventive actions
- Survey results/customer feedback
- Proficiency testing results
- A review of the laboratory equipment inventory.
- A review of the list of Critical Suppliers and Services.
- Current as well as possible upcoming validations.

The Section Administrators will present information regarding the operations of each analytical section, which may include the following:

- Status reports from section/lab managers.
- Changes required by the incorporation of advanced or new technologies.
- Potential upcoming validations
- Changes required by new legal requirements.
- Changes in the requested services.
- Additional work/services the CMPD Crime Lab needs to consider for future implementation.
- Training
- Subcontracting

The Lab Director will be responsible for the following:

- Review resources, staffing levels and training needs.
- Changes in the volume of work by section/lab.
- Review and evaluate goals, objectives and plans.
- Formulate action plans with a timeframe for completion.

4.15.2 Records and Timeliness

Records of review and resulting strategic plans will be maintained according to QM 4.13.1.2.3. The CMPD Crime Lab Quality Assurance Committee will ensure that plans or actions that result from a review are appropriate and are carried out within an agreed upon timeframe.

5.1 Technical Requirements

5.1.1 General Factors

Factors that contribute to the correctness and reliability of testing are addressed as follows:

- Human factors (QM 5.2)
- Accommodation and environmental conditions (QM 5.3)
- Test methods and method validation (QM 5.4)
- Equipment (QM 5.5)
- Measurement traceability (QM 5.6)
- Sampling (QM 5.7)
- The handling of test items (QM 5.8)

5.1.2 Factors Considered Prior to Approval of Processes

The following areas have been considered for each analytical process, including the selection and calibration of equipment, prior to approval:

- Skills and training necessary for competent analysts. A training program will be developed by each discipline for new employees and for existing employees as the need arises. Proficiency testing will be initiated for all trained analysts engaged in the testing of evidence QM 5.9.3.
- Appropriate resources to carry out the testing. Management will make every effort to insure that adequate resources are available to carry out the mission and goals of the CMPD Crime Lab.
- Appropriate and validated analytical procedures and processes necessary for evidence analysis. All analytical procedures will be written and validated for each discipline and approved QAC prior to use per QM 5.4. Competency tests will be successfully completed by each analyst prior to using a new procedure per QM 5.2.6.2.
- Appropriate equipment and its calibration. Each analytical section will include methods for the proper use and calibration of instrumentation used in the analysis of evidence per QM 5.5.
- Appropriate quality control to achieve the desired quality. Each analytical section will have written quality control procedures in section SOP's or Quality Manuals for its analytical procedures.
- All procedures that produce reportable results will include standards for determining that the result is acceptable. This includes those procedures which involve a subjective evaluation of the evidence.

- The testing and operations procedures utilized by the CMPD Crime Lab will include verification steps during the processing of evidence including inspection of product.

5.1.3 Reagents

Reagents will be routinely checked for reliability per QM 4.6.2 and section SOP's where applicable. Reagents will be labeled per QM 4.6.2 and with additional information if required by section SOP's.

5.2 Personnel

5.2.1 Training and Qualifications

The CMPD Crime Lab management shall ensure the competency of all analysts, to include the appropriate education, training, experience and/or demonstrated skills, as required.

The laboratory keeps copies of education and training records for all employees, such as degrees, transcripts, certificates of attendance to schools, seminars, workshops, documentation of competency, etc. (where available). These records are maintained indefinitely by the Quality Assurance Manager in both the Staff Qualifications File and on the R-drive for access by laboratory personnel.

New employee training records, which will consist at a minimum of diploma(s)/transcripts and curriculum vitae (CV), will be submitted to the Quality Manager by the employee's supervisor or designee.

CMPD Crime Lab management will provide support to those individuals seeking to gain or maintain a professional certification.

5.2.1.1 Training Programs

Each section of the CMPD Crime Lab will have documented training programs that can be used to train individuals in the knowledge, skills and abilities to conduct tasks for the categories of testing for which the section is responsible. The administrative procedures for training will provide for maintaining the skills and expertise of individuals and provide for retraining.

5.2.1.2 Testimony Training

CMPD Crime Lab analysts will have training in expert testimony on all aspects of their areas of expertise.

5.2.1.3 General Forensics Training

New employees' training must include a general knowledge of forensic science, the *application of ethical practices in forensic sciences* and of criminal and civil law and procedures.

5.2.2 Continuing Education

Ongoing training is initiated and directed by management based on the needs of the individual analysts to meet the goals and objectives of the CMPD Crime Lab.

The Performance Review and Development (PRD) process may be used to address the anticipated training needs/goals of each employee.

Employees will provide a copy of the Training Action Report Form to the QA Manager upon completion of any non-departmental training course/class and attach a copy of any pertinent documentation, when available.

Employees shall keep their curriculum vitae updated. A copy of updated CV's will be forwarded to the QA Manager. The CV will be the basis of the training history for each employee.

Records for departmental training (directives, legal updates, online training, department mandated training, bloodborne pathogens, etc.) is scheduled, conducted and documented via the CMPD Training Academy's Plateau Learning system on the department's local area network. This system is monitored by the laboratory's training coordinator (appointed by the Lab Director). This type of training does not require a Training Action Report Form to be completed as described above.

5.2.3 Employees

All personnel who perform tests and/or calibrate instruments, evaluate results and sign test reports are employed by or under contract to the CMPD. All employees of the CMPD Crime Lab will be assigned an immediate Section Administrator. Section Administrators will insure that all their employees are adequately supervised, properly trained and competent in their discipline and the quality system. The Lab Director or the Section Administrators will initiate a performance plan for all new employees according to CMPD Directives.

5.2.4 Job Descriptions

The CMPD and City of Charlotte Human Resources Offices maintain current job descriptions for all laboratory employees that are found in Appendix C. Each Section Administrator has the current performance expectations for each employee they supervise.

The organizational structure of the CMPD Crime Lab and general responsibilities are found in Appendix B. Individual duties and responsibilities for each job classification with the CMPD Crime Lab can be found in Appendix C.

Analysts may choose to represent the CMPD Crime Lab as members of various professional organizations in addition to their normal duties. If approved by the Director, the membership dues and fees for these individuals will be funded by the CMPD.

5.2.5 Authorizations

The Staff Qualification file containing educational qualifications, training and documentation of competency of each employee shall be reviewed by the appropriate Section Administrator and the Lab Director. If it is determined that an employee's file is complete then the Section Administrator will prepare an Authorization to Work letter for the employee.

The Authorization to Work letter will include an effective date stating when the employee is authorized to perform the specific duties. This letter will authorize the employee to perform particular types of sampling, tests and/or calibration, to give opinions and interpretations and to operate particular types of equipment. The Authorization to Work letter will be signed by the Lab Director and will be included in the individual's Staff Qualification File.

5.2.6 Technical Requirements

5.2.6.1 Educational Requirements

The educational requirements of the analytical and support personnel for the CMPD Crime Lab are located in Appendix C.

5.2.6.2 Competency Testing

Individuals who operate specific equipment, who perform tests and/or calibrate instruments, evaluate results and sign test reports will be competency tested according to each section's requirements before engaging in a particular function. Competency tests will consist of a practical test and a written and/or oral test. Competency tests will be used to:

- Ensure analyst competency using new techniques instituted in the laboratory. Ensure competency when an analyst is assigned to a different section of the laboratory or practices in a new discipline.
- Qualify an analyst to resume case work in situations where their proficiency test record has lapsed; they failed a proficiency test or for those who have been removed from casework as a result of QM 4.11.3.1.
- Ensure competency for newly hired analysts.

Individuals will not perform casework in a discipline or technically review casework in a discipline until successfully completing a competency test in that discipline that includes both a practical test and a written and/or oral test.

5.2.6.2.1 Practical Test

a) Sample(s) will consist of a set of unknowns/known's that the analyst is to analyze/examine/compare as specified in the section SOP's. Samples

should be representative of evidence typically submitted to the laboratory for that discipline.

b) The time allotted to complete the test will be established by the laboratory director, the Section Administrator and the analyst involved.
c) The analyst must submit written test results to the designated tester in the format required by the tester. Copies of notes and charts are to be included.
d) The test will be successfully completed if the analyst reports the findings with no incorrect or inconclusive responses other than as allowed in the section protocol.
e) Documentation of the practical test will be kept by the Section Administrator in the section. A memo or Training Action Report Form will be sent to the QA Manager at the conclusion of the proficiency test signifying the successful completion of the test or the need for additional training. The memo or Training Action Report Form will be kept in the analyst's qualifications/training file. A copy of the memo or form should also be sent to the laboratory director.

5.2.6.2.2 Written or Oral Test

a) A written or oral test will be given as a complement to a practical test.
b) The Section Administrator and director will determine the minimum acceptable level for a written or oral test. Incorrect answers on a written or oral test must be researched and answered correctly.
c) Documentation of the written or oral test will be kept by the appropriate Section Administrator. A memo or Training Action Report Form will be sent to the QA Manager at the conclusion of the written or oral test signifying the successful completion or the need for additional training. The memo or Training Action Report Form will be kept in the analyst's qualifications/training file. A copy of the memo or form should also be sent to the laboratory director.

5.2.6.2.3 Competency Tests Reviewed by Outside Agencies

When tests are given to analysts in single person disciplines, it may be necessary to send the results to another agency for review. Copies of all records obtained from the testing agency will be retained by the Section Administrator of the section. The Laboratory Director will review any comments provided by the external agency concerning the review and prepare a memo or Training Action Report Form to be submitted to the QA Manager upon completion of the competency test. The memo or Training Action Report Form will be kept in the analyst's qualifications/training file.

5.2.6.2.4 Responsibility

The responsibility for assuring that the analyst has taken and passed competency tests before working cases rests with the Section Administrator or the analyst's direct supervisor. Depending upon the reason for the competency test, the Section Administrator will be responsible for preparing or acquiring samples for the competency test. Competency tests will be completed in an appropriate time frame. Failure to correctly complete a competency test will be handled as a major personal technical error as described in QM 4.11.3.1.a.

5.2.7 Current Literature

The Section Administrators or DNA Technical Leader will identify current books, journals and other literature needed by the discipline for use as reference materials. Administrators will make every reasonable effort to provide these resources.

The Section Administrators or DNA Technical Leader will notify the discipline of articles and other current materials recommended for review. This notification may be in the form of section meetings, email, routing of the literature, etc. Administrators will ensure that employees are afforded time to review these materials.

5.3 Accommodation and Environmental Conditions

5.3.1 Laboratory Facilities

The CMPD Crime Lab will ensure that the environmental conditions of the facility are suitable for the correct performance of tests and/or calibrations. With the assistance of the CMPD Building Administrators, appropriate environmental conditions will be maintained through the proper performance and operation of safety, heating/cooling, plumbing, and electrical systems (including backup power when applicable). Maintenance of appropriate environmental conditions will not take priority over safety protocols or security requirements such as access control.

If extreme conditions of heat, humidity, etc. are temporarily encountered, all testing will be closely monitored and halted if controls do not produce expected results (see QM 5.9.1).

Any function that requires a controlled environment will be addressed by the Standard Operating Procedures for that function. Conditions will be documented and records maintained as required.

5.3.2 Halting Testing due to Environmental Conditions

If environmental conditions are observed which could potentially jeopardize the results of testing, the testing will be halted and management will be notified.

5.3.3 Lab Functions

Each analytical section will be responsible for identifying testing procedures that are not compatible and for ensuring that these activities are separated and/or isolated. Care must be exercised to prevent any cross-contamination or inadvertent destruction of evidence.

5.3.4 Security

Access into CMPD Crime Lab and the individual laboratory sections is controlled. The CMPD Crime lab has security policies and procedures in place to ensure that:

a) Only visitors authorized by section personnel or the laboratory director will be allowed into the secured areas of the laboratory. All **Visitors** requesting access to secured areas in the Crime Laboratory must report to the Crime Laboratory office and sign the Visitor Sign-In Log. A Crime

Laboratory employee will escort the visitor in the secured hallway. CMPD and other city employees must display their CMPD or city issued identification while in the secured areas of the laboratory. All visitors including CMPD employees will be escorted while in the secured areas of the laboratory. Personnel that have been given card key access by the laboratory director (e.g., uniformed P&EMD clerks, city employees, Computer Crimes personnel and the housekeeping employees assigned to the fourth floor) will not be required to sign the logbook. However, they should be escorted by a laboratory employee when within the secured analytical sections. This also includes sworn personnel escorting subjects to the Latent Print Section. Maintenance, service or trades personnel who are not CMPD employees must sign in to the logbook one time per day when accessing only the secured hallway or the roof access for job related duties.

b) All external entry/exit points to the operational areas of the laboratory will be kept locked at all times unless they are being secured by laboratory personnel. File Rooms and Laboratory files will be secured at all times.

c) All controlled laboratory keys are stamped with a number that corresponds to a secured area of the laboratory. Each employee will be assigned numbered keys according to their areas of responsibility and their need to access the secured area(s). The director will maintain a list of all assigned, unassigned and duplicate keys. All unassigned keys and duplicate keys for each locked door in the laboratory are stored in a locked box located on the fourth floor. Access to the locked key box is limited to the Lab Director and Section Administrators. When needed, a duplicate key may be signed out to an individual. The individual will be responsible for returning the key before the end of the work day. A checkout log will be maintained for the duplicate keys. If a key is lost or stolen, the employee will promptly notify their immediate supervisor. The initial notification to the supervisor will be followed by a written memorandum to the laboratory director. A grand master key for the Police Department Headquarters building is accessible to the Fire Department for emergency via breaking an emergency box seal.

d) Only laboratory personnel or persons authorized by the laboratory director will have key card access to the operational hallways of the laboratory. To request permission for key card access to the secured hallways of the laboratory the following steps shall be taken:

1. Only Laboratory staff or supervisory level CMPD employees may make a request for individuals seeking key card access to secured hallways of the crime laboratory. The requesting person will contact the laboratory director and submit a completed Request for Key Card Access Form found in the CMPD Portal under CMPD Forms.

2. The form will be reviewed by the laboratory director and if approved, the form will be delivered to CMPD Human Resource Division (HR) to code the key card with access to the card readers specified on the form.
3. The HR person assigned to program the key card for the identified individual will sign and date the form and provide the date the access was granted. The completed form will then be returned to the laboratory director.
4. When key card access to the laboratory is no longer required for an individual HR will be notified and their access will be removed.
5. The director will maintain a list of all keys and key cards and to whom they are issued.
6. If the electronic key card system fails resulting in unsecured access to the fourth floor hallways and front office, the laboratory director or his designee will inform each section of the problem. Before leaving the section for the day, all analysts must secure their evidence, work areas and section. No evidence should be left out in general section areas over night when this condition exists.

e) Only the personnel working within a section and those authorized by the director will have keyed access to that section. The doors to all evidence storage facilities within the laboratory sections will be kept closed and locked. Evidence that is not sealed in a container must be kept in a locked room or cabinet accessible only to the assigned analyst when left unattended. The following exceptions are noted:

- Evidence in the process of being analyzed or dried in general (secure) lab areas.
- Large items of evidence may be left in an unsealed condition as long as the evidence is in an area with access restricted to section personnel only.

f) All evidentiary items in the control of the CMPD Crime lab will be handled, stored, packaged and preserved in a way that prevents loss, deterioration and contamination and maintains the integrity and identity of the evidence.

5.3.5 Housekeeping and Safety

Facilities Management provides general housekeeping for the CMPD Crime Lab. The laboratory Safety and Chemical Hygiene Manual addresses general safety procedures. If a section requires special cleaning procedures necessary to ensure the quality of testing for that discipline and the safety of the employees, then those procedures will be outlined in that sections SOP's.

5.4 Test Methods Including Sampling and Method Validation

5.4.1 General

The CMPD Crime Lab has documented procedures for the handling, preparation and analysis of test items; the calibration of equipment; and the use of reference material, controls and standards. The analytical methods of analysis, methods for calibration, and the processes related to evidence testing are located within the Standard Operating Procedures for each discipline. All applicable methods will be kept up to date, approved and available to all personnel.

Operating instructions shall be available for all analytical equipment where the absence of such instructions could jeopardize the results of tests or calibrations.

Each section of the laboratory will determine measurements to be made and the accuracy/precision required and select appropriate equipment capable of producing measurements with the necessary accuracy/precision for all analytical procedures. The required equipment will be specified in the appropriate procedure in the Standard Operating Procedures for each discipline. The procedure will address accuracy/precision required, measurement uncertainty, statistical techniques for data analysis and control charting, if applicable.

Adjustments to the analytical procedure (e.g., varying from sampling plan, modification of instrumental method parameters) that are necessary in order to obtain a valid result require the prior approval of the Section Administrator or DNA Technical Leader. The Section Administrator or DNA Technical Leader will email the requester to document approval of the procedural adjustment. This documentation will be retained in the case records. A copy (cc:) of the email or memo will be sent to the Quality Assurance Manager.

All reagents/materials prepared by the CMPD Crime Lab will be labeled according to the guidelines listed QM 4.6.2.

5.4.2 Selection of Methods

The CMPD Crime Lab relies primarily on laboratory developed procedures for analysis but may also adopt standard methods (ASTM methods, for example). Each section of the laboratory will select the appropriate tests from the applicable Standard Operating Procedures to meet the needs of the customer. The customer will notify the laboratory of any special needs concerning the processing of their service request. If the customer requests any services or tests that are not approved by the laboratory, the customer will be informed that

the laboratory will not perform the requested service/test. Staff will forward the information about these requests to their Section Administrator. The Section Administrator will forward this information to the Lab Director and Quality Assurance Manager for informational purposes and for consideration in future plans.

5.4.3 Validation Plan

Any CMPD Crime Lab staff may submit a validation plan to initiate a study for a new procedure, major revision of a current procedure or use of new instrumentation/equipment. The validation plan will include a statement of the relevance to the needs of the customer and a timeline for expected completion of the validation study.

The validation plan will be submitted to the Section Administrator or the DNA Technical Leader. The Section Administrator or the DNA Technical Leader will evaluate the proposal. The Lab Director will be included in the evaluation process if the validation plan includes participation of additional personnel. The plan may be revised during the evaluation process. Submitting staff will be notified of the outcome of the evaluation.

If the recommendation is to proceed with the validation, the Section Administrator will forward the plan to the Lab Director for final review and approval.

5.4.4 Non-Standard Methods

It is recognized that not all analyses can be appropriately covered in a procedure manual. Any non-standard procedure and its purpose will be discussed with the customer prior to its use. The method developed shall have been validated prior to its use and this validation will include the following components:

a) Identification of the method;
b) the purpose/scope;
c) what type of item is to be tested;
d) what will be determined by the method, i.e., quantitative, qualitative, or subjective information;
e) materials, instrumentation and equipment and any required specifications;
f) use of standards and/or controls;
g) environmental conditions required if not ambient conditions of the laboratory;
h) written procedure to include:

- special handling/labeling of test items,

- any checks on instrumentation, controls, reagents, etc. to be performed prior to application of procedure on casework,
- method of processing data generated and recording observations and results,
- calibration of instrumentation,
- safety measures to be observed;

i) criteria for approval/rejection of test results;
j) required data to be recorded and the method of analysis and presentation of results; and,
k) uncertainty of method, if appropriate.

5.4.5 Validation of Methods

5.4.5.1 Preliminary Validation Issues

Validation studies will be conducted using reference materials or materials of known characteristics. The validation process will utilize samples similar to the types of samples expected to be encountered in casework.

If a new procedure will replace or be an alternative to an existing validated method, the new procedure must produce comparable results. This is best demonstrated by a cross over study analyzing samples using both procedures to evaluate the effects of the change.

5.4.5.2 Method Validation and Techniques

Following completion of the validation study, a validation summary will be prepared by personnel involved in the validation process. The validation summary will address all applicable issues listed below. The final validation document will include a statement as to whether the method is fit for the intended use.

The internal validation study and supporting documentation must include the following:

a) The scope and purpose of the new method or modification;
b) a description of the type of items/evidence to be tested;
c) the parameters or quantities to be determined by the method;
d) equipment, instrumentation, reference standards and reference materials required;
e) a description of the procedure, which may include:

- special handling, transporting, storing and preparing of test items;
- calibration of instrumentation;

- quality control checks required by the method;
- method of recording the observations and results;
- any related safety measures.

f) uncertainty or procedure for estimating uncertainty if applicable; and,
g) references for the method being validated, including previously internally validated laboratory developed methods and/or published methods from reputable technical organizations and peer reviewed scientific journals.

The final validation summary document must be reviewed by the Section Administrator or DNA Technical Leader and the Quality Assurance Committee (QAC). Once the QAC approves the validation it will be maintained by the Section Administrator.

The QAC, when considering the approval of a new technique or the substantial modification of an existing technique, will consider all factors including the results of the validation study, the impact upon the total quality of casework (timeliness, completeness, improvement of service and accuracy), and available resources.

Any subsequent changes to the analytical procedure will result in additional validation if necessary. Minor changes do not require submission of a formal validation plan, but any changes that can potentially affect the outcome of the test will be validated prior to use and approval by the QAC.

5.4.5.3 Method Range and Accuracy

The validation of laboratory developed methods or modified standard methods shall address the range and uncertainty of the values (e.g. accuracy, detection limit, selectivity, linearity, repeatability, reproducibility, robustness and cross-sensitivity) when possible or applicable to the result.

Validation of quantitative analyses must include the procedure's accuracy and precision over a range of concentrations expected in casework and establish the procedure's analytical limits such as limit of detection (LOD), limit of quantification (LOQ) and reporting limits, as appropriate.

5.4.5.4 Method Implementation

Prior to the implementation of a validated method new to the laboratory or a modified standard method, the reliability of the method shall be demonstrated in-house. The verification of the new method shall be documented and retained for future reference.

Before an individual uses the new procedure in casework, he or she must be competency tested following the new procedure per QM 5.2.6.2. The collection of data from test samples or reference standards during the course of the

validation may substitute for a competency test by the individual primarily responsible for the validation of the new method.

5.4.6 Estimation of Uncertainty of Measurement

5.4.6.1 Uncertainty of Calibrations

The CMPD Crime Lab does not perform calibration services.

5.4.6.2 Uncertainty of Measurement

The CMPD Crime Lab will estimate measurement uncertainty in testing procedures/processes when appropriate. This estimation will be based on the method and its application in the testing of evidence, previous experience with the method and/or validation data. The procedures used to estimate uncertainty will comply with the ASCLD/LAB Policy on Measurement Uncertainty.

Estimation of uncertainty is required where the testing contains measurement results that are quantitative, reported and may reasonably be expected to be used, by an immediate or extended customer (anyone in the judicial process) to determine, prosecute or defend the type or level of criminal charge(s).

Analytical methods that report a quantitative measurement will use a 95.45% confidence interval for reporting measurement uncertainty with the exception of alcohol testing. Methods involving alcohol quantitation will report a measurement uncertainty with a 99.73% confidence interval. When weights are reported, the precision of the balance will be included.

Estimation of uncertainty is not required where the results of the testing are qualitative or the sources of uncertainty are addressed in a published procedure that is utilized by the laboratory.

5.4.6.3 Sources of Uncertainty

The uncertainty measurement will include at a minimum the identification and assessment of the major sources of uncertainty in the procedure which are of importance to the process. This may include the methods, instrument/equipment, special environmental conditions, the types of evidence tested, the reference standards used and the operator. All data used in the estimation of uncertainty will be retained in the affected lab section.

5.4.7 Control of Data

5.4.7.1 Calculations and Data Transfers

It is the Responsibility and Authority of all PLIMS users to monitor data entry, data transfer and calculations to ensure accuracy and conformity with the written procedures. Selecting the "Ready for Review" button in PLIMS signifies that the analyst has checked the data, calculations and findings. Selecting the "Review Complete" button by the technical reviewer in PLIMS signifies that the reviewer has checked the data and agrees with any calculations and findings.

5.4.7.2 Laboratory Computers

The CMPD Crime Lab will ensure that:

a) Software developed by the laboratory for in-house use is documented and validated as suitable.
b) All electronic storage of data entry and evidence information is backed up electronically and password protected if necessary.
c) All computers and instruments are maintained to ensure proper functioning and are operated under conditions necessary to maintain the integrity of test and/or calibration data.

In addition:

- Procedures will reference the computers and any required software that is to be used.
- Commercial software in general use within the laboratory will be considered to be sufficiently validated as long as it is used within the application it is designed for.
- The validation of the instrument/equipment or method will contain an evaluation of the software used on that equipment
- Commercial software that has been altered by the laboratory will be validated prior to use.
- Operating instructions shall be available for all software and hardware where the absence of such instructions could jeopardize the results of tests or calibrations.

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5.5 Equipment

5.5.1 General

All equipment and instrumentation used in the testing of evidence will be under the direct control of the CMPD Crime Lab. If it becomes necessary for the CMPD Crime Lab to utilize instrumentation or equipment outside the direct control of the laboratory, it will ensure that the identical quality and operational requirements that the laboratory places on the use of its own equipment are in place for the borrowed or loaned equipment.

5.5.2 Equipment and Software Calibration or Check

Equipment, software and comparative references used in analytical procedures will undergo evaluation prior to initial use in evidence analysis. A periodic review will also be conducted to ensure continued acceptable performance. The frequency and extent of this calibration or check will be established in each section's Standard Operating Procedures. The initial evaluation will determine whether the equipment is capable of achieving the accuracy required by the procedure(s) in which it will be utilized. Equipment maintenance will be performed following a specified schedule and/or as needed in order to ensure continued proper functioning.

No calibration is necessary for general service equipment that is not directly used for making measurements or with equipment settings that do not significantly affect the test or result. General laboratory equipment such as stirrers, hot plates, centrifuges, non-volumetric glassware, cameras, refrigerators, etc., may be monitored by visual examination.

Microscopes generally need cleaning and periodic service. If they are used in making a measurement then they must be calibrated/checked. Volumetric equipment such as pipettes will be calibrated. Measuring instruments and equipment will be calibrated or checked as appropriate. Performance checks/calibration may be built into the analytical procedure.

5.5.3 Personnel and Instructions

Only individuals who have been trained in the proper use of an instrument or piece of equipment are authorized to use it. Instructions on the proper use and maintenance of equipment that affects quality will be readily available to authorized personnel.

5.5.4 Equipment and Software

All equipment/instrumentation and software used in testing that is significant to the quality of the result will be identified in the analytical (case) file, to include the unique instrument/equipment identifier. The software version will be identified in the analytical file if not specified in the section's Standard Operating Procedure.

5.5.5 Equipment and Records/Logs

Each section will create a list that identifies all testing equipment and its software that can affect quality. The list will reside in the Lab Documents folder on the (R:) drive. This list will include the following information:

a) Instrument/equipment identity and its software and version;
b) manufacturer's name, type and a unique identifier for each instrument/equipment (e.g., serial # of primary component if a multiple component instrument);
c) date that the equipment was calibrated or checked prior to being placed into service;
d) location of equipment (section and room #, if appropriate);
e) location of manufacturer's instructions, if available;
f) frequency of calibration checks and reference to the method used for calibration. Refer to the calibration label or log for the due date of next calibration;
g) reference to any maintenance plan. Refer to the maintenance log for records of maintenance;
h) any modification to the equipment not the result of repairs/maintenance.

Records/logs will be kept by each section of:

- Any maintenance carried out – maintenance log/records;
- results of calibration checks – calibration log/records;
- any repairs due to damage or malfunction (include in maintenance log/records).

5.5.6 Maintenance

The various sections of the CMPD Crime Lab will:

- Check the calibration of measurement and test equipment as outlined in the Standard Operating Procedures for that section. The calibration verification procedures/guidelines will specify equipment type, the steps involved in the calibration process, acceptance criteria and the action to be taken when results are unsatisfactory.

- Maintain calibration verification records for the instruments and equipment, in close proximity to the equipment or at a location specified by the Section Administrator which is accessible to all personnel who may need to reference such records.

The accuracy and fitness for use of inspection, measuring and test equipment will be maintained by individuals trained in the proper handling and preservation of the equipment. Frequency and scope of instrument/equipment maintenance will be outlined in each section's Standard Operating Procedures.

Equipment undergoing routine maintenance or troubleshooting will require an 'OUT OF SERVICE' notice in order to prevent inadvertent use of the equipment. Following any routine maintenance the equipment will not be used in evidence analysis until appropriate QC evaluations are performed.

5.5.7 Failed Calibration and Suspect Results

Any instrument or piece of equipment that has failed calibration, gives suspect results, is damaged or defective or has been mishandled will be immediately taken out of service. The Lab Director and/or the Section Administrator will be notified and arrangements will be initiated for corrective service. The instrument/equipment will be marked 'OUT OF SERVICE' until it has been repaired/recalibrated. The 'OUT OF SERVICE' notice will be affixed in such a way that it is readily visible and is not subject to inadvertent removal. The equipment will be shown to be performing correctly prior to its return to service. Acceptability of results from applicable standards/controls will be noted in the maintenance log prior to the equipment being considered in service.

If possible, out of service equipment will be removed from the working area of the lab. Small equipment or small pieces of equipment that are out of service may be packaged together, removed from the working area of the laboratory, and the container marked 'OUT OF SERVICE'. In instances where equipment cannot be removed from the working area of the laboratory, the 'OUT OF SERVICE' notice will be securely affixed and prominently displayed on the equipment.

The Section Administrator or the DNA Technical Leader will assess and document the validity of previous test results when a piece of equipment is found to be out of service. If the administrator is not familiar with the operation of a particular piece of equipment, then the analyst that is the most familiar with that equipment will be consulted. If the assessment shows that previous testing was concluded with controls demonstrating proper performance of the equipment, no further documentation is required. Otherwise the assessment documentation will include an evaluation of the impact of the equipment's malfunction, any actions taken and a description of any review/reanalysis performed as a result of the evaluation. The Lab Director will be notified of the results of the

review/reanalysis. Data produce by an instrument that is found to be operating outside of acceptable limits will be treated as non-conforming per QM 4.11. Documentation of the assessment will be maintained with the appropriate instrument/equipment log/records.

5.5.8 Status of Calibration

Whenever practicable all instruments/equipment that require calibration will be labeled to indicate the status of calibration. The information on the label(s) will include at least the following:

- Instrument;
- serial number or identification code (as assigned by section);
- date last calibrated;
- initials of who performed calibration;
- and, date of expiration (when next calibration is due).

Instrumentation that requires weekly, daily or with each use calibration will have a calibration label that states this with a notation to see log for expiration.

5.5.9 Outside Maintenance

Whenever any piece of equipment that affects quality leaves the direct control of the CMPD Crime Lab for any reason, such as for repair, maintenance or modification, either in house or returned to the factory, the equipment will be shown to be performing correctly prior to its return to service. Acceptability of results from applicable standards/controls will be noted in the maintenance log prior to the equipment being considered in service.

5.5.10 Intermediate Checks

The inclusion of control samples/blanks that are considered checks on the proper functioning of the equipment/instrument will be specified in procedure. Where appropriate, control charts will be used to indicate trends and demonstrate/verify that the process is in control.

5.5.11 Updating for Correction Factors

If calibrations give rise to correction factors, records will reflect the use of these correction factors, to include any software that requires updating.

5.5.12 Laboratory Computers

The CMPD Crime Lab will ensure that any computers or automated equipment used in the testing of evidence are validated, backed up electronically, and

maintained to ensure proper functioning and are operated under conditions necessary to maintain the integrity of test and/or calibration data according to QM 5.4.7.

5.5.13 Safeguarding Calibrations

Inspection, measuring and test equipment with calibration settings that can be adjusted by CMPD Crime Lab staff will be safeguarded against unintentional changes following calibration and during testing by at least one of the following:

- When necessary, positive and negative controls or alternate controls run at the beginning and end of instrumental runs/analytical sequences (Examples of alternate positive controls are DNA ladders or spiked samples. An example of an alternate negative control is a blank.);
- tamper proof seals placed over the adjustment points;
- properly trained personnel as the only individual(s) authorized to operate the instrument.

5.6 Measurement Traceability

5.6.1 General

Every section of the CMPD Crime Lab will have an established program for the calibration of equipment having a significant impact on the accuracy/validity of the test result. Equipment will be calibrated before being placed into service, after any non-routine shut down and following service or any substantial maintenance. Where calibration is a dominant factor in casework analysis, calibration check intervals will not be less stringent than manufacturers' recommendations.

Equipment will be calibrated against certified equipment/standards having a known valid relationship to internationally or nationally recognized standards (e.g., NIST standards). If no national/international standard exists, the basis used for calibration will be documented in the section's Standard Operating Procedures specific to that function.

Every effort will be made to utilize ISO 17025 suppliers, when needed or as required, to calibrate laboratory equipment. The laboratory will obtain chemicals and standard solutions utilized for calibration from suppliers that are accredited by an ILAC signatory wherever possible.

5.6.2 Specific Requirements

5.6.2.1 Calibration

5.6.2.1.1 5.6.2.1.2 Calibration Laboratories

Portions of this element applicable to testing labs are addressed in QM 5.6.2.2.1 and QM 5.6.2.2.2.

5.6.2.2 Testing

5.6.2.2.1 Calibrations

When calibration uncertainty of testing equipment is a dominant factor in the total uncertainty of measurement, then traceability of CMPD Crime Lab measurement standards by an unbroken chain linking them to relevant primary standards is required.

When the calibration of equipment contributes little to the total uncertainty of the test result, then the laboratory will calibrate instrumentation using reference materials. The reference material used in this calibration will be documented in the procedure.

When external calibration services are used, traceability of measurement will be assured by the use of calibration services that can demonstrate competence, measurement capability and traceability. The calibration certificates issued by these services will contain the measurement results, including the measurement uncertainty and/or a statement of compliance with an identified metrological specification. When possible, external calibration services will be accredited to ISO 17025.

5.6.2.2.2 Traceability to SI Units

Where possible, calibration materials will be traceable to International System of Units (SI) units of measurement.

When traceability of calibration measurements cannot be made in or is not relevant to SI units, the calibration procedure will establish traceability by one of the following:

- The use of certified reference material from a competent supplier to give a reliable characterization of a material;
- the use of specified methods, published standards and/or consensus standards;
- or, participation in inter-laboratory (other accredited laboratories) comparisons.

5.6.3 Reference Standards and Reference Materials

5.6.3.1 Reference Standards

All in-house NIST traceable primary measurement standards must be periodically checked and recertified by an external agency to maintain their NIST traceability. The Section Administrators shall maintain a list of the primary standards applicable to their section. The primary measurement standards will be stored according to manufacturer recommendations and handled using those recommendations and/or good scientific practices.

Primary reference standards will generally be used for calibration only unless it can be shown that their performance as reference standards would not be invalidated with other use.

Calibration Weights:

All weights used to verify balance calibrations shall be evaluated annually to determine if each measured weight meets acceptable criteria. The secondary weights shall be checked using the certified traceable Primary (Ultraclass) weights maintained by the Chemistry Section. The procedure for this is as follows:

- The primary weight is weighed and the value is recorded. The balance must provide a value that is within the acceptable tolerance listed for the weight.
- Once it has been determined that the recorded value (or balance reading) is within the acceptable tolerance listed for the primary weight, the secondary calibration weight is weighed and the value is recorded.
- If the measured weight of the secondary weight is within the declared tolerances then the standard is suitable for use in the routine performance checks of balances.

Documentation of the check shall be maintained by the appropriate Section Administrator. Each Section Administrator is responsible for maintaining a list of calibration weights in use in their section. Any weight that does not meet the acceptable tolerance level or becomes damaged will immediately be taken out of service.

The primary weights shall be sent to an external agency to be checked and recertified once every three years to maintain NIST traceability. The report of the external recertification of each primary mass standard shall be evaluated to determine if the reported actual values meet acceptable criteria. If the reported actual weight of the standard falls within the tolerance of the mass value, the standards are suitable for use in the annual performance checks of the secondary calibration weights.

5.6.3.2 Reference Materials

Any reference material will be traceable to SI units of measurements, certified reference materials or internally developed reference materials. Internally developed reference material must be checked against published references or certified reference material where technically practicable. Reference materials utilized in casework will contain sufficient identifying information to provide traceability of the data to the appropriate reference material.

Prepared reference materials and/or standards will be verified by the appropriate section prior to distribution to staff for use in casework. During the verification period the standard will be stored in a designated location until approved for casework use. After verification and documentation have been completed, the approved standard material may be distributed to staff for use with no further verification of the material required by individual analysts.

Reference collections of data or items/materials encountered in casework and maintained for identification, comparison or interpretation purposes will be fully documented, uniquely identified and properly controlled. Examples of reference collections include bullets, DNA profiles, and mass spectra.

5.6.3.3 Intermediate Checks

Every section of the CMPD Crime Lab will have an established program for the intermediate checking of calibration of equipment, where appropriate. These checks may be incorporated into the analytical procedures as blanks and controls.

If controls and working standards used during normal testing produce expected results, this demonstrates that the primary or reference standard is still satisfactory.

5.6.3.4 Handling, Transport, Storage and Use

Every section of the CMPD Crime Lab will have an established program for the handling, transport, storage and use of reference standards and reference materials. This program will address steps taken to prevent contamination and deterioration and to protect the integrity of the materials.

5.7 Sampling

5.7.1 Sampling

Every effort will be made to conserve evidence during the analytical process. However, it may be necessary to consume the entire evidence item in order to perform a complete analysis. If an evidence item is consumed/altered/destroyed in analysis, notation will be made in the case file to indicate that no sample remains for additional analysis.

Sampling is a process whereby a portion of an evidence item is taken for testing to serve as a representative of the whole. In many cases sampling of forensic evidence is limited by its availability. The process of sampling of forensic items submitted to the laboratory is unique for each discipline and is documented in the discipline operations and/or analytical procedures, where applicable. The documented processes include the selection, prioritization and sampling of testing material and are based upon statutory limits, a reasonable understanding of the limits of detectability and the sensitivity of the testing. Emphasis is placed upon the training and competence of each analyst to select/recover the adequate sample needed for testing.

5.7.2 Deviations

Whenever the customer requires a departure from the standard sampling/selection process, the Section Administrator or DNA Technical Leader must approve any deviation prior to testing. A conversation log or email record will be generated detailing any deviation and the approval of the Section Administrator prior to testing.

5.7.3 Records

The sampling/selection process used in routine casework as documented in the Standard Operating Procedures need not be recorded in the case notes. The analyst will document any deviations as well as any elaborations about the selection and sampling process. The analytical case file will contain any observations, drawings, diagrams, or images that the analyst has made and that may be appropriate to support the selection of test items by the analyst.

The results of any statistical programs used to select the number of items to be tested will be included in the analytical case file.

5.8 Handling of Test and Calibration Items

5.8.1 Procedures

5.8.1.1 Chain of Custody

Evidence is requested from the Property and Evidence Management Division through the Service Request function of PLIMS. Latent Prints automatically come to the lab after the case information is entered into PLIMS and do not require a lab request.

All evidence submitted to the laboratory for examination will have the chain of custody tracked in PLIMS. Once evidence is delivered to the section the receiving analyst will follow the proper procedure to show the transfer of the evidence to a person or storage location in PLIMS. The chain of custody of all evidence transfers will be tracked using the "Custody" tab in PLIMS. The transfer of evidence can be entered manually or accomplished with the aid of a PLIMS workstation and a hand held barcode reader.

Before the evidence leaves the section for any reason, an electronic record establishing the proper chain of custody must be created for the case.

5.8.1.2 Sub-Items

Sub-items of evidence that are developed during the exam process will be added to the case in PLIMS so that the chain of custody can be tracked. When a new item is added it will be given a new number by PLIMS. Sub-items can be retained in the section for possible future examination.

5.8.1.3 Evidence Sealing

The original (external) packaging of all evidence received by each laboratory section will be protected as an integral part of the evidence submission. Occasionally, normal laboratory processing will hinder the reuse of the original evidence container. When this occurs, the original packaging will be included with the repackaged evidence. The case notes will acknowledge how the evidence is repackaged.

The laboratory must ensure that evidence stored in the laboratory is properly sealed. A container is properly sealed only if its contents cannot readily escape and only if entering the container results in obvious damage/alteration of the container or its seal. Tape used to seal the containers must be initialed (or otherwise identified) to document the person sealing the evidence. Initials must overlap the tape and the package. Some evidential items are exempt from this

policy. Large bulky items not requiring trace, blood or fingerprint analysis are not required to be in a sealed container as long as the evidence is in an area with access restricted to section personnel only.

5.8.2 Identification of Test Items

Evidence is described and itemized in PLIMS by the customer and submitted to the P&EMD. Sub-items of evidence produced in the lab must be properly described and identified in PLIMS. Each item of evidence shall be marked for identification in such a manner as to ensure that it is uniquely identifiable. The minimum acceptable markings on evidence are outlined below.

5.8.2.1 External Markings

This policy applies to evidence that does not lend itself to packaging and to the external packaging of evidence that does lend itself to marking. Evidence will be marked to meet the following criteria:

a) Markings on the evidence or its external packaging must be sufficient to permit proper retrieval of evidence from storage.
b) Markings must be adequate for identification of evidence in court.
c) Markings must be designed to protect the integrity of the evidence
d) The analyst will mark the evidence/package (at a minimum) to show receipt date and analyst initials.

5.8.2.2 Test Item Marking by Analysts

This policy applies to all evidence or its proximal container. Evidence will be marked to meet the following criteria:

a) All items that are subjected to analysis should be marked to such a degree that the item can be uniquely identified in court; this will include at a minimum the analyst's initials. It will generally also include an F-number, control number and/or item number. The actual item should be marked when reasonably possible.
b) 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 of the image shall be treated as evidence.
c) Items that are not examined/analyzed (such as those only being inventoried) do not require individual markings.

5.8.2.3 Types and Location of Marks

a) Marks must be able to withstand normal handling and moisture without obliteration.

b) During the marking process, care must be taken to place the markings in such a manner that they will not alter the evidential value or unjustifiably lessen its intrinsic value. In this case, marks must be placed in an area that would alter the value of the object as little as possible. Marks will be placed on the evidence so they are readily visible.
c) If the evidence cannot be marked without destroying or altering any of its properties, it should be placed in an appropriate container. The container should be marked and properly sealed per CMPD Directive 700-001.III.F.
d) If an ink pen is used to mark the exhibit, the marks should be of sufficient size to be easily discernible. The color of ink should be selected to provide suitable contrast to the background.

5.8.3 Suitability of Test Item

Evidence will not be accepted by Laboratory personnel unless it has been submitted in accordance with department policy and properly entered into PLIMS. Evidence that is not accepted due to incorrect packaging, insufficient labeling or other evidence related issues should be documented in the Service Request function of PLIMS. Major evidence discrepancies such as a loaded gun being submitted in something other than a steel lined gun box or a significant difference in the weight of a drug recorded by the officer and what is actually submitted will be reported to the Lab Director.

If any abnormalities are encountered upon receipt of the test item, the issues will be recorded in the case file. When there is any doubt as to the suitability of an item for testing; or when there is a significant difference between the item submitted and the description provided for that item; the laboratory shall consult the submitting officer and/or property control for further instructions before proceeding and shall document the discussion per QM 4.4.2. When it is clear that the item(s) are not suitable for testing, the customer will be notified that the evidence was rejected.

5.8.3.1 Rejection of Evidence

Note that this section does not refer to the rejection of requests for analysis, but rather to the actual evidence sent to the lab. The laboratory staff must require that the evidence submitted is packaged and labeled correctly. When essential corrections by the submitter are necessary in order to complete the case analyses, the Service Request function is used by the analyst to return evidence to the P&EMD. Standard rules of evidence and analyst discretion will be the deciding factors to return the evidence to the P&EMD.

The following criteria will be used when deciding whether to reject and return evidence to the P&EMD:

a) The evidence was not properly packaged or sealed to preserve the integrity of the evidence.
b) The evidence/property listed in PLIMS does not reflect the evidence as submitted.
c) The Crime Laboratory is not able to provide the analytical services requested.
d) The evidence does not meet the requirements of a section's Standard Operating Procedures.

If evidence needs to be rejected after a Service Request has been accepted it can be done using the "Close Request" button in the "Assignments" tab. Once the "Close Request" button is hit a reason must be given using the drop down function for the "Completion Code". Once a reason is selected any additional information may be added to the "Comments" section before saving the information.

Evidence can also be rejected without closing the Service Request. If an issue needs to be corrected with the evidence it can be returned to P&EMD. Once this occurs the reason why the evidence was rejected must be communicated to the submitting investigator so that it can be corrected. Once the issue has been fixed the evidence can be delivered by P&EMD and work can be conducted on the case. Any communication regarding the rejection of evidence and its resubmission should be attached to the case in PLIMS.

5.8.4 Handling of Test Items

Evidence items within the laboratory will be maintained in a way as to avoid the deterioration, loss or damage to the test item during storage, handling and preparation. Any specific handling instructions provided with the item shall be followed unless they differ from laboratory protocols. When evidence items are required to be stored or maintained under specified environmental conditions, these conditions will be maintained, monitored and recorded in the case file.

All evidence not in the process of examination/analysis shall be maintained in a secured, limited-access storage area under the proper seal. Evidence in the process of being examined will be secured as outlined in QM 5.3.4.e. Unsealed evidence that cannot be examined in an expeditious manner will be resealed and properly secured until testing can be resumed.

Any time an evidence package is opened notes must be made regarding what examination, evaluation, etc. of the contents was done. These notes will be stored in the case file in PLIMS.

5.8.4.1 Firearms Submitted to the Laboratory

Firearms will be checked for safety by a member of the Firearms Section or a properly trained laboratory staff member before the firearm is handled for any analytical purpose. If the firearm is being resubmitted, no additional safety check is necessary as long as the package has not been opened since leaving the laboratory.

a) This policy pertains only to firearms that are packaged in cardboard boxes and presumed unloaded.
b) Any firearm packaged in a steel-lined gun box will be unloaded by Firearms Section personnel.
c) If a firearm is found loaded in other than a steel-lined gun box, the following will apply:

- The Firearms Section Administrator or his designee and the lab director will be notified immediately;
- if necessary the condition of the firearm will be documented photographically;
- the firearm will be unloaded safely by Firearms Section personnel and the submitting officer's supervisor will be notified of the event by the Firearms Administrator;
- anyone having difficulty unloading a firearm must cease working on the firearm and properly submit it to a fully trained firearms examiner. Any pertinent information regarding the problem(s)/safety of the firearm will be given to the analyst that is receiving the firearm.

d) Persons outside the Firearms Section who conduct safety checks will be trained by the Firearms Section Administrator or his designee
e) The training will be documented and a copy of the documentation will be placed in the person's training file.

5.8.5 Individual Characteristic Databases

Individual characteristic databases (AFIS, CODIS and IBIS) are addressed within the Standard Operating Procedures for each section of the Crime Lab, where applicable. Each section will specify how database samples are to be treated (as evidence, reference materials, or examination records) and shall follow appropriate crime lab procedures that apply to how the samples are to be treated.

Individual Characteristic database samples shall be protected from loss, cross transfer, contamination and deleterious change. Access to individual characteristic database samples shall be restricted to those persons authorized by the Laboratory Director according to QM 5.2.5. Each individual characteristic

database sample received by the laboratory will be uniquely identified according to section Standard Operating Procedures.

5.9 Assuring the Quality of Test and Calibration Results

5.9.1 Quality Control

Each section of the laboratory will have quality control procedures to monitor analytical testing appropriate to the type and frequency of the tests conducted. Depending on the particular test, the CMPD Crime Lab may use one or more techniques to demonstrate that the testing is under control. These monitoring procedures may include but are not limited to:

a) Certified reference materials and/or internal quality control using traceable secondary reference materials;
b) participation in inter-laboratory comparison or proficiency-testing programs;
c) replicate tests or calibrations using the same or different methods;
d) retesting or recalibration of retained items;
e) and/or correlation of results for different characteristics of an item.

When necessary, positive and negative controls or alternate controls will be run at the beginning and end of instrumental runs and other analytical sequences, as set forth in section SOP's. Examples of positive controls are a DNA ladder or spiked sample. An example of a negative control is a blank.

5.9.2 Quality Control Records

Quality control (QC) records shall be retained and shall include documentation of any remedial actions taken when QC results are not acceptable. These actions shall ensure that appropriate measures are taken to prevent incorrect results from being reported.

5.9.3 Proficiency testing

Each analyst will be proficiency tested annually in each discipline in which he performs casework by an ASCLD/LAB approved test provider. The tests will be used as diagnostic tools that provide information for continual quality improvement of analyses. Each analyst must be proficiency tested at least once, during each five-year accreditation cycle, in each sub-discipline in which the analyst performs casework examinations and issues reports.

Other than the DNA Section, multiple analysts may work on a single proficiency test provided that there is enough testing material. However, each analyst will work the test independently and submit separate documentation stating their findings. The following procedures are to be followed in handling external proficiency tests:

a) The laboratory director is responsible to ensure that all external proficiency tests are distributed to the appropriate Section Administrator.

The Section Administrator will assign the test to the appropriate analyst(s). The test will be assigned within five working days of its receipt in the laboratory.

b) The assigned analyst(s) will work the test and return the results, notes, answer sheets, etc. to the laboratory director or his designee by the date assigned by the director. The administrative and technical review procedures utilized when conducting casework shall be completed for all proficiency tests. A copy of the results will be stored in the laboratory's administrative files. The Section Administrator will retain the test materials for future reference, where feasible.

c) The analytical results of multi-staffed disciplines will be compared for consistency and those from single-staffed disciplines' will be demonstrated to the director or his designee. If a discrepancy is detected, corrective action will be taken in accordance with QM 4.11. Once the discrepancy is resolved or the laboratory director feels that the answers are consistent, the results are sent to the testing agency by the director or his designee. Refer to the DNA QAM for DNA Section policies concerning proficiency tests.

d) The QA Manager will review any discrepancy that arises during the proficiency testing process.

e) The laboratory's evaluation of its proficiency test results will be based upon the completed test results as published by the testing agency. If the laboratory's results do not agree with the published results, the director or his designee may contact the external proficiency testing service for verification and discussion of the test.

f) The laboratory will maintain the following records related to proficiency testing:

- The test identifier
- How samples were obtained or created
- The identity of the analyst
- The date of analysis and completion
- Copies of all data and notes supporting the conclusions
- The proficiency test results
- Any discrepancies noted
- Corrective actions taken (QM 4.11)

g) The laboratory will use the following criteria for evaluation of proficiency tests:

- All reported identifications are correct or incorrect based on laboratory SOPs.
- All reported eliminations are correct or incorrect based on laboratory SOPs.

- All results reported as inconclusive or insufficient for identification are correct or incorrect based on laboratory SOPs.
- It is recognized that evaluation of other submitting labs' results or reported consensus may be necessary to evaluate subjective analyses.
- All final reports are graded as satisfactory or unsatisfactory. A satisfactory grade is attained when there are no analytical errors or deviations from the SOP demonstrated.
- All proficiency test participants will be informed of the final test results.

h) The analysts' direct supervisor will provide feedback to the analyst. The analyst will sign and date the Crime Lab Proficiency Test Review Form when the feedback occurs.

5.9.4 Technical File Reviews

A minimum of ten percent of the reports will be technically reviewed (100% for the Biology Section). Management has the flexibility to require that a higher percentage of reports be reviewed based on particular laboratory circumstances. Each Section Administrator is responsible for ensuring that the proper proportion of cases is technically reviewed. 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
- that the test report contains all required information.

The technical review shall be done by a person authorized to conduct examinations in that category of testing. An author or co-author of a report may not serve as the technical reviewer of the report. When practical, this review should be accomplished by interasectional review; or in the case of a single person section, by the laboratory director's designee. Cases chosen for review should be selected throughout the calendar year to reflect a representative sampling of sample types and conclusions. At least 10% of cases from each sub-discipline will be technically reviewed. Technical review documentation will contain the identity of the reviewer and the date the review was conducted.

Should there be a disagreement in the technical proofing of a report, the reviewer will meet with the analyst to resolve the issue; however, this does not relieve the reviewer of the responsibility of notifying the Section Administrator, or the next level supervisor, of any repetitive or serious errors that are discovered.

If the reviewer and the analyst are unable to resolve the issue, the Section Administrator (if a qualified analyst) or DNA Technical Leader will arbitrate the issue. Issues on how to report results are often resolved by receiving input from all qualified analysts in the section. Outside laboratories may be required for arbitration and/or reanalysis. If after all attempts at arbitration are a disagreement still exists, the report should be written to reflect the more conservative opinion.

5.9.5 Administrative File Reviews

Prior to the issuance of the report, all case files will be administratively reviewed by a laboratory employee other than the report writer. Administrative review documentation will contain the identity of the reviewer and the date the review was conducted. At a minimum the review will consist of the following:

- 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; and,
- a review of the test report to ensure that all key information is included.

5.9.6 Testimony Monitoring

It is the responsibility of the laboratory management that analyst testimony be reviewed at least once annually, if possible. This may be accomplished by viewing testimony, submitting Crime Lab Witness Evaluation Forms to investigators, attorneys, judges or peers, or by conversation with the investigators/attorneys/judges involved for feedback. Each analyst is responsible for distributing at least one Witness Evaluation Form to an evaluating agent if he testifies during the year. Any reported deficiencies will be presented to the Section Administrator or the laboratory director who will then take appropriate action per QM 4.11. The Director will review all completed forms and the Director or Section Administrator will provide feedback to the analyst by means of a review of the completed form. The analyst will sign and date the form when the feedback occurs.

Each analyst will track Court Testimony using the Activity Log feature in the PLIMS program. This information will be used to monitor which personnel testify in court each year and to assist in knowing who has or has not been evaluated on court testimony for the year. The information should be entered within three business days following the court appearance.

Any analyst that did not testify during the calendar year will be required to submit a memo to the Quality Assurance Manager by December 31st of the year stating that he/she did not testify during the year.

5.10 Reporting the Results

5.10.1 General

The results of each test or series of tests, carried out by the CMPD Crime Lab will be reported in an Official Report produced by the analytical section of the laboratory responsible for the testing of the evidence. The Official Report will accurately, clearly, and objectively state the results obtained through analytical testing performed on that evidence.

The following terminology is used to describe various types of reports:

- Original- The originally issued report.
- Amended- A changed or corrected report.
- Second, third, etc. report- A second, third, etc., report issued when additional analysis is required for a given category of testing.
- Multiple reports executed for a case in the Latent Print Section will contain the exam type and the suspect name for comparison reports.
- Any report that is issued other than an original report should be marked with the type report in the “Remarks” area of the report header.

Each service requested and accepted by the CMPD Crime Lab (with the exceptions noted below) will result in the generation of an Official Report. Results will be reported for every item tested. Customers will be notified of completion of services in this category through ‘notification reports’ as needed to ensure the submitting officer is aware of the status of the submitted evidence.

Reports will not be necessary for the following circumstances:

- IBIS/AFIS/APIS/IAFIS entry/correlation activities.
- Presumptive testing on suspected controlled substances in time-sensitive investigations being conducted by the CMPD.
- The request for analysis is cancelled prior to any analytical work being done.

At times due to the immediacy of an ongoing investigation it may be necessary to release information prior to writing a report. It is required that, subject to section Standard Operating Procedures, an appropriate review (i.e., comparison verification, etc.) take place before any such information is released. Case related information released prior to the report will be issued only to the investigating officer, their designee and/or the officer and analyst’s chain of command.

Standard Operating Procedures within each section will include guidelines for forming conclusions and/or reporting test results. These guidelines can be in the form of formatted report statements, conditions resulting in positive/negative/inconclusive, etc.

No Official Reports will be issued prior to the completion of all technical/administrative reviews of analytical testing results and supporting documentation. The completed documentation associated with the technical/administrative process shall be included in PLIMS indicating approval of the procedures/results by an individual authorized to perform technical review.

5.10.2 Report

5.10.2.1 Report Content

Each Official Report will contain the following:

a) The title "Official Report."
b) The name "Charlotte Mecklenburg Police Department Crime Laboratory" and the address of the lab.
c) The CMPD complaint number assigned to the case and page number designated "X of Y" where "X" is the page number and "Y" is the total number of pages. The last page of the report will include the statement "End of Official Report." Each page of the report will include the date the report was printed.
d) The name of the submitting agency and its address, if the submitting agency is different than CMPD.
e) The examinations conducted on the items submitted.
f) The individual item number(s) of each piece of evidence tested. A listing and description of the items related to the request. This listing will include all items that were tested for this report. The description may include the general condition of the item such as wet, red brown stains, etc. A more detailed description of the condition of the item will be in the analyst's notes, if applicable.
g) The date the item(s) were received by the laboratory and the dates of the performance of the testing need not be reported if the date(s) are not critical to the validity and application of the results.
h) Method of sampling is not included on the report unless it is critical to the application of the results. Notes regarding sampling will be contained in the case file, if applicable. The sampling plan is available to the customer on request.
i) The results of the testing and, where appropriate, the units of measurement.
j) The name, title and electronic signature of the analyst.
k) Where relevant, a statement to the effect that the results relate only to the items tested.

5.10.3 Test Reports (Additional Requirements)

The information in QM 5.10.3.1 and QM 5.10.3.2 is contained within the analytical case file notes and is available at the request of authorized personnel. This additional information is to be included on Official Reports when appropriate or required by the discipline for the interpretation of the reported test results.

5.10.3.1 Additional Statements

a) A statement explaining any deviation from the standard test methods, including adverse laboratory environmental conditions that may have impacted the testing.
b) A statement explaining any noncompliance with the service requested. The Official Report with test results for the service requested is proof of compliance with the service requested.
c) A statement of an estimation of uncertainty of measurement(s) when relevant to the validity or application of the test results, when a measure or quantity is associated with statutory values or to comply with the requirements of the customer.
d) Where appropriate, interpretations, conclusions, and opinions may be stated on the report.
e) Any additional information required by CMPD Crime Lab approved methods or the requestor.

5.10.3.2 Comments on Sampling

When the analytical process involves sampling, the sampling plan will be specified in procedure and/or detailed in the analytical case file. Where necessary for the interpretation of test results, the following will be included about sampling on the report:

a) The date of the sampling/selection.
b) A more unique description of the item sampled.
c) The location of sampling/selection of each item. The analytical case file notes contain the notes, drawings, sketches and photographs that may have been generated during the course of the examination.
d) Reference to the sampling plan used.
e) Any adverse environmental condition(s) that may have affected sampling/selection.
f) Any deviations from the established sampling plan due to specifications from the customer or initiated by the analyst.

5.10.3.3 Release of Reports

The submitting officer is identified in PLIMS and in KBCOPS. Electronic copies of the Official Reports are retrieved by the officer through KBCOPS. Paper

copies of laboratory reports will be issued only to investigating officers or to the District or U.S. Attorney or their designee. When releasing a laboratory report, the issuing person must document the request for the copy in the case file. Documentation may include an e-mail, written request or a written record of the verbal request for the copy. The record of the request must be attached to the case file in PLIMS.

Reports for blood alcohol analyses will be notarized.

5.10.3.4 Testimony

Each analyst in the laboratory who issues findings (testifies in court, issues a written report, etc.) based on the examination documentation generated by another person will complete a review of all relevant pages of examination documentation and document the review in the case record by initialing or signing and dating the examination documents or via a document delineating the scope of the review.

5.10.3.5 Association

Associations that are made during the examination will be reported clearly and qualified properly per section SOP's.

5.10.3.6 Elimination

Eliminations or negative conclusions that are made during the examination will be reported per section SOP's.

5.10.3.7 Inconclusive Results

Inconclusive test results shall include further elaboration about the basis for these findings per section SOP's.

5.10.4 Calibration Certificates

This section covering calibration certificates is not applicable to the CMPD Crime Lab.

5.10.5 Opinions and Interpretations

When associations are made, the significance of the association shall be communicated clearly in the report. Terms such as "consistent with" and "match" will be qualified unambiguously and objectively.

5.10.6 Testing Results Obtained from Subcontractors

Reports issued by external laboratories performing forensic testing for the CMPD Crime Lab will be disseminated according to QM 5.10.3.3. The original report issued by the external laboratory will be retained in the case file.

5.10.7 Electronic Transmission of Results

An email is sent to the investigator notifying them that the report is available on the portal and via KBCOPS. For CMPD Investigators this notification is automatically sent via PLIMS. Telephone, facsimile or e-mail may be used to transmit results to the authorized parties. The person responsible for transmission of the test results via telephone, facsimile or e-mail will verify that the proper case information is being released to an approved individual. They will also check that the equipment used for release of information is functional and that the transmission is successful. Documentation of the request, verification and distribution will be attached to the case file in PLIMS.

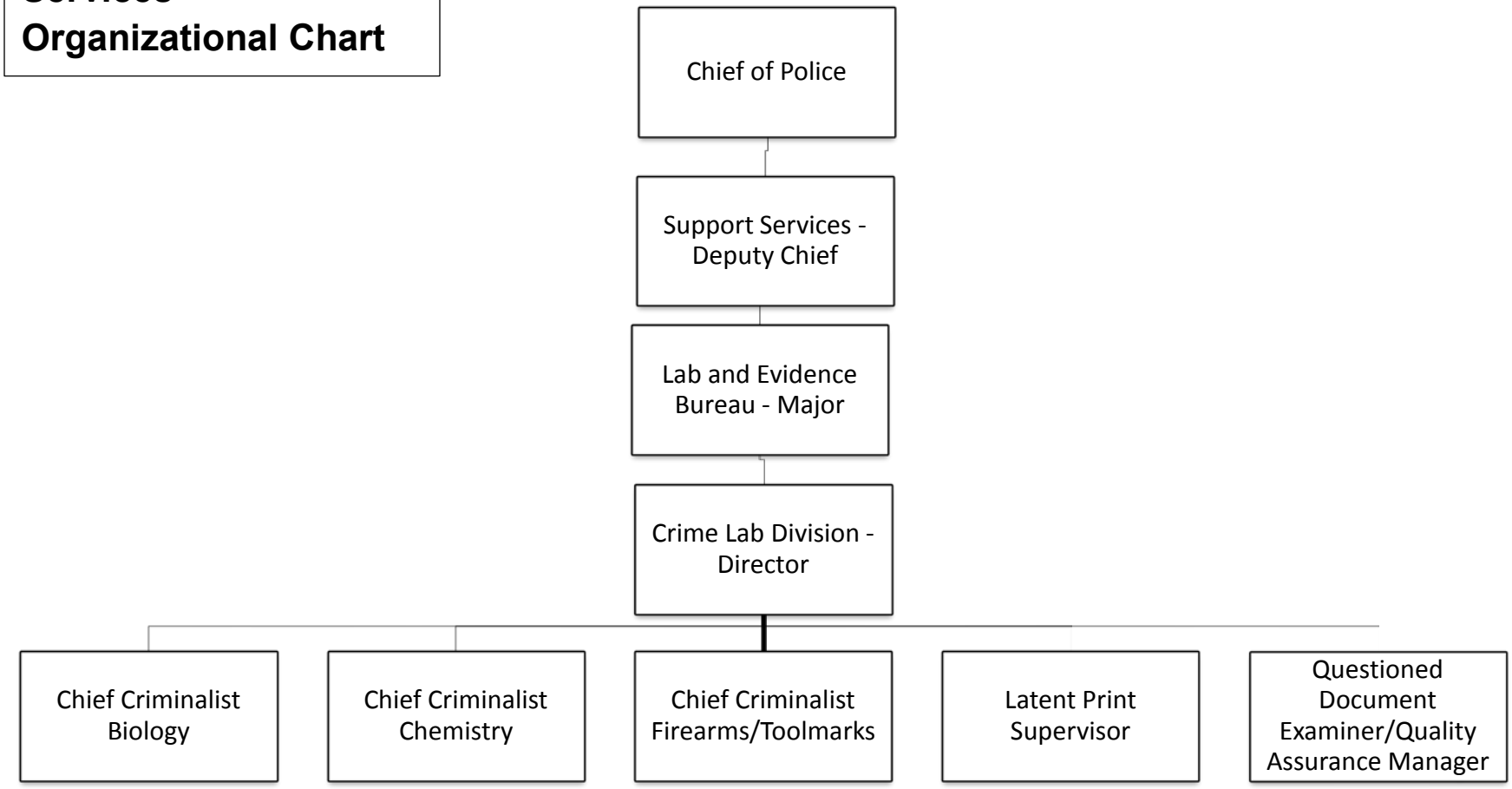
5.10.8 Format of Report

The PLIMS generates an Official Report in a standardized format containing all required QM 5.10.2 report elements not associated with specific case information. The format of the Official report will be approved by the Attorney General of the State of North Carolina. Each discipline may develop automated statements to be used on the PLIMS for the reporting of its results on the Official Report. An analyst may use free form text if the results do not meet the discipline criteria for an automated format.

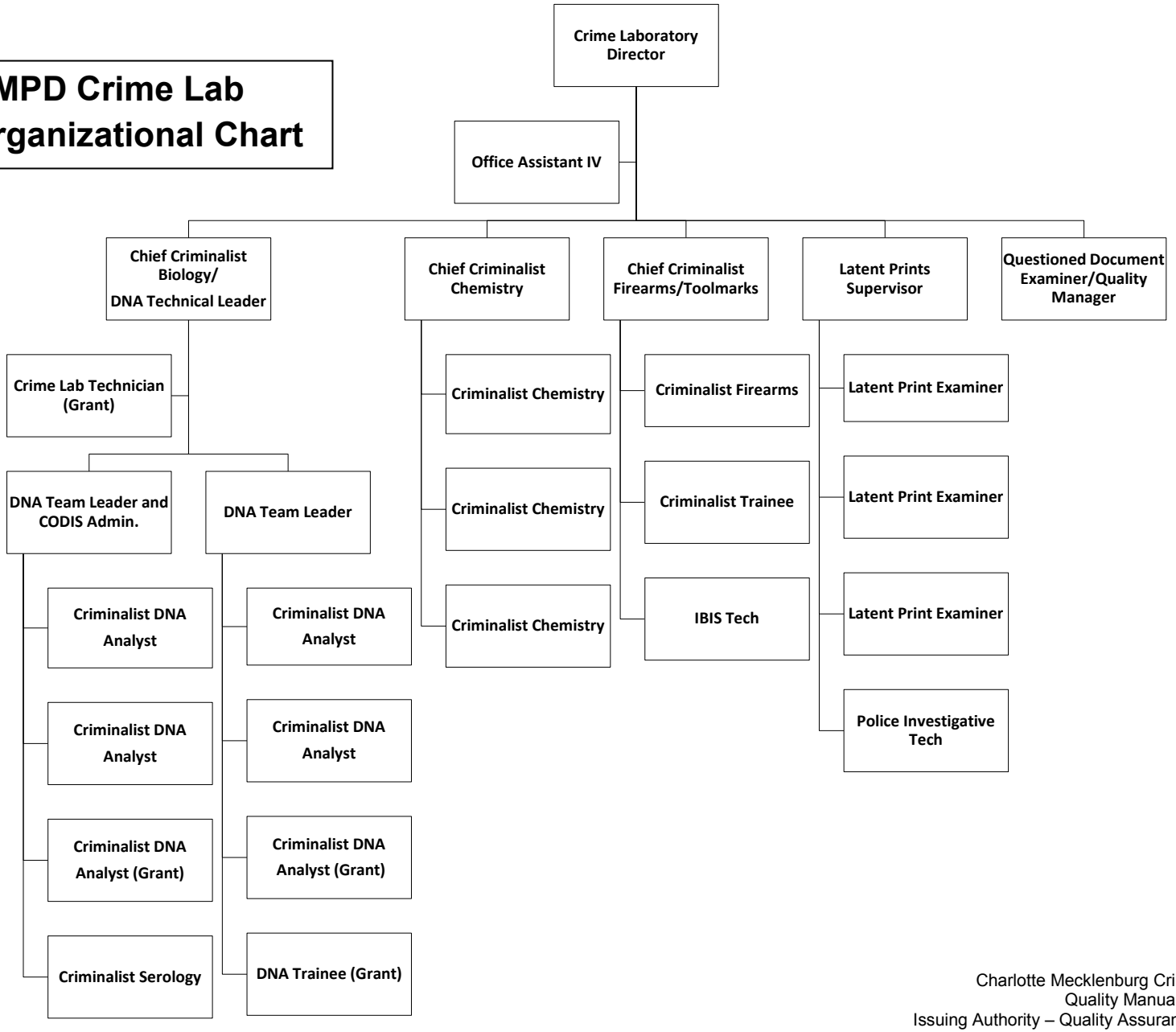
5.10.9 Amendments to Test Reports

When it is necessary to amend a test report, a new report will be issued. The new report will reference the original report that it replaces. The reason for the amended report will be clearly stated in the “Comments” section under the “Assignments” tab in PLIMS for the new report. Each amended or subsequent report will be labeled as “Amended” in the “Remarks” field. The Section Administrator or Laboratory Director will administratively review all amended case reports in PLIMS.

CMPD Support Services Organizational Chart



CMPD Crime Lab Organizational Chart



Appendix C

Crime Laboratory Director

This is a technical/administrative position responsible for the operational oversight of a full service American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) accredited forensic laboratory including the administration, management and direction of personnel. The responsibilities of this position include general supervision over a number of professional level analysts who are responsible for the physical and chemical analyses of evidence. Administration of the Crime Lab involves the application of specialized knowledge and skills in the development of goals and objectives which provide for the most efficient use of resources, the direction of professional and support personnel engaged in a variety of tests and analyses, and the evaluation of program results; budget preparation, fiscal operations and transactions, information systems; contracts with external police agencies; quality assurance systems; scientific instrument leasing and purchasing; forensic facility plans, specifications and modifications of services; oversees the quality assurance program in the laboratory. The position requires frequent contact with law enforcement agencies and legal officials in reviewing matters relating to the crime laboratory operation.

Responsibilities:

- Administers, directs and controls all activities of the crime laboratory operation.
- Act as the primary overseer of the quality assurance program in the laboratory.
- Develops program objectives and recommended operating budget for the crime laboratory operation.
- Serves as the Crime Laboratory's chief representative to law enforcement agencies and legal officials in coordinating the completion of work assignments.
- Maintains cooperative arrangements for the effective cross-utilization of crime laboratory resources in Mecklenburg County.
- Reviews results of completed analyses, and completes reports of crime laboratory activities as required.
- Performs related work as required.

Requirements:

Thorough experience in the administration of a crime laboratory operation; graduation from a four-year college or university with a major course in Biology, Chemistry, Physics, or Forensic science, supplemented by the attainment of a Master's Degree in Forensic Science, Criminal Justice Administration, Management; or any equivalent combination of experience and training which provides the following knowledge, abilities, and skills:

- Thorough knowledge of the principle and practices of forensic science.

- Thorough knowledge of advanced laboratory techniques and the methods used in collecting and preserving physical evidence.
- Considerable knowledge of the principles of program planning and program administration.
- Ability to supervise the work of professional subordinates and to install effective testing procedures involved in a comprehensive crime laboratory.
- Ability to prepare and analyze technical reports.
- Ability to establish working relationships with representatives of other law enforcement agencies and legal officials in directing the activities of the crime laboratory.
- Ability to communicate effectively both orally and in written form.
- Reports directly to the Major of the Lab and Evidence Bureau.

Chief Criminalist (Biology, Chemistry and Firearms/Toolmarks Sections)

This is an advanced technical and supervisory position directing the work of a specialist section in an American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) accredited forensic laboratory. The responsibilities of this position include supervising and managing the activities of the Biology, Chemistry or Firearms/Toolmarks Section of the Charlotte Mecklenburg Police Department Crime Lab and participating in the analysis of criminal evidence using advanced laboratory techniques. This position is also responsible for overseeing the quality control/quality assurance of the section and ensuring compliance with laboratory procedures, state and federal regulations, and the accreditation standards of ASCLD/LAB. Work is performed under the general guidance of the Crime Laboratory Director, with considerable independence and discretion being exercised.

Responsibilities:

- Plans, directs and supervises the work of professional level analysts responsible for physical and chemical analyses of evidence; evaluates work of subordinate criminalists; coordinates analyses when several criminalists are involved.
- Oversees the daily operations and supervision of staff of the Biology, Chemistry or Firearms/Toolmarks Section to include setting priorities, managing workflow, assigning casework to staff and maintaining the security and safety of the laboratory.
- Uses state of the art methods, techniques, and instrumentation to perform complex laboratory analyses of criminal evidence.
- Stays current in the forensic field by reading and attending meetings and schools.
- Interprets results, formulates independent conclusions and prepares reports of findings for use by the criminal justice system.
- Provides expert testimony in court relating to results of analyses; provides technical advice and guidance to laboratory personnel and members of the criminal justice system in forensic matters

- Implements quality control procedures and ensures that all work performed by the section is in accordance with laboratory procedures, state and federal regulations, and ASCLD/LAB accreditation standards.
- Performs the validation of new technical procedures and new instrumentation.
- Maintains and evaluates instrument calibration and maintenance records.
- Ensures sufficient laboratory supplies; maintains and calibrates complex laboratory equipment; assists in preparing the budget for crime laboratory.
- Performs related work as required.

Requirements:

- B.A./B.S. or advanced degree or its equivalent in a natural science, criminalistics or a closely related field from an accredited four-year college or university.
- Additional educational requirements for Biology include a B.A./B.S. or advanced degree or its equivalent in a biology-, chemistry-, or forensic science- related area and college coursework covering the subject areas of biochemistry, genetics, and molecular biology and college course work or training that covers the subject areas of statistics and/or population genetics.
- Additional educational requirements for Chemistry include a B.A./B.S. or advanced degree or its equivalent in a biology-, chemistry-, or forensic science-related area and thirty (30) or more hours of course work in chemistry.
- Five (5) years of forensic science experience in an accredited crime laboratory performing casework in one or more of the following disciplines: Drug Chemistry, Toxicology, Biology, Firearms/Toolmarks, Trace Evidence (Chemistry).
- Court qualified as an expert witness in one or more of the disciplines listed above.
- Two (2) years of managerial experience preferred.
- Thorough knowledge of the principles, methods and procedures applied to forensic chemistry.
- Experience working with advanced laboratory techniques and instrumentation;
- Knowledge of quality assurance/quality control procedures, general laboratory practices and the ASCLD/LAB accreditation standards.
- Knowledge of the methods used in collecting and preserving physical evidence and presentation of evidence in court.
- Ability to effectively coordinate the completion of analyses by subordinate staff using a variety of techniques;
- Ability to effectively communicate with representatives of other law enforcement agencies and legal officials.
- Reports directly to the Crime Lab Director.

Latent Print Supervisor

This is an advanced technical and supervisory position directing the work of a specialist section in an American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) accredited forensic laboratory. The responsibilities of this position include supervising skilled examiners responsible for identifying and classifying

fingerprint and related information. An employee in this class serves as the city's principal representative to other agencies in reviewing and providing fingerprint evidence. This position is also responsible for overseeing the quality control/quality assurance of the Latent Print Section and ensuring compliance with laboratory procedures, state and federal regulations, and the accreditation standards of ASCLD/LAB. Work is performed under the general guidance of the Crime Laboratory Director with considerable independence and discretion being exercised.

Responsibilities:

- Plans, assigns, supervise, and reviews work of skilled examiners; assists in solving difficult problems; trains new technicians.
- Participates in the standard processing of fingerprint evidence by obtaining latent fingerprints, classifying fingerprint information, and searching files for information necessary to make fingerprint comparisons.
- Communicates with representatives of other agencies regarding usage of fingerprint evidence.
- Reviews all fingerprint information as necessary for positive identifications.
- Presents fingerprint identification information in court cases.
- Maintains safe conditions in the laboratory and conducts laboratory procedures in accordance with ASCLD-LAB policies.
- Performs related work as required.

Requirements:

- Five (5) years of experience in fingerprint classification and latent fingerprint identification work; Personal certification in latent prints preferred.
- Two (2) years of managerial experience preferred.
- Graduation from high school, supplemented by courses in fingerprint identification techniques; or any equivalent combination of experience and training which provides the appropriate level of knowledge, abilities and skills.
- Thorough knowledge of the practices, methods, equipment, and materials used in fingerprint processing and identification.
- Considerable knowledge of the general laws, policies, rules, and regulations involved in law enforcement work as they apply to fingerprint processing and classification.
- Ability to take fingerprints, and identify and classify fingerprint information according to the standard system of classification.
- Ability to effectively plan the work of skilled examiners.
- Ability to effectively communicate with representatives of other law enforcement agencies and legal officials.
- Reports directly to the Crime Lab Director.

DNA Technical Leader

This is technical and advanced level work overseeing and performing DNA analysis.

Work involves the application of advanced laboratory techniques, materials, equipment and instruments operating in analyzing and typing DNA from body fluids and tissues obtained at crime scenes or elsewhere and the presentation of findings for investigative and prosecution purposes. Work is conducted in accordance with standardized laboratory methods and controls to ensure accurate and verifiable analyses, work completeness, technical quality and court presentation.

Responsibilities:

- Oversees the technical aspects of the DNA laboratory and has the responsibility to suspend analysis when problems are discovered.
- Screens evidence to locate and identify body fluid and tissue stains.
- Extracts, quantitates and profiles DNA using sophisticated laboratory techniques and instrumentation.
- Maintains, calibrates and troubleshoots problems with instrumentation.
- Evaluates and formulates independent opinions concerning body fluid evidence and DNA; completes reports of analyses and communicates results to appropriate department personnel.
- Trains individuals in the proper methods of collecting evidence for DNA analysis; trains individuals as to the importance and relatedness of DNA evidence in the solving of crimes.
- Provides expert court testimony relating to results of analyses and graphic illustrations for court use.
- Maintains safety and quality control in the laboratory in accordance with ASCLD-LAB & DAB policies.
- Reviews the work of others for technical correctness and completeness.
- Responsible for DNA proficiency testing.

Requirements:

- Considerable experience in DNA analysis including considerable knowledge of advanced laboratory techniques and instrumentation; a minimum of three years of forensic DNA laboratory experience.
- Minimum of a Master's Degree in biology, chemistry or forensic science and to have successfully completed a minimum of 12 semester hours of a combination of undergraduate and graduate course work covering the subject areas of biochemistry, genetics, molecular biology or other subjects which provide a basic understanding of the foundation of forensic DNA analysis as well as statistics and population genetics as it applies to forensic DNA analysis.
- Considerable knowledge of the methods used in collecting and preserving physical evidence and presenting such evidence in court.
- Considerable knowledge of the background and use of various methods of extracting and analyzing DNA.
- Considerable knowledge of PCR, STRs, capillary electrophoresis and use of computer programs to run instrumentation and capture and analyze data.

- Considerable knowledge of statistics as related to DNA analysis of forensic samples.
- Considerable knowledge of QAS and ASCLD/LAB regulations and how to implement them in the laboratory.
- Considerable knowledge of laboratory safety and quality control procedures.
- Considerable knowledge of CODIS.
- Excellent problem solving skills to troubleshoot technical problems, make decisions about handling of evidence, and to initiate new procedures as necessary.
- Ability to work well with others, communicate effectively and review the work of others.
- Ability to testify effectively in court as an expert witness.

DNA Team Leader

This is an advanced technical and supervisory position directing the work of a specialist section in an American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) accredited forensic laboratory. The responsibilities of this position include participating in the analysis of criminal evidence using advanced laboratory techniques and assisting the Chief Criminalist with the day to day supervision of analysts and support staff. This position is also responsible for helping to oversee the technical operations within the Biology Section and ensuring compliance with laboratory procedures, state and federal regulations, and the accreditation standards of ASCLD/LAB-*International* and the FBI's Quality Assurance Standards.

Responsibilities:

- Performs complex laboratory analyses of evidence obtained from crime scenes or elsewhere; uses advanced laboratory techniques, materials, and analytical instrumentation in the analysis and typing of DNA from body fluids and tissues.
- Provides expert testimony in court relating to results of analyses; provides technical advice and guidance to laboratory personnel and members of the criminal justice system in forensic matters.
- Interprets results, formulates independent conclusions and prepares reports of findings for use by the criminal justice system.
- Assists the section supervisor in overseeing the daily operations and supervision of staff of the Biology Section to include setting priorities, managing workflow, assigning casework to staff and maintaining the security and safety of the laboratory.
- Implements quality control procedures and ensures that all work performed by the Biology Section is in accordance with laboratory procedures, state and federal regulations, ASCLD/LAB-*International* accreditation standards and the FBI's Quality Assurance Standards for Forensic DNA Testing Laboratories.
- Performs the validation of new technical procedures and new instrumentation; Evaluates and documents approval of all validations and methods used by the

Biology Section and proposes new or modified analytical procedures to be used by analysts.
- Maintains and calibrates complex laboratory equipment; maintains and evaluates instrument calibration and maintenance records.
- Coordinates the outsourcing program to include preparation of samples, reviewing documentation, approval of the technical specifications and serving as the point of contact for external laboratories.
- Stays current in the forensic field by reading and attending meetings and schools.
- Performs related work as required.

Requirements:

- Master's degree in a biology, chemistry, or forensic science-related area preferred and successful completion of 12 semester or equivalent credit hours from a combination of undergraduate and graduate course work covering the following subject areas: biochemistry, genetics, molecular biology, and statistics or population genetics. The 12 semester or equivalent credit hours must include at least one graduate level course registering three (3) or more semester or equivalent credit hours.
- Five (5) years of forensic DNA laboratory experience obtained at an accredited laboratory where forensic DNA testing was conducted for the identification and evaluation of biological evidence in criminal matters.
- Court qualified as an expert witness in forensic DNA testing.
- Thorough knowledge of the principles, methods and procedures applied to forensic DNA testing.
- Experience working with advanced laboratory techniques and analytical instrumentation including a considerable knowledge of PCR, STRs, capillary electrophoresis and use of computer programs to run instrumentation and capture and analyze data.
- Knowledge of quality assurance/quality control procedures, general laboratory practices, the ASCLD/LAB-*International* accreditation standards and the FBI's Quality Assurance Standards for Forensic DNA Testing Laboratories.
- Considerable knowledge of statistics as related to DNA analysis of forensic samples.
- Knowledge of the methods used in collecting and preserving physical evidence and presentation of evidence in court.
- Ability to effectively coordinate the completion of analyses by professional level staff using a variety of techniques.
- Ability to effectively communicate with representatives of other law enforcement agencies and legal officials.
- Successful completion of the FBI sponsored auditor training and/or previous managerial experience preferred.
- Reports directly to the Chief Criminalist - Biology.

Questioned Document Specialist (Forensic Document Examiner)

This is a technical and advanced professional level laboratory position responsible for processing and analyzing forensic document evidence in an ASCLD/LAB - *International* accredited crime laboratory. The responsibilities of this position include the application of advanced laboratory techniques, materials, equipment and instruments in making physical and chemical analyses of document evidence obtained at crime scenes or elsewhere, and the presentation of findings for investigative and court uses.

Responsibilities:

- Performs side-by-side comparisons of questioned and known handwriting on such documents as checks, credit cards and suicide notes, attempting to determine if the handwriting is genuine or not genuine; makes typewriting and printing comparisons.
- Examines and analyzes handwriting on documents such as forged checks, credit cards, and suicide notes; make typewriting and printing comparisons.
- Performs examinations of questioned and known inks, papers and writing instruments; restores and deciphers obliterated and damaged writing on papers which have been erased or burned.
- Operates sophisticated laboratory equipment used in conducting analyses of questioned documents, inks and legal tender.
- Evaluates and formulates independent opinions concerning questioned documents; completes reports of results of analyses and communicates results to appropriate department personnel.
- Trains individuals in the proper method of acquiring known handwriting, hand printing, mechanically prepared impressions and printing; trains individuals as to the importance and relatedness of evidence in the solving of crimes.
- Provides expert court testimony relating to results of analyses and graphic illustrations for court use.
- Maintains safe conditions in the laboratory and conducts laboratory procedures in accordance with ASCLD-LAB policies.
- Performs related work as required.

Requirements:

- Completed a minimum two (2) year apprenticeship program in a forensic document laboratory recognized by the American Board of Forensic Document Examiners.
- Considerable experience in document examination; graduation from a four year college with a major in a science related field, preferably supplemented by graduate level courses in forensic science.
- Considerable knowledge of the advanced laboratory techniques used in questioned document examination.
- Considerable knowledge of the methods used in collecting and preserving physical evidence and presenting such evidence in court.

- Considerable knowledge of handwriting history, history of handwriting identification, system of handwriting, characteristics of handwriting similarities, variations and differences, detection of forgeries and techniques of side-by-side comparisons of questioned and known handwriting.
- Considerable knowledge of typewriter history and manufacture and the detection of typewriter defects.
- Considerable knowledge of print processes as related to counterfeit and genuine document production.
- Considerable knowledge of inks, their manufacture and examination through the use of alternate light sources and other instrumental techniques.
- Ability to effectively raise indented writing through the use of the Electrostatic Detection Apparatus (ESDA).
- Ability to effectively testify in court as an expert witness.
- Skill in the operation of advanced laboratory equipment used in conducting analyses.
- Reports directly to the Crime Lab Director.

Quality Assurance Manager

This is a technical/administrative position responsible for the administration and management of the quality management program in an American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) accredited forensic laboratory. This position is responsible for overseeing the quality assurance program and ensuring compliance with laboratory procedures, state and federal regulations, and the standards of the ASCLD/LAB-*International* accreditation program. This function is performed independently under the direction of the Lab Director.

Responsibilities:

- Maintains and documents revisions to the CMPD Crime Lab Quality Manual and procedural manuals for each section of the laboratory.
- Monitors laboratory practices to verify continuing compliance with laboratory procedures, the Quality Assurance Program, ASCLD/LAB-*International* accreditation standards and the FBI's Quality Assurance Standards for Forensic DNA Testing Laboratories.
- Evaluates instrument calibration and maintenance records as needed.
- Periodically assesses the adequacy of report review activities.
- Ensures validation of new technical procedures.
- Investigates technical problems and issues involving quality of work, proposes corrective actions, and verifies their implementation.
- Monitors the Proficiency Testing Program and evaluates results.
- Selects, trains and evaluates internal auditors.
- Schedules and coordinates management system audits.
- Evaluates results of management system audits.
- Maintains documentation of laboratory staff qualifications and training records.
- Recommend training to improve the quality of laboratory personnel.

- Proposes corrections and improvements in the management system.
- Oversees annual internal laboratory internal audit; prepares ASCLB/LAB required Annual Accreditation Audit Report.
- Serves as a resource for laboratory staff concerning quality related policies and practices.
- Conduct regular Quality Assurance Committee meetings; address quality issues and follow through with quality related projects.

Requirements:

- Bachelors or advanced degree in a natural science, forensic science, criminalistics or a closely related field.
- Five (5) years of forensic science experience in an accredited crime laboratory performing casework in one or more forensic disciplines.
- Experience in the administration of a quality assurance program for a crime laboratory and considerable knowledge of the ASCLD/LAB-*International* accreditation program.
- Ability to understand the analytical techniques of disciplines other than the area of specialization to which assigned and the ability to understand the documentation produced in those analytical disciplines.
- Considerable knowledge of the advanced laboratory techniques used in evidence analyses and the methods used in collecting and preserving physical evidence.
- Ability to conduct an annual laboratory audit to laboratory and ASCLD/LAB-*International* standards and prepare a report of findings for the Lab Director.
- Ability to write and edit laboratory policies, to publish those policies to laboratory staff and maintain those policies on the departmental local area network.

Criminalist (Biology, Chemistry and Firearms/Toolmarks Sections)

This is a technical and advanced professional level laboratory position responsible for processing and analyzing physical evidence in an ASCLD/LAB - *International* accredited crime laboratory.

Responsibilities:

- Examines evidence in one or more of the following categories of testing: controlled substances, blood alcohol analysis, fire debris, body fluid identification, DNA, firearms, toolmarks, serial number restoration, impression evidence, and/or document examination.
- Operates complex laboratory equipment and uses advanced laboratory techniques.
- Generates detailed documentation related to all examinations; completes reports of results of analyses and communicates results to appropriate department personnel.
- Provides expert testimony relating to results of analyses; consults with and advises attorneys and other law enforcement officials in forensic matters.

- Performs quality assurance and quality control checks and conducts laboratory analyses in accordance with laboratory procedures and ASCLD/LAB-*International* requirements.
- Maintains safe conditions in the laboratory.
- Provides assistance in the field to police and crime scene search personnel as needed.

Requirements:

- B.A./B.S. or advanced degree or its equivalent in a natural science, criminalistics or a closely related field from an accredited four-year college or university.
- Additional educational requirements for Biology include a B.A./B.S. or advanced degree or its equivalent in a biology-, chemistry-, or forensic science- related area and college coursework covering the subject areas of biochemistry, genetics, and molecular biology and college course work or training that covers the subject areas of statistics and/or population genetics.
- Additional educational requirements for Chemistry include a B.A./B.S. or advanced degree or its equivalent in a biology-, chemistry-, or forensic science-related area and thirty (30) or more hours of course work in chemistry; Minimum of a Bachelor of Science or advanced degree from an accredited university with a major in chemistry or in a natural science with a minimum of 30 hours of chemistry.
- Minimum of three (3) years of forensic science experience in an ASCLD/LAB-*International* or ISO/IEC 17025 accredited crime laboratory performing casework in one or more of the following disciplines: Drug Chemistry, Toxicology, Biology, Firearms/Toolmarks, and/or Trace Evidence (Chemistry).
- Knowledge of the principles, methods, equipment, and current techniques used in forensic evidence testing.
- Knowledge of the methods used in collecting and preserving physical evidence, maintaining legal chain of custody and presenting such evidence in court as an expert witness.
- Knowledge of Quality Control procedures, Quality Assurance principles; knowledge of ASCLD/LAB - *International* and ISO/IEC 17025 accreditation requirements.
- Ability to communicate effectively, to formulate and present ideas in an effective manner and to create comprehensive understandable reports of findings.
- Ability to follow oral and written procedures and policies and the ability to read and comprehend authoritative directives, laws, and ordinances.
- Reports directly to the Chief Criminalist.

Latent Fingerprint Examiner

This is a technical and advanced professional level laboratory position responsible for a broad range of tasks, including classifying fingerprints, comparing latent fingerprints, and providing expert testimony in an ASCLD/LAB - *International* accredited crime laboratory. Instructions are received from a departmental supervisor and work is

reviewed for compliance with department standards. Work requires the exercise of independent judgment and initiative, and an advanced skill level in the completion of work assignments.

Responsibilities:

- Evaluates friction ridge detail to determine the value for comparative analysis;
- Compares latent fingerprints with prints of suspects; makes appropriate point comparisons to establish identification when possible.
- Obtains fingerprints from a number of different sources using special chemical processing techniques and equipment, classifying fingerprint information, and searching files for information necessary to make fingerprint comparisons.
- Processes special requests for fingerprint and related information as requested by departmental employees.
- Input fingerprints and perform searches using the AFIS (Automated Fingerprint Identification System).
- Provides expert testimony in court; prepares evidence for court presentation.
- Performs related work as required.

Requirements:

- Minimum of three (3) years of experience in fingerprint classification, latent fingerprint identification work or closely related field; Personal certification in latent prints preferred.
- Graduation from high school, supplemented by courses in fingerprint identification techniques; or any equivalent combination of experience and training which provides the appropriate level of knowledge, abilities and skills.
- An understanding of common terminology and definitions associated with friction ridge pattern recognition (arch, loop, whorl) and interpretation.
- Considerable knowledge of the practices, methods, equipment, and materials used in fingerprint processing and identification.
- Considerable knowledge of the general laws, policies, rules, and regulations involved in law enforcement work as they apply to the processing of fingerprint evidence.
- Ability to process for latent fingerprints, and identify and classify fingerprint information according to the prescribed system of classification.
- Reports directly to the Latent Fingerprint Supervisor.

Criminalist Trainee (Biology, Chemistry, Firearms/Toolmarks Questioned Document Sections)

This is an entry level trainee position that involves the application of laboratory techniques, materials, equipment and instruments used in various physical and chemical analyses of evidence obtained at crime scenes or elsewhere. Work is distinguished from that of a Criminalist position by the generally lesser complexity of analyses. The Criminalist Trainee generally will not conduct analyses that require

subjective opinions and/or the use of complex instrumentation. Work is performed under the direct supervision of a qualified analyst who evaluates such factors as completeness, technical quality and quality of the work for court presentation.

Responsibilities:

- Examines evidence in one or more of the following categories of testing: controlled substances, blood alcohol analysis, fire debris, body fluid identification, DNA, firearms, toolmarks, serial number restoration, impression evidence, and/or document examination.
- Generates detailed documentation related to all examinations, performs quality assurance and conducts laboratory procedures in accordance with ASCLD-LAB policies.
- Evaluates and formulates opinions concerning evidence identified; completes reports of results of analyses and communicates results to appropriate department personnel; provides expert testimony relating to results of analyses.
- Performs quality assurance and quality control checks and conducts laboratory analyses in accordance with laboratory procedures and ASCLD/LAB-*International* requirements.
- Maintains safe conditions in the laboratory.
- Provides assistance to senior Criminalists, police and crime scene search personnel as needed.

Requirements:

- B.A./B.S. or advanced degree or its equivalent in a natural science, criminalistics or a closely related field from an accredited four-year college or university.
- Additional educational requirements for Biology include a B.A./B.S. or advanced degree or its equivalent in a biology, chemistry, or forensic science related area and college coursework covering the subject areas of biochemistry, genetics, and molecular biology and college course work or training that covers the subject areas of statistics and/or population genetics.
- Additional educational requirements for Chemistry include a B.A./B.S. or advanced degree or its equivalent in a biology, chemistry, or forensic science related area and thirty (30) or more hours of course work in chemistry; Minimum of a Bachelor of Science or advanced degree from an accredited university with a major in chemistry or in a natural science with a minimum of 30 hours of chemistry.
- Knowledge of the principles, methods, equipment, and current techniques used in forensic evidence testing.
- Knowledge of the methods used in collecting and preserving physical evidence, maintaining legal chain of custody and presenting such evidence in court as an expert witness.
- Ability to communicate effectively, to formulate and present ideas in an effective manner and to create comprehensive understandable reports of findings.

- Ability to follow oral and written procedures and policies and the ability to read and comprehend authoritative directives, laws, and ordinances.
- Reports directly to the Chief Criminalist or their designee.

Police Investigative Technician - Latent Fingerprint Section

This is an administrative support position that is assigned to the Latent Fingerprint Section of the CMPD Crime Lab. This position will support the Latent Fingerprint Section and function under the direct supervision of the Latent Fingerprint Supervisor.

Responsibilities:

- Assist Latent Fingerprint Examiners in the preparation of laboratory case files.
- Enter case assignments and service requests into the Property and Laboratory Information Management System (PLIMS) and statistical tracking databases.
- Transcribe analytical worksheets into analytical case reports and enter reports into PLIMS.
- Maintain statistical records and assist supervisor with section statistical reports and data.
- Receive, route and disseminate reports and other case related information to detectives, the DA's office and other departments.
- Maintain laboratory case files, records, databases, archived records and latent fingerprint files.
- Maintain and inventory office supplies and chemicals and reagents for the processing Lab. Ensure proper ordering of supplies in accordance with Department procedures.
- Maintain all Material Safety Data Sheets, log books, maintenance and training records as directed by the section supervisor.
- Distribute and prioritize requests for service in accordance with sectional SOP's.
- File reports, file and recover latent impressions, recover and file known standards.
- Operates the State AFIS system, recovers and distributes suspect standards, screens standards within the system for quality, print and distribute biometrical records.
- Coordinate evidence delivery and return with the Property and Evidence Division and the transfer of evidence to other sections of the Crime Lab.
- Complete any other duties that will support the effective and efficient operation of the Latent Fingerprint Section and the CMPD Crime Lab.

Requirements:

- Minimum of a High School degree or equivalent and one year experience.
- Prefer candidates with college level education with course work in forensics, criminal justice or related fields.
- Able to maintain a high level of working knowledge of latent fingerprint operations and laboratory quality standards.

- Must be willing to be cross trained in order to perform in a variety of assignments.
- Must be highly computer literate with very strong organizational skills.
- Ability to deal tactfully, courteously and effectively with customers, coworkers and other departmental personnel concerning a broad base of Crime Lab, Police and City issues.
- Ability to follow oral and written procedures and policies and the ability to read and comprehend authoritative directives, laws, and ordinances.

Crime Lab Technician I – Crime Lab, Biology Section

This is a technical and administrative support position that is assigned to the CMPD Crime Lab Biology Section. This position requires the individual to work independently performing complex duties including some clerical, administrative and technical assignments in a laboratory setting. This position also requires the individual to exercise considerable initiative, independent judgment, and discretion in performing tasks involving significant procedures and detailed sequences of an advanced nature. The Crime Lab Technician generally will not conduct analyses that require subjective opinions and/or the use of complex instrumentation. Work is performed in accordance with ASCLD/LAB policies and under the general direction of the Biology Section supervisor.

Responsibilities:

- Assists analysts in the preparation of case files.
- Enters case assignments and technical service requests into the Property and Laboratory Information Management System (PLIMS).
- Maintains the evidence flow through the section to include receiving, releasing or transfer of the evidence as determined by the section supervisor.
- Receives, routes and disseminates reports and other information to detectives, attorneys or other departments.
- Maintains laboratory files, maintenance log books, training records and data bases.
- Orders and maintains laboratory and office supplies.
- Manages and prioritizes requests for service.
- Performs routine maintenance of complex lab instrumentation.
- Maintains safe conditions in the laboratory and conducts laboratory procedures in accordance with ASCLD/LAB policies.
- Prepares reagents and keeps laboratory cleaned and stocked with critical supplies.
- Other technical and administrative functions as directed by the section supervisor.

Requirements:

- High School graduation with three (3) years of laboratory experience or an Associate Degree in Forensic Science, Biology, Chemistry or a related field with one (1) year of related experience.
- Must be highly computer literate with very strong organizational skills.
- Ability to communicate effectively orally and in writing with detectives and attorneys.

Crime Laboratory Technician I (IBIS Technician)

This is a technical support position with primary responsibility for the Integrated Ballistics Identification System (IBIS). This position is responsible for entering fired firearms evidence components into the IBIS computer (an automated cartridge case image analysis system) and instructing the system to conduct comparisons of this evidence against the system's database. This position is also responsible for reviewing the results of these correlations and relaying the results to the firearms examiner. This position handles the Firearms and Toolmarks Sections needs for evidence delivery and documentation of transfers into the PLIMS database. Competency must be shown before duties are performed.

Responsibilities:

- Prepare the exhibit materials (evidence cartridge cases and test fires from evidence firearms) to be entered into the IBIS system.
- Perform accurate and timely entry of test fired and evidence cartridge cases into the IBIS system in a high quality manner.
- Review correlations within the database; independently seek potential matches from the candidate list.
- Advise firearm examiner of high probability matching candidates resulting from correlations run on IBIS database.
- Perform routine system maintenance of the IBIS system to ensure maximum availability and optimal performance.
- Establish and maintain contacts with all remote IBIS sites and law enforcement groups throughout the state participating in the NIBIN program as well as FTI.
- Complete any other duties that will support the effective and efficient operation of the Firearm and Toolmark Identification Section as determined by the section supervisor.
- Coordination of evidence delivery and return with the Property and Evidence Division.
- Maintain the evidence flow through the section to include receiving, releasing or transfer of the evidence as determined by each section supervisor.
- Maintains safe conditions in the laboratory and conducts laboratory procedures in accordance with ASCLD-LAB policies.

Requirements:

- Graduation from High School supplemented by clerical and or administrative training with any combination of education, training and experience that has provided the necessary knowledge, skills and abilities for acceptable job performance.
- Must be highly computer literate with very strong organizational skills.

Office Assistant IV

The Office Assistant is an administrative support position for the Crime Lab that involves independent clerical work and the performance of both routine and complex administrative tasks. The Office Assistant performs a wide range of responsibilities to include office support and other administrative functions. The specific tasks may vary based on the needs of the Crime Lab management and the division. This position requires the exercise of considerable initiative, independent judgment, and discretion in performing the clerical and administrative duties and in keeping informed of division and department policies, rules and regulations. The Office Assistant reports directly to the Crime Lab Director.

Responsibilities:

- Provides complete administrative and office support for the management and staff of the Crime Lab;
- Receives and directs telephone calls and relays conversations and pertinent messages to appropriate staff while maintaining accuracy, clarity and confidentiality;
- Serves as the primary contact for officers and visitors to the Crime Lab on a daily basis; replies in person, by telephone, or by correspondence to inquiries for information;
- Answers basic queries made by the officers, attorneys and the public pertaining to the services provided by the Crime Lab or directs them to the proper sources;
- Maintains technical records for the Crime Lab, including files stored in-house and records of archived files;
- Keeps track of the office supplies and the purchases made;
- Enters requisitions for laboratory and office supplies; tracks purchases made and receives delivers to the Crime Lab; receives and distributes mail;
- Performs related work as required.

Requirements:

Considerable experience in varied clerical work, including experience in providing administrative assistance or in comparable clerical work; graduation from high school including or supplemented by courses in business and clerical subjects; or any equivalent combination of experience and training which provides the following knowledge, abilities, and skills:

- Considerable knowledge of business English, spelling, punctuation, and arithmetic;
- Considerable knowledge of the regulations, procedures, and services of the unit or units to which assigned or the ability to acquire such knowledge during a reasonable period of training;
- Knowledge of the principles and practices of office management and of modern office procedures, systems, and equipment;
- Ability to keep complex records, to assemble and organize data, and to prepare reports from such records;
- Ability to work independently on responsible and confidential clerical and related administrative tasks;
- Ability to provide guidance and train personnel if required by the specific position;
- Ability to deal with the public tactfully and courteously;
- Ability to compose effective and accurate correspondence;
- Ability to type accurately and rapidly if required by the specific position;
- Ability to take and transcribe oral dictation if required by the specific position.

Safety and Chemical Hygiene Officer (S&CHO)

This is a technical/administrative position responsible for the administration and management of Safety and Chemical Hygiene program of the laboratory. This position is responsible for ensuring compliance with laboratory procedures and state and federal regulations. This function is performed independently under the direction of the Lab Director.

Responsibilities:

- Oversees the safety activities of the laboratory.
- Performs semiannual safety audits.
- Maintains current and archived MSDS.
- Maintains records of exposures and other laboratory accidents.
- Reviews all laboratory safety policies and creates or modifies policies and procedures as necessary.
- Documents all safety related activities.
- Coordinates new employee safety training.
- Enforces daily safety practices.
- Interacts with a variety of regulatory agencies and professionals including OSHA and City Fire Inspectors as applicable.
- Determines the proper level of personal protective equipment, ensure that such protective equipment is available and in working order.
- Ensures that the laboratory maintains an adequate safety program for accreditation.

Requirements:

- B.A./B.S. or advanced degree or its equivalent in a natural science, criminalistics or a closely related field from an accredited four-year college or university.
- Performs safety related functions in accordance with the standards and safety requirements of the facility.
- Develops policies and procedures for the establishment of a safe and comfortable laboratory environment.
- Works with the Laboratory Director and Section Supervisors regarding safety related issues.
- Brings ideas, thoughts and concerns about the safety program to the laboratory management team.
- Works independently to organize the safety activities and report problems and solutions to the proper staff.
- Looks for ways to improve laboratory safety processes and eliminate waste of resources.
- Prepares reports and other documentation that are required by regulatory agencies and are utilized to support the Safety Program.
- Provides input into operational and capital equipment budget as it relates to safety.
- Documents all laboratory accidents and injuries.

History

7/18/11 Original Issue

8/18/11 Removed FBI and SBI from 4.5.1; fixed hyperlink in 4.13.1.2; and added 4.14.5, 5.2.1.1, 5.2.6, 5.2.7 and visitors to 5.3.4.

9/6/11 QM 5.5.5 removed date of service (i); QM 5.8.4 added to security, evidence sealing and handling of photographs; QM 5.8.5 added and QM 5.9.1 removed bullets and added a) through e).

9/16/11 Changed 5.10.2.g so that the date the test items were received in the lab only has to be on the report when it is critical to the validity and application of the results.

10/13/11 Gave permission to the Quality Manager and S&CHO to make forms and updated what the Quality Manager maintains about manuals in QM 4.3.2.1.

11/15/11 Changed Issuing Authority from the Director back to the QAC. Added Crime Lab Literature Routing Sheet to the TOC.

12/5/11 Crime Lab Communication Log added to the Appendix.

2/8/12 Added other locations to 4.1.3; Replaced 4.1.5j; added 4.1.8; added initials and date of reviewer to 4.4.2; added list and ILAC signatories to 4.6.4; reworked 4.8.1; added section responsibilities and CTS to 4.13.1.4; added 30 days prior to accreditation anniversary date to 4.14.1; added indefinitely to 5.2.1; and added CMPD Lab does not perform calibration services to 5.4.6.1.

4/26/12 Added Top Management to 4.2.4

6/1/12 Removed software from 4.3.2.1

7/17/12 Added terminology to 5.10.1 for the types of reports authored in the Latent Print Section

12/4/12 Removed “following the procedures set forth in PM 6.1.4” has been removed from QA 4.9.

12/6/13 Added Primary and Secondary Mass Standards to QM 3, added information required by ASCLD/LAB Policies on Measurement Uncertainty and Measurement Traceability to QM 5.4 and 5.6.

12/17/13 Added a procedure for the annual verification of secondary weights to 5.6.3.1.

1/23/14 In QM 4.15.1 QAC was changed to Lab Director and responsibilities were added to QA Manager and Section Administrators so that PM 2.5 Annual Review could be removed. QM 4.6 was updated with a QM 4.15.1 entry.

4/4/14 Minor changes were made to 4.4, 4.5, 4.13, 5.4, 5.8, and 5.10 to accommodate the use of PLIMS in the lab.

6/19/14 Added information about additions to technical records after review to QM 4.13.2.3.

8/25/14 Added annual audit being requested by director and made the auditors for the different sections more specific in QM 4.14.1.

12/17/14 Changed LIMS to PLIMS in QM 4.2.1 and 4.3.2.1. Presumptive testing information was added to QM 5.10.1.

1/9/15 Removed the requirement that all records must be scanned into PLIMS from QM 4.13.2.1.

7/24/15 R-Drive definition added to QM 3. QAC voting and approval information added to QM 4.2.7, 4.3.3.1 and 4.3.3.2, minor word changes to QM 4.6.2, 5.2.1, 5.5.13 and 5.6.1.

8/11/15 1st paragraph of QM 4.9.1 rewritten; Electronic Security access procedure added to QM 4.13.1.4; record keeping requirements added and changed in QM 4.13.2 4.13.2.1, 4.13.2.2 and 4.13.2.3; and record keeping information removed from 5.10.1.

8/31/15 Converted Quality Manual from protected Word to PDF version. Made changes to the Key Card Access Form, Meeting Sign-In Sheet, Proficiency Test Review Form, Report-Case Notes Release Form, Request for Access to Computer Information Systems Form and Training Action Report Form.

10/23/15 Incorporated PM 1 into QM 5.10.1, 5.10.3 and 5.10.9 with regards to the release of reports, the release of case related information and who is responsible for reviewing amended reports.

5/23/16 Much of the Quality Manual was changed to include the information in the Policy and Organizational Manual so that the PM and OM could be retired. A general overview of the substantive changes made to the specific sections and the subject added is as follows: QM 1.1 inserted "section SOP's" for "OM 2"; 4.2.5 removed Policy Manual reference; 4.3.2.1 removed Policy and Operations Manual references; 4.3.3.2 discovery request information; 4.3.3.1 authorization information; 4.4.1, 4.4.6 & 4.4.7 removed Control Number and added service request function; 4.5.1 evidence shipping information; 4.5.1.b case prioritization; 4.5.2 paperwork handling for external lab work; 4.6.2 supply evaluation; 4.9.1 nonconformity information; 4.11.2 & 4.11.3 cause analysis and corrective action procedures; 4.13.1 case and quality record definitions, case file storage and handling of case records; 4.14.1 audit information; 4.14.5 performance declaration; 5.2.1 added transcript; 5.2.6 testing requirements; 5.3.4 security information; 5.8.1 – 5.8.4 evidence handling, sealing, marking and acceptance, removed Firearms Safety Check Authorization; 5.9.1 quality control information; 5.9.3 proficiency testing; 5.9.4 – 5.9.6 technical, administrative and court reviews; 5.10.3.3 blood alcohol reports notarized added; and 5.10.7 added email information regarding reports. Minor changes to hyperlinks, punctuation and margins were made to the majority of the other sections of the Quality Manual.

Approval

Director — Matthew C. Mathis — Date: 5/23/16

QA Manager — Jeffrey S. Taylor — Date: 5/23/16