

TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

Scope of Accreditation

Legal Name of Accredited Laboratory: **RCMP Forensic Science & Identification Services**

Location Name or Operating as (if applicable): National Forensic Laboratory Services - Ottawa

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SCC File Number:	15539
Accreditation Standard(s):	ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories
Fields of Testing:	Biological Chemical/Physical Forensic
Program Specialty Area:	Forensic: Counterfeits Firearms / Toolmarks Biology / DNA Chemistry / Trace Evidence Toxicology
Initial Accreditation:	2002-02-26
Most Recent Accreditation:	2023-08-14
Accreditation Valid to:	2026-02-26

SCC Group Accreditation:

This laboratory is a part of a Group Accreditation with the following facilities in accordance with SCC's policy on Group Accreditation documented in the Accreditation Services Accreditation Program Overview.

- RCMP Forensic Science & Identification Services - NATIONAL FORENSIC LABORATORY SERVICES - EDMONTON, 15405;
- RCMP Forensic Science & Identification Services - NATIONAL FORENSIC LABORATORY SERVICES - SURREY 15489; and
- RCMP Forensic Science & Identification Services - NATIONAL DNA DATA BANK, 15654.

Remarque: La présente portée d'accréditation existe également en français, sous la forme d'un document distinct.

Note: This scope of accreditation is also available in French as a document issued separately.

FORENSICS

Counterfeits

Description of Activities

The National Anti-Counterfeiting Bureau (NACB) is the unit within this accredited laboratory that carries out the following examinations /analyses:

- Examinations of documents, which generally fall under the definition of Security Documents. These are documents of value such as bank notes and other negotiable instruments, travel and identification documents, payment cards and other types of printed matter. Examination types are categorized as follows:
 - Examination of currency and other negotiable instruments to determine authenticity;
 - Examinations of documents (including passports, immigration documents, visas, identification cards) to determine authenticity and alterations, erasures and obliterations on documents;
 - Examination of payment cards to determine authenticity and alterations, and
 - Examination of Canadian circulation coins to determine authenticity.

Techniques for which laboratory is accredited:

- a. Digital imaging capture techniques
- b. Macroscopic and microscopic comparisons
- c. Measurement of physical properties of coins
- d. Special lighting techniques

Firearms / Toolmarks

Description of Activities

The Firearms and Toolmark Identification Section carries out the following examinations:

- Legal classification and mechanical assessment of firearms, firearms components, ammunition, and prohibited devices
- Comparison of firearm toolmarks on fired ammunition components
- Probable type and make assessment of fired ammunition components (bullets and cartridge cases)
- Muzzle to target distance or range determination, and bullet impact damage assessment
- Comparison of non-firearm toolmarks
- Restoration of serial numbers
- Physical match and comparison
- Unsolved case database searches using an Integrated Ballistics Identification System (IBIS), and participation in the Canadian Integrated Ballistic Identification Network (CIBIN)

Techniques for which laboratory is accredited:

- a. Measurements; linear, mass, force, velocity, sound level
- b. Inspection and functional testing of firearms; including shock discharge and trigger pull analysis
- c. Macroscopic and microscopic examination and comparison of toolmarks (firearm and non-firearm)
- d. Chemical spot tests
- e. Chemical and electrolytic etching
- f. Magnetic particle inspection
- g. Image acquisition of fired ammunition components (bullets and cartridge cases) and virtual evaluation (correlation) of database search results

Forensic Biology / DNA

Description of Activities

The Biology Services Section carries out the following examinations:

- Examination of forensic evidentiary material for the presence of biological material, possible biological material and non-biological material using macroscopic and microscopic techniques;
- Testing of body fluids using biochemical, immunological and/or microscopic procedures as both confirmatory and presumptive tests for the following: semen (confirmatory & presumptive), blood (confirmatory & presumptive), and saliva (presumptive);
- Autosomal STR and Y-STR DNA analysis of biological material recovered from evidentiary material, which included the extraction, purification and quantification of human and male DNA, the amplification of DNA and the resolution of DNA typing profiles using capillary electrophoresis;
- Interpretation of DNA typing results to establish associations between individuals and crime scene samples, as well as paternity/parentage and other relatedness relationships

Techniques for which laboratory is accredited:

- a. Examination of exhibits for biological material, possible biological material and non-biological material using macroscopic and microscopic techniques;
- b. Body fluid testing (i.e. semen, blood and saliva) using biochemical, immunological and/or microscopic procedures;
- c. DNA extraction, purification, quantification, Polymerase Chain Reaction (PCR) amplification using autosomal STR and Y-STR Amplification Kits, and capillary electrophoresis;
- d. Interpretation of DNA typing profiles;
- e. Hair identification and determination of suitability for autosomal STR DNA typing;

Forensic Chemistry / Trace Evidence Analysis

Description of Activities

The Trace Evidence Services Section carries out the following examination/analyses:

- Examination, analysis, identification, and comparison of trace evidence (generally non-biological) to identify gunshot residues and/or explosives; including post-blast residues and improvised explosive precursor chemicals.
- Recognition, detection and identification of trace evidence (generally non-biological) such that the information can be used to aid in the investigation or reconstruction of events at a crime or accident scene, related to explosions and/or making explosives.
- *On-site visual examinations, chemical tests (crime scene), Fourier Transform Infrared Spectroscopy, and Ion Mobility Spectrometry.

Techniques for which laboratory is accredited:

- a. Sample preparation, extraction and/or separation and general chemical and physical tests such as pH measurement, ignitability tests, and solubility or miscibility tests

- b. Visual examinations and physical measurements
- c. Optical microscopy and scanning electron microscopy with energy dispersive X-ray spectroscopy
- d. Gas chromatography, liquid chromatography and ion chromatography coupled with mass spectrometry
- e. Ion mobility spectrometry
- f. Fourier transform infrared and Raman spectroscopy

Forensic Toxicology

Description of Activities

The Toxicology Section carries out the following examinations/analyses:

- Body fluid and tissue screen and quantification for volatile substances including ethanol
- Body fluid and tissue screen and quantification for drugs and poisons
- Analysis of drugs, poisons and other toxic materials in or on clothing, food, pharmaceuticals and miscellaneous exhibits

Techniques for which laboratory is accredited (100 Eglantine Driveway):

- a. Immunoassay
- b. Sample preparation, extraction and general chemical and physical tests
- c. Ultra/High-performance liquid chromatography coupled with tandem mass spectrometry detection
- d. Gas chromatography coupled with flame ionization detection
- e. Gas chromatography coupled with mass spectrometry detection
- f. Ultra/High-performance liquid chromatography coupled with quadrupole time-of-flight mass spectrometry detection

Techniques for which laboratory is accredited (1200 Vanier Parkway):

- a. Gas chromatography coupled with nitrogen & phosphorus detection
- b. Gas chromatography coupled with mass spectrometry detection
- c. Ultra/High-performance liquid chromatography coupled with quadrupole time-of-flight mass spectrometry detection

Number of Forensic Techniques: 31

Some toxicology tests are performed at the Tunney's Pasture location:
 Royal Canadian Mounted Police National Forensic Laboratory Services – Ottawa, Tunney's Pasture
 100 Eglantine Driveway,
 Ottawa, Ontario
 K1A 0K9

Notes:

ISO/IEC 17025:2017: General Requirements for the Competence of Testing and Calibration Laboratories

SCC RG-LAB: SCC Requirements and Guidance for the Accreditation of Testing Laboratories

SCC RG-FORENSIC: SCC Requirements and Guidance for the Accreditation for Forensic Testing Laboratories

* These test methods can be performed on-site as per RG-Lab.

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

Elias Rafoul
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