



Forensic Laboratory Services (FLS)

Quick Facts

- The FLS consists of approximately 370 forensic scientists, technologists, and administrative personnel.
- Each RCMP Forensic Laboratory site is accredited to the international quality standard ISO 17025.
- Laboratory services are delivered through six sites across Canada.

Overview

As an integral part of the RCMP National Police Services, the Forensic Laboratory Services (FLS) is responsible for conducting analyses and examinations of physical evidence and in reporting results and conclusions in connection with police investigations anywhere in Canada.

Its services are primarily available to police agencies, courts and government agencies in most provinces (Ontario and Quebec have their own provincial forensic laboratories).

Based on the results of their work, members of the Forensic Laboratory Services issue case reports and provide expert forensic testimony to the courts.

In certain cases, the laboratory staff can - on request - provide advice and opinion to interpret evidence in situations where a hypothetical scenario may have been established, but laboratory examinations have not been requested.

New and advanced forensic methods are developed through research.

Laboratory sites are located in Vancouver, Edmonton, Regina, Winnipeg, Ottawa, and Halifax. The National DNA Data Bank is located in Ottawa.

Working as a team, Forensic Laboratory Services aims to provide state-of-the-art service and forensic science capabilities in a diverse range of scientific disciplines:

Biology

Biological trace evidence is processed using DNA analysis techniques to generate DNA typing profiles.

Services include: comparing DNA profiles to determine if there are any forensically significant associations, and submitting selected DNA typing profiles for entry into the Crime Scene Index of the National DNA Data Bank of Canada.

Chemistry

Physical evidence recovered, compared and identified includes: paint, potential fire accelerants, glass, fibres and textiles, plastics, building products, safe insulation and commercial products. Physical matching of seized materials is conducted. The Paint Data Query (PDQ) database is hosted and supported.



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Counterfeits and Documents

Suspect travel documents (passports, visas, etc.), currency and payment cards are examined to determine if they are genuine, whether they have been altered or are counterfeit.

Information is catalogued and disseminated to Canadian and foreign law enforcement agencies and to Interpol. Assistance is provided to investigators in searching printing plants suspected of being connected with counterfeiting activities. Documents are examined to compare handwriting and hand printing and to establish means, media and material used in their production. Occurrences to documents after their production are also examined.

Explosives

Pre- and post-blast samples are analysed to determine type of explosive. Explosives ingredients and related materials are examined. Scene assistance, including use of explosives detectors, and scientific and technical support to bomb disposal and other experts in the field is provided.

Firearms

Recovered cartridge components are examined to determine if they were fired or chambered in specific weapons and, in cases where no suspect weapons are available, to determine the probable type and make of weapon involved. The legal status of firearms is determined and mechanical condition assessed. Tool marks on a variety of materials are compared with suspect tools. Gunshot residue (GSR) is analysed to determine whether a suspect fired a firearm and to estimate the distance between a gunshot victim and firearm. The Firearms Reference Table is researched and expanded and the Integrated Ballistics Information System database (IBIS) is hosted and supported.

Toxicology Services

Drugs and poisons, including alcohol and other volatile substances, are detected in biological fluids and tissues. These are quantified in cases of impaired driving, homicide and assault.

Interpretative evidence is given on the pharmacological effects of alcohol, drugs and poisons found. On request, interpretative evidence may be made on given hypothetical situations where no analysis of body fluids or tissues has been done.

“Over-the-counter” pharmaceutical and prepared food products are examined to determine evidence of tampering.

Chemicals found in tear gas canisters are analysed and their toxic effects interpreted for court purposes.

Scientific support is provided to the Breath-Test Program, as well as to the drug recognition expert programs of Canadian police agencies.

National DNA Data Bank

The National DNA Data Bank is a branch of Forensic Laboratory Services that contains the Convicted Offender Index and the Crime Scene Index. These represent two different sets of information in which DNA profiles are developed and compared.

The Data Bank assists law enforcement agencies in solving crimes by linking crimes together where there are no suspects, identifying suspects, eliminating suspects where there is no match between crime scene DNA and a DNA profile in the Data Bank and determining whether a serial offender is involved.

For more information, please visit www.rcmpgrc.gc.ca.

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