



Activation Laboratories Ltd.



Gold Exploration

Numerous analytical methods are available for analyzing samples for gold. While fire assay remains the analytical method of choice for gold evaluation, other cost-effective, multi-element alternatives exist. Assays are usually only required when a sample is known or suspected to contain higher levels of gold. Geochemical methods are for lower levels of gold, and generally provide lower detection limits.

GEOCHEMICAL ANALYSES Soils, Rock, Water and Vegetation

Gold Analysis by Neutron Activation (INAA) - Samples are irradiated in a nuclear reactor and following a 7-day decay, gamma rays are measured on a germanium detector. Actlabs offers several packages with detection limits ranging from 5 ppb (code 1D) to 2 ppb (code 1D enhanced).

Acid Soluble Gold by ICP/MS - Samples are digested with an aqua regia digestion and analyzed for up to 60 elements by using our Ultratrace 1 or 2 packages (0.2 ppb).

Cyanidation-AA - Gold is leached with a cyanide solution and analyzed by atomic absorption by code 1A5 (0.03 - 50 g/tonne).

BLEG-ICP/MS - Bulk Leachable Extractable Gold is analyzed by adding a leach solution with the final analysis done by ICP/MS for code 1A6 (0.1 - 10,000 ppb).

Gold Analysis in Water - ICP/MS is used to determine gold in waters to a detection limit of 0.002 µg/L as part of our code 6 Multi-element (60+ elements). High Resolution ICP/MS (HR-ICP/MS) can also be used to determine gold up to 0.1 ng/L. Gold can also be determined on activated charcoal by INAA.

Gold in Organic Samples - Humus samples can be analyzed by code 2A (INAA - 1 ppb); dry vegetation can be analyzed by code 2B (INAA - 0.1 ppb) or by code 2F (HR-ICP/MS - 0.1 ppb); and ashed vegetation can be analyzed by code 2C (INAA - 5 ppb) or by code 2E (ICP/MS - 2 ppb).

Heavy Mineral Concentrates - Glacial till samples and stream sediment samples are analyzed by thermal irradiation by code 3A (5 ppb).

FIRE ASSAYS

Gold by Fire Assay - Actlabs offers several fire assay packages with a variety of finishes and detection limits including: Fire Assay-INAA (code 1A1 - 1 ppb), Fire Assay-AA (code 1A2 - 5 ppb), Fire Assay-Gravimetric finish (code 1A3 - >3 g/tonne) and Metallic Screen-Fire Assay-Gravimetric finish (code 1A4).

Control, Umpire and Bullion Assay - code 8A.

Activation Laboratories' Quality System is accredited to international quality standards to ISO 17025 with CAN-P-1579 for specific registered tests through the Standards Council of Canada (SCC) in partnership with the Canadian Association of Environmental Analytical Laboratories (CAEAL).

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