



TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

Scope of Accreditation

Accredited Laboratory No. 266

Legal Name of Accredited Laboratory: **ACTIVATION LABORATORIES LTD.**

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SCC File Number:	15308
Accreditation Standard(s):	ISO/IEC 17025:2017
Fields of Testing:	Chemical/Physical Mechanical/Physical
Program Specialty Area:	Agriculture Inputs, Food, Animal Health and Plant Protection (AFAP) Environmental Testing (ET) Forensic Mineral Analysis
Initial Accreditation:	1998-02-27
Most Recent Accreditation:	2020-01-07
Accreditation Valid to:	2022-02-26

SCC GROUP ACCREDITATION

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

- Activation Laboratories Ltd., Thunder Bay, Ontario, Accredited Laboratory No. 673
- Activation Laboratories Ltd., Kamloops, BC, Accredited Laboratory No. 790
- Activation Laboratories Ltd., Timmins, Ontario, Accredited Laboratory No. 799



ANIMAL AND PLANTS (AGRICULTURE)

OTHER (SPECIFY):

(Vegetation)

QOP AquaGeo	Multi-Element Analysis Using Aqua Regia Extraction and Inductively Coupled Plasma Atomic Emission Spectrometry (Cu, Pb, Ag, Ni)
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ELASTOMERS AND PROTECTIVE AND COATINGS

PAINTS, VARNISHES, INKS, COATINGS, AND ALLIED PRODUCTS:

Paints and Protective Coatings

ASTM B499	Standard Test Method for measuring coating thickness by magnetic method non-magnetic coating on magnetic base
ASTM D3359	Standard test method for measuring adhesion by tape test
ASTM D3363	Standard test method for film hardness by pencil test

ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY

Environmental:

Soil/Sediment

(Cyanide - Soil/Sediment / Automated UV digestion/colourimetric)

QOP Cyanide	Automated analyzer method for the determination of Total CN in water/soil
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(Mercury - Soil/Cold Vapour FIMS)

QOP Hg FIMS	Mercury Analysis by Aqua Regia Leach and Cold Vapour Atomic Absorption Spectrophotometry
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(Metals - Soil/ICP - digestion)

QOP AquaGeo	Multi-Element Analysis Using Aqua Regia Extraction and Inductively Coupled Plasma Atomic Emission Spectrometry Cadmium Chromium Cobalt Copper Lead Nickel Zinc
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(Metals - Soil/ICP-MS)

QOP Ultra Trace 1	Trace elements by aqua regia digestion and ICP/MS Antimony Arsenic Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Zinc
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Water (Inorganic)

(Alkalinity - Water/Titrimetric)

QOP Alkalinity	Titration method for the determination of alkalinity of water
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(Ammonium - Water/pH/mV meter with ion selective electrode)

QOP Ammonia	Electrode method for the determination of ammonia in water
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(Conductivity - Water/Conductivity meter)

QOP Conductivity	Electrode method for measuring the conductivity of water
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(Cyanide – Water/Automated UV digestion/colourimetric)

QOP Cyanide	Automated analyzer method for the determination of Total CN in water/soil
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(Hydride Metals - Water/ICP-MS)

QOP HydroGeo	Hydrogeochemistry by ICP/MS Total Antimony Total Arsenic Total Selenium
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(Ions - Water/Ion Chromatography)

QOP Anions	Determination of Inorganic anions in water by IC [EPA Method 300.1] Dissolved Orthophosphate Dissolved Bromide Dissolved Fluoride Dissolved Nitrate Dissolved Nitrite Dissolved Sulfate Dissolved Chloride
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(Mercury - Water/Cold Vapour AA)

QOP Hg FIMS	Mercury Analysis by Aqua Regia Leach and Cold Vapour Atomic Absorption Spectrophotometry (Hg)
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(Metals - Water/ICP-MS)

QOP HydroGeo	Hydrogeochemistry by ICP/MS Dissolved Aluminum Dissolved Barium Dissolved Beryllium Dissolved Boron Dissolved Cadmium
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	Dissolved Calcium Dissolved Chromium Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Magnesium Dissolved Manganese Dissolved Molybdenum Dissolved Nickel Dissolved Silver Dissolved Strontium Dissolved Thallium Dissolved Tin Dissolved Titanium Dissolved Uranium Dissolved Vanadium Dissolved Zinc Potassium Sodium
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(Metals - Water/ICP-OES)

QOP Water	Determination of Multi-Elements in waters using inductively coupled plasma atomic emission spectrometry Dissolved Aluminum Dissolved Barium Dissolved Beryllium Dissolved Boron Dissolved Cadmium Dissolved Calcium Dissolved Chromium Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Magnesium Dissolved Manganese Dissolved Molybdenum Dissolved Nickel Dissolved Phosphorus Dissolved Silica Dissolved Silver Dissolved Strontium Dissolved Thallium Dissolved Tin Dissolved Titanium
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	Dissolved Uranium Dissolved Vanadium Dissolved Zinc
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(pH - Water/pH meter)

QOP pH	pH Analysis Using ORION 720A pH Meter
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(Total Metals - Water/ICP-MS-digestion)

QOP HydroGeo	Hydrogeochemistry, by ICP/MS Total Antimony Total Arsenic Total Cadmium Total Calcium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Magnesium Total Manganese Total Nickel Total Phosphorus Total Selenium Total Vanadium Total Zinc
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(Total Metals - Water/ICP-OES)

QOP Water	Determination of Multi Elements in water using inductively coupled plasma atomic emission spectrometry Total Antimony Total Arsenic Total Cadmium Total Calcium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Magnesium
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	Total Manganese Total Nickel Total Phosphorus Total Selenium Total Silica Total Vanadium Total Zinc
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(TSS - Water/Gravimetric)

QOP TSS	Filter method for the measurement of total suspended solids in water by gravimetry
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(Turbidity - Water/Nephelometric)

QOP Turbidity	Turbidimeter method for the measurement of turbidity of water
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Occupational Health and Safety:

Other (specify):

QOP Uranium Urine	Total uranium concentration in urine by ICP/MS
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METALLIC ORES AND PRODUCTS

Articles of Metal:

(Chemical Tests)

QOP Carbon& Sulphur	Total Sulphur Content in Metals by the Combustion Instrumental Method (Sulphur Content by Combustion/IR)
QOP ICP MET	Multi-Element Chemical Analysis of Metallic Material using (ICP-AES) for alloys of Steel, Stainless Steel, Copper, Aluminum, Nickel (Chemical analysis of metals for the following elements: Mn, P, Si, Cr, Ni, Mo, Cu, V, Al, Ti, Co, Zr, Pb, Nb, Ta, W, Mg, Fe, Sn, Sb, Ag, Bi, Sr, Cd)



(Laboratory Corrosion Tests)

ASTM B117	Procedure for salt spray testing (fog testing) (Salt spray exposure to various parts for a specified amount of time or during cyclical corrosion testing)
ASTM D1735	Standard practice for water resistance of coating using water fog apparatus
ASTMD2247	Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity

(Mechanical Tests)

ASTM A370	Standard test methods and definitions for mechanical testing of steel products
ASTM E10	Brinell Hardness of Metallic Materials
ASTM E18	Rockwell Hardness of Metallic Materials
ASTM E190	Guided Bend Test for Ductility of Welds
ASTM E23	Notched Bar Impact Testing of Metallic Materials
ASTM E290	Bend Testing of Material for Ductility
ASTM E517	Plastic Strain Ratio r for Sheet Metal
ASTM E646	Tensile Strain-Hardening Exponents (n -values)
ASTM E8	Tension Testing of Metallic Materials

(Metallic Coatings)

ASTM A90	Standard test method for weight of coating on zinc coated iron or steel articles
ASTM B487	Using Microscopic Examination or Instrumentation to determine the coating thickness on various materials
ASTM B578	Standard test method for microhardness of electroplated coating

(Metallography)

ASTM A247	Standard test method for the microstructure of graphite in iron castings
ASTM A923	Standard test method for detecting detrimental intermetallic phase in duplex stainless steel
ASTM E1077	Standard test method for estimating the depth of decarburization of steel
ASTM E112	Determining Average Grain Size
ASTM E3	Preparation of metallographic specimens
ASTM E340	Standard test method for macroetch metals and alloy
ASTM E381	Macroetch for Inspection and Rating of Steel Products



ASTM E384	Method for microindentation hardness test
ASTM E45	Determination of Inclusion Content of Steel

Metallic Ores:

Rocks and Ores

Refer to minor sub-heading: **Sediments**

Sediments

QOP H2O:	Gravimetric Determination of H ₂ O +/H ₂ O-Water of Soils and Rocks (Gravimetric Package 4F: H ₂ O+/H ₂ O-)
QOP Hg FIMS	Mercury Analysis by Aqua Regia Leach and Cold Vapour Atomic Absorption Spectrophotometry (Package 1G: Hg)

Mineral Analysis Testing

Contract Settlement Assaying

Refer to minor sub-heading: **Geotechnical Testing**

Geotechnical Testing

Refer to minor sub-heading: **Mineral Assaying**

Mineral Assaying

QOP 1B2 ICP-MS	Platinum Group Elements using NiS Fire Assay and ICP-MS (Ir, Ru, Rh, Pt, Pd, and Re by Fire Assay with ICP-MS finish)
QOP AA - Au	Procedure for analysis of Gold and/or Silver by Fire Assay with AA or Gravimetric finish
QOP AquaGeo	Multi-Element Analysis Using Aqua Regia Extraction and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn
QOP ASSAY	Assay Analysis Using Aqua Regia and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn
QOP INAAGEO	Procedures for Instrumental Neutron Activation Analysis (INAA) for Mineral Samples As, Au, Cr, Co, Sb, Sc, Sn, Ta, U (238), U (235 by DNC, Delayed Neutron Counting), W
QOP PGE ICP-MS	Platinum Group Elements Analysis using Fire Assay and Inductively Coupled Plasma Mass Spectrometry for Au, Pt, Pd
QOP ProTRACE XRF	Trace Element analysis using XRF Spectrometer (Quantify analytes by pressing into a disk and using X-



	ray Fluorescence spectrophotometry - Rb, Sr, Y, Zr, Nb, Mo, Th, U, Sn, Pb, Ga, Ba, Cr, Co, V)
QOP Sodium Peroxide	Multi-Element Analysis using Sodium Peroxide Extraction and Inductively Couple Plasma Atomic Emission Spectrometry for Al, As, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, Si, S, Ti, Zn
QOP TOTAL	Multi-Element Analysis Using Hydrofluoric/HNO ₃ /Perchloric/HCl Acid Digestion and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn
QOP Total Assay	Total Assay Digestion using Hydrofluoric/HNO ₃ /Perchloric/HCl Acid with Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn
QOP Ultra Trace 1	Trace elements by aqua regia digestion and ICP/MS-for Li, Be, B, Na, Mg, Al, K, Ca V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Ag, Cd, In, Sn, Sb, Te, Cs, Ba, La, Ce, Nd, Sm, Eu, Tb, Yb, Lu, Hf, Ta, W, Re, Au, Tl, Pb, Bi, Th, U
QOP WRA	Multi-Element Whole Rock Analysis - Using Multi-Element Fusion Inductively Coupled Plasma - Atomic Emission Spectrometer (Al ₂ O ₃ , CaO, Fe ₂ O ₃ , K ₂ O, LOI, MgO, MnO, Na ₂ O, P ₂ O ₅ , SiO ₂ , TiO ₂ , Ba, Be, Sc, Sr, V, Y, Zr)
QOP WRA4B2	Trace Element Suite by Fusion Method 4B and Inductively Coupled Plasma-Mass Spectrometer (ICP/MS) Ba, Hf, Nb, Rb, Sn, Ta, Th, U, V, Y, Zr, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu
QOP XRF FUSION	Fusion using XRF spectrometer (Quantify analytes by X-ray Fluorescence which are fused with Lithium and reported in the oxide form - SiO ₂ , Al ₂ O ₃ , Fe ₂ O ₃ , MnO, MgO, CaO, Na ₂ O, K ₂ O, TiO ₂ , P ₂ O ₅ , Cr ₂ O ₃ , Co ₃ O ₄ , NiO, Zn, Sn and Cu)

FORENSICS

Forensic Chemistry / Trace Evidence

Techniques for which laboratory is accredited:

QOP Ignitable	The analysis for the presence/absence of ignitable liquids in fire debris samples.
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Number of Scope Listings: 65
 Number of Forensic Techniques: 1



Notes:

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

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

RG - MINERAL: SCC Requirements and Guidance for the Accreditation of Mineral Analysis Testing Laboratories

ASTM: American Society for Testing and Materials

EPA: United States Environmental Protection Agency

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
Vice President, Accreditation Services
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