

TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

Scope of Accreditation

Accredited Laboratory No. 836

Legal Name of Accredited Laboratory: **Bureau Veritas Canada (2019) Inc.
(Formerly Maxxam Analytics)**

Location Name or Operating as (if applicable): Bureau Veritas Calgary

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SCC File Number:	151043
Accreditation Standard(s):	ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories
Fields of Testing:	Biological Chemical/Physical
Program Specialty Area:	Agriculture Inputs, Food, Animal Health and Plant Protection (AFAP) Environmental Testing (ET)
Initial Accreditation:	2016-08-30
Most Recent Accreditation:	2021-07-13
Accreditation Valid to:	2024-08-30

*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 separately issued document.*

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.

15229 - Bureau Veritas Canada (2019) Inc. (Formerly Maxxam Analytics) - 6744 - 50 Street NW, Edmonton, AB, T6B 3M9, Accredited Laboratory No. 160

151039 - Bureau Veritas Canada (2019) Inc. (Formerly Maxxam Analytics) - Unit D, 675 Berry St., Winnipeg, MB, R3H 1A7, Accredited Laboratory No. 837

Testing is performed at the following locations:

Air testing: #1 2080-39th Avenue N.E. Calgary, AB. T2E 6P7

Inorganic, organic chemistry and water microbiology: 4000-19 Street N.E Calgary, AB T2E 6P8 and #3-4 2080-39th Avenue N.E. Calgary, AB. T2E 6P7, and 2021 – 41 Avenue NE, Calgary, AB T2E 6P2

Food testing: #112, 3442-118 Ave S.E. Calgary, AB T2Z 3X1.

* These test methods can be performed on-site as per RG-On-Site-Testing.

ANIMAL AND PLANTS (AGRICULTURE)

Foods and Edible Products (Human and Animal Consumption):

(Microbiology)

Assurance GDS® MPX Top 6 STEC Assay	Assay BioControl Assurance GDS® MPX Top 6 STEC
Assurance GDS® MPX Top 7 STEC Assay	BioControl Assurance GDS® MPX Top 7 STEC
MFHPB-10	Isolation of <i>Escherichia coli</i> O157:H7/NM from foods and environmental surface samples
MFHPB-18	Determination of Aerobic Colony Counts in Foods
MFHPB-20	Isolation and Identification of <i>Salmonella</i> from Food and Environmental Samples
MFHPB-22	Enumeration of Yeast and Moulds in Foods
MFHPB-30	Isolation of <i>Listeria monocytogenes</i> and <i>Listeria</i> spp. from foods and environmental samples
MFHPB-33	Enumeration of Total Aerobic Bacteria in Food Products and Food Ingredients Using 3M™ Petrifilm™ Aerobic Count Plates
MFHPB-34	Enumeration of <i>Escherichia coli</i> and Coliforms in Food Products and Food Ingredients Using 3M™ Petrifilm™ <i>E. coli</i> Count Plates
MFLP-09	Enumeration of <i>Enterobacteriaceae</i> species in Food and Environmental Samples Using 3M™ Petrifilm™ <i>Enterobacteriaceae</i> Count Plates
MFLP-16	Detection of <i>Escherichia coli</i> O157:H7 in foods - Assurance GDS® for <i>E. coli</i> O157:H7 Tq Gene Detection System

MFLP-21	Enumeration of <i>Staphylococcus aureus</i> in Foods and Environmental Samples Using 3M™ Petrifilm™ <i>Staph.</i> Express Count (STX) Plates
MFLP-28	The Qualicon Bax® System Method for the Detection of <i>Listeria monocytogenes</i> in a Variety of Food.
MFLP-29	The BAX® System Method for the detection of Salmonella in foods and environmental surface samples.
MFLP-30	Detection of <i>Escherichia coli</i> O157:H7 in Select Foods using the BAX® System <i>E. coli</i> O157:H7 MP.
MFLP-36	Detection of <i>Salmonella</i> in Foods and Environmental Surface Samples-Assurance GDS® for <i>Salmonella</i> Tq Genetic Detection System
MFLP-54	Detection of <i>Listeria monocytogenes</i> from selected foods using iQ-Check™ <i>Listeria monocytogenes</i> Real-Time PCR Test Kit
MFLP-74	Enumeration of <i>Listeria monocytogenes</i> in foods
MFLP-79	Detection of <i>Listeria</i> spp. in Environmental Surface Samples using the BAX®System Real-Time PCR Assay for <i>Listeria</i> genus
MLG4	Isolation and Identification of <i>Salmonella</i> from Meat, Poultry, Pasteurized Egg and Siluriformes (fish) Products and Carcass and environmental sponges
MLG41	Isolation and Identification of <i>Campylobacter jejuni/coli/lari</i> from Poultry Rinse, Sponge and Raw Product Samples

ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY

Environmental:

Soil/Solid/Waste

AB SOP-00045	Specific Gravity (Modified SM 2710 F, MSSMA 2.25, and Petroleum and Natural Gas Industries- Field Testing of Drilling Fluids NS SM-2710F – water inorganic) Gravimetric Specific Gravity
AB SOP-00047	Free Liquid (Paint Filter Test) (Modified EPA 9095 B) Volumetric Free Liquid in Waste Samples

Water

AB SOP-00011	Silica (Reactive) by Konelab - Molybdate/ANSA Reduction Method (Modified EPA 370.1) Colorimetric Reactive Silica
*AB SOP-00016	Chemical Oxygen Demand (Total and Dissolved) (Modified SM 5220 D) Colorimetric COD
AB SOP-00017	Biochemical Oxygen Demand (Modified SM 5210 B) D.O. Meter BOD (5 day) CBOD (5 day)
AB SOP-00024	Total Phosphorus by Konelab - Ascorbic Acid Reduction Method (Modified from SM 4500-P, A, B, F) Colorimetric Inorganic phosphorus Total Phosphorus
AB SOP-00032	The Determination of Residual Chlorine in Waters (Modified SM 4500 C1G) Colorimetric Free Chlorine Total Chlorine
AB SOP-00041	Ferrous and Ferric Iron in Water-Colorimetric Determination (Modified SM 3500-Fe A, B) Colorimetric Ferrous Iron
AB SOP-00058	Dissolved Oxygen- Modified Winkler Method (Modified SM 4500-O C) Titrimetric Dissolved Oxygen
AB SOP-00060	Naphthenic Acids in water by FTIR (Modified EPA 3510C R3/FTIR) IR Naphthenic Acids
*AB SOP-00061	Total Suspended Solids, Total Fixed Solids, Total Volatile Solids (Modified SM 2540 D, E) Gravimetric Total Suspended Solids Total Suspended Solids Fixed Total Suspended Solids Volatile

AB SOP-00065	Total Dissolved Solids [Modified SM 2540 C] Gravimetric Total Dissolved Solids
AB SOP-00070	Extraction and Analysis of Naphthenic Acids in Water (DCM Extraction) [Modified from Syncrude 1995 m] IR DCM Extraction Naphthenic Acids
AB SOP-00084	Mercury in Waters, Leachates and Liquids by Bromination and Cold Vapour [Modified BC MOE LABORATORY MANUAL SECTION C and EPA 245.7] Mercury
AB SOP-00087	Organic Carbon by Technicon - Persulfate UV Oxidation (Modified Methods Manual for Chemical Analysis of Water and Wastes, Method Code 119) Colorimetric Organic Carbon
AB SOP-00092	Oil and Grease Water Analysis by Gravimetric Hexane Extraction Method (Modified SM 5520 B, Gravimetric) Total Oil and Grease Total Petroleum Hydrocarbons (TPH)
CAL SOP-00040	Bromate, Chlorate, Chlorite by IC – Conductivity detection (Modified SM 4110 D) Ion Chromatography Bromate Chlorate Chlorite
CAL SOP-00049	Colour by Konelab (Modified SM 2120C) Spectrophotometric Apparent colour True Color
CAL SOP-00055	Volatile Organic Acids (Modified from Dionex ICE-AS6 DOC NO 34961) Ion Chromatography Glycolic Acid Lactic Acid
CAL SOP-00057	Iodide/Thiocyanate/Thiosulfate (Modified DIONEX, DOC NO 034035) Ion Chromatography

	Iodide Thiocyanate Thiosulfate
CAL SOP-00063	Volatile Organic Acids (Modified DIONEX ICE-AS1 DOC NO 031181) Ion Chromatography Acetic Acid Butyric Acid Formic Acid Propionic Acid
CAL SOP-00065	Oxalic Acid by Ion Chromatography - Conductivity Detection (Modified from SM 4110B) Ion Chromatography Oxalic Acid
CAL SOP-00071	Sulphite by IC (Modified SM 4110 B) Ion Chromatography - Conductivity Detector Sulfite
CAL SOP-00076	Total and Dissolved Inorganic Carbon by Automated Colourimetry (Modified AE 2411) Inorganic Carbon
CAL SOP-00081	Turbidity – Nephelometric Method (Modified SM 2130 B) Nephelometric Turbidity
CAL SOP-00099	Extraction and analysis of Resin and Fatty Acids in water by GCMS (Modified AE 129.0 and EPA 8270E) GC/MS 12,14-Dichlorodehydroabietic Acid 12-Chlorodehydroabietic Acid 14-Chlorodehydroabietic Acid 9,10-Dichlorostearic Acid (C18) Abietic Acid Decanoic Acid C10 Dehydroabietic Acid Docosanoic Acid C22 Docosanoic Acid C12 Eicosanoic Acid C20 Hexadecanoic Acid C16 Isopimaric Acid Linoleic Acid C18:2 Linoleic Acid C18:3 Neoabietic Acid Octadecanoic Acid C18 Oleic Acid C18:1 Palustric Acid Pimaric Acid Sandaracopimaric Acid Tetradecanoic Acid (C14) Undecanoic Acid (C11) Total of Resin Acids Total of Fatty Acids
CAL SOP-00273	Determination of Chlorophyll and Pheophytin (Modified SM 23 10200 H) Chlorophyll A

	Chlorophyll B Chlorophyll C Pheophytin
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Emissions (Air)

EMS SOP-00009	Sorbent traps for the determination of Mercury Emissions (Field) (Modified US EPA Method 30B) Spectrometer - Atomic Absorption Detector Mercury (Hg)
EMS SOP-00110	Anions-Water (Modified Methods Manual for Chemical Analysis of Atmospheric Pollutants method 52121) Ion Chromatography - Conductivity Detector Chloride Fluoride Nitrate Sulfate
EMS SOP-00111	Ammonia – Water (Modified Methods Manual for Chemical Analysis of Atmospheric Pollutants method 52626] Ion Chromatography - Conductivity Detector Ammonia
EMS SOP-00112	Fixed Gases - Air (Modified Method 3, Alberta Stack Sampling Code, 1995, Publication Number: REF.89 and EPA 3C) GC/TCD CO CO ₂ N ₂ O ₂
EMS SOP-00113	Formaldehyde – Water (Modified from Methods Manual for Chemical Analysis of Atmospheric Pollutants, method 12525) Colorimetric Formaldehyde
EMS SOP-00114	Hydrocarbons – Air (Modified AENV18) GC/FID Total Hydrocarbons as Methane

EMS SOP-00115	Total Particulates - Air Filter (Modified method 5, Determination of Particulate Emissions from Stationary Sources, Alberta Stack Sampling Code, 1995, Publication Number: REF.89) Gravimetric Particulates
EMS SOP-00116	Total/Trace Reduced Sulfur - Air (Field) (Modified from AENV.TRS.P&P-1 and AENV.TRS.SGP-1) GC/PID Carbon disulfide Carbonyl sulfide Dimethyl disulfide Dimethyl sulfide Hydrogen sulphide Methyl mercaptan
EMS SOP-00122	Chlorine and Chlorine Dioxide – Air (Field) (Modified Alberta Environment Stack Code, 1995, Publication Number REF 89) Iodometric Determination Chlorine Chlorine Dioxide

Soil/Solid

*AB SOP-00002	Moisture Content in Soil (Modified CCME Petroleum Hydrocarbons in Soil - Tier 1 Method Section 13) Gravimetric % Moisture
*AB SOP-00003	Analysis of PAH in Water, Soil, Oil and Leachates by GC/MS (Modified EPA 8270E, EPA 3540C, EPA 8270E) - Soils and water 1-Methylnaphthalene 2-Methylnaphthalene Acenaphthene Acenaphthylene Acridine Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b, j) fluoranthene Benzo (g,h,i) perylene Benzo (k) fluoranthene Benzo(c)phenanthrene Benzo(e)pyrene Chrysene Dibenzo (a,h) anthracene Fluoranthene Fluorene Indeno (1,2,3 - cd) pyrene Naphthalene Perylene Phenanthrene Pyrene

	Quinoline
*AB SOP-00004	Determination of Electrolytic Conductivity by Manual Meter (Modified SM 2510B) - Soils and waters Conductivity Meter (Manual) Conductivity
AB SOP-00005	Alkalinity Conductivity Fluoride and pH by PC-Titrate (Modified SM 2510 B, SM 4500 H+B, SM 2320 B, SM 4500-F C) - Soil & Waters PC Titrate Conductivity (25 °C) Alkalinity Fluoride pH Acidity
*AB SOP-00006	pH by Manual Meter (Modified from SM 4500-H+ B) – Soils and Waters pH Meter pH
*AB SOP-00007	Ammonia-Nitrogen by Konelab - Phenate colorimetric method (Modified SM4500-NH3 A&G) – Soils and Waters Colorimetric Ammonia Ammonia – Extraction
AB SOP-00008	TKN by Konelab (Modified EPA 351.1, EPA 351.2) – Soils and Waters Colorimetric Total Kjeldahl Nitrogen
AB SOP-00012	Total Organic Carbon and Organic Matter in Soil (Modified Methods Manual for Soil and Plant Analysis) Reflux – Titrimetric Organic Matter – Calculation Total Organic Carbon
AB SOP-00019	Calcium Carbonate Equivalence by pH (Modified SSMA 20.2) pH Meter Calcium Carbonate Equivalence (CCE)
AB SOP-00020	Chloride and Sulfate Analysis by Discrete Autoanalyzer (Modified SM 4500 Cl E & SM 4500 SO4 E) – Soils and Waters Chloride *Sulfate

AB SOP-00022	Particle Size Distribution by Sieve Analysis (Modified ASTM D6913) Gravimetric/SIEVE Grain size Particle size by sieve (Special)
AB SOP-00023	Nitrite and Nitrate by Ion Chromatography (Modified SM 4110 B) – Soil and Waters Ion Chromatography Nitrate Nitrite
AB SOP-00025	Ortho-phosphate by Konelab - Ascorbic Acid Reduction Method (Modified SM 4500-P, A and F) - Soils and Waters Colorimetric Auto Color Ortho-phosphate
*AB SOP-00026	Chloride, Sulphate and Bromide by Ion Chromatography (Modified SM 4110B] – Soils and Waters Ion Chromatography Chloride Sulfate
AB SOP-00030	PSA by Hydrometer - Texture (Sand, Silt, Clay and gravel) Analysis (Modified SSMA 55.3) Hydrometer % clay % sand % gravel % slit
*AB SOP-00033	Preparation of Saturation and Water-Soil Ratio Samples [Modified from SSMA Method 15.2] Gravimetric % Saturation
AB SOP-00039	Extraction and Analysis of BTEX/F1 and select Volatiles by HS/GC/MS/FID Water, Soil and Oil (BTEX: Modified EPA 8260D, GC/MS – HEADSPACE) (F1/PHC: Modified CCME Petroleum Hydrocarbons - Tier 1 Method and EPA5021A) – Soils and Waters (BTEX TCLP: EPA 1311) GC/MS - HEADSPACE 1,2,4-Trimethyl Benzene C5-C10 F1: C6-C10 m/p-xylene o-xylene Toluene Benzene Ethylbenzene Hexane Methyl tert-butyl ether (MTBE) Styrene

<p>*AB SOP-00040</p>	<p>Analysis of Extractable Hydrocarbons in Water and Soils by GC/FID (Modified Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil – Tier 1 Method) Modified EPA 1617)- Sheen</p> <table border="0"> <tr> <td>C6-C50 Hydrocarbons</td> <td>F2 (C10-C16 Hydrocarbons)</td> </tr> <tr> <td>F3 (C16-C34 Hydrocarbons)</td> <td>F3A (C16-C22 Hydrocarbons)</td> </tr> <tr> <td>F3B (C22-C50 Hydrocarbons)</td> <td>F4 (C34-C50 Hydrocarbons)</td> </tr> <tr> <td>Reached Baseline at C50</td> <td>F4G-SG (Heavy Hydrocarbons- Grav)</td> </tr> <tr> <td>Total Extractables C10 to C30</td> <td>Total Extractables C10 to C22</td> </tr> <tr> <td>Total Extractables C23 to C60</td> <td>F4 HTG (>C34 – High Temp GC)</td> </tr> <tr> <td>Total Petroleum Hydrocarbon</td> <td>Visible Sheen</td> </tr> </table>	C6-C50 Hydrocarbons	F2 (C10-C16 Hydrocarbons)	F3 (C16-C34 Hydrocarbons)	F3A (C16-C22 Hydrocarbons)	F3B (C22-C50 Hydrocarbons)	F4 (C34-C50 Hydrocarbons)	Reached Baseline at C50	F4G-SG (Heavy Hydrocarbons- Grav)	Total Extractables C10 to C30	Total Extractables C10 to C22	Total Extractables C23 to C60	F4 HTG (>C34 – High Temp GC)	Total Petroleum Hydrocarbon	Visible Sheen																										
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<p>*AB SOP-00042</p>	<p>Metals on Liquids and Solids by ICP/OES (Modified EPA 6010 D) - Soils and Waters ICP/OES</p> <table border="0"> <tr> <td>Aluminum</td> <td>Barium</td> <td>Boron</td> <td>Calcium</td> </tr> <tr> <td>Chromium</td> <td>Iron</td> <td>Lithium</td> <td>Magnesium</td> </tr> <tr> <td>Manganese</td> <td>Phosphorus</td> <td>Potassium</td> <td>Silicon</td> </tr> <tr> <td>Sodium</td> <td>Strontium</td> <td>Sulfur</td> <td>Thorium</td> </tr> </table>	Aluminum	Barium	Boron	Calcium	Chromium	Iron	Lithium	Magnesium	Manganese	Phosphorus	Potassium	Silicon	Sodium	Strontium	Sulfur	Thorium																								
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<p>*AB SOP-00043</p>	<p>Metals Analysis on Soils and Waters Using ICPMS (Modified EPA 6020 B) - Soils and Waters [TCLP: EPA 1311] ICP/MS</p> <table border="0"> <tr> <td>Aluminum</td> <td>Antimony</td> <td>Arsenic</td> <td>Barium</td> </tr> <tr> <td>Beryllium</td> <td>Bismuth</td> <td>Boron</td> <td>Cadmium</td> </tr> <tr> <td>Calcium</td> <td>Chromium</td> <td>Cobalt</td> <td>Copper</td> </tr> <tr> <td>Iron</td> <td>Lead</td> <td>Lithium</td> <td>Magnesium</td> </tr> <tr> <td>Manganese</td> <td>Mercury</td> <td>Molybdenum</td> <td>Nickel</td> </tr> <tr> <td>Palladium</td> <td>Potassium</td> <td>Selenium</td> <td>Silicon</td> </tr> <tr> <td>Silver</td> <td>Sodium</td> <td>Strontium</td> <td>Sulphur</td> </tr> <tr> <td>Tellurium</td> <td>Thallium</td> <td>Tin</td> <td>Titanium</td> </tr> <tr> <td>Tungsten</td> <td>Uranium</td> <td>Vanadium</td> <td>Zinc</td> </tr> <tr> <td>Zirconium</td> <td></td> <td></td> <td></td> </tr> </table>	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Palladium	Potassium	Selenium	Silicon	Silver	Sodium	Strontium	Sulphur	Tellurium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Zirconium			
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<p>AB SOP-00049</p>	<p>Particle Size Distribution by Hydrometer (Modified ASTM D422-63) Hydrometer Particle Size Distribution</p>																																								
<p>AB SOP-00050</p>	<p>Dry Bulk Density and Wet Bulk Density (Modified McKeague and MSSMA Section 2.21) Gravimetric Bulk Density</p>																																								

AB SOP-00052	Bromide by Ion Chromatography - UV Detection (Modified from SM 4110 B) – Soils and Waters Ion Chromatography/UV Detector Bromide
AB SOP-00056	Preparation and Analysis VOC -Water and Soil by HS/GC/MS (Modified from EPA8260D and EPA5021A) (VOC TCLP: EPA 1311) - Soils and Waters GC/MS (Headspace) 1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-dichloroethylene 1,2 dibromoethane 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-dichlorobenzene 1,2-dichloroethane 1,2-Dichloropropane 1,3,5 Trichlorobenzene 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-dichlorobenzene Benzene Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chlorodibromomethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethylene cis-1,3-Dichloropropene Dichloromethane Ethylbenzene m/p-xylene Methyl methacrylate Methyl t-butyl ether o-xylene Styrene Tetrachloroethylene Toluene trans-1,2-Dichloroethylene trans-1,3-Dichloropropene Trichloroethylene Trichlorofluoromethane Vinyl Chloride
AB SOP-00062	Flashpoint by Small Scale Closed Cup Tester (SetaFlash) (Modified ASTM D3828) Seta Flash Closed Cup Flashpoint
AB SOP-00063	Hexavalent Chromium by Konelab (Modified SM 3500-Cr B) – Soil and Water Colorimetric Hexavalent Chromium
AB SOP-00067	Elemental Sulfur (Modified Canadian Journal of Soil Science, 65, Pages 811-813, 1985) Colour-Extraction

	Elemental Sulphur
* AB SOP-00071	Electrical Conductivity by Manual Meter - On-Site Testing (Modified SM 2510 B) – Soil and Water Conductivity Meter Conductivity (25 °C)
* AB SOP-00073	Determination of Percent Moisture - On-Site Testing (Modified CCME PHC-CWS) Gravimetric % Moisture
* AB SOP-00074	Determination of pH in Water and Soil by Manual Meter - On-Site Testing (Modified SM 4500H+ B) – Soils and Waters pH Meter pH
* AB SOP-00075	Preparation of Saturation Samples - On-Site Testing (Modified from SSMA Method 15.2) Gravimetric % Saturation
*AB SOP-00076	BTEX/F1 in Water and Soil by GC Headspace PID/FID - On-Site Testing (BTEX: Modified EPA 8021B] – GC/PID - Headspace (F1: CCME Hydrocarbons Tier 1, BCMOE Section D, BCMELP] - GC/FID – Headspace) Benzene Ethylbenzene m/p-xylene O-xylene-C10 Toluene C6 o-xylene F1:C6-C10 o-xylene Styrene Total C6-C10
*AB SOP-00077	Extractable Hydrocarbon in Water and Soil - On-Site Testing (Modified CCME hydrocarbons Analysis tier 1, BCMOE Section D, BCMELP] – Soils and Waters GC/FID - Direct Injection EPH (C10-C19) F2: C10-C16 F4: C34-C50 EPH (C19-C32) F3: C16-C34 TEH (C10-C30)
*AB SOP-00078	Chloride Analysis by Hach DR2800 - On-Site Testing (Modified SM 4500-CIE) – Soils and Waters Colorimetric Chloride
AB SOP-00080	Sulphide, Low level (Modified SM 4500-S2D, A, F) – Soil and Water Colorimetric Sulphide

	<p>Bentazon Chloramben Dichlorprop Dinoseb (DNBP) MCPP Picloram</p>	<p>Bromoxynil Dicamba Diclofop-methyl MCPA Pentachlorophenol</p>
CAL SOP-00096	<p>Extraction and Analysis of OG and TPH in Water and Soil by FTIR (Modified SM 23 5520 C m) – Soils and Waters IR – Extraction Oil and Grease Total Petroleum Hydrocarbons</p>	
CAL SOP-00104	<p>Preparation and Analysis of Extended VOC in Water and Soils by HS/GC/MS (Modified EPA 8260D, EPA 5021A & VOC TCLP: EPA 1311) – Soils and Waters GC/MS – HS/Extraction 1,2,3-trichloropropane 1,2-dibromo-3-chloropropane 2,2-dichloropropane 2-chlorotoluene 2-nitropropane 4-methyl-2-pentanone (MIBK) Acetonitrile Acrylonitrile Bromochloromethane Cyclohexane Dibromomethane Dicyclopentadiene Ethyl ether Hexachlorobutadiene Iodomethane Naphthalene Nitrobenzene p-Isopropyltoluene tert-Butylbenzene</p>	
CAL SOP-00149	<p>Polychlorinated Biphenyls (PCB) (Modified EPA 8082A) – Soils, Waters and Oil GC/ECD – Extraction Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260 Aroclor 1262 Aroclor 1268 Total PCB</p>	

<p>CAL SOP-00164</p>	<p>Semi Volatile Phenols (Modified EPA 8270E) – Soils and Waters GC/MS – Extraction</p> <table border="0"> <tr> <td>2,3,4,5-tetrachlorophenol</td> <td>2,3,4,6-tetrachlorophenol</td> </tr> <tr> <td>2,3,4-trichlorophenol</td> <td>2,3,5,6-tetrachlorophenol</td> </tr> <tr> <td>2,3,5-trichlorophenol</td> <td>2,3,6-trichlorophenol</td> </tr> <tr> <td>2,3-dichlorophenol</td> <td>2,4,5-trichlorophenol</td> </tr> <tr> <td>2,4,6-trichlorophenol</td> <td>2,4-dichlorophenol</td> </tr> <tr> <td>2,4-dimethylphenol</td> <td>2,4-dinitrophenol</td> </tr> <tr> <td>2,5-dichlorophenol</td> <td>2,6- dimethylphenol</td> </tr> <tr> <td>2,6-dichlorophenol</td> <td>2-chlorophenol</td> </tr> <tr> <td>2-methylphenol</td> <td>2-nitrophenol</td> </tr> <tr> <td>3&4-chlorophenol</td> <td>3&4-methylphenol</td> </tr> <tr> <td>3,4,5-trichlorophenol</td> <td>3,4-dichlorophenol</td> </tr> <tr> <td>3,4-dimethylphenol</td> <td>3,5-dichlorophenol</td> </tr> <tr> <td>4,6-dinitro-2-methylphenol</td> <td>4-chloro-3-methylphenol</td> </tr> <tr> <td>4-nitrophenol</td> <td>Pentachlorophenol</td> </tr> <tr> <td>Phenol</td> <td></td> </tr> </table>	2,3,4,5-tetrachlorophenol	2,3,4,6-tetrachlorophenol	2,3,4-trichlorophenol	2,3,5,6-tetrachlorophenol	2,3,5-trichlorophenol	2,3,6-trichlorophenol	2,3-dichlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,5-dichlorophenol	2,6- dimethylphenol	2,6-dichlorophenol	2-chlorophenol	2-methylphenol	2-nitrophenol	3&4-chlorophenol	3&4-methylphenol	3,4,5-trichlorophenol	3,4-dichlorophenol	3,4-dimethylphenol	3,5-dichlorophenol	4,6-dinitro-2-methylphenol	4-chloro-3-methylphenol	4-nitrophenol	Pentachlorophenol	Phenol	
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<p>CAL SOP-00184</p>	<p>Aliphatic and Aromatic fractionation and analysis for >C10-C50 PHC (Modified from Atl RBCA m) – Soils and Waters GC/FID</p> <table border="0"> <tr> <td>>C10-C12 Aliphatic</td> <td>>C10-C12 Aromatic</td> </tr> <tr> <td>>C12-C16 Aliphatic</td> <td>>C12-C16 Aromatic</td> </tr> <tr> <td>>C16-C21 Aliphatic</td> <td>>C16-C21 Aromatic</td> </tr> <tr> <td>>C21-C34 Aliphatic</td> <td>>C21-C34 Aromatic</td> </tr> <tr> <td>>C34 Aliphatic (Up to C50)</td> <td>>C34 Aromatic (Up to C50)</td> </tr> </table>	>C10-C12 Aliphatic	>C10-C12 Aromatic	>C12-C16 Aliphatic	>C12-C16 Aromatic	>C16-C21 Aliphatic	>C16-C21 Aromatic	>C21-C34 Aliphatic	>C21-C34 Aromatic	>C34 Aliphatic (Up to C50)	>C34 Aromatic (Up to C50)																				
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>C34 Aliphatic (Up to C50)	>C34 Aromatic (Up to C50)																														
<p>CAL SOP-00239</p>	<p>BC Extractable Petroleum Hydrocarbons in Water and Soil by GC/FID (Modified BCMOE EPH S 12/16) – Soils and Waters GC/FID EPH: C10-C19 EPH: C19-C32</p>																														
<p>CAL SOP-00240</p>	<p>Fractionation for C6-C10 and BC method VPH by Headspace GC/FID/MS (Modified volatile HC in soils by GC/FID and EPA method 5021A, BC MELP VH; Atl. RBCA) – Soils and Waters GC/FID</p> <table border="0"> <tr> <td>Benzene</td> <td>C6-C8</td> </tr> <tr> <td>C6-o-xylene</td> <td>C8-C10 aromatic</td> </tr> <tr> <td>Ethylbenzene</td> <td>Methyl-ter-butylether</td> </tr> <tr> <td>o-xylene</td> <td>o-xylene-C10</td> </tr> <tr> <td>Styrene</td> <td>Toluene</td> </tr> </table>	Benzene	C6-C8	C6-o-xylene	C8-C10 aromatic	Ethylbenzene	Methyl-ter-butylether	o-xylene	o-xylene-C10	Styrene	Toluene																				
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<p>CAL SOP-00243/CAL SOP-00263</p>	<p>Carbon, Nitrogen and Sulfur (Modified LECO Corporation Form No. 203-821-170,203-821-165 and Vario El Cube No AN-A-030609, Total Organic Carbon (TOC/FOC) in soil/sediment by combustion (PBM)) IR Combustion Carbon Nitrogen Organic Carbon Sulphur</p>
<p>CAL SOP-00250</p>	<p>Preparation and analysis of Alkylated PAH in soils and water (Modified SM 8270 E and ESTD-OR-20) – Soils and Waters GC/MS – Extraction 1-Methylnaphthalene Acenaphthene Acridine Benzo (a) anthracene Benzo (g,h,i) perylene Benzo (b&j) fluoranthene Benzo(e)pyrene C1-Acenaphthene C1-Benzo(bjk)fluoranthene / Benzo[a]pyrene C1-Biphenyl Chrysene C1-Dibenzothiophene C2-Naphthalene C2- Fluoranthene / Pyrene Chrysene C3-Dibenzothiophene C3-Naphthalene C3- Fluoranthene / Pyrene Chrysene C4-Dibenzothiophene C4-Phenanthrene/ anthracene Dibenzo (a,h) anthracene Fluoranthene Indeno (1,2,3 - cd) pyrene Naphthalene Phenanthrene Quinoline</p> <p>2-Methylnaphthalene Acenaphthylene Anthracene Benzo (a) pyrene Benzo (k) fluoranthene Benzo(c)phenanthrene Biphenyl C1-Benzo(a) anthracene/ C2-Fluorene C2-Phenanthrene/ anthracene C3-Benzo(a)anthracene / C3-Fluorene C3-Phenanthrene/ anthracene C4- Benzo(a)anthracene / C4-Naphthalene Chrysene Dibenzothiophene Fluorene Indeno (1,2,3-cd) fluoranthene Perylene Pyrene Retene</p>

CAL SOP-00251	Extraction and analysis of low level Sulfolane in water and soil by GCMS (Modified EPA 8270E) GC/MSD – Extraction Sulfolane
CAL SOP-00264	Preparation and Analysis of Alcohol/Solvents (Water, soil, oil) by GCFID (Modified EPA 8015D) – Soils and Waters GC/FID – Extraction 2-Methylphenol 4- Methylphenol Ethanol Isopropanol n-butanol 3- Methylphenol Acetone (2-propanone) Isobutanol * Methanol Pyridine
CAL SOP-00265	ICP/MS Analysis for Low Level Metals (Modified EPA SW846 6020B) – Soils and Waters ICP/MS Aluminum Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Calcium Cesium Chromium Cobalt Copper Iron Lanthanum Lead Lithium Magnesium Manganese Mercury Molybdenum Nickel Phosphorus Potassium Rubidium Selenium Silicon Silver Sodium Strontium Sulphur Tellurium Thallium Thorium Tin Titanium Tungsten Uranium Vanadium Zinc Zirconium
CAL SOP-00266	Free Cyanide (Modified EPA 9016) - Water Colorimetric- Distillation Free cyanide
CAL SOP-00270	Determination of cyanide by automated colourimetry (Modified SM 23 4500-CN-,O) – Soil and Water Colorimetric- Distillation Cyanide SAD Cyanide WAD
CAL SOP-00275	Extraction and Analysis of Hydroxyphenols in Water and Soil by GCMS (Modified BC MOE Laboratory Manual and EPA SW 846 8270) – Water and Soil 2-Hydroxyphenol (Catechol) 3-Hydroxyphenol (Resorcinol) 4-Hydroxyphenol (Hydroquinone)

Water (Microbiology)

<p>AB SOP-00085</p>	<p>Determination of Iron-Related and Sulfate Reducing Bacteria using the BART Method (Modified Dbi Env Tech Verification of the Irb Bart Tester for the Detection and Evaluation of Iron Bacteria in Water and Dbi Enviro Tech Verification of the Srb Bart Tester for the Detection and Verification of Sulphate Reducing Bacteria in Water) BART™ Iron Related Bacteria (IRB) Sulfate Reducing Bacteria (SRB)</p>
<p>AB SOP-00089</p>	<p>Total and Fecal Coliforms by defined substrate technique (Modified SM 9223 A, B) Most Probable Number (Colilert) <i>Escherichia coli</i> (<i>E. coli</i>) Total Coliforms Fecal (Thermotolerant) Coliforms</p>
<p>CAL SOP-00012</p>	<p>Heterotrophic Plate Count (HPC) (Modified SM 9215 A, B) Pour Plate Heterotrophic Plate Count (HPC)</p>

Number of Scope Listings: 117

Notes:

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

MFHPB: Microbiological Foods Health Protection Branch, Health Canada

MFLP: Microbiological Food Laboratory Procedure, Health Canada

MLG: Food Safety and Inspection Services Microbiology Laboratory Guidebook, U.S. Department of Agriculture

SM: Standard Methods for Examination of Water and Wastewater, American Public Health Association (APHA)

EPA: Environment Protection Agency

TCLP: toxicity characteristic leaching procedure

AB SOP: Internal test method (Alberta)

CAL SOP: Internal test method (Calgary)

CCME: Canadian Council of Ministers of the Environment

* These test methods can be performed on-site as per RG-On-Site-Testing.



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Elias Rafoul
Vice-President, Accreditation Services
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