

## TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

### Scope of Accreditation

Accredited Laboratory No. 836

**Legal Name of Accredited Laboratory:** **Bureau Veritas**

Location Name or Operating as (if applicable): Calgary Laboratory

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

**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 - 6744 - 50 Street NW, Edmonton, AB, T6B 3M9, Accredited Laboratory No. 160

151039 - Bureau Veritas - 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.

**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 <i>Salmonella</i> 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 and Petroleum and Natural Gas Industries- Field Testing of Drilling Fluids 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 CL G) 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 (TDS) [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

	<p>Wastes, Method Code 119)</p> <p>Colorimetric</p> <p>Organic Carbon</p>
AB SOP-00092	<p>Oil and Grease Water Analysis by Gravimetric Hexane Extraction Method (Modified SM 5520 B, Gravimetric)</p> <p>Total Oil and Grease</p> <p>Total Petroleum Hydrocarbons (TPH)</p>
CAL SOP-00040	<p>Bromate, Chlorate, and Chlorite by IC – Conductivity detection (Modified SM 4110 D)</p> <p>Ion Chromatography</p> <p>Bromate</p> <p>Chlorate</p> <p>Chlorite</p>
CAL SOP-00049	<p>Color by Konelab (Modified SM 2120C)</p> <p>Spectrophotometric</p> <p>Apparent colour</p> <p>True Color</p>
CAL SOP-00055	<p>Glycolic and Lactic Acid by reversed-phase chromatography (Modified from Dionex ICE-AS6 DOC NO 34961)</p> <p>Ion Chromatography</p> <p>Glycolic Acid</p> <p>Lactic Acid</p>
CAL SOP-00057	<p>Iodide, Thiocyanate, and Thiosulfate by Ion Chromatography (Modified DIONEX, DOC NO 034035)</p> <p>Ion Chromatography</p> <p>Iodide</p> <p>Thiocyanate</p> <p>Thiosulfate</p>
CAL SOP-00063	<p>Organic Acids by reversed-phase chromatography (conductivity detection) (Modified DIONEX ICE-AS1 DOC NO 031181)</p> <p>Ion Chromatography</p> <p>Acetic Acid</p> <p>Butyric Acid</p> <p>Formic Acid</p> <p>Propionic Acid</p>
CAL SOP-00065	<p>Oxalic Acid by Ion Chromatography - Conductivity Detection (Modified from SM 4110B)</p> <p>Ion Chromatography</p> <p>Oxalic Acid</p>

CAL SOP-00071	Sulfite by Ion Chromatography – conductivity detection(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

#### 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)
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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 <sub>2</sub> N <sub>2</sub> O <sub>2</sub>
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
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**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 Electrical Conductivity by Manual Meter (Modified SM 2510B) - Soils and waters Conductivity Meter (Manual) Conductivity
AB SOP-00005	Alkalinity Acidity Conductivity Fluoride and pH by PC-Titrate (Modified SM 2510 B, SM 4500 H+B, SM 2320 B, SM 4500-F C, SM 2310 B) - Soil & Waters PC Titrate Conductivity (25 °C) Alkalinity Fluoride pH Acidity



*AB SOP-00006	pH by Manual Meter and PC-Titrate (Modified from SM 4500-H+ B) – Soils and Waters pH Meter pH
*AB SOP-00007	Ammonia-Nitrogen by Automated 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 (Dissolved) by Automated Ascorbic Acid Reduction Method (Modified SM 4500-P, A and F) - Soils and Waters Colorimetric Auto Color Ortho-phosphate
*AB SOP-00026	Chloride and Sulphate 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 % Silt
*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
*AB SOP-00040	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 C6-C50 Hydrocarbons F3 (C16-C34 Hydrocarbons) F3B (C22-C34 Hydrocarbons) Reached Baseline at C50 Total Extractables C10 to C30 Total Extractables C23 to C60 Total Petroleum Hydrocarbon
	F2 (C10-C16 Hydrocarbons) F3A (C16-C22 Hydrocarbons) F4 (C34-C50 Hydrocarbons) F4G-SG (Heavy Hydrocarbons- Grav) Total Extractables C11 to C22 F4 HTG (>C34 – High Temp GC) Visible Sheen
*AB SOP-00042	Metals on Liquids and Solids by ICPOES (Modified EPA 6010 D) - Soils and Waters ICP/OES Aluminum Chromium Manganese
	Barium Iron Phosphorus Boron Lithium Potassium Calcium Magnesium Silicon

	Sodium	Strontium	Sulfur
*AB SOP-00043	Metals Analysis on Soils and Waters Using ICPMS (Modified EPA 6020 B) - Soils and Waters [TCLP: EPA 1311] ICP/MS Aluminum                  Antimony                  Arsenic                  Barium Beryllium                  Bismuth                  Boron                  Cadmium Calcium                  Chromium                  Cobalt                  Copper Iron                  Lead                  Lithium                  Magnesium Manganese                  Mercury                  Molybdenum                  Nickel Potassium                  Selenium                  Silicon Silver                  Sodium                  Strontium                  Sulphur Tellurium                  Thallium                  Tin                  Titanium Tungsten                  Uranium                  Vanadium                  Zinc Zirconium		
AB SOP-00049	Particle Size Distribution by Hydrometer (Modified ASTM D7928) Hydrometer Particle Size Distribution		
AB SOP-00050	Dry Bulk Density and Wet Bulk Density (Modified McKeague and MSSMA Section 2.21) Gravimetric Bulk Density		
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		

	<p>Chlorobenzene  Chloroethane  Chloromethane  cis-1,3-Dichloropropene  Ethylbenzene  Methyl methacrylate  o-xylene  Tetrachloroethylene  trans-1,2-Dichloroethylene  Trichloroethylene  Vinyl Chloride</p>	<p>Dibromochloromethane  Chloroform  cis-1,2-Dichloroethylene  Dichloromethane  m/p-xylene  Methyl t-butyl ether  Styrene  Toluene  trans-1,3-Dichloropropene  Trichlorofluoromethane</p>
AB SOP-00062	<p>Flashpoint by Small Scale Closed Cup Tester (SetaFlash) (Modified ASTM D3828)  Seta Flash Closed Cup  Flashpoint</p>	
AB SOP-00063	<p>Hexavalent Chromium by Konelab  (Modified SM 3500-Cr B and EPA 3060) – Soil and Water  Colorimetric  Hexavalent Chromium</p>	
AB SOP-00067	<p>Elemental Sulfur (Modified Canadian Journal of Soil Science, 65, Pages 811-813, 1985)  Colour-Extraction  Elemental Sulphur</p>	
*AB SOP-00076	<p>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</p>	
		<p>C6 o-xylene  F1:C6-C10  o-xylene  Styrene  Total C6-C10</p>
AB SOP-00080	<p>Sulphide, Low level Sulfide (Modified SM 4500-S2D, A, F) – Soil and Water  Colorimetric  Sulphide</p>	
AB SOP-00088	<p>Phenol Phenolics-Automated 4--Aminoantipyrine Colorimetry (Modified SSMA Chapter 40 &amp; EPA 9066) - Water  Colorimetric – Distillation Extraction  Phenol</p>	



	MCPP Picloram	Pentachlorophenol	
CAL SOP-00096	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		
CAL SOP-00104	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		
CAL SOP-00149	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		
CAL SOP-00164	Semi Volatile Phenols (Modified EPA 8270E) – Soils and Waters GC/MS – Extraction 2,3,4,5-tetrachlorophenol 2,3,4-trichlorophenol 2,3,5-trichlorophenol 2,3-dichlorophenol		
		1,1-dichloropropene 1,3-dichloropropene 2-butanone (MEK) 2-hexanone 4-chlorotoluene Acetone Acrolein Bromobenzene Carbon disulphide Cyclohexanone Dichlorodifluoromethane Ethyl acetate Ethyl methacrylate Hexane Isopropylbenzene n-Butylbenzene n-Propylbenzene sec-Butylbenzene	
		2,3,4,6-tetrachlorophenol 2,3,5,6-tetrachlorophenol 2,3,6-trichlorophenol 2,4,5-trichlorophenol	

	<p>2,4,6-trichlorophenol                  2,4-dimethylphenol                  2,5-dichlorophenol                  2,6-dichlorophenol                  2-methylphenol                  3&amp;4-chlorophenol                  3,4,5-trichlorophenol                  3,4-dimethylphenol                  4,6-dinitro-2-methylphenol                  4-nitrophenol                  Phenol</p>	<p>2,4-dichlorophenol                  2,4-dinitrophenol                  2,6- dimethylphenol                  2-chlorophenol                  2-nitrophenol                  3&amp;4-methylphenol                  3,4-dichlorophenol                  3,5-dichlorophenol                  4-chloro-3-methylphenol                  Pentachlorophenol</p>												
CAL SOP-00184	<p>Aliphatic and Aromatic fractionation and analysis for &gt;C10-C50 PHC (Modified from Atl RBCA m) – Soils and Waters                  GC/FID</p> <table> <tr> <td>&gt;C10-C12 Aliphatic</td> <td>&gt;C10-C12 Aromatic</td> </tr> <tr> <td>&gt;C12-C16 Aliphatic</td> <td>&gt;C12-C16 Aromatic</td> </tr> <tr> <td>&gt;C16-C21 Aliphatic</td> <td>&gt;C16-C21 Aromatic</td> </tr> <tr> <td>&gt;C21-C34 Aliphatic</td> <td>&gt;C21-C34 Aromatic</td> </tr> <tr> <td>&gt;C34 Aliphatic (Up to C50)</td> <td>&gt;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)		
>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)													
*CAL SOP-00239	<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                  TEH: C10-C30 (Water Only)</p>													
CAL SOP-00240	<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> <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> <tr> <td>m&amp;p-xylene</td> <td></td> </tr> </table>		Benzene	C6-C8	C6-o-xylene	C8-C10 aromatic	Ethylbenzene	Methyl-ter-butylether	o-xylene	o-xylene-C10	Styrene	Toluene	m&p-xylene	
Benzene	C6-C8													
C6-o-xylene	C8-C10 aromatic													
Ethylbenzene	Methyl-ter-butylether													
o-xylene	o-xylene-C10													
Styrene	Toluene													
m&p-xylene														
CAL SOP-00243/CAL SOP-00263	<p>Carbon, Organic Carbon, Nitrogen and Sulphur in Solids by LECO TruMac                  Elemental Analysis of Soil by Elementar Vario Cube EL (Modified LECO Corporation Form No. 203-821-498, 203-821-165 and Vario El Cube No AN-A-030609, Total Organic Carbon (TOC/FOC) in</p>													

	soil/sediment by combustion (PBM)) IR Combustion Carbon Nitrogen Organic Carbon Sulphur
CAL SOP-00250	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                      2-Methylnaphthalene Acenaphthene                                Acenaphthylene Acridine                                        Anthracene Benzo (a) anthracene                      Benzo (a) pyrene Benzo (g,h,i) perylene                    Benzo (k) fluoranthene Benzo (b&j) fluoranthene                Benzo(c)phenanthrene Benzo(e)pyrene                              Biphenyl C1-Acenaphthene C1-Benzo(bjk)fluoranthene / Benzo[a]pyrene C1-Biphenyl                                  C1-Benzo(a) anthracene/ Chrysene C1-Dibenzothiophene                      C2-Fluorene C2-Naphthalene                              C2-Phenanthrene/ anthracene C2- Fluoranthene / Pyrene                C3-Benzo(a)anthracene / Chrysene C3-Dibenzothiophene                      C3-Fluorene C3-Naphthalene                              C3-Phenanthrene/ anthracene C3- Fluoranthene / Pyrene                C4- Benzo(a)anthracene / Chrysene C4-Dibenzothiophene                      C4-Naphthalene C4-Phenanthrene/ anthracene            Chrysene Dibenzo (a,h) anthracene                Dibenzothiophene Fluoranthene                                Fluorene Indeno (1,2,3 - cd) pyrene                Indeno (1,2,3-cd) fluoranthene Naphthalene                                Perylene Phenanthrene                                Pyrene Quinoline                                    Retene
CAL SOP-00251	Extraction and analysis of low level Sulfolane in water and soil by GCMS (Modified EPA 8270E) GC/MSD – Extraction Sulfolane



<p>CAL SOP-00264</p>	<p>Preparation and Analysis of Alcohol/Solvents (Water, soil, oil) by GC/FID (Modified EPA 8015D) – Soils and Waters GC/FID – Extraction 2-Methylphenol 4- Methylphenol Ethanol Isopropanol n-butanol</p> <p>3- Methylphenol Acetone (2-propanone) Isobutanol * Methanol Pyridine</p>
<p>CAL SOP-00265</p>	<p>ICPMS 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</p>
<p>CAL SOP-00266</p>	<p>Determination of Free Cyanide (Modified EPA 9016) - Water Colorimetric- Distillation Free cyanide</p>
<p>CAL SOP-00270</p>	<p>Determination of cyanide by automated colourimetry (Modified SM 23 4500-CN-,O) – Soil and Water Colorimetric- Distillation Cyanide SAD Cyanide WAD</p>
<p>CAL SOP-00275</p>	<p>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)</p>

**Water (Microbiology)**

AB SOP-00085	Determination of Iron Related and Sulfate Reducing Bacteria using BART™(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) Iron Related Bacteria (IRB) Sulfate Reducing Bacteria (SRB)
AB SOP-00089	Total and Fecal Coliforms and E. Coli by defined substrate technique (Modified SM 9223 A, B) Most Probable Number (Colilert) <i>Escherichia coli (E. coli)</i> Total Coliforms Fecal (Thermotolerant) Coliforms
CAL SOP-00012	Heterotrophic Plate Count – Pour Plate Method (Modified SM 9215 A, B) Pour Plate Heterotrophic Plate Count (HPC)

Number of Scope Listings: 111

**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--Lab.



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Published on: 2022-02-10