



# CALA

Canadian Association for  
Laboratory Accreditation Inc.

## CALA Directory of Laboratories

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**Membership Number:** 3990  
**Laboratory Name:** Paracel Laboratories Ltd. (Calgary)  
**Parent Institution:** Paracel Laboratories Ltd.  
**Address:** 1423 45 Avenue NE, Unit F Calgary AB T2E 2P3  
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**Standard:** Conforms with requirements of ISO/IEC 17025  
**Clients Served:** All Interested Parties  
**Revised On:** March 6, 2018  
**Valid To:** January 23, 2020

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### Scope of Accreditation

#### Air

Fungi - Air (002)  
PM-002; modified from ASTM D7391  
MICROSCOPIC  
Fungal Propagule - Genus

#### Air (Inorganic)

Asbestos and Other Fibres - Air (001)  
PM-003; modified from NIOSH 7400  
PCM FIBRE COUNTING  
Asbestos

#### Paint (Inorganic)

Metals - Paint (038)  
PI-020; modified from EPA 6020A  
ICP/MS - DIGESTION  
Lead

#### Soil (Inorganic)

Conductivity - Soil (008)  
PI-006; modified from MOE E3138 and EPA 120.1  
CONDUCTIVITY METER  
Conductivity (saturated paste)

#### Soil (Inorganic)

Hot Water Soluble Boron - Soils (031)  
PI-025; modified from EPA 6020A  
ICP/MS - HOT WATER EXTRACTION  
Boron (hot water soluble)

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**Soil (Inorganic)**

Metals - Soils (028)

PI-020; modified from EPA 6020A

ICP/MS - DIGESTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Nickel

Potassium

Selenium

Silver

Sodium

Strontium

Thallium

Tin

Uranium

Vanadium

Zinc

**Soil (Inorganic)**

Particle Size Analysis (PSA) - Soil (019)

PI-036; modified from CARTER METHOD

HYDROMETER

% clay

% Sand

Silt

**Soil (Inorganic)**

pH - Soil (020)

PI-010; modified from MOE E3137 and EPA 150.1

pH METER

pH

**Soil (Organic)**

Petroleum Hydrocarbons (PHC) - Soil (013)

PO-007; CCME PHC TIER 1

GC/FID - EXTRACTION

F2: C10-C16

F3: C16-C34

F4: C34-C50

**Soil (Organic)**

Petroleum Hydrocarbons (PHC) - Soil (015)

PO-009; CCME PHC TIER 1

GRAVIMETRIC - EXTRACTION

F4: Gravimetric

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**Soil (Organic)**

Volatile Organic Compounds (VOC) - Soil (024)

PO-001; modified from EPA 8260C

GC/MS - HEADSPACE

- 1,1-Dichloroethane
- 1,1-Dichloroethylene
- 1,1,1-Trichloroethane
- 1,1,1,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1,2,2-Tetrachloroethane
- 1,2-Dichlorobenzene
- 1,2-Dichloroethane
- 1,2-Dichloropropane
- 1,3-Dichlorobenzene
- 1,3,5-Trimethylbenzene
- 1,4-Dichlorobenzene
- Acetone (2-Propanone)
- Benzene
- Bromodichloromethane
- Bromoform
- Bromomethane
- Carbon Tetrachloride
- Chlorobenzene
- Chlorodibromomethane
- Chloroethane
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethylene
- cis-1,3-Dichloropropene
- Dichlorodifluoromethane
- Dichloromethane
- Ethylbenzene
- Ethylene Dibromide
- Hexane
- m/p-xylene
- Methyl isobutyl ketone
- Methyl t-butyl ether
- o-xylene
- Styrene
- Tetrachloroethylene
- Toluene
- trans-1,2-Dichloroethylene
- trans-1,3-Dichloropropene
- Trichloroethylene
- Trichlorofluoromethane
- Vinyl chloride

**Soil (Organic)**

Volatile Petroleum Hydrocarbons (VPH) - Soil (011)

PO-006; CCME PHC TIER 1

GC/FID - HEADSPACE

F1: C6-C10

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**Solid Waste (Inorganic)**

Anions - Solid Waste (041)

PI-039; EPA 1311 (LEACH) and modified from EPA 300.1 (ANALYSIS)  
COLORIMETRIC - TCLP

Nitrite as Nitrogen

**Solid Waste (Inorganic)**

Fluoride - Solid Waste (040)

PI-007; EPA 1311 (LEACH) and modified form EPA 340.2 (ANALYSIS)  
SELECTIVE ION ELECTRODE - TCLP

Fluoride

**Solid Waste (Inorganic)**

Metals - Solid Waste (039)

PI-020; EPA 1311 (LEACH) and modified from EPA 200.8 (ANALYSIS)  
ICP/MS - TCLP EXTRACTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Iron

Lead

Nickel

Selenium

Silver

Thallium

Uranium

Vanadium

Zinc

Zirconium

**Solid Waste (Organic)**

Volatile Organic Compounds (VOC) - Solid Waste (042)

PO-001; EPA 1311 (LEACH) and modified from EPA 8260C  
GC/MS - TCLP EXTRACTION

1,2-Dichlorobenzene

1,2-Dichloroethane

1,4-Dichlorobenzene

Benzene

Carbon tetrachloride

Chlorobenzene

Chloroform

Dichloromethane

Ethylbenzene

m,p-Xylene

o-Xylene

Tetrachloroethylene

Toluene

Total Xylenes (Calculation)

Trichloroethylene

Vinyl chloride

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**Solids**

Fungi - Solids (003)  
PM-002; modified from ASTM D7391  
MICROSCOPIC  
Fungal Propagule - Genus

**Solids (Inorganic)**

Anions - Solids (047)  
PI-039; modified from HACH 8171 and HACH 8507  
COLORIMETRIC-Saturated Paste  
Nitrate (calculation)  
Nitrate plus Nitrite  
Nitrite

**Solids (Inorganic)**

Asbestos - Bulk (049)  
PM-004; modified from EPA 600/M4-82-020 and EPA 600/R-93/116  
POLARIZED LIGHT MICROSCOPY (PLM)  
Bulk Asbestos

**Solids (Inorganic)**

Chloride - Solids (045)  
PI-040; modified from SM 4500-CL- B  
TITRATION-Saturated Paste  
Chloride

**Solids (Inorganic)**

Fluoride - Solids (048)  
PI-007; modified from EPA 340.2  
SELECTIVE ION ELECTRODE-Saturated Paste  
Fluoride

**Solids (Inorganic)**

Metals - Solids (044)  
PI-020; modified from EPA 200.8 (ANALYSIS)  
ICP/MS-Saturated Paste  
Boron  
Calcium  
Magnesium  
Potassium  
Sodium

**Solids (Inorganic)**

Paint Filter - Solids (043)  
PI-038; modified from EPA SW-846 9095B  
GRAVITY FILTRATION  
Free Liquid

**Solids (Inorganic)**

Sulphate - Solids (046)  
PI-041; modified from EPA 375.4  
TURBIDIMETRIC-Saturated Paste  
Sulphate

**Solids (Organic)**

Perfluoroalkyl Acid Substances - Solids (050)  
PO-018; modified from MOECC E3506  
LC-MS/MS  
Perfluorobutanesulfonate (PFBS)  
Perfluorobutanoic acid (PFBA)

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Perfluorodecanesulfonate (PFDS)  
Perfluorodecanoic acid (PFDA)  
Perfluorododecanoic acid (PFDoA)  
Perfluoroheptanoic acid (PFHpA)  
Perfluorohexanesulfonate (PFHxS)  
Perfluorohexanoic acid (PFHxA)  
Perfluorononanoic acid (PFNA)  
Perfluorooctane sulfonamide (PFOSA)  
Perfluorooctanesulfonate (PFOS)  
Perfluorooctanoic acid (PFOA)  
Perfluoropentanoic acid (PFPeA)  
Perfluorotetradecanoic acid (PFTeDA)  
Perfluorotridecanoic acid (PFTrDA)  
Perfluoroundecanoic acid (PFUnA)

**Water (Inorganic)**

Alkalinity - Water (004)  
PI-003; modified from EPA 310.1  
TITRIMETRIC  
Alkalinity (pH 4.5)

**Water (Inorganic)**

Biochemical Oxygen Demand (BOD) - Water (005)  
PI-014; modified from SM 5210 B  
D.O. METER  
BOD (5 day)  
CBOD (5 day)

**Water (Inorganic)**

Chloride - Water (037)  
PI-040; SM 4500-CL- B  
TITRATION  
Chloride

**Water (Inorganic)**

Chlorine - Water (006)  
PI-005; modified from SM 4500-CL G  
COLORIMETRIC  
Free Chlorine  
Total Chlorine

**Water (Inorganic)**

Colour - Water (026)  
PI-019; modified from HACH 8025  
SPECTROPHOTOMETRIC  
True Colour

**Water (Inorganic)**

Conductivity - Water (009)  
PI-006; modified from SM 2510 B  
CONDUCTIVITY METER  
Conductivity (25°C)

**Water (Inorganic)**

Dissolved and Extractable Metals - Water (029)  
PI-020; modified from EPA 200.8  
ICP/MS  
Aluminum  
Antimony

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Arsenic  
Barium  
Beryllium  
Boron  
Cadmium  
Calcium  
Chromium  
Cobalt  
Copper  
Iron  
Lead  
Magnesium  
Manganese  
Molybdenum  
Nickel  
Potassium  
Selenium  
Silver  
Sodium  
Thallium  
Tin  
Uranium  
Vanadium  
Zinc

**Water (Inorganic)**

Dissolved Oxygen - Water (010)  
PI-037; modified from SM 4500-O C  
TITRATION  
Dissolved Oxygen

**Water (Inorganic)**

Fluoride - Water (034)  
PI-007; modified from EPA 340.2  
ION SELECTIVE ELECTRODE  
Fluoride

**Water (Inorganic)**

Hexavalent Chromium - Water (007)  
PI-013; modified from MOE E3056A.1  
COLORIMETRIC  
Hexavalent Chromium

**Water (Inorganic)**

Nitrate and Nitrite - Water (036)  
PI-039; modified from HACH 8171 and HACH 8507  
COLORIMETRIC  
Nitrate  
Nitrate plus Nitrite

**Water (Inorganic)**

pH - Water (021)  
PI-010; modified from EPA 150.1  
pH METER  
pH

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**Water (Inorganic)**

Solids - Water (022)

PI-012; modified from SM 2450 C and SM 2450 D

GRAVIMETRIC

Total Dissolved Solids

Total Suspended Solids

**Water (Inorganic)**

Sulphate - Water (035)

PI-041; modified from HACH 8051

TURBIDIMETRIC

Sulfate

**Water (Inorganic)**

Sulphide - Water (023)

PI-001; modified from SM 4500-S2- D

COLORIMETRIC (METHYLENE BLUE)

Sulphide

**Water (Inorganic)**

Total Metals - Water (033)

PI-020; modified from EPA 200.8

ICP/MS - DIGESTION

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Selenium

Silver

Sodium

Strontium

Thallium

Tin

Uranium

Vanadium

Zinc

**Water (Inorganic)**

Turbidity - Water (027)

PI-017; modified from SM 2130 B

NEPHELOMETRY

Turbidity

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**Water (Microbiology)**

Coliforms - Water (018)  
PW-005; modified from HACH 10029  
MEMBRANE FILTRATION (mCOLIBLUE)  
Background Counts  
Escherichia coli (E. coli)  
Total Coliforms

**Water (Microbiology)**

Fecal (Thermotolerant) Coliforms - Water (016)  
PW-006; modified from SM 9222 D  
MEMBRANE FILTRATION (mFC)  
Fecal (Thermotolerant) Coliforms

**Water (Microbiology)**

Heterotrophic Plate Count (HPC) - Water (017)  
PW-007; modified from SM 9215 E  
IDEXX (SIMPLATE)  
Heterotrophic Plate Count (HPC)

**Water (Organic)**

Perfluoroalkyl Acid Substances - Water (051)  
PO-017; modified from MOECC E3457  
LC-MS/MS  
Perfluorobutanesulfonate (PFBS)  
Perfluorobutanoic acid (PFBA)  
Perfluorodecanesulfonate (PFDS)  
Perfluorodecanoic acid (PFDA)  
Perfluorododecanoic acid (PFDoA)  
Perfluoroheptanoic acid (PFHpA)  
Perfluorohexanesulfonate (PFHxS)  
Perfluorohexanoic acid (PFHxA)  
Perfluorononanoic acid (PFNA)  
Perfluorooctane sulfonamide (PFOSA)  
Perfluorooctanesulfonate (PFOS)  
Perfluorooctanoic acid (PFOA)  
Perfluoropentanoic acid (PFPeA)  
Perfluoroundecanoic acid (PFUnA)

**Water (Organic)**

Petroleum Hydrocarbons (PHC) - Water (014)  
PO-007; PREP: modified from MOE E3421 and QUANT: CCME PHC TIER 1  
GC/FID - EXTRACTION  
F2: C10-C16  
F3: C16-C34  
F4: C34-C50

**Water (Organic)**

Volatile Organic Compounds (VOC) - Water (025)  
PO-001; modified from EPA 624  
GC/MS - HEADSPACE  
1,1-Dichloroethane  
1,1-Dichloroethylene  
1,1,1-Trichloroethane  
1,1,1,2-Tetrachloroethane  
1,1,2-Trichloroethane  
1,1,2,2-Tetrachloroethane  
1,2-Dichlorobenzene

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1,2-Dichloroethane  
1,2-Dichloropropane  
1,3-Dichlorobenzene  
1,3,5-Trimethylbenzene  
1,4-Dichlorobenzene  
Acetone (2-Propanone)  
Benzene  
Bromodichloromethane  
Bromoform  
Bromomethane  
Carbon Tetrachloride  
Chlorobenzene  
Chlorodibromomethane  
Chloroethane  
Chloroform  
Chloromethane  
cis-1,2-Dichloroethylene  
cis-1,3-Dichloropropene  
Dichlorodifluoromethane  
Dichloromethane  
Ethylbenzene  
Ethylene Dibromide  
Hexane  
m/p-xylene  
Methyl ethyl ketone  
Methyl isobutyl ketone  
Methyl t-butyl ether  
o-xylene  
Styrene  
Tetrachloroethylene  
Toluene  
trans-1,2-Dichloroethylene  
trans-1,3-Dichloropropene  
Trichloroethylene  
Trichlorofluoromethane  
Vinyl Chloride

**Water (Organic)**

Volatile Petroleum Hydrocarbons (VPH) - Water (012)

PO-006; PREP: modified from MOE E3421 and QUANT: CCME PHC TIER 1  
GC/FID - HEADSPACE

F1: C6-C10

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