



CALA

Canadian Association for
Laboratory Accreditation Inc.

CALA Directory of Laboratories

Membership Number: 3990
Laboratory Name: Paracel Laboratories Ltd. (Calgary)
Parent Institution: Paracel Laboratories Ltd.
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Standard: Conforms with requirements of ISO/IEC 17025
Clients Served: All Interested Parties
Revised On: August 9, 2017
Valid To: January 23, 2020

Scope of Accreditation

Air

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

Air

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

Paint (Inorganic)

Metals - Paint (038)
PI-020; modified from EPA 6020 A
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 6020 A
ICP/MS - HOT WATER EXTRACTION
Boron (hot water soluble)

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Soil (Inorganic)

Metals - Soils (028)

PI-020; modified from EPA 6020 A

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 - 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)

PHC Heavy Oil - 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 8260 C

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-N

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 & 8507
COLORIMETRIC-Saturated Paste
Nitrate (calculation)
Nitrate plus Nitrite
Nitrite

Solids (Inorganic)

Asbestos (Bulk) - Solids (049)
PM-004; modified from EPA 600/M4-82-020 and EPA 600/R-93/116
POLARIZED LIGHT MICROSCOPY
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 Liquids Test - Solids (043)
PI-038; modified from EPA SW-846 9095 B
GRAVITY FILTRATION
Free Liquid

Solids (Organic)

Perfluoroalkyl Acid Substances- Solids (050)
PO-017; modified from MOECC E3506
LC-MS/MS
Perfluorobutanesulfonate (PFBS)
Perfluorobutanoic acid (PFBA)
Perfluorodecane sulfonate (PFDS)
Perfluorodecanoic acid (PFDA)
Perfluorododecanoic acid (PFDoA)
Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonate (PFHxS)

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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
Arsenic
Barium
Beryllium
Boron
Cadmium

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Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Molybdenum
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Tin
Uranium
Vanadium
Zinc

Water (Inorganic)

Dissolved Oxygen (DO) - 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 & Nitrite Nitrogen - Water (036)
PI-039; modified from HACH 8171 & 8507
COLORIMETRIC
Nitrate
Nitrate plus Nitrite

Water (Inorganic)

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

Water (Inorganic)

Solids - Water (022)
PI-012; modified from SM 2450 C, D
GRAVIMETRIC
Total Dissolved Solids
Total Suspended Solids

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Water (Inorganic)

Sulphate - Water (035)
PI-041; modified from HACH 8051
TURBIDIMETRIC
Sulfate

Water (Inorganic)

Sulphide - Water (023)
PI-001; modified from SM 4500-S2D
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
Tln
Uranium
Vanadium
Zinc

Water (Inorganic)

Turbidity - Water (027)
PI-017; modified from SM 2130 B
NEPHELOMETRY
Turbidity

Water (Microbiology)

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

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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)

Perfluorinated Hydrocarbons - 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
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,3,5-Trimethylbenzene
1,4-Dichlorobenzene
Acetone (2-Propanone)
Benzene

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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

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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