



Drinking-Water Testing Licence

Under the Drinking-Water Testing Services Regulation,
O. Reg. 248/03 and the Safe Drinking Water Act, 2002

Licence #: 2270

This supercedes licence issued: Sep 29, 2021

Located at: 2319 St. Laurent Blvd Unit 300
Ottawa ON K1G 4J8
Canada

Licensee: Paracel Laboratories Ltd.

The licensee is authorized to conduct the following drinking-water tests at the laboratory:

Class: Inorganic	Technique - Sub-Technique:
4AAP-phenolics Lab Method Code: PI-002	Colourimetry-Distillation Appendix #: C064
Alkalinity Lab Method Code: PI-003	Titrimetry Appendix #: C001
Alkalinity; bicarbonate Lab Method Code: PI-033	Calculation Appendix #: N/A
Alkalinity; carbonate Lab Method Code: PI-033	Calculation Appendix #: N/A
Aluminum Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Aluminum Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Ammonia Lab Method Code: PI-033	Calculation-Unionized Appendix #: Calculated
Anions Lab Method Code: PI-033	Calculation-Sum Appendix #: Calculated
Antimony Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004



Class: Inorganic	Technique - Sub-Technique:
Arsenic Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Barium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Barium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Beryllium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Beryllium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Bismuth Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Bismuth Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Boron Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Boron Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Bromide Lab Method Code: PI-016	IC Appendix #: C034
Cadmium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Calcium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Calcium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Carbon; dissolved organic Lab Method Code: PO-011	Combustion-IR Appendix #: C056



Class: Inorganic	Technique - Sub-Technique:
Carbon; total organic Lab Method Code: PO-011	Combustion-IR Appendix #: C056
Cations Lab Method Code: PI-033	Calculation-Sum Appendix #: Calculated
Chloride Lab Method Code: PI-016	IC Appendix #: C034
Chlorine; residual Lab Method Code: PI-005	Colourimetry Appendix #: C053
Chlorine; total Lab Method Code: PI-005	Colourimetry Appendix #: C053
Chromium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Chromium VI Lab Method Code: PI-013	Colourimetry-Diphenylcarbazide Appendix #: C033
Cobalt Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Cobalt Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Copper Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Copper Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Cyanide; free Lab Method Code: PI-008	Colourimetry-Distillation Appendix #: C052
Cyanide; total Lab Method Code: PI-008	Colourimetry-Distillation, UV Digestion Appendix #: C052
Fluoride Lab Method Code: PI-016	IC Appendix #: C034



Class:	Inorganic	Technique - Sub-Technique:
Ion balance		Calculation
Lab Method Code:	PI-033	Appendix #: Calculated
Ion balance		Calculation-Ratio
Lab Method Code:	PI-033	Appendix #: Calculated
Iron		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Lead		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Lead		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Magnesium		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Magnesium		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Manganese		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Manganese		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Mercury		AA-Flameless-Digestion
Lab Method Code:	PI-015	Appendix #: C014
Molybdenum		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Molybdenum		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Nickel		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Nickel		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004



Class: Inorganic	Technique - Sub-Technique:
Nitrate (as nitrogen) Lab Method Code: PI-016	IC Appendix #: C034
Nitrite (as nitrogen) Lab Method Code: PI-016	IC Appendix #: C034
Nitrogen; ammonia+ammonium Lab Method Code: PI-004	Colourimetry Appendix #: C062
Nitrogen; nitrate+nitrite Lab Method Code: PI-016	IC-calculation Appendix #: C034
Nitrogen; total Kjeldahl Lab Method Code: PI-004	Colourimetry Appendix #: C061
o-Phosphate (as P) Lab Method Code: PI-016	IC Appendix #: C034
Phosphate Lab Method Code: PI-016	IC Appendix #: C034
Phosphorus; total Lab Method Code: PI-011	Colourimetry-Digestion Appendix #: C060
Potassium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Potassium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Ryznar Stability Index (RSI) Lab Method Code: PI-033	Calculation Appendix #: Calculated
Saturation pH Estimated Lab Method Code: PI-033	Calculation Appendix #: Calculated
Selenium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Selenium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065



Class: Inorganic	Technique - Sub-Technique:
Silicon Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Silver Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Silver Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Sodium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Sodium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Solids; volatile suspended Lab Method Code: PI-012	Gravimetry Appendix #: C040
Strontium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Strontium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Sulphate Lab Method Code: PI-016	IC Appendix #: C034
Sulphide Lab Method Code: PI-001	Colourimetry-Methylene Blue Appendix #: C041
Thallium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Thallium Lab Method Code: PI-020/PI-022	ICP-MS(Total)(digested) Appendix #: C065
Tin Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004
Titanium Lab Method Code: PI-020	ICP-MS(Total)(nondigested) Appendix #: C004



Class:	Inorganic	Technique - Sub-Technique:
Titanium		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Tungsten		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Tungsten		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Uranium		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Vanadium		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Vanadium		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Zinc		ICP-MS(Total)(digested)
Lab Method Code:	PI-020/PI-022	Appendix #: C065
Zinc		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Zirconium		ICP-MS(Total)(nondigested)
Lab Method Code:	PI-020	Appendix #: C004
Class:	Microbiological	Technique - Sub-Technique:
E. coli		MF-DC
Lab Method Code:	PW-001	Appendix #: C057
Fecal coliforms		MF-mFC
Lab Method Code:	PW-002	Appendix #: C058
HPC		Spread Plate
Lab Method Code:	PW-003	Appendix #: C059
Legionella		MF
Lab Method Code:	PW-004	Appendix #: C092
Total coliform		MF-DC
Lab Method Code:	PW-001	Appendix #: C057



Class: Microbiological	Technique - Sub-Technique:
Total coliform background	MF-DC
Lab Method Code: PW-001	Appendix #: C057
Class: Organic	Technique - Sub-Technique:
1&2-methylnaphthalene	Calculation-GC/MS
Lab Method Code: PO-003	Appendix #: Calculation
1,1,1,2-tetrachloroethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,1,1-trichloroethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,1,2,2-tetrachloroethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,1,2-trichloroethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,1-dichloroethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,1-dichloroethene	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,2,4-trichlorobenzene	GC-MS-Extraction
Lab Method Code: PO-003	Appendix #: C075
1,2-dibromoethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,2-dichlorobenzene	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,2-dichloroethane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007
1,2-dichloroethene; cis & trans	Calculation
Lab Method Code: PI-033	Appendix #: Calculated
1,2-dichloropropane	PTGC-MS
Lab Method Code: PO-001	Appendix #: C007

Class: Organic	Technique - Sub-Technique:
1,3-dichlorobenzene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
1,3-dichloropropene; cis & trans Lab Method Code: PI-033	Calculation Appendix #: Calculated
1,4-dichlorobenzene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
1-methylnaphthalene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,3,4,5-tetrachlorophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,3,4,6-tetrachlorophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,4,5-trichlorophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,4-dichlorophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,4-dimethylphenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,4-dinitrophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,4-dinitrotoluene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2,6-dinitrotoluene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2-chloronaphthalene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2-chlorophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075



Class: Organic	Technique - Sub-Technique:
2-methylnaphthalene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
2-nitrophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
3,3-dichlorobenzidine Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
4-chloro-3-methylphenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
4-chlorophenyl phenyl ether Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
7H-Dibenzo(c,g)carbazole Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Acenaphthene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Acenaphthylene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Acetone Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Acridine Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Anthracene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Benzo(a)anthracene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzo(a)pyrene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075

Class: Organic	Technique - Sub-Technique:
Benzo(b)fluoranthene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzo(e)pyrene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzo(g,h,i)perylene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzo(j)fluoranthene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzo(k)fluoranthene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Benzyl butyl phthalate Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Biphenyl Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Bis(2-chloroethoxy)methane Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Bis(2-chloroethyl)ether Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Bis(2-chloroisopropyl)ether Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Bis(2-ethylhexyl)phthalate Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Bromodichloromethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Bromoform Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Bromomethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007



Class: Organic	Technique - Sub-Technique:
Carbon tetrachloride Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Chloroethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Chloroform Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Chrysene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
cis-1,2-dichloroethene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
cis-1,3-dichloropropene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Dibenzo(a,h)anthracene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Dibenzo(a,i)pyrene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Dibenzo(a,j)acridine Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Dibromochloromethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Dichlorodifluoromethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Dichloromethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Diethyl phthalate Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Dimethyl phthalate Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075

Class: Organic	Technique - Sub-Technique:
di-n-butyl phthalate Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
di-n-octyl phthalate Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Ethylbenzene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Extractable petroleum hydrocarbons (F2: C10 to C16) Lab Method Code: PO-007	GC-FID-Extraction Appendix #: C039
Extractable petroleum hydrocarbons (F3: C16 to C34) Lab Method Code: PO-007	GC-FID-Extraction Appendix #: C039
Extractable petroleum hydrocarbons (F4: C34 to C50) Lab Method Code: PO-007	GC-FID-Extraction Appendix #: C039
Fluoranthene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Fluorene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Formaldehyde Lab Method Code: PO-014	GC Appendix #: C089
Hexachlorobenzene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Hexachlorobutadiene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Hexachlorocyclopentadiene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Hexachloroethane Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Hexane Lab Method Code: PO-001	PTGC-MS Appendix #: C007



Class: Organic	Technique - Sub-Technique:
Indeno(1,2,3-c,d)pyrene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Indole Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
m/p-Cresol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
m/p-Xylene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Methyl ethyl ketone Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Methyl isobutyl ketone Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Monochlorobenzene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
MTBE Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Naphthalene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Nitrobenzene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
n-Nitrosodiphenylamine Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
o-Cresol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
o-Xylene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
p-chloroaniline Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075



Class: Organic	Technique - Sub-Technique:
Pentachlorophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Perylene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Petroleum hydrocarbons (F1: -BTEX) Lab Method Code: PO-006	PTGC-FID Appendix #: C038
Phenanthrene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Phenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
p-nitrophenol Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Polychlorinated biphenyls Lab Method Code: PO-002	GC-ECD-Extraction Appendix #: C035
Pyrene Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Quinoline Lab Method Code: PO-003	GC-MS-Extraction Appendix #: C075
Styrene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Tetrachloroethylene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Toluene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
trans-1,2-dichloroethene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
trans-1,3-dichloropropene Lab Method Code: PO-001	PTGC-MS Appendix #: C007



Class: Organic	Technique - Sub-Technique:
Trichloroethylene Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Trichlorofluoromethane Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Trihalomethanes; total Lab Method Code: PO-001	PTGC-MS (Calculaion) Appendix #: C007
Vinyl chloride Lab Method Code: PO-001	PTGC-MS Appendix #: C007
Xylene; total Lab Method Code: PO-001	PTGC-MS (Calculation) Appendix #: C007
Class: Physical/Others	Technique - Sub-Technique:
Apparent colour Lab Method Code: PI-019	Spectrophotometric Appendix #: C042
BOD (5 Day) Lab Method Code: PI-014	Meter-D.O Appendix #: C055
CBOD (5 Day) Lab Method Code: PI-014	Meter-D.O Appendix #: C055
Chloramines Lab Method Code: PI-033	Calculation-Total Appendix #: Calculated
COD Lab Method Code: PI-009	Colourimetry-Reflux Appendix #: C054
Conductivity Lab Method Code: PI-006	Meter Appendix #: C003
Hardness (as CaCO3) Lab Method Code: PI-033	Calculation-ICP-MS, (Total) Appendix #: Calculated
Langeliers index calculation Lab Method Code: PI-033	Calculation Appendix #: Calculated
Oil and Grease; animal and vegetable Lab Method Code: PI-033	Calculation Appendix #: NA



Class: Physical/Others	Technique - Sub-Technique:
Oil and Grease; mineral Lab Method Code: PO-004	Gravimetry Appendix #: C032
Oil and Grease; total Lab Method Code: PO-004	Gravimetry Appendix #: C032
pH Lab Method Code: PI-010	Potentiometry Appendix #: C013
Sodium Absorption Ratio (SAR) Lab Method Code: PI-033	Calculation Appendix #: Calculated
Solids; total dissolved Lab Method Code: PI-033	Calculation Appendix #: Calculated
Solids; total dissolved Lab Method Code: PI-012	Gravimetry Appendix #: C040
Solids; total suspended Lab Method Code: PI-012	Gravimetry Appendix #: C040
Tannins and Lignins Lab Method Code: PI-018	Colourimetry-Spectrophotometer Appendix #: C073
True colour Lab Method Code: PI-019	Spectrophotometric Appendix #: C042
Turbidity Lab Method Code: PI-017	Nephelometry Appendix #: C051

Subject to the following terms and conditions:

Terms and conditions are specified in Appendix 1.

Expiry Date: Sep 30, 2023

September 28, 2022

Date Issued

Director

Licence Number: 2270

Date Issued: September 28, 2022

Appendix 1 - Conditions

Pursuant to the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, and the regulations made thereunder, this drinking-water testing services licence is issued subject to the following conditions.

Part I: Definitions

1.1 In this licence, unless the context otherwise requires, words and phrases shall be given the same meaning as those set out in the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 and any regulations made in accordance with that Act.

1.2 In this licence

“accreditation body” means any body designated or established pursuant to section 64 of the SDWA;

"director" means a director appointed pursuant to s. 6 of the SDWA for the purposes of Part VII of the SDWA;

“laboratory” means the drinking-water testing laboratory located at 2319 St. Laurent Blvd., #300 Ottawa, ON;

"licence" means this entire drinking water testing licence document, issued in accordance with Part VII of the SDWA, and includes this appendix, any schedules to it, and the application and other supporting documents listed in schedule “A” that are attached to and form part of this licence, except as otherwise specified in the conditions contain herein;

“licensee” means the Paracel Laboratories Ltd;

“Ministry” means the Ministry of the Environment Conservation & Parks;

“protocol” means the document published by and available from the Ministry entitled “Protocol of Accepted Drinking-Water Testing Methods”, Version 2.0 dated May 31, 2010.

"provincial officer" means a provincial officer designated pursuant to s. 8 of the SDWA;

"SDWA" means the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, as amended.

Part II – Authorized Tests

- 2.1 Subject to the conditions of this licence, the licensee is authorized to provide a drinking-water testing service at the laboratory.
- 2.2 The licensee is only authorized to conduct drinking-water tests at the laboratory for the class and for the parameters set out in the licence.
- 2.3 Subject to conditions 2.4 and 2.5, the licensee shall only conduct drinking water tests at the laboratory for parameters using the methods that were listed in the application, and approved by this licence.

[Where applicable]

- 2.4 Despite condition 2.3, where the licensee listed a method for a parameter in the application for this licence, but the method is not designated as an acceptable testing method for that parameter in the protocol, the licensee is not authorized to use the method listed in the application for this licence, unless the method is specifically authorized under condition 2.5.

[Where applicable]

- 2.5 The licensee is specifically authorized to conduct drinking-water tests for the parameters listed below using the corresponding method listed below, despite the method not being designated as an acceptable testing method for that parameter in the protocol:

None

Accreditation

- 2.6 Except as authorized by condition 2.7, the licensee shall only conduct a drinking-water test if the laboratory is accredited by an accreditation body for the conduct of that test.

Non-accredited Tests [Where applicable]

- 2.7 In accordance with section 74 of the SDWA, the licensee is authorized to conduct the following tests for which the laboratory is not accredited by an accreditation body, using the method specified.

None

Part III: Operational Requirements

- 3.1. A copy of this licence shall be made readily available for reference by all persons responsible for all or part of the operation of the drinking-water testing laboratory.
- 3.2. A copy of this licence shall be made readily available to laboratory clients and for Ministry inspection.

- 3.3. The Certificate of Drinking Water Testing Licence shall be conspicuously displayed in a location at the laboratory which maximizes the likelihood of a client seeing it upon entry to the laboratory's sample receiving area.

Part IV: General

Compliance

- 4.1 The licensee shall operate the laboratory in accordance with the SDWA, including the statutory conditions enumerated in 75(3), any applicable regulations made thereunder, and this licence.
- 4.2 The licensee shall ensure that any person authorized to carry out a drinking-water test or any aspect of a drinking-water test at a laboratory has been informed of the SDWA, all applicable regulations made in accordance with that Act, and this licence and shall take all reasonable measures to ensure any such person complies with the same.

Interpretation

- 4.3 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- i. the SDWA;
 - ii. any regulation made under the SDWA;
 - iii. this licence;
 - iv. any application or supporting documents listed in Schedule "A".
- 4.4 The conditions of this licence are severable. If any requirement of this licence, or the application of any requirement of this licence to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this licence shall not be affected thereby.

Other Legal Obligations

- 4.5 The issuance of, and compliance with the conditions of, this licence does not:
- i. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or
 - ii. limit in any way the authority of the ministry to require certain steps be taken or to require the licensee to furnish any further information related to compliance with this licence.

Change of Licensee's Information

- 4.6 The licensee shall notify the director, in writing, of any of the following changes within 30 days of the change occurring,
- i. change of address of the laboratory; or
 - ii. change of business name, and the notification shall include a copy of the most recent documentation filed under the *Business Names Act*, R.S.O. 1990, c. B17 or *Corporations Information Act*, R.S.O. 1990, c. C.39.

- 4.7 The licensee shall notify the director, in writing, of any changes to the following personnel identified on the licence application form whenever staffing changes are made
- (a) Owner of the Laboratory;
 - (b) Laboratory Administrator;
 - (c) Laboratory Operator;
 - (d) Laboratory Director, and
 - (e) Laboratory Director Designate
- 4.8 As per section 73(6) of the SDWA this licence is not transferable without the consent of the Director.

Information

- 4.9 Any information requested, by the Ministry, concerning the drinking-water testing laboratory and its operation under this licence, including but not limited to any records required to be kept by this licence shall be provided to the Ministry, upon request.
- 4.10 Records required by or created in accordance with the SDWA, any regulations under the SDWA, or this licence shall be retained for at least 5 years in a location where a provincial officer who is inspecting the laboratory can conveniently view them.
- 4.11 The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this licence or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this approval or any statute, regulation or other legal requirement.

Standard Conditions

- 4.12 The licensee shall distribute to any person with whom the licensee enters into an arrangement to conduct a drinking-water testing service, the document available from the Ministry entitled “MOE Practices for the Collection and Handling of Drinking-Water Samples” or one produced by the laboratory in fulfillment of the licensee’s obligation pursuant to subsection 9(1) of O. Reg. 248/03.
- 4.13 The licensee shall collect and handle drinking water samples in accordance with the Ministry’s Protocol or its licensed method.
- 4.14 The licensee shall track the custody of samples submitted for drinking-water tests using either;
- a. A chain of custody form approved by the Ministry, or
 - b. A client generated chain of custody form, provided that the licensee ensures that all necessary and required information is obtained and included on the form. The licensee is expected to review and approve the client generated form prior to use.

- 4.15 The licensee shall not filter drinking water samples prior to analyses unless dictated by non-routine analytical contingencies.
- 4.16 Licensed laboratories shall report all adverse water quality results as per the drinking water legislation without any regard to calculated uncertainty estimations.
- 4.17 Drinking water samples shall be retained until either;
- The day the result of the drinking water test has been reported in accordance with section 12 or 12.0.1 of Ontario Regulation 248/03; or
 - Sample requirements are no longer met as outlined in the ministry's document entitled "*Practices for the Collection and Handling of Drinking Water Samples*" and dated April 1, 2009, as amended from time to time.
- 4.18 Where the sample hold time is measured in hours, the laboratory shall adhere to the absolute maximum hold time from sampling to analysis, for example - microbiological samples must be processed within 48 hours 0 minutes. Anything greater than 48 hours 0 minutes is considered past hold time.

Where the hold time is measured in days, the laboratory shall record the time from sampling to analysis in days to 1 decimal place. When rounded down/up to a whole number, the hold time must meet the requirement.

For example – the hold time for Nitrate is 7 days. The lab may process the sample up to 7.4 days from sampling because this rounds down to 7 days. Once the rounded number rounds up to 8 days, this is unacceptable. So, a sample processed 7.6 days after sampling shall be deemed to be 8 days old at the time of analysis and so will have exceeded the hold time and must be rejected or the result qualified as per lab procedures.

- 4.19 The laboratory shall monitor, track and ensure integrity of samples that are sent to the laboratory via a sample drop off depot. Sample drop off depots are defined as "any location under the direction of the laboratory that is off site from the laboratory licensed to do the testing (excluding sister laboratories), where drinking water samples are deposited, collected and held for shipping to the drinking water testing laboratory."
- 4.20 Each of the persons involved directly or indirectly with the provision of drinking water testing services shall,
- exercise the level of care, diligence and skill in respect of a drinking water testing laboratory that a reasonably prudent person would be expected to exercise in a similar situation; and
 - act honestly, competently and with integrity, with a view to providing timely, accurate and reliable test results and ensuring the protection and safety of the consumers of the drinking water tested at the laboratory.

Part V: Special Conditions

- 5.1 When a sample is submitted to the licensee for a drinking-water test for a microbiological parameter, the licensee shall ensure that the test is conducted in a standardized timely manner and that microbiological plates/tests are processed and read without extended overnight refrigerated incubation.
- 5.2 When the licensee observes the “over-crowding/confluent/non-identifiable microbial growth” is detected on a plate relating to analyses under the SDWA, licensed laboratories are required to report the results to the appropriate parties as Adverse for TC and/or EC as appropriate, using the appropriate NDOG terminology as documented in the laboratory licensed method or associated SOPs.
- 5.3 The licensee shall ensure that test culture plates are incubated for the full incubation time stated in its licensed method. The licensee shall not read test culture plates before the minimum accepted incubation time has elapsed in order to report potential adverse results ahead of schedule.
- 5.4 The licensee must employ the appropriate positive and negative test controls for each licensed test, on each day that those tests are performed. These controls will be subject to the same conditions as the tests performed. Each identifying characteristic reaction (eg: colony or test well appearance/colour change) must be represented by an appropriate positive control organism.
- 5.5 When a sample is submitted to the licensee for a drinking-water test for microbiological analyses, the licensee shall ensure that the analysis is started within 48 hours of the sample collection time.
- 5.6 When a sample is submitted to the licensee for a drinking-water test for metals analyses, the licensee shall ensure that the test is conducted within 60 days of the sample collection date. The licensee shall ensure that the pH has been confirmed and at least 24 hours has elapsed from the time of preservation before starting the test procedure.
- 5.7 The licensee is authorized to report the results of more than one parameter (such as total xylenes, Total THMs, Total HAAs, Dioxins & Furans) as an aggregate result in order to comply with reporting requirements provided that that licensee conducts a separate test for each parameter using a method otherwise authorized by this licence, and the means by which the aggregate is calculated is documented and kept available for inspection by the Ministry. For calculated parameters, if any analyte or component of the calculation is undetermined, then the value will not be calculated. The SDWA requires that the "total" analyses be done at one laboratory licensed to test all of the aggregated parameters. When reporting the individual components to the client, the individual component results as well as the total shall be uploaded to e-DWIS.
- 5.8 Trihalomethanes; total (TTHM) is defined as the sum of Chloroform, Bromoform, Chlorodibromomethane and Bromodichloromethane.
- 5.9 Due to the short holding time and the requirement for immediately analysis of free/residual chlorine, the data from the determination of free/residual chlorine cannot be used for direct reporting or calculation of other chlorine parameters, which are required for the purposes of the SDWA, unless holding times are met. Samples for free/residual/total/combined Chlorine which are not analyzed

immediately must be coded with UAL (UAL means unreliable; sample age exceeds normal limit) when uploaded to the DIWS and/or LRMA databases and on the final report to the client.

Note to the Licensee Regarding Reviewable Decisions

All or part of this licence may be reviewable in accordance with the provisions of Part X of the SDWA. In accordance with Section 129(1) of the SDWA, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 129(2) sets out a procedure upon which the 15 days may be extended by the Tribunal. Section 129(3) of the SDWA provides that the Notice requiring the hearing shall state:

1. The aspect of the decision, including the portion of the permit, licence, approval, order or notice of administrative penalty in respect of which the hearing is required; and
2. The grounds for review to be relied on by the person at the hearing.

Except with leave of the Tribunal, a person requiring a hearing in relation to a reviewable decision is not entitled to,

- (a) a review of an aspect of the decision other than that stated in the notice requiring the hearing; or**
- (b) a review of the decision other than on the grounds stated in the notice**

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The Licence number;
4. The date of the Licence;
5. The name of the Director;

The Notice should be signed and dated by the appellant. This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Part VII, Safe Drinking Water Act, 2002
Compliance, Promotion & Support Branch
Ministry of Environment Conservation & Parks
125 Resources Road
Toronto, Ontario
M9P 3V6

** If the Director believes that a reviewable decision that he or she is about to make in respect of a drinking-water testing licence, if stayed by an appeal, would endanger, or likely endanger, public health, the Director shall include in the decision the reasons for his or her belief and shall also serve a copy of the decision on the Chief Medical Officer of Health. In the case of a reviewable decision in respect of a drinking-water testing licence, if the Chief Medical Officer of Health advises the Tribunal, the licensee and the Director that in his or her opinion the staying of the decision would endanger, or likely endanger, public health, the Tribunal may not stay the operation of a reviewable decision.*

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

Schedule "A"
Application and Supporting Documentation

The following documents are incorporated into and constitute part of this licence:

1. Application received by the Director on 07/24/08, 08/24/09, 03/16/11, 06/21/12, 10/01/12, 05/24/13, 09/06/13, 11/06/15 and 10/12/19.