February 18, 2021

Corporation of the Town of Laurentian Hills
34465 Highway #17, R.R.#1
Deep River, Ontario
K0J 1P0

Attention: Sherry Batten, Chief Administrative Officer

RE: Chalk River Drinking Water System
2020 Annual Report

Dear Sherry,

Please find attached the 2020 Annual Operations Report for the Chalk River drinking water system, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

Finally, as per Schedule 22 of O. Reg. 170/03, please ensure that a copy of the report is given to the members of municipal council no later than March 31, 2021.

If you have any questions regarding the report, we would be pleased to address them and you should contact the undersigned accordingly.

Sincerely,

VEOLIA WATER CANADA INC.

Greg Prangley
Project Manager

c. Veolia Canada Chalk River operations

Veolia Water Canada Inc.
80 Birmingham St
Hamilton, ON L8L 6W5

www.Veolianorthamerica.com

2020 ANNUAL REPORT FOR WATER SYSTEMS

Part 1 – ANNUAL REPORT (as required by O. Reg. 170/03, Section 11)

Drinking-Water System Number:	210000666
Drinking-Water System Name:	Chalk River Drinking Water System
Drinking-Water System Owner:	Town of Laurentian Hills
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 – December 31, 2020

Complete if your Category is Large Municipal Residential or Small Municipal Residential		**Complete for all other Categories**	
Does your Drinking-Water System serve more than 10,000 people?	☐ Yes ☒ No	Number of Designated Facilities served:	n/a
Is your annual report available to the public at no charge on a web site on the Internet?	☒Yes☐ No	Did you provide a copy of your annual report to all Designated Facilities you serve?	☐ Yes☐ No
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. **MUNICIPAL OFFICE** **Town Office – Pt. Alexander** **#34465 Hwy 17**		Number of Designated Facilities served:	n/a
		Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	☐Yes☐No

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	**Drinking Water System Number**
n/a	

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

N/A

Indicate how you notified system users that your annual report is available, and is free of charge.

☒ Public access/notice via the web	☐ Public access/notice via Municipal Office	☐ Public access/notice via a newspaper
☒ Public access/notice via Public Request	☐ Public access/notice via a Public Library	☐ Public access/notice via other method

Describe your Drinking Water System

The source of the Chalk River Drinking Water system is Corry Lake. Raw water is screened from the lake before being pumped to the water plant for treatment. The water treatment process includes chemically-assisted coagulation, flocculation and settling within a solids contact clarifier followed by filtration through sand and anthracite filters. Filtered water is then disinfected using liquid chlorine. Fluoride is then added to the treated water. Water is pumped into the elevated water storage tower for disinfection contact time and then flows out to the distribution system.

List all water treatment chemicals used over this reporting period
pH adjustment – Soda Ash Primary Coagulant – PAX-XL Coagulant aid – Polymer Disinfection – Sodium Hypochlorite Fluoridation – Hydroflousilicic acid

Please provide a brief description and a breakdown of monetary expenses incurred
Calibrations (all equipment) $3.0K Replacement portable turbidity analyzer $1.3K Replacement portable fluoride analyzer $1.6K New chlorine sensor for process analyzer $2.6K

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Units	Corrective Action	Corrective Action Date
May 26, 2020	Data loss	Loss of data for 10 min	n/a	Review of power supply. Technician reviewed programming	May 26, 2020

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period

	Number of Samples	Range of E.Coli Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw	52	0-7	0-30	NA	NA
Treated	52	0	0	51*	<2-2
Distribution	156	0	0	51*	<2-2

*HPC was requested on Dec. 23 but not analyzed due to lab holiday schedule. Still met monthly distribution HPC requirement, but missed treated sample is considered a non-compliance

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report

	Number of Grab Samples	Range of Results (min #) – (max #)	Units
Filter Effluent Turbidity-Filter #1	**8760**	**0.04-0.72**	NTU
Filter Effluent Turbidity-Filter #2	**8760**	**0.04-0.57**	NTU
Chlorine-POE (Tower)	**8760**	**0.58-1.47**	mg/L
Distribution	**468**	**0.28-1.21**	mg/L
Fluoride (If the DWS provides fluoridation)	**8760**	**0.06-1.18**	mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument				
Date of legal instrument issued	**Parameter**	**Date Sampled**	**Range of Results**	**Unit of Measure**
None				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results				
Parameter	**Sample Date**	**Result Value**	**Unit of Measure**	**Exceedance**
Antimony	Jan 29/20	ND	mg/L	No
Arsenic	Jan 29/20	0.0001	mg/L	No
Barium	Jan 29/20	0.008	mg/L	No
Boron	Jan 29/20	ND	mg/L	No
Cadmium	Jan 29/20	ND	mg/L	No
Chromium	Jan 29/20	ND	mg/L	No
Lead-see results below				
Mercury	Jan 29/20	ND	µg/L	No
Selenium	Jan 29/20	ND	mg/L	No
Sodium	Jan 24/18	22.0	mg/L	Yes
Uranium	Jan 29/20	ND	mg/L	No
Fluoride	Jan 24/18	0.5	mg/L	No
Nitrite	Jan 29/20	<0.1	mg/L	No
Nitrate	Jan 29/20	0.1	mg/L	No
Nitrite	Apr 22/20	<0.1	mg/L	No
Nitrate	Apr 22/20	<0.1	mg/L	No
Nitrite	July 23/20	<0.1	mg/L	No
Nitrate	July 23/20	<0.1	mg/L	No
Nitrite	Oct. 21/20	<0.1	mg/L	No
Nitrate	Oct. 21/20	<0.1	mg/L	No

Summary of Lead Results during this reporting period (Winter: Dec. 15/19-April 15/20; Summer: June 15-Oct. 15/20				
Sampling Period	Range of Results (µg/L) from Residential Samples (# of Samples taken)	Non-residential locations	Distribution System	Any Adverse Water Quality Incidents?
Winter	n/a	n/a	n/a	NO
Summer	2.12-2.54(1)	2.53-8.92(1)	0.11-0.36 (4)	NO

*two samples taken per residential and non-residential address

Summary of Organic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Jan 29/20	ND	µg/L	No
Atrazine + N-dealkylated metobolites	Jan 29/20	ND	µg/L	No
Azinphos-methyl	Jan 29/20	ND	µg/L	No
Benzene	Jan 29/20	ND	µg/L	No
Benzo(a)pyrene	Jan 29/20	ND	µg/L	no
Bromoxynil	Jan 29/20	ND	µg/L	No
Carbaryl	Jan 29/20	ND	µg/L	No
Carbofuran	Jan 29/20	ND	µg/L	No
Carbon Tetrachloride	Jan 29/20	ND	µg/L	No
Chlorpyrifos	Jan 29/20	ND	µg/L	No
Diazinon	Jan 29/20	ND	µg/L	No
Dicamba	Jan 29/20	ND	µg/L	No
1,2-Dichlorobenzene	Jan 29/20	ND	µg/L	No
1,4-Dichlorobenzene	Jan 29/20	ND	µg/L	No
1,2-Dichloroethane	Jan 29/20	ND	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 29/20	ND	µg/L	No
Dichloromethane	Jan 29/20	ND	µg/L	No
2-4 Dichlorophenol	Jan 29/20	ND	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 29/20	ND	µg/L	No
Diclofop-methyl	Jan 29/20	ND	µg/L	No
Dimethoate	Jan 29/20	ND	µg/L	No
Diquat	Jan 29/20	ND	µg/L	No
Diuron	Jan 29/20	ND	µg/L	No
Glyphosate	Jan 29/20	ND	µg/L	No
HAA (will become a regulatory requirement in 2020)	Q1-Q4 2020	78.4	µg/L	No
Malathion	Jan 29/20	ND	µg/L	No
MCPA	Jan 29/20	ND	mg/L	N/A
Metolachlor	Jan 29/20	ND	µg/L	No
Metribuzin	Jan 29/20	ND	µg/L	No
Monochlorobenzene	Jan 29/20	ND	µg/L	No

Paraquat	Jan 29/20	ND	µg/L	No
Pentachlorophenol	Jan 29/20	ND	µg/L	No
Phorate	Jan 29/20	ND	µg/L	No
Picloram	Jan 29/20	ND	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan 29/20	ND	µg/L	No
Prometryne	Jan 29/20	ND	µg/L	No
Simazine	Jan 29/20	ND	µg/L	No
THM (NOTE: show latest annual average)	Q1-Q4 2020	78.0	µg/L	No
Terbufos	Jan 29/20	ND	µg/L	No
Tetrachloroethylene	Jan 29/20	ND	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan 29/20	ND	µg/L	No
Triallate	Jan 29/20	ND	µg/L	No
Trichloroethylene	Jan 29/20	ND	µg/L	No
2,4,6-Trichlorophenol	Jan 29/20	ND	µg/L	No
Trifluralin	Jan 29/20	ND	µg/L	No
Vinyl Chloride	Jan 29/20	ND	µg/L	No

ND = Non-Detect

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
Total THM	Q1-Q4 2020	78.0	µg/L	100 µg/L
HAA	Q1-Q4 2020	78.4	µg/L	80 µg/L

Part 2 – SUMMARY REPORT (as required by O. Reg. 170/03, Schedule 22)

Non-Compliance with Legislations, Regulations, Approvals & Orders		
During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility's approval, save and except for the following:		
Requirement	**Actions Required**	**Actions Taken**
Chlorine residuals to be taken with all microbiological samples. These were missed on December 2, 2020	Obtain logbook for the distribution residuals. Record residuals on all lab C of C prior to submission	Reviewed regulation with operators
Weekly treated HPC was missed on Dec. 23. Was requested but fell outside lab analysis hours	None	None

System Capability Assessment

Comparison of Flow Rates (m^3/d):

Month	Average Flow	Maximum	Max. Instantaneous Flow (L/s)
January	334	493	10.4
February	335	535	10.7
March	348	539	10.3
April	370	460	10.2
May	457	805	15.8
June	571	890	15.5
July	625	954	15.3
August	420	678	15.3
September	331	389	15.0
October	320	501	15.2
November	320	479	15.1
December	296	434	10.2
AVERAGE	**394**	**n/a**	**-**
MAXIMUM	**-**	**954**	15.8
SYSTEM CAPACITY	**1987**	**1987**	**23L/s**
% CAPACITY	**19.8%**	**48.0%**	**-**