

Document 1 – City of Ottawa Drinking Water Systems 2020 – Regulatory requirements and compliance with Safe Drinking Water Act (2002)

Drinking water systems: Lemieux Island WPP; Britannia WPP and Central Distribution System; Carp Well System; Munster Well System; Kings Park Well System; Richmond West Well System; Shadow Ridge Well System; Vars Well System

Source Water: Ottawa River & various groundwater sources for municipal well systems

Date of report: March 31st, 2021

Description	Legislation	Regulatory Requirement	Britannia WPP	Lemieux Island WPP	Carp Well	Munster Well	Kings Park Well	Richmond West Well	Shadow Ridge Well	Vars Well
Water Treatment										
Raw (river/well) water taking	PTTW	Raw water flow must be <PTTW	√	√	√	√	√	√	√	√
Raw (river/well) water taking	PTTW	Daily raw water taking flow rates for previous year must be submitted to MECP by March 31	√	√	√	√	√	√	√	√
Treated water production	MDWL Sch.(C) 1.0	Treated water flow must be <MDWL	√	√	√	√	√	√	√	√
Treatment barriers	O.Reg.170/03 Sch.1.4	Treatment must include chemically assisted filtration	√	√	n/a	n/a	n/a	n/a	n/a	n/a
Well protection	O.Reg.170/03 Sch.1.2	Wells must be constructed and maintained to prevent surface water and contaminants from entering the well	n/a	n/a	√	√	√	√	√	√

Description	Legislation	Regulatory Requirement	Britannia WPP	Lemieux Island WPP	Carp Well	Munster Well	Kings Park Well	Richmond West Well	Shadow Ridge Well	Vars Well
Chemicals and materials	MDWL Section 14.0	Chemicals and materials in contact with drinking water must meet standards NSF/60, NSF/61, & NSF 372	√	√	√	√	√	√	√	√
Waste & residual management	MDWL Sch.(C) 1.5	Total suspended solids <25 mg/L (annual average); Total chlorine <0.02 mg/L (maximum); pH between 6.0 and 9.5 units	no ¹	√	n/a	n/a	n/a	n/a	n/a	n/a
Calibration of flow measuring devices	MDWL Sch.(C) 2.0	Annual calibration for raw water and treated water flow meters	√	√	√	√	√	√	√	√
Harmful Algal Bloom Response plan (HAB)	MDWL #008-102 Sch.(C) 6.0	Response plan for sampling and reporting of HAB. Sample monthly between May – Oct and monitor shoreline with trigger levels & response actions	√	√	n/a	n/a	n/a	n/a	n/a	n/a
Water Quality										
Microbiological sampling & testing	O.Reg.170/03 Sch.10.2, 10.3, & 10.4	Raw water – weekly TC/EC Treated water – weekly TC/EC Treated water – weekly HPC Distrib. – monthly TC/EC Distrib. – monthly HPC	√	no ²	√	√	√	√	√	no ²
Chemical sampling & testing	O.Reg.170/03 Sch.13.2, Sch.13.3	Inorganics (9 trace metals) – Organics (56 chemicals) –	√	√	√	√	√	√	√	√
Turbidity in source wells	O.Reg.170/03 Sch.7.3	Monthly turbidity measurements in each source well (12 x 2 wells = 24 tests required per year)	n/a	n/a	√	√	√	√	√	√

Description	Legislation	Regulatory Requirement	Britannia WPP	Lemieux Island WPP	Carp Well	Munster Well	Kings Park Well	Richmond West Well	Shadow Ridge Well	Vars Well
Summary reports	O.Reg.170/03 Sch.22.2	Prepare and transmit Summary Report for each water system to municipal council by March 31 st of the next calendar year	√	√	√	√	√	√	√	√
Annual reports	O.Reg.170/03 Section 11	Prepare Annual Report for each water system and make available to public by February 28 th of the next calendar year	√	√	√	√	√	√	√	√
Alterations to the system	DWWP Sch.B 4.0	Any alteration of the treatment system must be documented in Forms 2/3 – Record of Minor Modification, retained on-site for 10 years	√	√	√	√	√	√	√	√
Alterations to the system	DWWP Sch.B 4.0	Any alteration of the water mains must be documented in Form 1 – Record of Water Mains Authorized as a Future Alteration, retained on-site for 10 years	√	√	√	√	√	√	√	√

Notes for items of non-compliance:

- (1) Chlorine residual in waste effluent outside target range at Britannia WPP – the continuous chlorine analyzer on the main drain recorded two events on April 29th with a measurement above the effluent chlorine target of <0.02 mg/L. The events lasted for 27 minutes and 20 minutes respectively, exceeding the 15 minute criteria. The events were the result of unstable standby power operations. In both events, the operator adjusted the sodium bisulphite dose to neutralize chlorine in the effluent, but the process took longer than 15 minutes to respond. These events were reviewed with technical staff and instructions were provided to plant operators in the case of future occurrences.
- (2) Required number of distribution bacteriological samples were not achieved in Carp and Vars well systems: Due to COVID-19, sampling at some distribution locations was suspended to minimize contact with public and protect staff and residents. Therefore, only 8 bacteriological samples were taken during the months of May and September,

while 9 monthly samples are required by regulations. In response, the Carp Fire Hall was added to provide an additional sample point for Carp, and the sample frequency at the Vars fire hydrant was increased to meet regulatory requirements. This minor correction had no impact on drinking water quality.

Regulations, Licenses, & Permits:

MDWL – Municipal Drinking Water License

DWWP – Drinking Water Works Permit

PTTW – Permit To Take Water

O.Reg.170/03 – Drinking Water Systems Regulation

O.Reg.169/03 – Ontario Drinking Water Quality Standards

O.Reg.248/03 – Drinking Water Testing Services

O.Reg.128/04 – Certification of Drinking Water Systems Operators

O.Reg.188/07 – Licensing of Municipal Drinking Water systems

O.Reg.170/03 (Appendix) – Procedure for Disinfection of Drinking Water in Ontario

O.Reg.170/03 (Sch.15.1) – Community Lead Testing Program

AWWA – American Water Works Association

Glossary:

NOTE: water quality testing refers to treated_water samples unless otherwise stated

ML/d = mega-Litres per day = million Litres per day

WPP = Water Purification Plant

TC = Total Coliform bacteria, units of (cfu/100mL)

EC = E.coli bacteria, units of (cfu/100mL)

HPC = Heterotrophic Plate Count bacteria, units of (cfu/mL)

PS = Pump Station

MAC = maximum acceptable concentration for Ontario Drinking Water Standards

MOH = Medical Officer of Health

MECP = Ministry of Environment and Climate Change

n/a=not applicable for that system