



DRINKING WATER SYSTEM

2021

ANNUAL REPORT

**Prepared by the Environmental Service
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Introduction

This Annual Drinking Water Report has been prepared to satisfy Section 11 of O. Reg. 170/03: Drinking Water Systems Regulation, under *the Safe Drinking Water Act, 2002*. It describes the Hawkesbury Drinking Water System, details the water quality testing results, any non-compliances findings and adverse conditions that may have occurred from January 1 to December 31, 2021.

The Corporation of the Town of Hawkesbury is engaged to provide safe and clean drinking water to all its citizens and customers, to remain compliant with all regulatory requirements and to maintain and continually improve its drinking water quality management system. All efforts have been made to ensure the information presented is accurate.

Drinking Water System Description

The Hawkesbury Drinking Water System provides drinking water to the citizens of the Town of Hawkesbury and to three stand-alone systems owned by the Township of Champlain.

The key elements of Hawkesbury's Drinking Water System are:

- A raw water pumping station,
- A drinking water treatment plant,
- A water distribution system for the Town of Hawkesbury,
- A remote standpipe water storage in the Town of Hawkesbury completed with booster pumping system and secondary disinfection system,
- A pipeline connection to the Town of Vankleek Hill, with booster pumping system and secondary disinfection system,
- A pipeline connection to supply the village of L'Orignal, completed with a metering chamber, and
- A pipeline connection to the Laurentian Park, completed with a metering chamber.

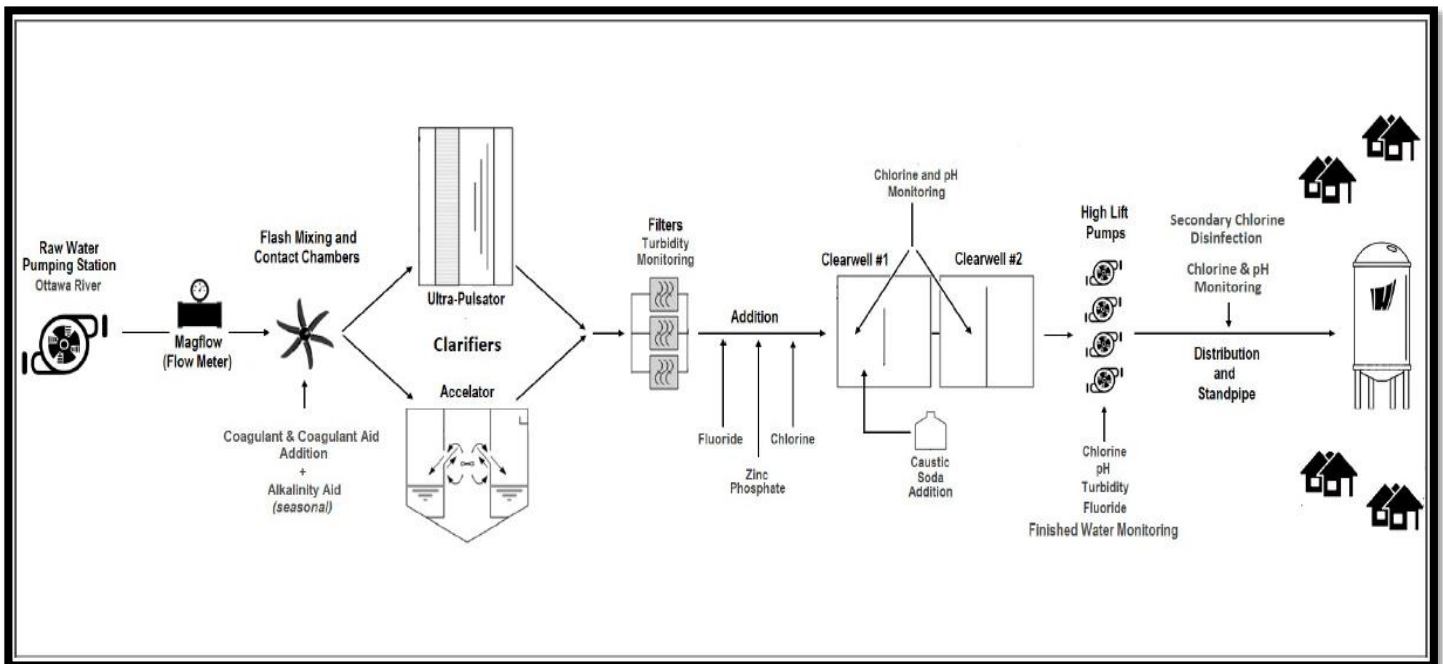
Hawkesbury Drinking Water System Profile Description	
Drinking Water System Number	220002832
Drinking Water System Name	Hawkesbury Drinking Water System
Drinking Water System Owner & Operating Authority	The Corporation of the Town of Hawkesbury
Municipal Drinking Water Licence	177-101
Drinking Water Works Permit	177-201
Drinking Water System Category	Large Municipal Residential System
Water Source	Ottawa River
Population Served	>10,000

The three stand-alone systems owned by the Township of Champlain are as follows and are all operated under the Ontario Clean Water Agency (OCWA).

Drinking Water System Receivers	
Township of Champlain (L'Orignal)	260037102
Township of Champlain (Vankleek Hill)	260002395
Township of Champlain (Park Laurentien)	260090012

Drinking Water System Process

The water is drawn from the Ottawa River through the intake pipe from the low lift pumping station and flows into the drinking water treatment plant where it undergoes a treatment process based on coagulation and flocculation followed by clarification and filtration. Treated water then travels through over 35 km of water distribution piping system and is stored in a 5,450 m³ standpipe water storage.



Treatment Chemicals Used

Every chemical used in the operations and treatment processes of Hawkesbury Drinking Water System satisfies the NSF International (NSF) and American National Standards Institute (ANSI) in contact with drinking water applicable standards.

Treatment Chemical Name	Role
Aluminium Sulfate	Coagulant for treatment process in summer
Aluminium hydroxide Sulfate	Coagulant for treatment process in winter
Sodium Silicate	To form activated silica, a coagulant aid
Sodium Aluminate	To form activated silica, a coagulant aid
Liquid Chlorine (compressed gas)	Primary disinfection
HydroFluosilicic Acid	Help prevent tooth decay
Zinc Orthophosphate	Corrosion control in the distribution system
Caustic Soda	pH adjustment
Sodium Hypochlorite	Secondary disinfection of the distribution system

Major Expenses

The details of major expenses incurred for the maintenance and operations of the drinking water treatment plant are as follows:

DESCRIPTION	COST
New automation software and computer systems to improve cybersecurity	65,000\$
Installation of the emergency actuator valve for gas chlorine	50,000\$
Raw water soil erosion study	20,000\$

The details of major expenses incurred for the maintenance and operations of the drinking water distribution system are as follows:

DESCRIPTION	COST
Watermain connection of Lafleche Street to the Nouvel Horizon School (looping)	150,000 \$
Thorough inspection and maintenance of the fire hydrants	18 000 \$

Annual Water Quality Summary

In-plant samples are collected and tested on site throughout the day by certified operators, while on-line systems continuously monitor chlorine residual, turbidity and other quality-related parameters. Additionally, samples are collected for bacteriological, inorganic, organic and other chemical parameters, as required by O. Reg. 170/03. These sample testings are performed by Caduceon Environmental Laboratories, accredited by the Canadian Association for laboratory Accreditation and licenced by the Ministry of the Environment, Conservation and Parks (MECP).

The following tables describe the water quality monitoring, both regulatory and operational, that has been performed during this reporting period.

Microbiological testing performed under Schedule 10 of Reg. 170/03

Sample Type	Parameter	Total Analysis	Range Results	Units	# Analysis Exceeding Standard
Raw	E. coli	52	0 - 76	CFU/100 mL	n/a
	Total coliforms	52	0 - 390	CFU/100 mL	n/a
Treated	E. coli	52	0 - 0	CFU/100 mL	0
	Total coliforms	52	0 - 0	CFU/100 mL	0
	HPC	51	2 - 2	CFU/mL	n/a
Distribution	E. coli	359	0 - 0	CFU/100 mL	0
	Total coliforms	359	0 - 1	CFU/100 mL	1
	HPC	156	2 - 180	CFU/mL	n/a

Operational testing performed under Schedule 6 & 7 of Reg. 170/03

Sample Type	Parameter	# of Grab Samples	Range Results	Units
Raw	Turbidity	Continuous monitoring	1.45 - 58.45	NTU
Treated	Turbidity	Continuous monitoring	0.02 - 0.18	NTU
Treated	Chlorine	Continuous monitoring	0.77 - 1.21	mg/L
Distribution	Chlorine	358	0.24 - 1.66	mg/L
Treated	Fluoride*	353	0.00 - 0.73	mg/L

Note for Continuous Monitoring (zero days offline):

Number of Grab Samples = 24 samples/day x 365 days/year (or 366 days/leap year) = 8760 (or 8784)

*Fluoride Grab Sample numbers and range of results are reported using data from days when fluoridation was in service

Additional testing and sampling performed in accordance with the requirement of an approval, order or other legal instrument

Legal Instrument Issue Date	Parameter	Total Analysis	Annual Average	Units	Maximum Annual Allowed Concentration
April 25, 2005	Total Suspended Solids (Residue Management)	12	9	mg/L	25

Summary of Inorganic parameters identified under Schedule 23, performed per Schedule 13

Parameter	Date Sampled	Result	Units	Exceeded the Standard	Exceeded Half the Standard
Antimony	2021-09-13	< 0.0001	mg/L	No	No
Arsenic	2021-09-13	0.0002	mg/L	No	No
Barium	2021-09-13	0.013	mg/L	No	No
Boron	2021-09-13	0.007	mg/L	No	No
Cadmium	2021-09-13	< 0.000015	mg/L	No	No
Chromium	2021-09-13	< 0.002	mg/L	No	No
Mercury	2021-09-13	<0.00002	mg/L	No	No
Selenium	2021-09-13	< 0.001	mg/L	No	No
Uranium	2021-09-13	< 0.00005	mg/L	No	No

Summary of Organic parameters identified under Schedule 24, performed per Schedule 13

Parameter	Date Sampled	Result	Units	Exceeded the Standard	Exceeded Half The Standard
Alachlor	2021-09-13	< 0.3	µg /L	No	No
Atrazine + N-dealkylated metabolites	2021-09-13	<0.5	µg /L	No	No
Azinphos-methyl	2021-09-13	<1	µg /L	No	No
Benzene	2021-09-13	<0.5	µg /L	No	No
Benzo(a)pyrene	2021-09-13	<0.006	µg /L	No	No
Bromoxynil	2021-09-13	<0.5	µg /L	No	No
Carbaryl	2021-09-13	<3	µg /L	No	No
Carbofuran	2021-09-13	<1	µg /L	No	No
Carbon Tetrachloride	2021-09-13	<0.2	µg /L	No	No
Chlorpyrifos	2021-09-13	<0.5	µg /L	No	No
Diazinon	2021-09-13	<1	µg /L	No	No
Dicamba	2021-09-13	<10	µg /L	No	No
1,2-Dichlorobenzene	2021-09-13	<0.5	µg /L	No	No

**Summary of Organic parameters identified under Schedule 24, performed per
Schedule 13 *continue*:**

Parameter	Date Sampled	Result	Units	Exceeded the Standard	Exceeded Half the Standard
1,4-Dichlorobenzene	2021-09-13	<0.5	µg /L	No	No
1,2-Dichloroethane	2021-09-13	<0.5	µg /L	No	No
1,1-Dichloroethylene (vinylidene chloride)	2021-09-13	<0.5	µg /L	No	No
Dichloromethane	2021-09-13	<5	µg /L	No	No
2-4 Dichlorophenol	2021-09-13	<0.2	µg /L	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2021-09-13	<10	µg /L	No	No
Diclofop-methyl	2021-09-13	<0.9	µg /L	No	No
Dimethoate	2021-09-13	<1	µg /L	No	No
Diquat	2021-09-13	<5	µg /L	No	No
Diuron	2021-09-13	<5	µg /L	No	No
Glyphosate	2021-09-13	<25	µg /L	No	No
Malathion	2021-09-13	<5	µg /L	No	No
MCPA	2021-09-13	<10	µg /L	No	No
Metolachlor	2021-09-13	<3	µg /L	No	No
Metribuzin	2021-09-13	<3	µg /L	No	No
Monochlorobenzene	2021-09-13	<0.5	µg /L	No	No
Paraquat	2021-09-13	<1	µg /L	No	No
Pentachlorophenol	2021-09-13	<0.2	µg /L	No	No
Phorate	2021-09-13	<0.3	µg /L	No	No
Picloram	2021-09-13	<15	µg /L	No	No
Polychlorinated Biphenyls (PCB)	2021-09-13	<0.05	µg /L	No	No
Prometryne	2021-09-13	<0.1	µg /L	No	No
Simazine	2021-09-13	<0.5	µg /L	No	No
Terbufos	2021-09-13	<0.5	µg /L	No	No
Tetrachloroethylene	2021-09-13	<0.5	µg /L	No	No
2,3,4,6- Tetrachlorophenol	2021-09-13	<0.2	µg /L	No	No
Triallate	2021-09-13	<10	µg /L	No	No
Trichloroethylene	2021-09-13	<0.5	µg /L	No	No
2,4,6- Trichlorophenol	2021-09-13	<0.2	µg /L	No	No
Trifluralin	2021-09-13	<0.5	µg /L	No	No
Vinyl Chloride	2021-09-13	<0.2	µg /L	No	No

Summary of other parameters performed under Schedule 13

Sample Type	Parameter	Total Analysis	Range Results	Units	Exceeded the Standard
Treated	Nitrite	4	0.1 – 0.1	mg/L	None
Treated	Nitrate	4	0.3 – 0.3	mg/L	None
Distribution	Haloacetic acids (<i>running annual average</i>)	12	44.4	mg/L	No
Distribution	THM (<i>running annual average</i>)	12	60.3	mg/L	No
Treated	Sodium	1	16.0	mg/L	No
Distribution	Sodium	1	1.6	mg/L	No

Summary of lead testing performed under Schedule 15.1

Sample Type	Total Analysis	Range Results	Units	Exceeded the Standard
Plumbing	12	0.00002 - 0.00070	mg/L	None
Distribution	8	0.00006 - 0.00262	mg/L	None

Non-Compliance Findings

The annual Ministry of the Environment, Conservation and Parks (MECP) inspection for this reporting period took place in December 2021. There were no non-compliance findings and the Inspection Report Rating was 100%.

Adverse Test Results

The summary of the adverse/reportable occurrence for this reporting period is as follows. All required reporting and corrective actions were taken.

Incident Date	Parameter	Result	Units	Corrective Action	Corrective Action Date
July 14, 2021	Total coliforms	1	cfu/100mL	Re-sampling	July 14, 2021

Availability of Report

This report is available at no charge at the following places:

1. ***Environmental Service***
Corporation of the Town of Hawkesbury
815 Main East
Hawkesbury (Ontario) K6A 1B5
(613) 678-9269

2. ***Hawkesbury Public Library***
550 Higginson Street
Hawkesbury, Ontario
K6A 1H1

3. ***Town's website*** www.hawkesbury.ca

Additionally, this report is provided to the Township of Champlain and the Ministry of the Environment, Conservation and Parks.

If the format of this document is inadequate, the Clerk's office can be contacted at 613-632-0106 and the municipality can provide, to the best of its abilities, the required assistance.