

The Regional Municipality of Durham

Cannington Drinking Water System 2025 Annual Report

Drinking Water System Number: 220000745

Municipal Drinking Water Licence Number: 003-106

Drinking Water System Owner: The Regional Municipality of Durham

Drinking Water System Category: Large Municipal Residential

This Annual Report for the calendar year 2025 is designed to inform you about your drinking water system. This report has been prepared to satisfy Section 11 of Ontario Regulation (O. Reg.) 170/03. O. Reg. 170/03 sets requirements for drinking water systems with regard to sampling and testing, levels of treatment, certification of staff, and notification of authorities and the public about water quality. Hard copies of this report and the Schedule 22 Summary Report are available at the Regional Municipality of Durham Headquarters office, located at 605 Rossland Road East, Whitby. The annual report is also available on the [Region of Durham's website](http://www.durham.ca) at www.durham.ca. Further information regarding the Drinking Water Regulations can be found on the [Ministry of the Environment, Conservation and Parks website](http://www.ontario.ca/ministry-environment-conservation-parks) at www.ontario.ca/ministry-environment-conservation-parks.

Drinking Water System Process Description

General

The Cannington Drinking Water System provides potable water to consumers in the Community of Cannington in the Township of Brock. Cannington has seven municipal wells designated as Well No. 2, Well No. 3, Well No. 4, Well No. 7, Well No. 8, Well No. 9 and Well No. 10. Well No. 8 in Cannington is classified as groundwater under direct influence of surface water (GUDI) with effective in-situ filtration. Well No. 8, Well No. 9 and Well No. 10 are equipped with an ultraviolet (UV) system to provide additional disinfection. Cannington is a Class One Water Treatment Plant with an approved combined capacity of 2,692 cubic metres per day (m³/d). The Cannington Drinking Water System feeds a Class One Distribution Subsystem and Class One Trunk Distribution Subsystem. The treatment and distribution subsystems are owned and operated by the Regional Municipality of Durham.

The water supply system includes the following processes:

- Raw Water Supply,
- Disinfection (sodium hypochlorite),
- UV disinfection (Well No. 8, Well No. 9 and Well No. 10), and
- Distribution system.

Raw Water Supply

Water is pumped from the seven municipal wells. Wells No. 2, 3, 4, 7, 8, 9 and 10 which are drilled to depths of 16.76 metre (m), 10.67 m, 21.34 m, 12.19 m, 21.34 m, 11.9 m and 11.3 m, respectively. Water is delivered to the distribution system by the well pumps.

Disinfection

The raw water is disinfected with sodium hypochlorite. UV treatment provides additional disinfection at Well No. 8, No. 9 and No.10. The free chlorine residual, turbidity and ultraviolet transmittance are monitored continuously by online analyzers.

Distribution System

The distribution system delivers treated water through approximately 15 kilometres of watermain and includes a 1,391 cubic metre standpipe for storage and pressure equalization.

Major Monetary expenses (above \$50,000)

Under Section 11 of O. Reg. 170/03, a description of any major expenses incurred during this reporting period to install, repair or replace required equipment must be included in the annual report. The details of major expenses for this drinking water system are as follows:

Well 9 pumphouse and Well 10 enclosure construction - \$593,890

Tables

For a description of terms and abbreviations in all tables, refer to the glossary at the end of the report.

Cannington Drinking Water System (DWS) Table 1

Summary of all Adverse Water Quality Incidents in 2025 Reported to Spills Action Centre in Accordance with Schedule 16-3 and 16-4 of O. Reg. 170/03.

Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
February 6	Sodium (Plant)	45.6 Milligram per Litre (mg/L) – MW3 42.5 mg/L – MW4	Flushed and resampled.	February 6

Cannington DWS Table 2

Microbiological Membrane Filtration (MF) Testing Under Schedule 10 of O. Reg. 170/03.

Type of Sample	Number of Samples	Range of <i>Escherichia coli</i> MF Colony Forming Units per 100 Millilitres	Range of Total Coliforms MF Colony Forming Units per 100 Millilitres
Raw	336	Non-Detect (ND) – 1	ND – 69
Treated	0	Not Applicable (N/A)	N/A
Distribution	2	ND	ND

Cannington DWS Table 3

Microbiological Presence Absence (P/A) Testing Under Schedule 10 of O. Reg. 170/03.

Type of Sample	Number of Samples	<i>Escherichia coli</i> P/A per 100 Millilitres	Total Coliforms P/A per 100 Millilitres
Treated	177	Absence (A)	A
Distribution	202	A	A

Cannington DWS Table 4

Microbiological Heterotrophic Plate Count (HPC) Testing Under Schedule 10 of O. Reg. 170/03.

Type of Sample	Number of Samples	Range of HPC Samples Colony Forming Units per Millilitre
Treated	177	Non-Detect (ND) – 59
Distribution	103	ND - 92

Cannington DWS Table 5

Operational Testing Under Schedule 7 of O. Reg. 170/03.

Test	Number of Samples	Range of Results	Unit of Measure	Parameter Description
Turbidity - Raw Water	260	0.04 – 0.22	Nephelometric Turbidity Units (NTU)	Turbidity is a measure of particles in water.
Free Chlorine – Plant	Continuous	0.46 – 1.98*	Milligram per Litre (mg/L)	Must be sufficient to ensure disinfection has been achieved.
Free Chlorine - Distribution	Continuous	0.35 – 1.74*	mg/L	Recommended level of at least 0.20 mg/L in the distribution system to maintain secondary disinfection, 0.05 mg/L is the minimum required.

*Results include all analyzers and grab samples.

Cannington DWS Table 6

Summary of Treated Water Chemical Parameter Testing Under Schedules 13 and 23 of O. Reg. 170/03.

Parameter	Number of Samples	Results Range	MAC	Unit of Measure	MAC Exceedance	Potential Sources*
Antimony	103	Non-Detect (ND)	0.006	Milligram per Litre (mg/L)	No	Fire retardants, ceramics, electronics, solder.
Arsenic	103	ND	0.01	mg/L	No	Mining.
Barium	6	0.033 – 0.0709	1.0	mg/L	No	Metal refineries, oil drilling.
Boron	6	0.0073 – 0.0513	5.0	mg/L	No	Industrial.
Cadmium	103	ND	0.005	mg/L	No	Industrial.
Chromium	103	ND – 0.0104	0.05	mg/L	No	Industrial.
Total Haloacetic acids - Distribution (annual average)	4	ND	80	Microgram per Litre (ug/L)	No	By-product of chlorination of drinking water.
Mercury	6	ND	0.001	mg/L	No	Industrial.
Selenium	103	ND – 0.0016	0.05	mg/L	No	Refineries, mines, chemical manufacturing.
Sodium	97	5.32 – 76.1	Not Applicable**	mg/L	Yes (80)***	Storm water runoff including road salt.
Total Trihalomethanes - Distribution (annual average)	4	16.1	100	ug/L	No	By-product of chlorination of drinking water.
Uranium	6	ND – 0.0009	0.02	mg/L	No	Power generation.
Fluoride	97	ND – 0.06	1.5	mg/L	No	Mining
Nitrite	98	ND	1.0	mg/L	No	Agriculture runoff, landfill leachate and animal waste.
Nitrate	98	1.64 – 8.98	10.0	mg/L	No	Fertilizer.

* Parameters may occur naturally in the environment.

** Sodium does not have a Maximum Acceptable Concentration (MAC); only an aesthetic objective of 200 mg/L. Sodium results exceeding 20 mg/L are to be reported to the Medical Officer of Health as per Schedule 16-3 (8) of O. Reg. 170/03.

*** Number in parenthesis represents number of exceedance(s) above 20 mg/L. For Sodium, regulations require reporting when results exceed 20 mg/L if it has not been reported in the preceding 57 months.

Cannington DWS Table 7

Summary of Lead Testing Under Schedule 15.1 of O. Reg. 170/03.

No plumbing samples were required to be taken in 2025.

Location Type	Number of Samples	Range of Lead Results Milligram per Litre	MAC	Number of Exceedances	pH	Alkalinity Milligram per Litre
Plumbing	Not Required (N/R)	N/R	0.01	N/R	N/R	N/R
Distribution	4	Non-Detect (ND)	0.01	0	7.5 – 7.9	254 - 303

Cannington DWS Table 8

Summary of Treated Water Organic Parameter Testing Under Schedule 24 of O. Reg. 170/03.

Parameter	Number of Samples	Results Range	MAC	Unit of Measure	MAC Exceedance	Potential Sources
Alachlor	6	Non-Detect (ND)	5	Microgram per Litre (ug/L)	No	Agricultural herbicide.
Atrazine + N-dealkylated metabolites	6	ND	5	ug/L	No	Agricultural herbicide.
Azinphos-methyl	6	ND	20	ug/L	No	Insecticide.
Benzene	8	ND	1	ug/L	No	Plastics manufacturing, leaking fuel tanks.
Benzo(a)pyrene	6	ND	0.01	ug/L	No	Formed from the incomplete burning of organic matter.
Bromoxynil	6	ND	5	ug/L	No	Agricultural herbicide.
Carbaryl	6	ND	90	ug/L	No	Agricultural, forestry, household insecticide.

Cannington DWS Table 8 continued

Parameter	Number of Samples	Results Range	MAC	Unit of Measure	MAC Exceedance	Potential Sources
Carbofuran	6	Non-Detect (ND)	90	Microgram per Litre (ug/L)	No	Agricultural insecticide.
Carbon Tetrachloride	8	ND	2	ug/L	No	Chemical and industrial activities.
Chlorpyrifos	6	ND	90	ug/L	No	Agricultural, household insecticide.
Diazinon	6	ND	20	ug/L	No	Agricultural, livestock, operation, residential insecticide.
Dicamba	6	ND	120	ug/L	No	Agricultural herbicide
1,2-Dichlorobenzene	8	ND	200	ug/L	No	Chemical and industrial factories.
1,4-Dichlorobenzene	8	ND	5	ug/L	No	Chemical and industrial factories.
1,2-Dichloroethane	8	ND	5	ug/L	No	Industrial chemical factories.
1,1-Dichloroethylene (vinylidene chloride)	8	ND	14	ug/L	No	Industrial chemical factories.
Dichloromethane	8	ND	50	ug/L	No	Pharmaceutical and chemical factories.
2,4-Dichlorophenol	6	ND	900	ug/L	No	Industrial contamination, reaction with chlorine.
2,4-Dichlorophenoxy acetic acid (2,4-D)	6	ND	100	ug/L	No	Agricultural, residential herbicide.

Cannington DWS Table 8 continued

Parameter	Number of Samples	Results Range	MAC	Unit of Measure	MAC Exceedance	Potential Sources
Diclofop-methyl	6	Non-Detect (ND)	9	Microgram per Litre (ug/L)	No	Agricultural herbicide.
Dimethoate	6	ND	20	ug/L	No	Agricultural, livestock, operation, residential insecticide.
Diquat	6	ND	70	ug/L	No	Agricultural, aquatic herbicide.
Diuron	6	ND	150	ug/L	No	Agricultural, industrial herbicide.
Glyphosate	6	ND	280	ug/L	No	Agricultural, forestry, household herbicide.
Malathion	6	ND	190	ug/L	No	Pest control insecticide.
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6	ND	100	ug/L	No	Agricultural herbicide.
Metolachlor	6	ND	50	ug/L	No	Agricultural herbicide.
Metribuzin	6	ND	80	ug/L	No	Agricultural herbicide.
Monochlorobenzene (Chlorobenzene)	8	ND	80	ug/L	No	Industrial and agricultural chemical factories and dry cleaning facilities.
Paraquat	6	ND	10	ug/L	No	Agricultural, aquatic herbicide.
Pentachlorophenol (PCP)	6	ND	60	ug/L	No	Pesticide, wood preservative residue.
Phorate	6	ND	2	ug/L	No	Agricultural insecticide.

Cannington DWS Table 8 continued

Parameter	Number of Samples	Results Range	MAC	Unit of Measure	MAC Exceedance	Potential Sources
Picloram	6	Non-Detect (ND)	190	Microgram per Litre (ug/L)	No	Industrial herbicide.
Polychlorinated Biphenyls (PCB)	6	ND	3	ug/L	No	Residue from various industrial uses.
Prometryne	6	ND	1	ug/L	No	Agricultural herbicide.
Simazine	6	ND	10	ug/L	No	Agricultural herbicide.
Terbufos	6	ND	1	ug/L	No	Agricultural insecticide.
Tetrachloroethylene (perchloroethylene (PCE))	8	ND	10	ug/L	No	Leaching from PVC pipes; discharge from factories; dry cleaners and auto shops (metal degreaser).
2,3,4,6 - Tetrachlorophenol	6	ND	100	ug/L	No	Wood preservative.
Triallate	6	ND	230	ug/L	No	Agricultural herbicide.
Trichloroethylene (TCE)	8	ND – 0.5	5	ug/L	No	Metal degreasing sites and other factories.
2,4,6-Trichlorophenol	6	ND	5	ug/L	No	Pesticide manufacturing.
Trifluralin	6	ND	45	ug/L	No	Agricultural herbicide.
Vinyl Chloride	8	ND	1	ug/L	No	Leaching from PVC pipes; discharge from plastics factories.

Cannington DWS Table 9

Inorganic or Organic Parameter(s) that Exceed Half the Standard Prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.

Parameter	Results Range	MAC	Unit of Measure	Date of Sample
Nitrate (Well 4 Treated Water)	5.14 – 7.07 (14)*	10.0	Milligram per Litre (mg/L)	July 2 – November 12
Nitrate (Well 8 Treated Water)	5.39 – 8.98 (7)*	10.0	mg/L	June 17 – July 29

*Number in parenthesis represents number of samples above half the standard prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.