
The 2022 Annual Drinking Water Quality Report: South Halton Drinking Water System – Milton Treatment and Distribution Subsystem

February 2023



Introduction

Halton is committed to providing safe drinking water to all of our customers. As mandated by the *Safe Drinking Water Act, 2002*, this annual Water Quality Report includes:

- a description of the water treatment process and chemicals used;
- any major expenses to install, repair or upgrade equipment in the system; and,
- the results of our water tests and how they compare to provincial regulatory standards.

All provincial regulatory monitoring requirements and actions applicable to Halton's operation of this system were met or surpassed in the current reporting year.

Milton Treatment and Distribution Subsystem

Drinking Water System Number: 220001646

The Milton Treatment and Distribution Subsystem consists of two well fields: Kelso and Walker's Line. Four wells in the Kelso well field pump raw water into the Kelso Water Treatment Plant (WTP). The treatment includes greensand filters for manganese removal and disinfection using chlorine. The treated water is pumped from the WTP to the Milton Reservoir and then flows by gravity into the Milton distribution system. The Walkers Line well field consists of one production well. Water from the well is disinfected with chlorine and pumped into the Milton Surge Tank which is located just off 12th Side Road. From the surge tank the water is fed by gravity into the distribution system. The Milton Treatment and Distribution Subsystem is controlled through a Supervisory Control and Data Acquisition (SCADA) system that is monitored twenty-four hours per day, seven days per week.

The following chemicals are used in the drinking water treatment process:

- chlorine (disinfection and control of manganese)

What Improvements Are We Making?

In the current reporting year, approximately \$7,400,000 was spent on upgrading the connected distribution system, including watermains and services. Halton continued to support the production of quality drinking water through increased sampling for groundwater monitoring, the implementation of the Source Protection Plans (e.g. establishing Risk Management Plans, threat activity verification, and screening both planning and building permit applications in vulnerable areas), upgrades to the SCADA monitoring and infrastructure management systems, water efficiency programs and optimization of water treatment processes. Work also continued on the Drinking Water Quality Management System, a provincial requirement to support the licensing of municipal drinking water systems which came into effect for Halton in January 2009.

Partnership for Safe Water Program

Halton Region is actively involved in the American Water Works Association's Partnership for Safe Water, an alliance of prestigious drinking water organizations with a mission of improving the quality of drinking water delivered to customers. The Partnership's comprehensive programs have provided the Region with the tools needed to continuously improve performance beyond regulatory requirements.

Water Quality Testing

A large number of water quality tests are performed each and every day, in accordance with the *Safe Drinking Water Act, 2002* and regulations. The following sections provide a summary of the test results.

Terms

CFU/100 mL	Colony-forming units per 100 millilitres of water
µg/L	micrograms per litre
mg/L	milligrams per litre
Standard	Ontario Drinking Water Quality Standard, O.Reg. 169/03

Microbiological Testing

	Number of Samples	<i>E. coli</i> Results (min -max)	Total Coliform Results (min - max)	Number of HPC Samples	HPC Results (min -max)
Raw	515	0 - 0	0 - 0	N/A	N/A
Treated	206	0 – Absent	0 - Absent	104	0 - 2
Distribution	465	Absent – Absent	Absent – Absent	360	0 - 15

Microbiological standards for treated and distributed water:

E.coli not detected

Total Coliforms not detected

HPC Heterotrophic Plate Counts are conducted on some treated and distribution system samples. The HPC test is used as a tool to monitor overall quality, but the results are not indicators of water safety. There is no Drinking Water Quality Standard for HPC.

Operational Testing

In the Milton Treatment Subsystem, continuous analyzers measure and record the results of free chlorine residual and turbidity in treated water several times per minute, twenty-four hours per day, seven days per week. All of the readings are validated by an operator and are also reviewed by the Ministry of the Environment, Conservation and Parks (MECP) Inspector. As well, Halton operators measure the chlorine in the distributed water. 'Adverse' test results must be reported if the free chlorine residual at the end of the treatment process is not sufficient to achieve primary inactivation (disinfection) or if a free chlorine residual in the distribution system is <0.05 mg/L. In the current reporting year, all of the validated readings and test results were within the ranges required by regulation.

Chemical Testing

Inorganic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Antimony	04/11/22	0.0007	mg/L	0.006	No
Arsenic	04/11/22	<0.001	mg/L	0.01	No
Barium	04/11/22	0.118	mg/L	1.0	No
Boron	04/11/22	0.045	mg/L	5.0	No
Cadmium	04/11/22	<0.0005	mg/L	0.005	No
Chromium	04/11/22	<0.001	mg/L	0.05	No
Mercury	04/11/22	<0.00005	mg/L	0.001	No
Selenium	04/11/22	<0.001	mg/L	0.05	No

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Sodium	11/21/22	51.2	mg/L	20	Yes – Reported February 2022
Uranium	04/11/22	0.001	mg/L	0.02	No
Fluoride	11/21/22	0.10	mg/L	1.5	No
Nitrite	11/14/22	<0.01	mg/L	1.0	No
Nitrate	11/14/22	2.43	mg/L	10.0	No

Organic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Alachlor	04/11/22	<0.50	µg/L	5	No
Atrazine + N-dealkylated metabolites	04/11/22	<1.0	µg/L	5	No
Azinphos-methyl	04/11/22	<2.0	µg/L	20	No
Benzene	04/11/22	<0.10	µg/L	1	No
Benzo(a)pyrene	04/11/22	<0.0050	µg/L	0.01	No
Bromoxynil	04/11/22	<0.50	µg/L	5	No
Carbaryl	04/11/22	<5.0	µg/L	90	No
Carbofuran	04/11/22	<5.0	µg/L	90	No
Carbon Tetrachloride	04/11/22	<0.10	µg/L	2	No
Chlorpyrifos	04/11/22	<1.0	µg/L	90	No
Diazinon	04/11/22	<1.0	µg/L	20	No
Dicamba	04/11/22	<1.0	µg/L	120	No
1,2-Dichlorobenzene	04/11/22	<0.20	µg/L	200	No
1,4-Dichlorobenzene	04/11/22	<0.20	µg/L	5	No
1,2-Dichloroethane	04/11/22	<0.20	µg/L	5	No
1,1-Dichloroethylene (vinylidene chloride)	04/11/22	<0.10	µg/L	14	No
Dichloromethane	04/11/22	<0.50	µg/L	50	No
2-4 Dichlorophenol	04/11/22	<0.25	µg/L	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	04/11/22	<1.0	µg/L	100	No
Diclofop-methyl	04/11/22	<0.90	µg/L	9	No
Dimethoate	04/11/22	<2.5	µg/L	20	No
Diquat	04/11/22	<7.0	µg/L	70	No
Diuron	04/11/22	<10	µg/L	150	No
Glyphosate	04/11/22	<10	µg/L	280	No
HAA (latest running annual average)	11/14/22	5.1	µg/L	80 (running annual average)	No
2-Methyl-4-chlorophenoxyacetic acid	04/11/22	<10	µg/L	100	No
Malathion	04/11/22	<5.0	µg/L	190	No
Metolachlor	04/11/22	<0.50	µg/L	50	No
Metribuzin	04/11/22	<5.0	µg/L	80	No
Monochlorobenzene	04/11/22	<0.10	µg/L	80	No
Paraquat	04/11/22	<1.0	µg/L	10	No
Pentachlorophenol	04/11/22	<0.50	µg/L	60	No

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Phorate	04/11/22	<0.50	µg/L	2	No
Picloram	04/11/22	<5.0	µg/L	190	No
Polychlorinated Biphenyls(PCB)	04/11/22	<0.05	µg/L	3	No
Prometryne	04/11/22	<0.25	µg/L	1	No
Simazine	04/11/22	<1.0	µg/L	10	No
THM (latest running annual average)	11/14/22	27.9	µg/L	100 (running annual average)	No
Terbufos	04/11/22	<0.50	µg/L	1	No
Tetrachloroethylene	04/11/22	<0.10	µg/L	10	No
2,3,4,6-Tetrachlorophenol	04/11/22	<0.50	µg/L	100	No
Triallate	04/11/22	<1.0	µg/L	230	No
Trichloroethylene	04/11/22	<0.10	µg/L	5	No
2,4,6-Trichlorophenol	04/11/22	<0.50	µg/L	5	No
Trifluralin	04/11/22	<1.0	µg/L	45	No
Vinyl Chloride	04/11/22	<0.20	µg/L	1	No

No additional testing was required by a Municipal Drinking Water License, order or other legal instrument.

'Adverse' Results Notifications

The following tables show the notices of 'adverse' water quality results submitted in accordance with the *Safe Drinking Water Act, 2002* to the MECP and the Medical Officer of Health.

Sample Date	Location	Adverse Condition	Corrective Action	Notice of Issue Resolution
February 7, 2022	Treated	Sodium = 47.7 mg/L	Resamples taken and results were comparable in value to the original sample(s) Reportable every 57 months.	February 9, 2022
February 7, 2022	Distribution	Sodium = 46.3 / Duplicate = 45.9 mg/L Sodium = 50.3 mg/L	Resamples taken and results were comparable in value to the original sample(s) Reportable every 57 months.	February 9, 2022

Community-Wide Lead Sampling Program Results

Under the Community-Wide Lead Sampling Program, samples were collected from eight sampling points located throughout the Milton Distribution Subsystem in the current reporting year. None of the samples contained lead concentrations above the standard of 10 µg/L.

Microcystin Sampling Results

Although not required by regulation or the municipal drinking water licence, Halton Region has proactively implemented a harmful algal bloom (HAB) monitoring plan at Kelso Lake. The plan includes regular visual inspections for HABs. In the event that an HAB is observed or reported at Kelso Lake, the Region will enact the associated response protocols prescribed in the HAB monitoring plan.

More Information or Questions

The related annual drinking water Flow Summary Report is published on or before March 31 each year on halton.ca.

Halton Region

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