



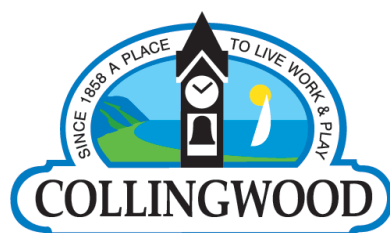
# Town of Collingwood

## Drinking Water System 2024 Annual Summary Report



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## Town of Collingwood Quality Management Policy

The Corporation of the Town of Collingwood owns and operates the Collingwood Drinking Water System and is committed to:

- Maintaining and continually improving our Quality Management System;
- Providing our consumers with a safe, reliable supply of potable drinking water;
- Meeting or exceeding all applicable legislation, regulations and other requirements;
- Communicating openly and effectively with employees, Council and the public; and
- Providing services in an environmentally responsible manner.

**Issue Date:** February 10, 2021 **Revision:** 4

*MSF-P-01*

## 1. Introduction

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This report has been prepared in accordance with the reporting requirements of the Safe Drinking Water Act 2002 O. Reg. 170/03, s.11 and Schedule 22.

This report is presented to the Council and posted to the Town's website on or before February 28, 2025. It is available on the Town of Collingwood website in PDF format at <https://www.collingwood.ca/water-services#:~:text=Water%20Quality%20%26%20Compliance>

A printed copy of this report will be provided free of charge when requested through the Town's Water and Wastewater Division:  
Phone: (705) 445-1030  
Email: [waterwastewater@collingwood.ca](mailto:waterwastewater@collingwood.ca)

### Drinking Water System Description

|   |   |
|---|---|
| Drinking Water System Number            | 220001165   |
| Drinking Water Works Permit             | 100-201 Issue 5 January 3, 2025                       |
| Municipal Drinking Water License (MDWL) | 100-101 Issue 6 January 3, 2025                       |
| Permit to Take Water                    | 0385-C8CNW8 issued November 4, 2021                   |
| Drinking Water System Name              | Collingwood Drinking Water System                     |
| Drinking Water System Owner             | Town of Collingwood                                   |
| Drinking Water System Category          | Large Municipal Residential                           |
| Water Treatment Subsystem Class         | Class 2 Certificate No. 3009 issued November 15, 2005 |
| Water Distribution Subsystem Class      | Class 3 Certificate No. 277 issued May 22, 2019       |
| Rated Capacity                          | 31,140 m <sup>3</sup> /d                              |
| Period being Reported                   | January 1, 2024 to December 31, 2024                  |

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Other Drinking Water Systems that receive drinking water from Raymond A. Barker Ultrafiltration Plant:

| Drinking Water System Owner     | Drinking Water System Number |
|---------------------------------|------------------------------|
| Town of New Tecumseth           | 220001174                    |
| Town of the Blue Mountains      | 220001762                    |
| Township of Essa (Baxter)       | 260086866                    |
| Township of Essa (Angus)        | 260001026                    |
| Clearview Township (New Lowell) | 220003706                    |

A copy of this report will be provided to the drinking water system owners listed above.

The Collingwood Drinking Water System (CDWS) consists of the Raymond A Barker Water Treatment Plant (RAB) and the Collingwood Distribution System.

The RAB is an ultrafiltration membrane surface water treatment plant which was built in 1998. The shoreline RAB reconstruction started in 2023 and will nearly double the capacity of the plant to 59,000 m<sup>3</sup> per day. The expansion project will allow additional drinking water to be piped south and is anticipated to be completed by 2031. The raw water source is surface water from Georgian Bay, Lake Huron.

Surface water is taken from Nottawasaga Bay through a submerged inlet structure, approximately 765m offshore. Chlorine can be applied at the intake for zebra mussel control although this system is currently not in use to prevent chlorinated water being released back into the bay. Raw water flows by gravity through a 1067 mm diameter intake pipe and surge chamber into the raw water well. The raw water then flows to the membrane distribution channel in the main building.

The raw water is then distributed to six (6) filter basins or treatment trains. Five (5) trains are fed by gravity and house the 500 series ZeeWeed ultrafiltration membrane modules. One (1) train consists of 1000 series ZeeWeed ultrafiltration membrane and is fed with a low lift vertical turbine pump and a 5-micron strainer with automatic cleaner (Mobile Package Plant).

Each treatment train of the membrane filtration system has membrane modules and a permeate/backpulse pump. The permeate pump creates a slight vacuum which sucks clean (permeate) water through the membrane leaving any particulate matter greater than 0.035 microns in the process tank.

The permeate water is then disinfected using UV and chlorine. This water then flows into the two (2) 413 m<sup>3</sup> chlorine contact chambers (total volume 826 m<sup>3</sup>) prior to flowing by gravity into the clear well. The finished water is then pumped either directly into to the Collingwood Distribution System, which supplies water to the Town of Collingwood and the Town of the Blue

Mountains, or into the Regional Pipeline, which supplies water to the Town Collingwood and the Town of New Tecumseth.

The ultrafiltration membranes undergo a regular cleaning cycle that consists of reversing the flow of clean water stored in the backpulse tank back through the membranes under positive pressure. This process cleans the particles from the outer surface of the membranes and removes them to waste. This wastewater can be discharged to the sewer or returned to the lake. Air is also used to keep the membranes clear. Air is injected at the bottom of the tank and scours the membranes with air bubbles as they rise to the surface. This air scouring process also assists in keeping the concentrated solids in suspension, prior to reject.

The RAB is continually monitored 24 hours a day 365 days a year through the SCADA (Supervisory Control and Data Acquisition) system. The SCADA will send an alarm to an on-call operator if any part of the process requires attention.

**The Collingwood Distribution System** is comprised of approximately 172.62 km of concrete, ductile and cast iron watermains, ranging in size from 50 mm to 600 mm in diameter, 1187 fire hydrants and 2210 isolation valves in three pressure zones. There are also 84.8 km of private watermains with 246 private hydrants.

The Water Tower is an elevated storage tank with a capacity of 2250 m<sup>3</sup> supplying pressure zone 1. The Water Tower has re-chlorination capabilities, on-line monitoring and a generator for emergency backup power.

The Carmichael Reservoir is an in-ground reservoir and booster pumping station with a capacity of 6800 m<sup>3</sup> supplying pressure zone 1. The Carmichael Reservoir has re-chlorination capabilities, on-line monitoring and standby generator for emergency backup power.

The Davey Reservoir is an in-ground reservoir and booster pumping station with a capacity of 2500 m<sup>3</sup> supplying pressure zone 2. The Davey reservoir has re-chlorination capabilities, on-line monitoring and standby generator for emergency backup power.

The Osler Bluff Road booster pumping station helps to regulate the pressure in the west side of zone 2. This station has a standby generator for emergency backup power.

The Georgian Meadows booster pumping station helps to regulate the pressure in the Georgian Meadows subdivision.

### 1. Water Treatment Chemicals Used

Chlorine Gas  
Sodium Hypochlorite (12%)

## 2. Significant Expenses

The significant expenses in 2024 comprised of Installing required equipment, repairing required equipment, replacing required equipment, and studies and engineering.

Details of the significant expenses incurred to operate and maintain the drinking water system in 2024 are provided below.

| Description  | Amount                 |
|--|------------------------|
| Water Treatment Plant Expansion                          | \$23,226,400.00        |
| New Tecumseth High Lift Pumps<br>Refurbishment           | \$59,094.00            |
| Water Equipment – Vehicles (New<br>Backhoe)              | \$234,000.00           |
| New Fire Hydrants  | \$22,245.00            |
| Barlett and Princeton Shores Blvd<br>Watermain Re-lining | \$2,015,000.00         |
| Water Treatment Plant Hight Lift Pump<br>VDF             | \$19,722.00            |
| Davey Reservoir VDF Replacement<br>for High Lift Pump    | \$20,777.00            |
| New Water Meters   | \$375,359.11           |
| Water Tower Upgrades                                     | \$166,700.00           |
| New Chlorine Analyzer                                    | \$8479.00              |
| Carmichael Reservoir and Pumping Station<br>Upgrades     | \$2,310,600.00         |
| Arch Flash Study-Water Facilities                        | \$44,930.00            |
| Valves   | \$13,359.00            |
| Large Tools  | \$11,181.80            |
| <b>Total</b>   | <b>\$28,527,846.91</b> |

### 3. Notices Submitted to the Ministry of Environment, Conservation and Parks (MECP)

Subsection 18(1) of the Safe Drinking Water Act and/or Section 16-4 of Schedule 16 of O. Reg.170/03 requires notices on water incidents to be submitted to Spills Action Centre.

There were no adverse water incidents in 2024.

### 4. Microbiological Testing as per Schedule 10 of O. Reg. 170/03

| Type         | Number of Samples | Range E. Coli Results |   | Range of Total Coliform Results |    | Number of HPC Samples | Range of HPC Results |     |
|--------------|-------------------|-----------------------|---|---------------------------------|----|-----------------------|----------------------|-----|
| Raw          | 52                | 0                     | 3 | 0                               | 40 | n/a                   | n/a                  | n/a |
| Treated      | 52                | 0                     | 0 | 0                               | 0  | 52                    | 0                    | 30  |
| Distribution | 531               | 0                     | 0 | 0                               | 0  | 531                   | 0                    | 70  |

### 5. Operational Testing as per Schedule 7 of O. Reg. 170/03

Free chlorine residual and turbidity are monitored at various locations in the treatment and distribution system in accordance with Schedule 7 of O. Reg. 170/03.

Free chlorine residuals remained above the minimum concentration of 0.05 mg/L throughout the water distribution system in 2024.

| Parameter   | Number of Samples     | Units | Min  | Max  | Avg  |
|---|-----------------------|-------|------|------|------|
| Turbidity - Raw                                   | Continuous Monitoring | NTU   | 0.13 | 100  | 0.74 |
| Turbidity - Treated                               | Continuous Monitoring | NTU   | 0.02 | 0.51 | 0.03 |
| Free Chlorine - Treated                           | Continuous Monitoring | mg/L  | 1.19 | 2.28 | 1.55 |
| Free Chlorine – Distribution Davey Reservoir      | Continuous Monitoring | mg/L  | 0.91 | 2.89 | 1.30 |
| Free Chlorine – Distribution - Tower              | Continuous Monitoring | mg/L  | 0.67 | 2.98 | 1.40 |
| Free Chlorine – Distribution Carmichael Reservoir | Continuous Monitoring | mg/L  | 0.80 | 2.38 | 1.36 |
| Free Chlorine – Distribution Grab Samples         | 1356                  | mg/L  | 0.16 | 4.00 | 0.99 |



## 6. Additional Testing and Sampling

### Environmental Discharges

Condition 1.5 of Schedule C of the Town’s MDWL requires that environmental discharges be monitored for total chlorine and suspended solids.

The previous MDWL required that the total chlorine concentration in discharges to the environment have an annual running average of 0.02 mg/L. Regulatory relief as of the new issue of the MDWL in December 2024 allows the annual running average of 0.05 mg/L. The monthly running annual average of total Chlorine in 2024 was 0.04 mg/L, which is below allowed 0.05 mg/L. Section 14 provides further discussion about the rated treatment plant capacity and disinfection process.

The MDWL requires that suspended solids concentrations in discharges to the environment have an annual running average of 25 mg/L or less. The annual running average of suspended solids in 2024 ranged from 6.9 mg/L to 10.5 mg/L, which is well below the MDWL limit.

|                   | Total Chlorine (mg/L) <sup>a</sup> | Suspended Solids (mg/L) <sup>a</sup> |
|-------------------|------------------------------------|--------------------------------------|
| <b>MDWL Limit</b> | <b>0.02<sup>1</sup></b>            | <b>25</b>                            |
| <b>Jan</b>        | <u>0.04</u>                        | 9.0                                  |
| <b>Feb</b>        | <u>0.04</u>                        | 7.4                                  |
| <b>Mar</b>        | <u>0.04</u>                        | 7.1                                  |
| <b>April</b>      | <u>0.04</u>                        | 6.9                                  |
| <b>May</b>        | <u>0.04</u>                        | 7.2                                  |
| <b>June</b>       | <u>0.04</u>                        | 9.7                                  |
| <b>July</b>       | <u>0.04</u>                        | 10.3                                 |
| <b>Aug</b>        | <u>0.04</u>                        | 9.7                                  |
| <b>Sept</b>       | <u>0.04</u>                        | 11.1                                 |
| <b>Oct</b>        | <u>0.04</u>                        | 10.5                                 |
| <b>Nov</b>        | <u>0.04</u>                        | 10                                   |
| <b>Dec</b>        | 0.04                               | 9.2                                  |

<sup>1</sup> Regulatory relief as of December 2024 allows the annual running average limit of 0.05 mg/L

Underline – Exceedance of MDWL Limit

a – Running Annual Average Concentration

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Section 6 of Schedule C of the Town’s MDWL requires that a Harmful Algal Bloom monitoring plan be developed and implemented. As part of this plan, Microcystin testing is conducted between June 1 and October 31 to detect blue-green algal blooms in raw water samples. Microcystin was not detected in any of the raw water samples in 2024.

| Parameter   | Units | Jun 11, 2024 | Jul 9, 2024 | Aug 13, 2024 | Sep 10, 2024 | Oct 8, 2024 | MAC | Exceedance |
|-------------|-------|--------------|-------------|--------------|--------------|-------------|-----|------------|
| Microcystin | µg/L  | <0.15        | <0.15       | <0.15        | <0.15        | <0.15       | 1.5 | No         |

MAC – Maximum Acceptable Concentration for treated water

### 7. Summary of Schedule 13 Inorganic Parameters Tested

Schedule 13 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that at least one water sample is collected every 12 months and is tested for the inorganic parameters listed in Schedule 23 of the Regulation if the drinking water system obtains water from a raw water supply that is surface water. If a test result for a parameter exceeds half of the drinking water quality standard prescribed for the parameter in the Ontario Drinking Water Quality Standards, the frequency of sampling and testing for that parameter needs to be increased so that at least one water sample is taken and tested every three months.

Treated drinking water samples were collected from RAB on February 6, 2024, and tested for the Schedule 23 inorganic parameters.

There were no exceedances of any Schedule 23 inorganic parameters in 2024, and all results were less than half of the maximum acceptable concentration for the specified parameters.

| Parameter | Units | 6-Feb-24 | MAC  | Exceedance |
|-----------|-------|----------|------|------------|
| Antimony  | µg/L  | <0.5     | 6    | No         |
| Arsenic   | µg/L  | <1       | 10   | No         |
| Barium    | µg/L  | 13       | 1000 | No         |
| Boron     | µg/L  | <2       | 5000 | No         |
| Cadmium   | µg/L  | <0.1     | 5    | No         |
| Chromium  | µg/L  | <1       | 50   | No         |
| Mercury   | µg/L  | <0.1     | 1    | No         |
| Selenium  | µg/L  | 0.4      | 50   | No         |
| Uranium   | µg/L  | <1       | 20   | No         |

MAC – Maximum Acceptable Concentration  
 AO – Aesthetic Objective  
 ND – Not Detected

## 8. Summary of Schedule 13 Organic Parameters Tested

Schedule 13 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that at least one water sample is collected every 12 months and is tested for every organic parameter listed in Schedule 24 of the Regulation if the drinking water system obtains water from a raw water supply that is surface water. If a test result for a parameter exceeds half of the drinking water quality standard prescribed for the parameter in the Ontario Drinking Water Quality Standards, the frequency of sampling and testing for that parameter needs to be increased so that at least one water sample is taken and tested every three months.

Treated drinking water samples were collected from RAB on February 6 and tested for the Schedule 24 organic parameters.

There were no exceedances of any Schedule 24 organic parameters in 2024, and all results were less than half of the maximum acceptable concentration for the specified parameters.

| Parameter                           | Units | 6-Feb-24 | MAC  | Exceedance |
|-------------------------------------|-------|----------|------|------------|
| Alachlor                            | µg/L  | <0.239   | 5    | No         |
| Atrazine + N-dealkylated metabodies | µg/L  | <0.5     | 5    | No         |
| Azinphos-methyl                     | µg/L  | <0.194   | 20   | No         |
| Benzene                             | µg/L  | <0.2     | 1    | No         |
| Benzo(a)pyrene                      | µg/L  | <0.008   | 0.01 | No         |
| Bromoxynil                          | µg/L  | <0.117   | 5    | No         |
| Carbaryl                            | µg/L  | <2       | 90   | No         |
| Carbofuran                          | µg/L  | <4       | 90   | No         |
| Carbon Tetrachloride                | µg/L  | <0.2     | 2    | No         |
| Chlorpyrifos                        | µg/L  | <0.194   | 90   | No         |
| Diazinon                            | µg/L  | <0.194   | 20   | No         |
| Dicamba                             | µg/L  | <0.102   | 120  | No         |
| 1,2-Dichlorobenzene                 | µg/L  | <0.5     | 200  | No         |
| 1,4-Dichlorobenzene                 | µg/L  | <0.5     | 5    | No         |
| 1,2-Dichloroethane                  | µg/L  | <0.5     | 5    | No         |
| 1,1-Dichloroethylene                | µg/L  | <0.5     | 14   | No         |
| Dichloromethane                     | µg/L  | <5       | 50   | No         |
| 2,4-Dichlorophenol                  | µg/L  | <0.2     | 900  | No         |
| 2,4-D                               | µg/L  | <0.439   | 100  | No         |
| Diclofop-methyl                     | µg/L  | <0.146   | 9    | No         |
| Dimethoate                          | µg/L  | <0.194   | 20   | No         |
| Diquat                              | µg/L  | <0.2     | 70   | No         |
| Diuron                              | µg/L  | <10      | 150  | No         |
| Glyphosate                          | µg/L  | <20      | 280  | No         |
| Malathion                           | µg/L  | <0.194   | 190  | No         |

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|   |      |         |            |           |
|---|------|---------|------------|-----------|
| <b>2-Methyl-4-chlorophenoxyacetic acid (MCPA)</b> | µg/L | <7.32   | <b>100</b> | <b>No</b> |
| <b>Metolachlor</b>                                | µg/L | <0.129  | <b>50</b>  | <b>No</b> |
| <b>Metribuzin</b>                                 | µg/L | <0.129  | <b>80</b>  | <b>No</b> |
| <b>Monochlorobenzene</b>                          | µg/L | <0.5    | <b>80</b>  | <b>No</b> |
| <b>Paraquat</b>                                   | µg/L | <0.2    | <b>10</b>  | <b>No</b> |
| <b>Pentachlorophenol</b>                          | µg/L | <0.3    | <b>60</b>  | <b>No</b> |
| <b>Phorate</b>                                    | µg/L | <0.129  | <b>2</b>   | <b>No</b> |
| <b>Picloram</b>                                   | µg/L | <0.102  | <b>190</b> | <b>No</b> |
| <b>PCB</b>  | µg/L | <0.06   | <b>3</b>   | <b>No</b> |
| <b>Prometryne</b>                                 | µg/L | <0.0647 | <b>1</b>   | <b>No</b> |
| <b>Simazine</b>                                   | µg/L | <0.194  | <b>10</b>  | <b>No</b> |
| <b>Terbufos</b>                                   | µg/L | <0.129  | <b>1</b>   | <b>No</b> |
| <b>Tetrachloroethylene (perchloroethylene)</b>    | µg/L | <0.5    | <b>10</b>  | <b>No</b> |
| <b>2,3,4,6-Tetrachlorophenol</b>                  | µg/L | <0.3    | <b>100</b> | <b>No</b> |
| <b>Triallate</b>                                  | µg/L | <0.129  | <b>230</b> | <b>No</b> |
| <b>Trichloroethylene</b>                          | µg/L | <0.5    | <b>5</b>   | <b>No</b> |
| <b>2,4,6, -Trichlorphenol</b>                     | µg/L | <0.2    | <b>5</b>   | <b>No</b> |
| <b>Trifluralin</b>                                | µg/L | <0.129  | <b>45</b>  | <b>No</b> |
| <b>Vinyl Chloride</b>                             | µg/L | <0.1    | <b>1</b>   | <b>No</b> |

MAC – Maximum Acceptable Concentration

AO – Aesthetic Objective

ND – Not Detected.

### 9. Other Schedule 13 Water Quality Testing

Schedule 13 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that:

- at least one water sample is taken every three months and tested for nitrate and nitrite
- at least one water sample is taken every 60 months and tested for sodium
- at least one water sample is taken at least once every 60 months and tested for fluoride
- at least one distribution sample is taken in each calendar quarter and tested for halo acetic acids (HAAs)
- at least one distribution sample is taken in each calendar quarter and tested for trihalomethanes (THMs)

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| Parameter | Units | Feb 6, 2024 | May 7, 2024 | Aug 6, 2024 | Nov 5, 2024 | MAC             | Exceedance |
|-----------|-------|-------------|-------------|-------------|-------------|-----------------|------------|
| Nitrite   | mg/L  | <0.05       | <0.05       | <0.05       | <0.05       | 1.0             | No         |
| Nitrate   | mg/L  | 0.23        | 0.24        | 0.21        | 0.27        | 10.0            | No         |
| Fluoride  | mg/L  |             | <0.05       | -           | -           | 1.5             | No         |
| Sodium    | mg/L  | -           | 4.58        | -           | -           | 20 <sup>a</sup> | n/a        |

MAC – Maximum Acceptable Concentration

a – Aesthetic Objective

| Parameter | Units | 1 <sup>st</sup> Quarter <sup>a</sup> | 2 <sup>nd</sup> Quarter <sup>a</sup> | 3 <sup>rd</sup> Quarter <sup>a</sup> | 4 <sup>th</sup> Quarter <sup>a</sup> | MAC <sup>a</sup> | Exceedance |
|-----------|-------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------|------------|
| HAAs      | µg/L  | 24.8                                 | 24.8                                 | 26.8                                 | 24.3                                 | 80               | No         |
| THMs      | µg/L  | 28.3                                 | 29.8                                 | 31.8                                 | 35.3                                 | 100              | No         |

MAC – Maximum Acceptable Concentration

a – Running Annual Average Concentration

### 10. Schedule 15 Water Quality Testing:

Schedule 15 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that samples are collected from the distribution system between December 15 and April 15 and between June 15 and October 15, and tested for:

- Total alkalinity and pH each year; and
- Lead every third 12-month period.

Lead samples were collected from the Collingwood distribution system in 2024. The next round of lead sampling is required in 2027. The pH sample result on February 6, 2024 slightly exceeded the operational objective of 8.5 at 43 Stuart Road with the value of 9.4, but it was met on August 2024 with the value of 7.3.

| Parameter  | Units | 2024       | Feb 6, 2024 | Aug 6, 2024 | MAC | OG      | Exceedance |
|------------|-------|------------|-------------|-------------|-----|---------|------------|
| Lead       | µg/L  | <0.1 – 0.4 | <0.1 – 0.3  | <0.1 – 0.4  | 10  | -       | No         |
| Alkalinity | mg/L  | 71-78      | 75-78       | 71-75       | -   | 30-500  | No         |
| pH         | -     | 7.3-9.4    | 8-9.4       | 7.3-8.5     | -   | 6.5-8.5 | No         |

MAC – Maximum Acceptable Concentration

OG – Operational Guideline

## 11. Inorganic or Organic Parameter(s) Exceeding Half the Standard

The Standard for Organic and inorganic parameter(s), from Schedule 23 and 24, that exceeded half the standard prescribed in Schedule 2 of O. Reg. 169/03 Ontario Drinking Water Quality Standards. The table below demonstrates that none of the parameters exceeded half the standard.

| Parameter | Result Value | Unit of Measure | Date of Sample |
|-----------|--------------|-----------------|----------------|
| None      | n/a          | n/a             | n/a            |

## 12. Incidents of Regulatory Non-Compliance

The Ministry of the Environment, Conservation and Parks (MECP) annual inspection was completed in September 2024. Two non-compliances were noted. There were monthly non-compliance results regarding the total chlorine concentrations in discharges from the water treatment plant to the environment. The MDWL required that the total chlorine concentrations in these discharges have an annual running average of 0.02 mg/L each month. The monthly total chlorine concentrations in these discharges were steady at 0.04 mg/L in 2024. Please see Section 6 for the results. The design of the Treatment Plant is not presently capable of meeting the annual average total chlorine residual limit of 0.02 mg/L. The Town of Collingwood received regulatory relief in December 2024 from the MECP with an annual running average limit of 0.05 mg/L until the new plant with better treatment capability is commissioned.

The second non-compliance was noted since notification to the Ministry on the changes to the Drinking Water System was not made within 10 days as required by the Subsection 10.1(3) of O. Reg. 170/03. The recently added ultraviolet disinfection equipment was added to the treatment component's section and Town submitted an updated profile information form to the Ministry in July 2024.

### Findings:

Raw water enters the membrane filter basins and is drawn through the membrane. Concentrate pumps continuously draw unfiltered water out of the filter basins to remove particles that are too large to flow through the membrane. Chlorine is introduced into the raw water during the backpulse cycle when chlorinated water flows in reverse direction through the membrane as part of the cleaning process. A portion of this water goes to the sewer, but due to limited sewer capacity at the treatment plant, a larger portion is returned to Nottawasaga Bay.

Total chlorine testing of the raw water waste stream became a requirement in April 2021 under the updated Municipal Drinking Water License. As mentioned above, the existing facility design is not capable of meeting this requirement.

Prior to this requirement coming into effect, chlorine was also introduced into the raw water at the intake structure, where it was used to control the zebra mussel population. This system has

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not been used since 2021 to minimize chlorine residual levels in the filter basins. The annual intake inspection found 95% coverage of zebra mussels on the intake structure, and they were physically removed by a qualified contractor. Subsequent manual cleanings will be completed as needed based on the findings of future annual intake inspections.

The samples of total chlorine are grab samples taken with a colorimeter. The colorimeter is an industry standard for measuring chlorine samples, but 0.02 mg/L should be considered the detection limit.

The Town is currently working towards an expansion of the existing water treatment plant that will include a de-chlorination process for the raw water waste stream.

In accordance with the requirements of the Municipal Drinking Water License, the exceedance of total chlorine in the raw water waste stream is reported in writing to the local Ministry of the Environment, Conservation and Parks Office each month. The Ministry Office has accepted the reports with no further actions required.

Based on the Ministry established risk rating methodology the Collingwood Drinking Water System received a 99.24% rating for 2024.

### 13. Raw Water Taking

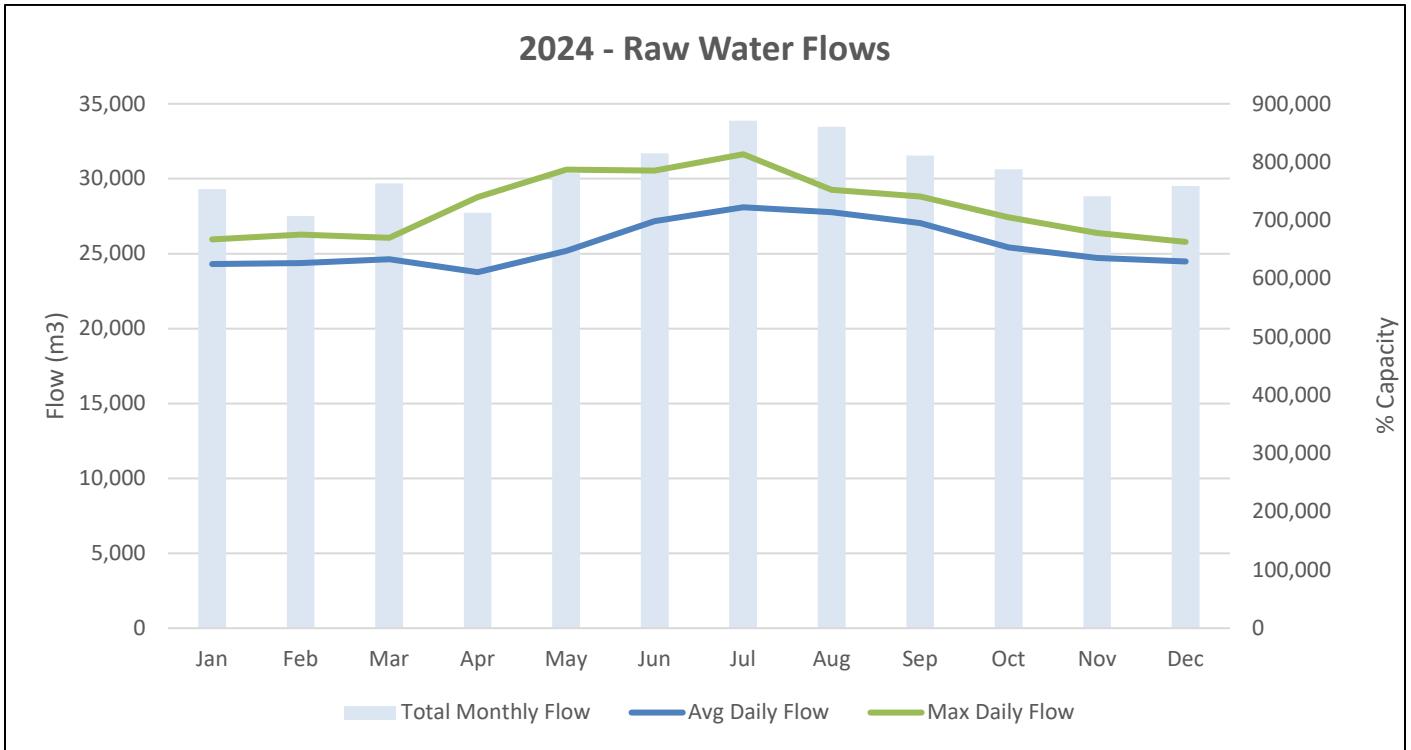
The raw water supply is more than adequate to provide a reliable source of potable water to meet the demands of the system. The source is Nottawasaga Bay, part of Lake Huron in the Georgian Bay region.

Throughout 2024, all water takings at the Collingwood Water Treatment Plant were within the maximum daily permitted rate of 68,250 m<sup>3</sup>, as established by Permit to Take Water (PTTW) 0385-C8CNW8.

| 2024 Raw Water Taking Summary            |           |
|--|-----------|
| Total Annual Taking (m <sup>3</sup> )    | 9,364,127 |
| Average Daily Taking (m <sup>3</sup> /d) | 25,577    |
| Minimum Daily Taking (m <sup>3</sup> /d) | 11,425    |
| Maximum Daily Taking (m <sup>3</sup> /d) | 31,634    |
| Maximum Daily Taking (% Capacity)        | 46%       |

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| Raw Water Taking |                      |                |                |                |          |
|------------------|----------------------|----------------|----------------|----------------|----------|
| Month            | Monthly              | Daily Avg      | Min Day        | Max Day        | Max Day  |
|                  | Total m <sup>3</sup> | m <sup>3</sup> | m <sup>3</sup> | m <sup>3</sup> | Capacity |
| January          | 753,604              | 24,310         | 22,791         | 25,958         | 38%      |
| February         | 707,613              | 24,370         | 18,331         | 26,263         | 38%      |
| March            | 763,397              | 24,626         | 22,659         | 26,050         | 38%      |
| April            | 712,847              | 23,762         | 11,425         | 28,777         | 42%      |
| May              | 780,976              | 25,193         | 23,521         | 30,615         | 45%      |
| June             | 815,062              | 27,169         | 23,294         | 30,552         | 45%      |
| July             | 870,955              | 28,095         | 25,714         | 31,634         | 46%      |
| August           | 860,721              | 27,765         | 25,562         | 29,257         | 43%      |
| September        | 810,956              | 27,032         | 24,596         | 28,809         | 42%      |
| October          | 787,618              | 25,407         | 23,639         | 27,420         | 40%      |
| November         | 741,412              | 24,714         | 22,189         | 26,376         | 39%      |
| December         | 758,966              | 24,483         | 19,656         | 25,784         | 38%      |





## 14. Treated Water Production Rates

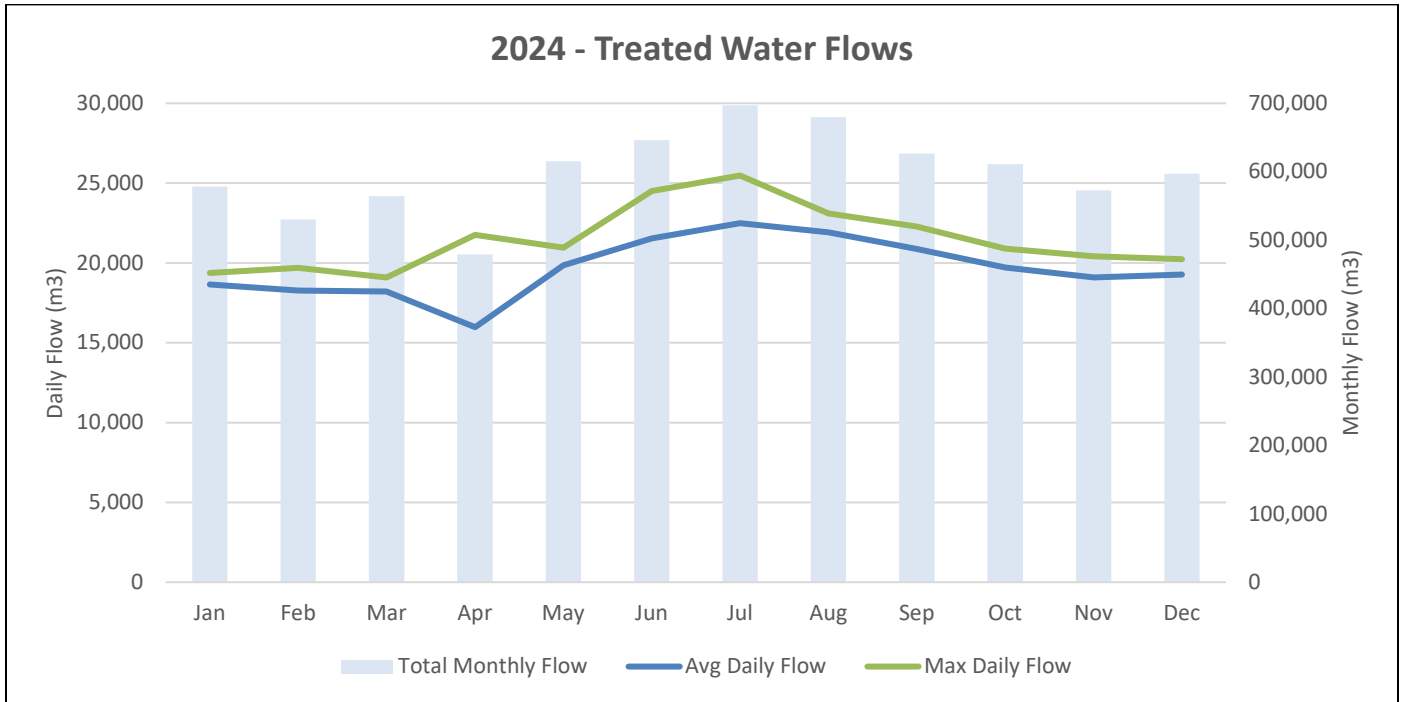
Schedule 22 of O.Reg. 170/03 requires the owner to provide a summary of the quantities and flow rates of water supplied for the reporting period, and a comparison of these flows to the rated capacity and flow rates of the system's approval, drinking water works permit or municipal drinking water licence.

The rated treatment capacity for the Collingwood Water Treatment Plant is 31,140 m<sup>3</sup>/day. In the past this rated treatment capacity was reduced to 24,019 m<sup>3</sup>/d during winter months due to operational limitations with the primary disinfection process (i.e. chlorine contact tanks). The Town installed ultraviolet (UV) reactors which resolved the winter limitations associated with achieving primary disinfection requirements with chlorination only.

In 2024, treated water production rates were as high as 25,476 m<sup>3</sup>/d (82% of the treatment capacity). 2024 production rates are comparable to production rates in the previous five years.

| Treated Water Flows |                                 |                             |                           |  |                  |
|---------------------|---------------------------------|-----------------------------|---------------------------|--|------------------|
| Month               | Monthly Total (m <sup>3</sup> ) | Daily Avg (m <sup>3</sup> ) | Max Day (m <sup>3</sup> ) | Treatment Capacity (m <sup>3</sup> /d) | % Rated Capacity |
| January             | 578,187                         | 18,651                      | 19,373                    | 31,140                                 | 62%              |
| February            | 530,051                         | 18,278                      | 19,685                    | 31,140                                 | 63%              |
| March               | 564,370                         | 18,205                      | 19,087                    | 31,140                                 | 61%              |
| April               | 479,246                         | 15,975                      | 21,764                    | 31,140                                 | 70%              |
| May                 | 615,219                         | 19,846                      | 20,952                    | 31,140                                 | 67%              |
| June                | 646,157                         | 21,539                      | 24,506                    | 31,140                                 | 79%              |
| July                | 697,211                         | 22,491                      | 25,476                    | 31,140                                 | 82%              |
| August              | 679,659                         | 21,924                      | 23,103                    | 31,140                                 | 74%              |
| September           | 626,539                         | 20,885                      | 22,287                    | 31,140                                 | 72%              |
| October             | 610,985                         | 19,709                      | 20,893                    | 31,140                                 | 67%              |
| November            | 572,705                         | 19,090                      | 20,414                    | 31,140                                 | 66%              |
| December            | 597,183                         | 19,264                      | 20,238                    | 31,140                                 | 65%              |

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## 15. Conclusion

The Town of Collingwood continues to provide a safe, reliable source of potable water to the consumers and continues to meet or exceed all legislative requirements.