



# **MATTICE DRINKING WATER SYSTEM 2025 ANNUAL COMPLIANCE AND SUMMARY REPORT**

Prepared by the Ontario Clean Water Agency  
on behalf of the Township of Mattice – Val Côté

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## INTRODUCTION

Municipalities throughout Ontario are required to comply with Ontario Regulation 170/03 made under the *Safe Drinking Water Act*, 2002. The Act was passed following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking-water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. This report must include the following:

1. Description of system and chemical(s) used
2. Description of any major expenses incurred to install, repair or replace equipment
3. Summary of all required testing
4. Summary of any adverse water quality reports and corrective actions

This Annual Report must be completed by February 28 of each year.

The regulation also requires a Summary Report, which must be presented and accepted by Council by March 31 of each year for the preceding calendar year reporting period.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), and any Provincial Officer Order the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

The *Safe Drinking Water Act*, 2002 and the drinking water regulations can be viewed at the following website: <http://www.e-laws.gov.on.ca>.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report:

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows.
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The two reports have been combined and presented to council as the Annual Compliance and Summary Report.

## SECTION 11 ANNUAL REPORT

### SYSTEM INFORMATION

Drinking-Water System Name:	MATTICE DRINKING WATER SYSTEM
Drinking-Water System No.:	210001781
Drinking-Water System Owner:	The Corporation of the Township of Mattice-Val Côté
Drinking-Water System Category:	Large Municipal, Residential System
Population:	542
Reporting Period:	January 1 to December 31, 2025

### REPORT AVAILABILITY

Hard Copy Available at:	Mattice - Val Côté Municipal Office; 500 Highway 11; Mattice ON P0L 1T0
Electronic Copy Available:	<a href="https://www.matticevalcote.ca/en/eaux-et-égouts">https://www.matticevalcote.ca/en/eaux-et-égouts</a>
Public Notification via:	Public access/notice

### DESCRIPTION OF THE DRINKING WATER SYSTEM

The Water Treatment System is located at 249 Parkview Avenue in the community of Mattice. The system is designed to treat raw water from the Missinaibi River for the removal of colour, turbidity and other impurities in order to provide a high quality effluent for potable and domestic use.

Raw water is introduced to the system via one of two (one standby) pumps, each rated at 11.0 L/s located in the wet well building adjacent to the river. The raw water inlet valve opens on plant start up, low clearwell level, or another control signal. The valve closes automatically on plant shutdown.

The facility houses a dual train package water treatment plant, chlorine contact tank, chemical storage, dosing equipment, high lift pumps, office, laboratory and personnel facilities. The treatment process is a completely automatic, gravity flow operation consisting of two-process trains with a treatment capacity of 905 m<sup>3</sup>/day. The trains provide flash mixing, coagulation, flocculation, and up flow clarification using settling tubes and high rate filtration through a dual media system. The filter is comprised of sand and anthracite and is backwashed when a pressure transmitter indicates total headloss, when filtered turbidity values are high, or by elapsed time. The turbidity off each filter is continuously monitored and information is relayed to the plant control panel.

Backwash water and sludge from the bottom of the clarifier is automatically removed and discharged to the sanitary sewer.

The plant is provided with six chemical storage and dosing systems: alum, sodium hydroxide, soda ash, sodium hypochlorite, polymer and ammonia solution. Each system consists of a solution tank, chemical feed pumps, and a mixer where applicable.

The treated water enters a baffled chlorine contact tank (reservoir/storage) that has a capacity of 808 m<sup>3</sup> before it is distributed to the residents of Mattice. Free chlorine residual is continuously monitored in the reservoir where primary disinfection has been achieved. Ammonium sulphate is added at the discharge of the chlorine contact tank to produce a combined chlorine residual before entering the distribution system.

Standby power consists of a 130 kW diesel generator and is located in a separate room with the ability to provide power for the entire facility including the low lift building

### WATER TREATMENT CHEMICALS USED

- Sodium hypochlorite - disinfection by chlorination
- Ammonium sulphate - disinfection by chloramination
- Aluminum sulphate - coagulation/flocculation
- Polymer - aids in coagulation/flocculation
- Sodium hydroxide or soda ash – pH and alkalinity adjustment

All treatment chemicals are NSF/ANSI approved.

### MAJOR EXPENSES INCURRED TO INSTALL, REPAIR OR REPLACE EQUIPMENT

#### Capital Work – 2025

- Chemical Pump and Analyzer Parts
- PLC/HMI Upgrade Components
- PLC Migration
- SCADA Computer and Software
- SCADA Alarm Dialer Setup
- Valve Turning Trailer Work
- Confined Space Equipment Certification
- Lifting Device Inspections
- Generator Maintenance
- DWQMS Third Party Audit
- Backwash Flowmeter Install
- MDWL Renewal
- Fire Extinguisher Inspections
- Highlift-531 VFD Install

### REPORTING ADVERSE TEST RESULTS AND OTHER PROBLEMS

Details on the notices required in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Date	Details (Parameter, Limit, Result, Corrective Action, Date, etc.)
NONE	None

## SCHEDULE 7 - OPERATIONAL TESTING WITH CONTINUOUS MONITORING

Continuous Analyzers in Treatment Process	Number of Samples	Range of Results (min to max)	Unit of Measure	Standard
Turbidity (Filter #1)	8760	0.0 – 1.97	NTU	<1.0
Turbidity (Filter #2)	8760	0.0 – 2.00	NTU	<1.0
Chlorine (Free)	8760	0.40 – 2.11	mg/L	-

**Note:** For continuous monitors use 8760 as the number of samples.

Effective backwash procedures, including filter to waste at 0.3 NTU, are in place to ensure that the effluent turbidity requirements are met all times. The plant is configured to shutdown and creates a callout whenever turbidity reaches 1.0 NTU

## SCHEDULE 7 - OPERATIONAL TESTING IN THE DISTRIBUTION SYSTEM

Distribution System	Number of Samples	Range of Results (min to max)	Unit of Measure	Standard
Combined Chlorine	365	0.36 – 1.94	mg/L	>0.25

**Note:** A total of seven operational checks for chlorine residual in the distribution system are required each week. The owner/operating authority can continue to test one sample per day or test four (4) samples one day and three (3) on a second day. The sample sets must be collected at least 48-hours apart and samples collected on the same day must be from different locations.

## SCHEDULE 10 - MICROBIOLOGICAL TESTING

Sample Type	Number of Samples	<i>E.coli</i> Results (min to max)	Total Coliform Results (min to max)	Number of HPC Samples	Range of HPC Results (min to max)
Raw	52	0 – 40	0 – 402	N/A	N/A
Treated	52	0 – 0	0 – 0	52	<10 – 1720
Distribution	104	0 – 0	0 – 0	53	<10 – 70
MAC	-	0	0	-	-

Maximum Acceptable Concentration (MAC) applies only to treated or distribution samples

## SCHEDULE 13 - NITRATE AND NITRITE AT THE WATER TREATMENT PLANT

Date of Sample	Nitrate Result Value (mg/L)	Nitrite Result Value (mg/L)	Exceedance
January 7, 2025	0.1	0.02	No
April 8, 2025	0.4	<0.01	No
July 9, 2025	<0.05	<0.05	No
October 6, 2025	<0.05	<0.05	No

Maximum Acceptable Concentration (MAC) for Nitrate = 10 mg/L

MAC for Nitrite = 1 mg/L

## SCHEDULE 13 - TOTAL TRIHALOMETHANES IN THE DISTRIBUTION SYSTEM

Date of Sample	Result (ug/L)	Running Four Quarter Average	Exceedance
January 7, 2025	66	66.8	No
April 8, 2025	62.6	70.3	No
July 9, 2025	159	78.5	No
September 9, 2025	93.4		
October 6, 2025	88	85.7	No

Maximum Acceptable Concentration (MAC) for Trihalomethanes = 100 ug/L Four Quarter Running Average

## SCHEDULE 13 – HALOACETIC ACIDS (HAA) IN THE DISTRIBUTION SYSTEM

Date of Sample	Result (ug/L)	Running Four Quarter Average	Exceedance
January 7, 2025	< 8	37.9	No
April 8, 2025	65	41.4	No
July 9, 2025	166	66.1	No
September 9, 2025	101		
October 6, 2025	96	74.5	No
November 18, 2025	87		

Maximum Acceptable Concentration (MAC) for Haloacetic Acids = 80 ug/L Four Quarter Running Average

## SCHEDULE 13 – SODIUM AT WATER TREATMENT PLANT

Date of Sample	Result (mg/L)	Maximum Acceptable Concentration	Exceedance
October 11, 2022	45.5	20	Yes - AWQI
October 18, 2022	36	20	Yes (Re-sample)

**Note:** sample required every 60 months

## SCHEDULE 13 – FLUORIDE TESTED AT WATER TREATMENT PLANT

Date of Sample	Result (mg/L)	Maximum Acceptable Concentration	Exceedance
October 11, 2022	<0.05	1.5	No

**Note:** sample required every 60 months

## SCHEDULE 15.1 – LEAD IN THE DISTRIBUTION

The Mattice water supply system qualified for the ‘Exemption from Plumbing Sampling’ as described in section 15.1-5 (9) and 15.1-5 (10) of Ontario Regulation 170/03

As such, the system was required to test for total alkalinity and pH in two distribution samples collected during the periods of December 15 to April 15 and June 15 to October 15. This testing is required in every 12-month period with lead testing in every third 12-month period.

Sampling Dates	Number of Samples	Range of Results (min to max)		
		Lead (ug/L)	pH	Alkalinity (mg/L)
<b>Winter Period</b>				
April 12, 2023	2	0.7 – 1.5	6.79 – 6.84	31 – 43
April 10, 2025	2	-	6.88 – 6.94	82 – 85
<b>Summer Period</b>				
August 18, 2023	2	0.2 – 0.3	7.37 – 7.44	79 – 81
September 4, 2025	2	-	6.79 – 7.01	45 – 65

MAC for lead is 10 ug/L

## SCHEDULE 23 - INORGANIC PARAMETERS SAMPLED AT THE WATER TREATMENT PLANT

Sample Date: October 6, 2025

Parameter	Result	MAC	MAC Exceedance	1/2 MAC Exceedance
Antimony	<0.5	6.0	No	No
Arsenic	<1	10.0	No	No
Barium	6	1000.0	No	No
Boron	5	5000.0	No	No
Cadmium	<0.1	5.0	No	No
Chromium	2	50.0	No	No
Mercury	<0.1	1.0	No	No
Selenium	<0.2	50.0	No	No
Uranium	<0.5	20.0	No	No

MAC – Maximum Acceptable Concentration

No inorganic parameter(s) exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standards (ODWS) during the reporting period

## SCHEDULE 24 - ORGANIC PARAMETERS SAMPLED AT THE WATER TREATMENT PLANT

Sample Date: October 6, 2025

Parameter	Result	MAC	MAC Exceedance	1/2 MAC Exceedance
1,1-Dichloroethylene	<0.3	14	No	No
1,2-Dichlorobenzene	<0.2	200	No	No
1,2-Dichloroethane	<0.2	5	No	No
1,4-Dichlorobenzene	<0.3	5	No	No
2,3,4,6-Tetrachlorophenol	<0.3	100	No	No
2,4,6-Trichlorophenol	<0.2	5	No	No
2,4-D (2,4-Dichlorophenoxy acetic acid)	<0.299	100	No	No
2,4-Dichlorophenol	<0.2	900	No	No
Alachlor	<0.248	5	No	No
Atrazine + N-dealkylated metabolites	<0.5	5	No	No
Azinphos-methyl	<0.186	20	No	No
Benzene	<0.1	1	No	No
Benzo(a)pyrene	<0.01	0.01	No	No*
Bromoxynil	<0.0797	5	No	No
Carbaryl	<0.5	90	No	No
Carbofuran	<0.5	90	No	No
Carbon Tetrachloride	<0.2	2	No	No
Chlorobenzene (Monochlorobenzene)	<0.5	80	No	No
Chlorpyrifos	<0.186	90	No	No
Diazinon	<0.186	20	No	No
Dicamba	<0.0697	120	No	No
Dichloromethane (Methylene Chloride)	<1	50	No	No
Diclofop-methyl	<0.0996	9	No	No
Dimethoate	<0.186	20	No	No
Diquat	<0.3	70	No	No
Diuron	<0.5	150	No	No
Glyphosate	<10	280	No	No
Malathion	<0.186	190	No	No
MCPA (2-methyl-4-chlorophenoxyacetic acid)	<4.98	100	No	No
Metolachlor	<0.124	50	No	No
Metribuzin	<0.124	80	No	No
Paraquat	<0.4	10	No	No
Pentachlorophenol	<0.3	60	No	No

Parameter	Result	MAC	MAC Exceedance	1/2 MAC Exceedance
Phorate	<0.124	2	No	No
Picloram	<0.0697	190	No	No
Prometryne	<0.062	1	No	No
Simazine	<0.186	10	No	No
Terbufos	<0.124	1	No	No
Tetrachloroethylene	<0.3	10	No	No
Total PCBs	<0.05	3	No	No
Triallate	<0.124	230	No	No
Trichloroethylene	<0.2	5	No	No
Trifluralin	<0.124	45	No	No
Vinyl Chloride	<0.1	1	No	No

Note\*: Benzo(a)pyrene – Schedule 13-5 of O. Reg. 170/03 requires increased frequency of sampling if an analytical result obtained for any of the parameters listed in Schedule 24 exceeds one half of the MAC. The Ministry has set the reporting detection limit (RDL) for Benzo[a]pyrene at 50 per cent or more of the MAC, due to the limitations of the current analytical methods to achieve lower detection limits. The RDL for benzo[a]pyrene is 0.01 ug/L. For this parameter, a licenced laboratory must be able to achieve a method detection limit (MDL) at least equal to the RDL. A positive result above their MDL would trigger increased frequency of sampling, but a result equal to their MDL would not.

MAC – Maximum Acceptable Concentration

No organic parameter(s) exceeded half the standard found in Schedule 2 of the ODWS during the reporting period.

#### **ADDITIONAL TESTING AND SAMPLING**

No additional sampling and testing was required for the Mattice Drinking Water System during the reporting period.

## SCHEDULE 22 - SUMMARY REPORTS FOR MUNICIPALITIES

This report is a summary of water quality information for the Mattice Water Treatment System. It is published in accordance with Schedule 22 of Ontario’s Drinking Water Systems Regulation 170/03 for the reporting period of January 1 to December 31, 2025 and must be submitted to members of council.

The report must include:

- Any requirements the system failed to meet during the reporting period
- A summary of quantities and flow rates and a comparison to the imposed limits

### PERMITS AND LICENCES

Municipal Drinking Water Licence (MDWL)	291-101 Issued March 1, 2021
Drinking Water Works Permit (DWWP)	291-201 Issued March 1, 2021
Permit to Take Water (PTTW)	0836-AXHN4F – expires February 21, 2028

### REQUIREMENTS THE SYSTEM FAILED TO MEET

The following table lists the requirements of the Safe Drinking Water Act (2002), the drinking water regulations, the system’s approval, drinking water works permit, municipal drinking water works licence, and any other orders applicable to the system that were not met at any time during the reporting period. This table is based on documentation available to the Ontario Clean Water Agency. The duration of the failure and details of the actions that were taken to correct the failure must be described.

Legislation	Requirement(s) the System Failed to Meet, Corrective Actions and Status
O. REG. 170/03 SCHEDULE 6	<p>ALL CONTINUOUS MONITORING EQUIPMENT UTILIZED FOR SAMPLING AND TESTING WERE NOT EQUIPPED WITH AN ALARM OR SHUTOFF MECHANISM TO SATISFY THE REGULATION</p> <p>February 28 – Reported immediately and noted from the MECP inspection on October 30 – A non-compliance occurred because on February 27 a truck on Highway 11 crashed and went off the highway causing an interruption to phone and internet services in Mattice. NorthernTel was contacted immediately when it was noticed, however, the internet and phone line service was not restored until March 1. During this time, an operator could not be notified immediately if there was a compliance related alarm.</p> <p>No corrective actions were required at this time.</p>

Legislation	Requirement(s) the System Failed to Meet, Corrective Actions and Status
O. REG. 170/03 SCHEDULE 6	<p data-bbox="422 252 1250 283">FAILURE OF THE CONTINUOUS MONITORING OF THE FREE CHLORINE ANALYZER</p> <p data-bbox="422 294 1445 609">December 16 – There was a loss of continuous monitoring of the free chlorine residual for about 66 minutes, which is a violation of O. Reg 170/03 Schedule 6. The free chlorine analyzer (Hach CL17) reagent bottle contents were too low and the analyzer stopped reading at 5:24 am. An hour later the on-call operator arrived on site and began taking grab samples to verify the chlorine residual was okay. The Pre-Clearwell and Point of Entry total chlorine analyzers had stable readings the whole time. There were no concerns for loss of disinfection.</p> <p data-bbox="422 619 1445 735">Corrective Actions: The reagent bottles were replaced and the analyzer started reading properly after being primed. The on-call operator was reminded of their duty to report non-compliances forthwith.</p>

## SUMMARY OF FLOW RATES

For the purpose of enabling the owner of the system to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report. Under schedule 22-2(3) of Ontario Regulation 170/03, the Summary Report must include the following:

1. A summary of the quantities and flow rates of water supplied, including the monthly average and the maximum daily flows
2. A comparison of both the average and maximum flow rate summary to the rated capacity approved in the systems approval, drinking water works permit or municipal drinking water licence

The following tables indicate the quantities and flow rates of water taken and produced during the reporting period, including monthly average flows, maximum daily flows and the total monthly volumes. A comparison of the water data is made to the rated capacity and flow rates specified in the system’s Municipal Drinking Water Licence

## DAILY RAW WATER USAGE SUMMARY

	Maximum (L/min)	Maximum (m <sup>3</sup> /d)	Average (m <sup>3</sup> /d)	Total Usage (m <sup>3</sup> )
January	337	237	181	5,617
February	382	261	179	5,023
March	286	232	177	5,491
April	319	297	181	5,437
May	274	250	182	5,645
June	282	348	238	7,128
July	281	314	230	7,117
August	293	332	231	7,175
September	280	352	219	6,565
October	277	264	190	5,896
November	328	288	185	5,539
December	276	248	188	5,833

## DAILY VOLUME OF TREATED WATER INTO THE DISTRIBUTION SYSTEM

	Total Usage (m <sup>3</sup> )	Average (m <sup>3</sup> /d)	Maximum (m <sup>3</sup> /d)	% Rated Capacity
January	5,234	169	186	18.7
February	4,555	163	175	18.0
March	5,061	163	186	18.0
April	4,898	163	178	18.0
May	5,134	166	210	18.3
June	6,312	210	295	23.2
July	6,128	198	227	21.8
August	5,740	185	227	20.5
September	5,495	183	278	20.2
October	4,829	156	179	17.2
November	4,679	156	177	17.2
December	4,942	159	182	17.6

## SUMMARY OF FLOW COMPARISON

### COMPARISON OF RAW FLOWS TO SYSTEM'S PERMIT TO TAKE WATER

<b>Permit to Take Water Limits (PTTW) - maximum</b>	<b>1,309 m<sup>3</sup>/day</b>	<b>909 L/min</b>
Average Daily Flow for 2025	199 m <sup>3</sup> /day	138 L/min
Maximum Daily Flow for 2025	352 m <sup>3</sup> /day	382 L/min
Total Raw Water Used in 2025	72,466 m <sup>3</sup>	-

### COMPARISON OF TREATED FLOWS TO THE SYSTEM'S MUNICIPAL DRINKING WATER LICENCE

<b>Rated Capacity of the Plant (MDWL)</b>	<b>905 m<sup>3</sup>/day</b>	
Average Daily Flow for 2025	173 m <sup>3</sup> /day	19.1 % of the rated capacity
Maximum Daily Flow for 2025	295 m <sup>3</sup> /day	32.6 % of the rated capacity
Total Treated Water Produced in 2025	63,008 m <sup>3</sup>	

Based on the information above, the plant is able to meet the demands of the consumers.