

# Thorndale Drinking Water System

## 2024 Summary Report



Presented to Council March 24, 2025

## Table of Contents

### Summary Report

Background.....	3
Thorndale Water System Description.....	3
Legislation.....	3
Safe Drinking Water Act.....	4
Standard of Care, Section 19, Safe Drinking Water Act.....	4
Ontario Regulation 170/03: Drinking Water Systems Regulation.....	4
Drinking Water Quality Management Standard (DWQMS) .....	5
Ontario Regulation 435/07: Financial Plans .....	5
Non-Compliances with Legislation .....	5
Testing Results .....	6
Permit to Take Water .....	6
Production Well Maintenance .....	8
Water Usage .....	8

## Background

The delivery of potable water in Ontario is regulated by the Ministry of Environment, Conservation and Parks (MECP) under the Safe Drinking Water Act. On June 1, 2003 O. Reg. 170/03 came into effect. This regulation prescribes requirements for owners and operators of municipal drinking water systems.

Among the obligations, O. Reg. 170/03 prescribes the need for all owners of licensed water works to produce a Summary Report with the following information:

- The list of requirements of the Act, regulations and the system's approval. It must also note any order that the system failed to meet at any time during the period covered by the report and specify the duration of the failure and describe the measures taken to correct the situation.
- Summary of quantities of water used for the period covered by the report.
- The Summary Report must be presented and accepted by Council by March 31<sup>st</sup> of each year.

This Regulation also requires the owner to produce an Annual Report that includes the following:

- A system description
- Summary of any adverse water quality reports and corrective actions
- Summary of all required testing results
- Description of any major expenses incurred to install, repair or replace required equipment
- The Annual Report must be completed by February 28<sup>th</sup> of each year and available to the public.

The Thorndale Drinking Water System – 2024 Annual Report was presented to Council on February 24<sup>th</sup> and made available to the public on February 25<sup>th</sup>.

## Thorndale Water System Description

The Thorndale Drinking Water System services approximately 1,830 people via approximately 732 service connections. There are an estimated 19.29 kilometres of watermains located within the village of Thorndale; the oldest being 49 years old. There are 95 municipal hydrants and 8 private property fire hydrants providing fire protection including 150 valves of various sizes throughout the system to control water flow. Water is supplied to the village from the Thorndale Water Treatment Facility through a network of wells, reservoirs, and an elevated storage tank. The treatment process and distribution system are monitored on-line, 24 hours per day by licenced municipal operators through a SCADA (System Control and Data Acquisition) system. The water treatment facility and water distribution system are both owned and operated by the Municipality of Thames Centre.

## Legislation

The following are the primary pieces of legislation that directly affect the operation of the Thorndale Drinking Water System.

## Safe Drinking Water Act

The Safe Drinking Water Act's (SDWA) purpose is to protect human health through the control and regulation of drinking-water systems and drinking-water testing. The Act also has the benefit of gathering in one place all legislation and regulations relating to the treatment and distribution of drinking water.

Highlights of the Act address:

- Accreditation of operating authorities
- Municipal drinking water systems
- Drinking water testing
- Inspections, Compliance and Enforcement

## Standard of Care, Section 19, Safe Drinking Water Act

The Standard of Care defines the legal responsibility of the owner and operating authority of a municipal drinking water system. It requires that the owners and operating authorities exercise the level of care, diligence and skill with regard to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation. Owners and operating authorities must exercise this due diligence honestly, competently and with integrity. Based on the definition of owner in the SDWA, the Municipality of Thames Centre is considered the owner of the Thorndale Drinking Water System.

The three key messages identified for Municipal Councillors are as follows:

**It is Your Duty:** The Standard of Care is for individuals who have oversight responsibilities for municipal drinking water systems that can extend to Municipal Councillors. There are legal consequences for negligence of financial penalties up to imprisonment for individuals, corporations or both.

**Be Informed:** Ask questions; Get answers. Councillors do not have to be an expert in drinking water operations, but they do need to be informed about them. Council decisions can have an impact on public health. Councillors should seek advice from those with expertise and act prudently on that advice.

**Be Vigilant:** Complacency can pose one of the greatest risks to drinking water systems. It is critical that Councillors never take drinking water safety for granted or assume all is well with the drinking water systems under their care and direction. The health of the community depends on diligent and prudent oversight of its drinking water systems.

## Ontario Regulation 170/03: Drinking Water Systems Regulation

The Drinking Water Systems Regulation (O. Reg. 170/03) regulates municipal and private water systems that provide water to year-round residential developments. This regulation stipulates treatment equipment usage, operational checks and sampling, chemical and microbiological testing requirements, corrective actions, and reporting requirements.

## Drinking Water Quality Management Standard (DWQMS)

The purpose of this Standard is to assist owners and operating authorities in the effective management and operation of their municipal residential drinking water systems. This Standard outlines the requirements for a Quality Management System (QMS) to ensure high quality drinking water. In the development of a QMS, the Operating Authority must create an Operational Plan; this document defines the QMS and will be subject to internal and external audits for accreditation. As referenced in the Standard, the QMS must be embraced by all those with active rolls in the water system, from front line staff to the highest level of management.

Environmental Services staff have developed and implemented a QMS specific to Thames Centre's two drinking water systems. Certification was originally obtained on September 10, 2010. Recertification was successfully achieved in 2013, 2016, 2019, and 2022. The next external certification audit will be carried out in the spring of 2025.

## Ontario Regulation 435/07: Financial Plans

O. Reg. 453/07 requires all owners of a municipal residential drinking water systems to prepare a Financial Plan that details the system's financial information projected forward for at least six years. The Financial Plan must include income statements (which set out revenues and expenses), as well as balance sheets (which include financial assets, non-financial assets, total liabilities, cash flow, etc.).

The Financial Plan must then be formally approved by the owner of the municipal system through a resolution of the municipal council. The Financial Plan requires regular updates before every Operating License renewal application (every 5 years). Council report ES-017-11 was submitted and approved by Council on June 13, 2011. This report formed the foundation for the Financial Plan that was then submitted to the Ministry of the Environment, Conservation and Parks (MECP). On May 25, 2020, through council report PW-004-20 the five-year renewal application of the Long Range Financial Plan was presented to Council for acceptance and subsequently submitted to the Province.

## Non-Compliances with Legislation

Schedule 22 of Ontario Regulation 170/03 requires that all non-compliance with applicable legislation be discussed in the Summary Report. The Thorndale Drinking Water System has extensive requirements for monitoring and reporting of water quantity and quality. These requirements include proper documentation, analytical testing, adverse incident reporting, corrective actions, and calibration of flow meters and online continuous water quality monitoring instrumentation. The Ministry of the Environment, Conservation and Parks (MECP) completed their annual drinking water system inspection on May 30, 2024 for the period of June 16, 2023 to May 30, 2024. The following "**Non-Compliance/Non-Conformance Items**" section has been taken from the Ministry Drinking Water Inspection Report for the Thorndale Drinking Water System dated June 25, 2024.

### Non-Compliance/Non-Conformance (Legislative):

- 1) Parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. Condition 2.3, Schedule B of the Drinking Water Works Permit (DWWP) requires all parts of the drinking water system that come into contact with drinking water, be disinfected in

accordance with a procedure approved by the ministry's Director or in accordance with the applicable provisions identified in the DWWP. Disinfection records were provided for the following projects: watermain commissioning of Nissouri Road extension, and watermain commissioning of Rosewood phase 2. The facility logbook includes an entry on September 6, 2023. That describes the installation of a sample collection line in the bypass chamber/clearwell, down flow from the chlorine contact chamber. However, no disinfection records were available for this project.

**Required Action(s):**

The system owner shall ensure that the American Water Works Association disinfection procedures are followed, and pertinent details are recorded.

**Action(s) Taken by staff:**

Staff created the Water Treatment Facility Infrastructure Disinfection Record (ES-DWS-FRM-011-021) to ensure there is a record of the disinfection of any new or replaced equipment in the Thames Centre water plants.

**Non-Compliance/Non-Conformance (Best Management Practices):**

There were no Best Management Practices identified during the 2024 inspection.

**Testing Results**

**Summary of reports made to the Ministry under subsection 18(1) of the Safe Drinking-Water Act or Schedule 16-4 of O.Reg.170/03:**

**ADVERSE WATER QUALITY INCIDENTS (AWQI)**

Table A: *Adverse Water Quality Incidences (AWQI)*

AWQI #	DATE 2024	LOCATION	PARAMETER	RESULT	MECP CRITERIA	CORRECTIVE ACTION
There were no Adverse Water Quality Incidences in 2024.						

**Permit to Take Water, Drinking Water Works Permit, and Municipal Drinking Water Licence**

The Thorndale Drinking Water System has restrictions on instantaneous flow rates (peak flow rates) and maximum daily flow volumes. These limits are identified in the Amended PTTW No. 5082AP2RUV, the Drinking Water Works Permit 059-201, and the Municipal Drinking Water Licence 059-101.

Well #1 exceeded the maximum allowable permitted flow rate on (4) four separate occurrences in 2024.

DATE 2024	DWWP # 059-201 Exceedances Well #1 maximum allowable flow: 8.33 l/s	DURATION	EXPLANATION / CORRECTIVE ACTION
Sept 3	8.34 l/s	1 minute	Flow spike on start-up
Sept 10	8.63 l/s	1 minute	Flow spike on start-up
Oct 8	8.39 l/s	3 minutes	Flow spike at start-up
Dec 4	9.38 l/s	33 minutes	Annual drawdown step test performed by water operators

Chart 1: Well #1 Flow Rate (litres/second)

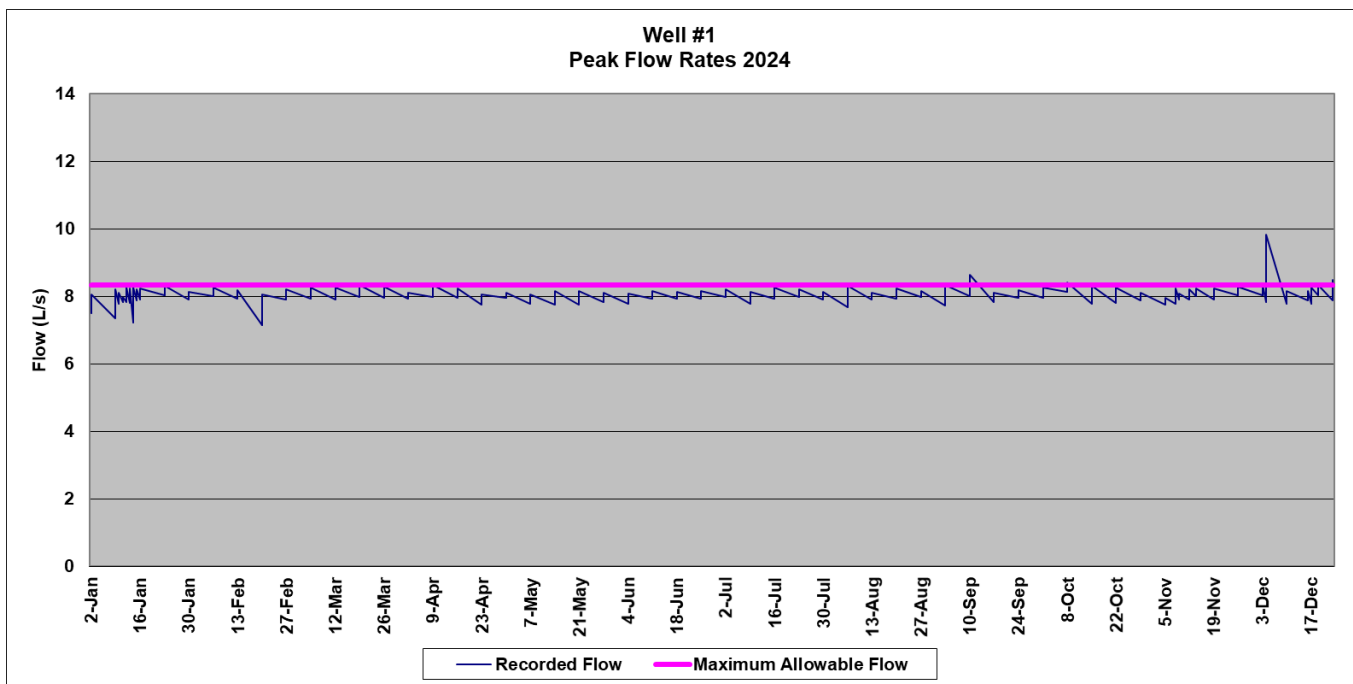
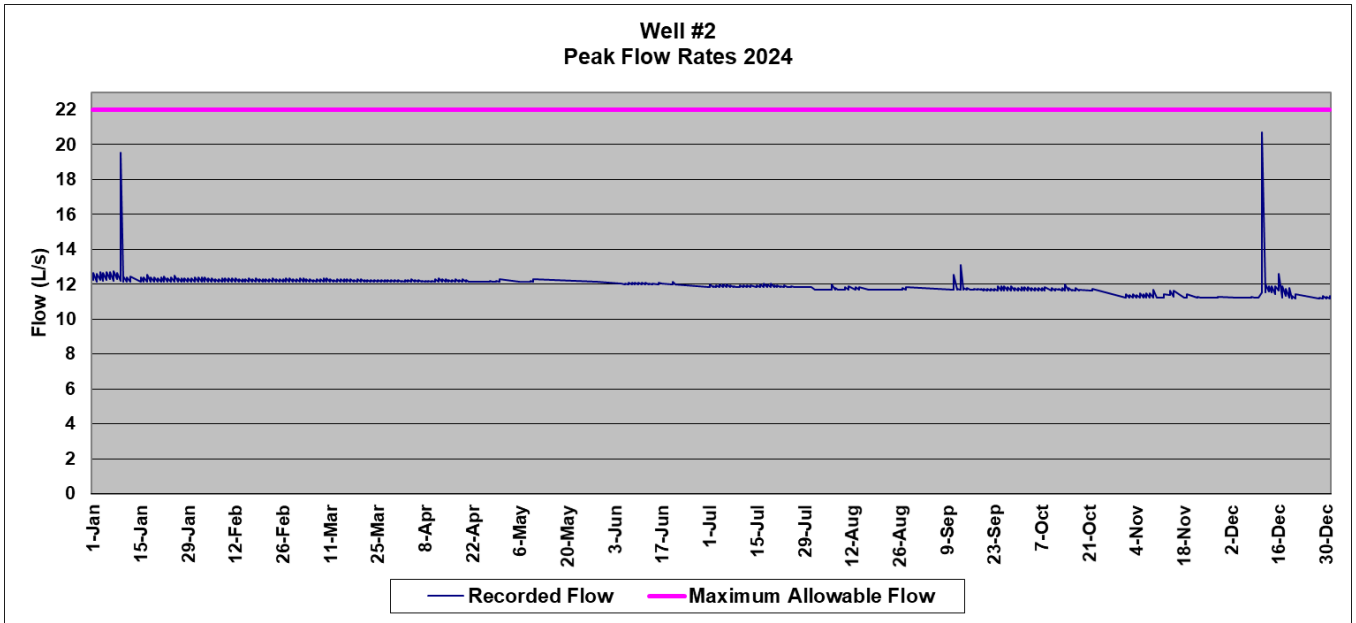


Chart 2: Well #2 Flow Rate (litres/second)



## Production Well Maintenance

Routine (weekly) well inspections conducted by Thames Centre staff, in accordance with the Thames Centre - Well Inspection and Maintenance Plan, indicate all drinking water supply wells were in compliance. Wells are maintained in accordance with O. Reg. 903, (made under the Ontario Water Resources Act).

Table B: Production Well Maintenance Summary

PRODUCTION WELL	OUT OF SERVICE DURATION	REASON FOR MAINTENANCE	CORRECTIVE ACTION / RESULTS (data collected from Inspection Report)
No well maintenance was conducted in 2024.			

## Water Usage

From January 1 to December 31, 2024, the Thorndale Water Distribution System received a total of 140,080 m<sup>3</sup> of water from Thorndale Water Treatment Facility. This compares to 137,942 m<sup>3</sup> from the previous year (an increase of 1.5%).



Chart 3: Thorndale DWS – 2024 Monthly Water Consumption (m3)

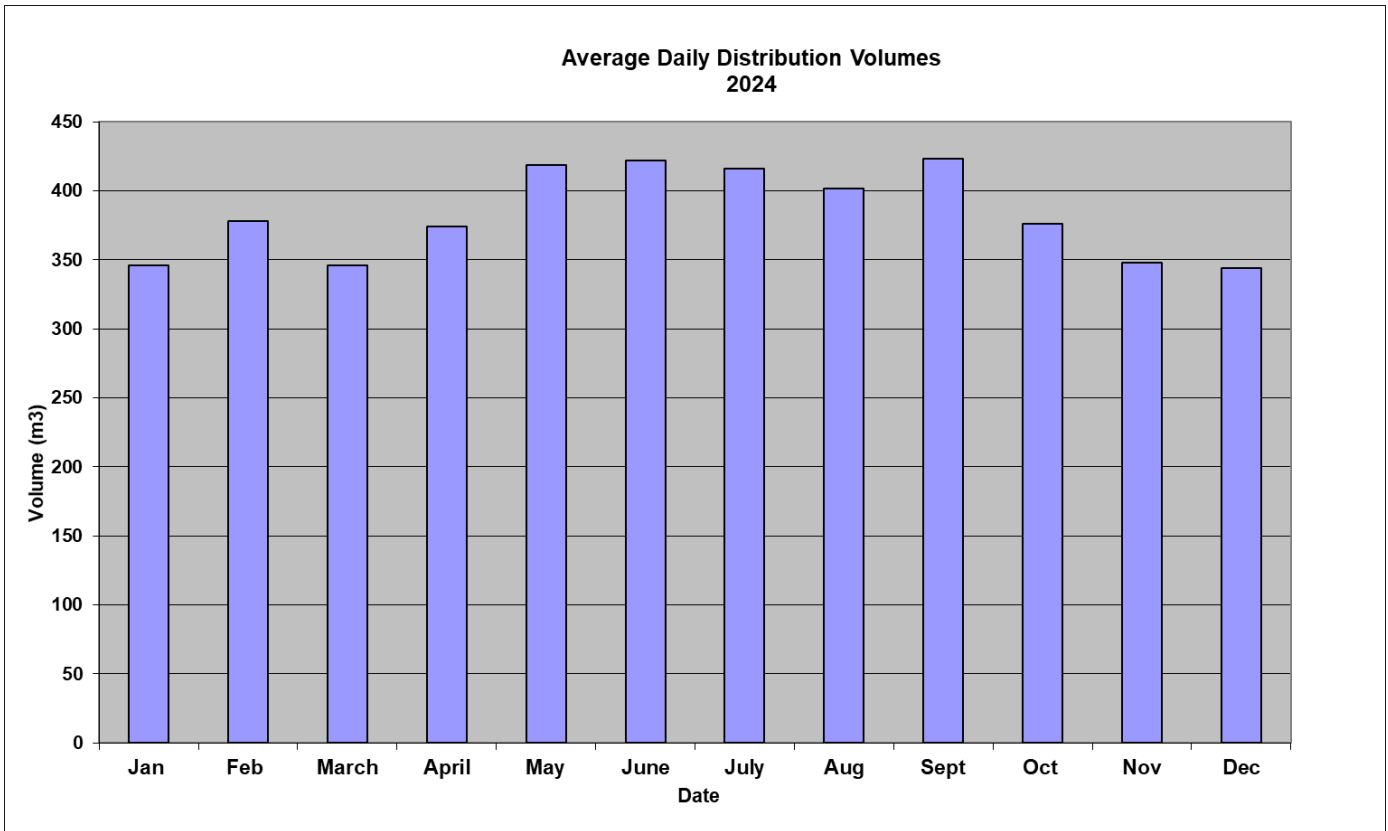
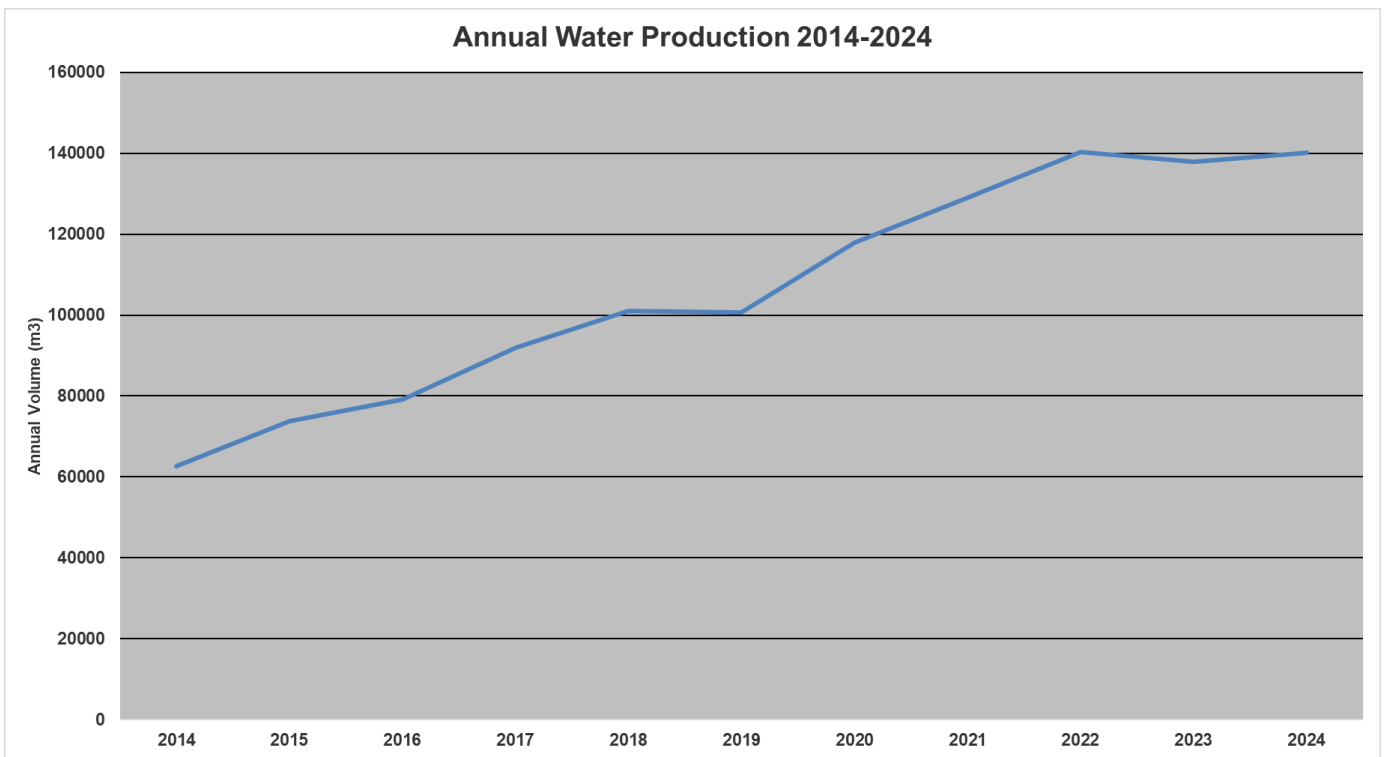


Chart 4: Thorndale DWS - Annual Water Consumption (m3), 2014 – 2024



This report is presented based on recorded information taken by licenced water operators and to the best of my knowledge is complete and accurate.

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