

Summary Report 2022

Orangeville Drinking Water System

Town of Orangeville

Ministry of the Environment, Conservation & Parks

Municipal Drinking Water License No. 108-101

Drinking Water Works Permit No. 108-201

Water Works No. 220003252

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1. Introduction

This is the summary report for the Orangeville drinking water system, as required by Schedule 22 of Ontario Regulation 170/03 (Reg. 170/03), as amended, Summary Reports for Municipalities. For purposes of the regulation, the Orangeville drinking water system is considered a large municipal residential system.

The reporting period is January 1 to December 31, 2022.

During the reporting period, the Orangeville drinking water system was operated pursuant to the Municipal Drinking Water License (MDWL) and Drinking Water Works Permit (DWWP) listed below.

1. MDWL No. 108-101 (Issue No. 3), dated December 1, 2020 and expiring on November 29, 2025.
2. DWWP No. 108-201 (Issue No. 3), dated December 1, 2020.

The DWWP and MDWL were issued in accordance with Sections 40 and 44, respectively, of the Safe Drinking Water Act (SDWA), 2002.

Water takings for the drinking water system were made under Permit to Take Water (PTTW) No. 7518-8XGL8T, issued December 14, 2012 and expired on December 31, 2022. Beginning January 1, 2023, water takings for the drinking water system will be made under PTTW No. 5327-CMJLJU issued December 29, 2022 and expiring on December 31, 2032.

The summary report is required to provide the following:

1. A list of any known instances when the system failed to meet the requirements of the Safe Drinking Water Act (SDWA), the regulations, the system's MDWL, DWWP, and any order;
2. Descriptions of the measures that were taken to correct the failure;
3. A summary of the quantities and flow rates of water supplied during the reporting period;
4. The monthly average and maximum daily instantaneous peak flow rates; and
5. A comparison of the data summarized above to the rated capacities and flow rates in the system's MDWL.

2. Failure to Meet Regulatory Requirements

This section provides a summary of regulatory non-compliance issues that occurred during the reporting period.

2.1. Non-compliance with Schedule B, Sections 16.2.8 and 16.2.9 of Municipal Drinking Water License #108-101

2.1.1. Background

Schedule B, Section 16.2.8 of the MDWL requires an inspection schedule be established for all wells associated with the drinking water system including production wells, standby wells, test wells and monitoring wells.

Schedule B, Section 16.2.9 of the MDWL requires inspections be carried out on both the above ground and below ground components of the wells.

2.1.2. Description

The Ministry of Environment, Conservation and Parks (MECP) inspection report for the Orangeville drinking water system dated December 16, 2022 acknowledged that the Town has established a well inspection and maintenance program to conform to the requirements of Schedule B, Section 16.2.8 of the MDWL. However, with respect to Section 16.2.9, the MECP noted that below-grade video inspections of production wells were only being carried out on an as-needed basis when the wells were out of service or undergoing rehabilitation.

2.1.3. Resolution

The Town's Well Inspection and Maintenance Procedure for Wells Standard Operating Procedure (SOP) #14-001-04 was revised January 31, 2023 as required by the MECP. The revisions included the addition of minimum frequencies for below-grade video inspections of all production wells. Below-grade inspections are now scheduled to occur at least once every 6 to 8 years.

Town staff have developed a draft below-grade video inspection schedule for all production wells in the Orangeville drinking water system. The completed schedule will be submitted to the MECP for review and approval.

2.2. Non-compliance with Schedule B, Section 16.2.10 of Municipal Drinking Water License #108-101

2.2.1. Background

Schedule B, Section 16.2.10 of the MDWL requires the development of a remedial action plan when any well inspection indicates non-compliance with regulatory requirements and/or identifies a risk to the raw water quality of a well.

2.2.2. Description

The MECP inspection report for the Orangeville drinking water system dated December 16, 2022 found that remedial actions were not undertaken in response to deficiencies noted in the 2021 annual well inspection program.

2.2.3. Resolution

Upon request by the MECP inspector, Town staff undertook remedial actions to address deficiencies noted at observation wells in the 2021 annual well inspection program. The Town's Well Inspection and Maintenance Procedure for Wells SOP #14-001-04 was revised January 31, 2023 as required by the MECP.

The revisions included the strengthening of the remedial action process. The remedial action process is now more clearly defined in the SOP with minor remedial actions to be undertaken within 60 days and major remedial actions to be undertaken within 180 days following the discovery of a deficiency. Additionally, the forms associated with the SOP were revised to provide Town staff with additional clarity and to improve the documentation and remedial processes.

2.3. Non-compliance with Schedule A and Schedule C of Drinking Water Works Permit #108-201

2.3.1. Background

Schedule A of the DWWP provides a description of the Orangeville drinking water system along with detailed information regarding each individual production well, the pumping equipment and each treatment facility. The schedule also contains information on various other components of the system such as chlorine contact simulators, storage reservoirs, pumping stations, SCADA instrumentation and fuel oil systems.

Schedule C of the DWWP provides authorization to the Town to make specific alterations to the Orangeville drinking water system, including changes to some of the components listed in Schedule A of the DWWP.

2.3.2. Description

In late October 2022, Town staff became aware that the physical characteristics of the chlorine contact simulators at Wells 2A, 5/5A, 9A/9B and 10 did not match the descriptions in Schedule A of the DWWP. Town staff discovered the discrepancies while working to provide the MECP Provincial Officer with requested information during the 2022 annual inspection process.

2.3.3. Resolution

Upon discovering the discrepancies in the chlorine contact simulators, Town Operations staff conducted a detailed review of the physical characteristics of each chlorine contact simulator within the drinking water system. An investigation was conducted as to why and when the changes to the simulators occurred. The results of the investigations were provided to the MECP in an email dated November 11, 2022.

At the request of the MECP, Town staff submitted an application to amend the DWWP on December 15, 2022. The application included updated designs and descriptions of the chlorine contact simulators. The application is currently under review by the MECP.

2.4. Non-compliance with Schedule B, Sections 3.5 and 3.6 of Drinking Water Works Permit #108-201

2.4.1. Background

Schedule B, Sections 3.5 and 3.6 of the DWWP require the Town to maintain up to date mapping of the water distribution system, including watermain location and sizing information. Any watermain additions, modifications, replacements, or extensions must be recorded and incorporated into the mapping within 12 months of completion.

2.4.2. Description

The Town uses a Geographic Information System (GIS) to map the water distribution system. The GIS mapping documents the network of watermains, valves, hydrants and other components of the drinking water system on a topographic base map viewable within a web browser application.

In mid-October 2022, Compliance Staff became aware that the GIS mapping contained incorrect and inaccurate information. Upon further investigation, it was discovered the mapping had not been maintained in accordance with Sections 3.5 and 3.6 of the DWWP.

2.4.3. Resolution

Compliance Staff have had discussions with key Town staff members and management to formulate a process to correct the mapping and develop a procedure to incorporate recent and future additions, modifications, replacements or extensions. The work is currently underway but a time frame for completion has not been determined.

3. Summaries of Flow Rates and Water Supply Capacities

Table 1 summarizes the capacities of the system's water treatment facilities and the flow rates through the facilities during the reporting period. The table includes the following information.

1. The monthly average and maximum daily flow through each of the water treatment facilities, in cubic metres per month and cubic metres per day, respectively.
2. The daily instantaneous peak flow rate through each of the water treatment facilities, in litres per minute. The table includes a footnote explaining how the rates were calculated.
3. The approved rated capacity of each treatment facility, in cubic metres per day, as authorized in the MDWL. None of the facilities exceeded their approved rated capacities in 2022.

4. The maximum daily flow through each treatment facility expressed as a percentage of the approved rated capacity for that facility, as authorized in the MDWL.
5. Footnotes that deal specifically with the Well 2A treatment facility.

TABLE 1

**Town of Orangeville Drinking Water System
Water Treatment Facilities
2022 Capacity & Flow Summary**

Well Field	Volumes Through Treatment Facilities				Approved Rated Capacity in MDWL (m3/day)
	Monthly Average (m3/mo.)	Daily Instantaneous Peak Flow Rate (L/min.) (1)	Maximum Daily Flow (m3/day)	Max. Daily Flow as % of Approved Rated Capacity in MDWL	
2A	14,367 (2)	535	771	59% (3)	1,309 (3)
5/5A	123,451	3,785	5,450	91%	6,000
6	33,755	1,088	1,567	44%	3,600
7	21,128	649	935	71%	1,310
8B/8C	5,364	346	498	76%	654
9A/9B	14,731	531	765	87%	878
10	20,604	847	1,219	84%	1,453
11	17,739	594	855	65%	1,309
12	26,515	803	1,156	88%	1,309
All Wells:	273,367	-	12,693	71%	17,822

Footnotes:

(1) Daily instantaneous peak flow rates are calculated by converting the maximum daily flow in m3/day to L/min. This calculation assumes the flow through the treatment facility has been continuous during the preceding 24-hour period.

(2) The Well 2A monthly average is based on a 6 month operating period. Refer to PTTW No. 7518-8XGL8T.

(3) The Well 2A maximum daily volume allowed in PTTW No. 7518-8XGL8T was only 878.4 m3/day. The maximum daily flow of 771 m3/day is **88%** of the PTTW rate.

4. Conclusion

This report will be presented to Orangeville Council at its March 20, 2023 meeting, satisfying the requirements of Schedule 22-2 (1) (a) of Reg. 170/03, as amended. Additionally, the report will be available to the public at no cost, and it will be posted on the Town's website at www.orangeville.ca.