

# **Summary Report 2021**

## **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, 2021; however, some of the incidents documented in this report occurred prior to this period. Additional information is provided in Section 2 of this report.

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 expiring on December 31, 2022.

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. It is noted that some of the incidents summarized below occurred prior to the current reporting period. The incidents came to the attention of Staff after the preparation and submission of the 2020 Summary Report. Therefore, they are included herein to comply with the requirements of Reg. 170/03.

### **2.1. Non-compliance with Schedules A and C of Drinking Water Works Permit #108-201**

#### **2.1.1. 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 storage reservoirs, pumping stations, SCADA instrumentation and fuel oil systems.

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

#### **2.1.2. Description**

The Ministry of Environment, Conservation and Parks (MECP) inspection report for the Orangeville drinking water system, dated April 9, 2021, identified discrepancies between Schedule A of the DWWP and some of the equipment and appurtenances located at some of the water works facilities. A list of discrepancies was provided to the Town by the MECP in an email dated December 16, 2020.

#### **2.1.3. Resolution**

Staff submitted a DWWP amendment application and Director Notification form to the MECP as required by April 30, 2021. The application included revisions to Schedule A of the DWWP to ensure the equipment and appurtenances throughout the Orangeville drinking water system are accurately listed.

### **2.2. Non-compliance with Schedule B, Section 2.3 of Drinking Water Works Permit #108-201**

#### **2.2.1. Background**

Schedule B, Section 2.3 of the DWWP indicates that all parts of the drinking water system in contact with drinking water that are modified, replaced, or extended shall be disinfected in accordance with the provisions outlined in the MECP document "Watermain Disinfection Procedure" (WDP), dated August 1, 2020 and American Water Works Association Standards C652, C653 and C654.

### **2.2.2. Description**

The MECP inspection reported dated April 9, 2021 indicated the Town's watermain break records included many details required to demonstrate compliance with the WDP. Water Operations Staff ensure that all steps in the WDP are followed. Due to some record-keeping issues, Staff were unable to provide complete written records for some of the watermain break events, as required in the DWWP.

### **2.2.3. Resolution**

The Town's Watermain Break and Repair Standard Operating Procedure (SOP) #14-002-02) was revised May 31, 2021, as required by the MECP. The SOP was revised to include a statement that all tools and equipment used in repair procedures are to be disinfected prior to use. The repair checklist was also revised to add an item for the disinfection of all tools and equipment. Additionally, the Water Main Break Log was revised to include spaces for recording the post repair and flushing free chlorine residuals.

## **2.3. Non-compliance with Schedule 6-5 (1) 3 of Ontario Regulation 170/03**

### **2.3.1. Background**

Schedule 6-5 (1) 3 of Reg. 170/03 requires that data collected by continuous monitoring devices be reviewed by a certified drinking water Operator within 72 hours of test results.

### **2.3.2. Description**

The MECP inspection report dated April 9, 2021 noted that Operators were reviewing the automatically generated daily compliance reports within 72 hours, as required by Reg. 170/03. The daily compliance reports include summaries of the continuous monitoring data.

If Operators identified issues in the daily compliance report requiring follow up, they would review the SCADA trending and/or data in more detail. SCADA is an acronym for the **S**upervisory **C**ontrol and **D**ata **A**cquisition system, which is a computerized system used in the operation of the Town's drinking water system. The MECP Inspector noted this method did not comply with the requirements of Reg. 170/03.

### **2.3.3. Resolution**

An interim Standard Operating Procedure (SOP #015A-01, "Operator Review of Daily SCADA Compliance and Trending") was developed and submitted to the MECP as required on May 31, 2021. The SOP provides guidance to water works Operators for completing reviews of regulatory continuous monitoring and trending data as required by Schedule 6-5 (1) 3 of Reg. 170/03.

Staff are in the process of developing and implementing a new automatically generated compliance report system that will facilitate compliance with Schedule 6-5 (1) 3 of Reg. 170/03. It is anticipated the new system will be operational later in 2022.

## **2.4. Non-compliance with Sections 12 and 13 (5) of Ontario Regulation 170/03**

### **2.4.1. Background**

Section 12 of Reg. 170/03 requires that drinking water system information be available for inspection during regular business hours. Section 13 (5) requires that information be provided to the Director or a Provincial Officer (Inspector) upon request within a reasonable time frame.

### **2.4.2. Description**

The MECP inspection report dated April 9, 2021 noted that SCADA data requested by the Provincial Officer was not provided within a reasonable time frame.

### **2.4.3. Resolution**

A Standard Operating Procedure (SOP #014-00, "MECP Drinking Water System Inspections – Provision of Data, Documents, and Records") was developed, issued, and submitted to the MECP as required on May 31, 2021. The SOP specifies procedures for the timely acquisition and provision of data, documents, and records, as specified in Reg. 170/03.

## **2.5. Non-compliance with the Section 20 of Regulation 903 (Wells)**

### **2.5.1. Background**

Regulation 903 (Wells) is issued under the Ontario Water Resources Act. Section 20 requires well owners to maintain their well(s) in such a manner as to prevent the entry of surface water or other foreign materials.

### **2.5.2. Description**

The MECP inspection report dated February 4, 2022 indicated that a small number of monitoring wells located on Town-owned properties were out of compliance with Section 20 of Regulation 903. Monitoring wells located at production well sites 5, 7, and 8 were identified as needing minor improvements to secure them against the entry of surface water or other foreign materials.

### **2.5.3. Resolution**

Minor repairs to the monitoring wells were completed as required by water works Operations Staff. A temporary repair was completed at one of the wells due to winter weather conditions. A permanent repair will be completed in the spring once temperatures are warm enough to permit proper welding operations. The MECP Inspector was informed of the completed repairs in an email dated February 16, 2022.

## **2.6. Non-compliance with Schedule E of Municipal Drinking Water License #108-101**

### **2.6.1. Background**

Schedule E of the MDWL requires the ultraviolet (UV) light sensors on each UV disinfection unit be checked against a reference UV sensor at least once per month. The calibration ratio between the sensors must be less than or equal to 1.2.

### **2.6.2. Description**

The MECP inspection report dated February 4, 2022 noted the UV sensors were checked monthly as per the requirements of Schedule E of the MDWL. However, the September 2021 UV sensor check at Wells 5/5A indicated the calibration ratio was greater than 1.2. Due to record-keeping issues, Operations Staff were unable to provide the Inspector with records documenting the follow up actions completed.

### **2.6.3. Resolution**

A training session was held for Operations Staff on January 26, 2022. The purpose of the training was to provide Operators with direction regarding the necessary steps to take when a UV sensor calibration ratio is measured as greater than 1.2. A record of the training session was provided to the MECP prior to completion of the Orangeville drinking water system inspection.

## **2.7. Non-compliance with Schedule C of Municipal Drinking Water License #108-101**

### **2.7.1. Background**

Schedule C of the MWDL requires continuous monitoring of UV treatment equipment be conducted every five minutes or less and recorded every four hours or less. The data to be recorded includes the flow rate, UV intensity and UV lamp status.

### **2.7.2. Description**

The MECP inspection report dated February 4, 2022, noted the Well 12 UV lamp status was not recorded as per the requirements of Schedule C of the MWDL. Upon investigation by Town Staff, a SCADA system configuration error was found. The error resulted in an incorrect SCADA tag (identifier) being referenced for Well 12 UV lamp status.

### **2.7.3. Resolution**

Town Staff corrected the SCADA system configuration error on November 10, 2021. UV lamp status data at Well 12 has since been properly recorded as per the requirements of Schedule C of the MDWL. Evidence of this corrective action was provided to the MECP prior to completion of the Orangeville drinking water system inspection.

## **2.8. Non-compliance with Schedule 15.1 of Ontario Regulation 170/03**

### **2.8.1. Background**

Schedule 15.1 of Reg. 170/03 requires water quality samples be collected and analyzed for lead (Pb) at a frequency prescribed in the Schedule. The Schedule also requires that field pH measurements be taken at the time of water quality sample collection.

### **2.8.2. Description**

The MECP inspection report dated February 4, 2022 noted that lead (Pb) testing was completed in February 2021 as required by Schedule 15.1 of Reg. 170/03. However,

field pH measurements were not taken as required. Upon investigation by Town Staff, it was determined that incorrect laboratory chain of custody (COC) records were used during sample collection. The COC records used did not include a column prompting the water works Operators to measure and record field pH measurements. COC records designed for use in the lead (Pb) testing programs include a column for recording pH measurements.

### **2.8.3. Resolution**

Standard Operating Procedure #013-03 (“Regulatory Water Quality Sampling and Testing”) was revised January 14, 2022, as required by the MECP. Section 6.3 of the SOP was revised to include specific direction regarding the collection of field pH measurements during water quality sample collection for lead (Pb) testing. The SOP is now consistent with the requirements of Schedule 15.1 of Reg. 170/03.

## **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 2021.
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  
 2021 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	12,362 (2)	479	690	53% (3)	1,309 (3)
5/5A	100,216	3,685	5,306	88%	6,000
6	45,387	1,182	1,702	47%	3,600
7	24,409	639	920	70%	1,310
8B/8C	7,353	448	645	99%	654
9A/9B	14,652	542	780	89%	878
10	8,662	810	1,166	80%	1,453
11	25,087	638	918	70%	1,309
12	19,101	773	1,113	85%	1,309
All Wells:	250,164	-	10,482	59%	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 is only 878.4 m3/day. The maximum daily flow of 690 m3/day is 79% of the PTTW rate.

**4. Conclusion**

This report will be presented to Orangeville Council at its March 21, 2022 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](http://www.orangeville.ca).