

# Town of New Tecumseth 2022 Alliston Drinking Water System Annual Report



Prepared in accordance with Section 11 of Ontario Regulation 170/03

For the Period of

**January 1 to December 31, 2022**

System Rating: Water Distribution and Supply Subsystem Class II

Drinking Water System No.: 220001174

Municipal DW License No.: 123-101, Issue No. 3

## Table of Contents

1.	INTRODUCTION.....	1
2.	REPORTING REQUIREMENTS (Section 11 - O.Reg.170/03) .....	1
2.1	Availability of Annual Water Report.....	1
2.2	Drinking Water System Receiving Water .....	1
2.3	Description of Drinking-Water System .....	1
2.4	Water Treatment Chemicals .....	2
2.5	Significant Expenses Incurred.....	2
2.6	Sampling and Testing .....	2
2.6.1	Schedule 7 - Operational Checks .....	2
2.6.2	Schedule 10 - Microbiological Sampling and Testing.....	3
2.6.3	Schedule 13 - Chemical Testing .....	3
2.6.4	Schedule 15.1 – Lead.....	3
2.6.5	Schedule 16 – Reporting of Adverse Test Results and Other Problem and.....	3
	Schedule 17 – Corrective Actions .....	3

## Tables

### Schedule 7 Operational Checks

Table 1 – Summary of Treated Water and Distribution Samples – Free Chlorine and Raw Samples – Turbidity

### Schedule 10 Microbiological Testing

Table 2 – Summary of Raw, Treated and Distribution System Samples

### Schedule 13 Chemical Testing (HAAs, Nitrate and Nitrite)

Table 3 – Summary of Treated Water Samples – Inorganics and Organics

Table 3.2 – Summary of Treated Water Samples - Trihalomethanes

Table 3.3 – Summary of Treated Water Samples – Haloacetic Acids

Table 3.4 – Summary of Treated Water Samples – Nitrite, Nitrate, Sodium and Fluoride

### Schedule 15 Lead

Table 4 – Summary of Lead Samples

### Schedule 16 and 17

Table 5 – Details of Adverse Water Quality Incidents (AWQIs) and Corrective Actions

## 1. Introduction

In accordance with Ontario Regulation 170/03 (O.Reg.170/03): Drinking Water Systems, the Town of New Tecumseth has prepared this Annual Report which is required to be completed no later than February 28<sup>th</sup> of every year. This report covers the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2022, and the information provided complies with the reporting requirements outlined in Section 11 of O.Reg.170/03.

A summary of the Town of New Tecumseth’s drinking water system description is outlined below:

Drinking-Water System Number: 220001174  
 Drinking-Water System Name: Alliston Water Supply System  
 Drinking-Water System Owner: Corporation of the Town of New Tecumseth  
 Drinking-Water System Category: Large Municipal Residential

## 2. Reporting Requirements (Section 11 - O.Reg.170/03)

### 2.1 Availability of Annual Water Report

This report has been prepared in accordance with Section 11 of Ontario Regulation 170/03 and is available, free of charge as follows:

- via the Town of New Tecumseth website (<http://newtecumseth.ca/>)
- via Public Request (email: [drinkingwater@newtecumseth.ca](mailto:drinkingwater@newtecumseth.ca) or phone 705-435-3900)

The users of water from the Town of New Tecumseth Alliston Drinking Water System are advised through the Town of New Tecumseth’s website for viewing.

### 2.2 Drinking Water System Receiving Water

List all Drinking Water Systems, which receive all their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Kingsmere Village Distribution System	2600094133
Briar Hill RSO	220008337
Tottenham Drinking Water System	220001085

### 2.3 Description of Drinking-Water System

The Alliston Water Supply System consists of six groundwater production wells and is supplemented with surface water from the Raymond A. Barker Ultra-Filtration Plant in Collingwood and distributed via a 600 mm diameter transmission main to the Parsons Road Reservoir. It also consists of four in-ground reservoirs with a total capacity of 15,788 m<sup>3</sup> and one elevated storage tank with a capacity of approximately 4,500 m<sup>3</sup>.

The Parsons Road Reservoir is the central location for the Supervisory Control and Data Acquisition (SCADA) system that provides various monitoring and control over the Alliston Water System. The Parsons Road Reservoir houses a high lift pumping station dedicated to the Honda of Canada Plant.

The Alliston Water Supply system distributes treated water to the communities of Alliston and Beeton, which includes approximately 27,879 consumers (based on data from the Planning Department). There are 7,820 service connections, comprising of residential, institutional, commercial, and industrial consumers. In addition, there are approximately 148 kilometers of water main and 970 hydrants. The Alliston Water Supply

supplements the Tottenham Water System through a transmission main connecting Alliston to Tottenham through Beeton.

Treated water from the Alliston distribution system is conveyed to Earl Rowe Provincial Park via a dedicated transmission main.

The Hillcrest Well Supply System operates as a self-contained system with one groundwater production well and one reservoir in the northern part of Alliston. The Hillcrest Well Supply System distributes treated water to the community of Hillcrest, which is composed of approximately 101 residential service connections. In addition, there are approximately 1.6 kilometers of water main and 11 fire hydrants. The Hillcrest system has a Pressure Sustaining Valve (PSV) that connects to the Alliston Water Supply System to allow water from the Alliston system to flow into the Hillcrest system should the pressure drop below a predetermined level. This provides additional capacity for fire protection and flexibility of supply from the Alliston Distribution System. Hillcrest Water System was not in service for 2022. Water was provided to the residents from the Alliston Water System.

## 2.4 Water Treatment Chemicals

The following water treatment chemicals were utilized during the reporting period:

- Sodium Hypochlorite (12%)
- Sodium Silicate

## 2.5 Significant Expenses Incurred

The following major expenses were incurred during the reporting period to install, or replace required equipment:

A brief summary and value of the expenses incurred, including those outlined above, are as follows:

Maintenance Activity	Costs Incurred (2022)
Flow Meter Calibration	\$2,001
Cleaning and Inspection of Beeton Springs Reservoir	\$14,200
McKelvey Reservoir Building Repairs	\$4,000
Mowder Reservoir Motor Repairs	\$2,500
Alliston Well #7 – Pump Control Upgrades	\$20,000

## 2.6 Sampling and Testing

Drinking water samples were collected and tested in accordance with O.Reg. 170/03 and tested in accordance with O.Reg. 169/03.

### 2.6.1 Schedule 7 - Operational Checks

Operational checks including raw water turbidity, and free chlorine (treated and distribution) were conducted in accordance with Schedule 7 of O.Reg.170/03. The operational testing conducted during this reporting period are summarized in Table 1 of this report.

## **2.6.2 Schedule 10 - Microbiological Sampling and Testing**

Microbiological testing on raw, treated and distribution water samples was conducted in accordance with Schedule 10-2, 10-3 and 10-4 of O.Reg.170/03. The microbiological testing and sampling conducted during this reporting period is summarized in Tables 2, 2.1 and 2.2 of this report.

In addition to the required microbiological testing from O. Reg. 170/03 (i.e. Total Coliform and E. Coli) Tables 2.1 and 2.2, include bacteriological health-related parameter; Heterotrophic Plate Count (HPC). HPC is a useful operational tool for monitoring general bacteriological water quality throughout the treatment process and in the distribution system. HPC results are not an indicator of water safety and, as such, should not be used as an indicator of potential adverse human health effects.

## **2.6.3 Schedule 13 - Chemical Testing**

Chemical testing for organic and inorganic parameters was conducted on treated water samples in accordance with Schedule 13, Sections 13.2 (Schedule 23), 13.4 (Schedule 24), 13.8 and 13.9. The latest 36-month and 60-month test results are summarized in Table 3 of this report.

Chemical testing for trihalomethanes (THMs), haloacetic acids (HAAs) and nitrate and nitrite was conducted quarterly in accordance with Schedule 13.6 and 13.7 of O.Reg 170/03 respectively. THMs and HAAs are samples solely from the distribution system and nitrate and nitrites are samples at the reservoir (treated samples). The latest test results are summarized in in Table 3 of this report.

## **2.6.4 Schedule 15.1 – Lead**

Lead and Alkalinity samples are collected from several locations in the distribution system in accordance with Schedule 15.1. Lead samples are required to be done every three years and was completed in 2022. Alkalinity samples are required to be sampled between December 15<sup>th</sup> and April 15<sup>th</sup> and June 15<sup>th</sup> and October 15<sup>th</sup> every year. The latest test results are summarized in Table 4 of this report.

## **2.6.5 Schedule 16 – Reporting of Adverse Test Results and Other Problem and Schedule 17 – Corrective Actions**

Adverse water quality incidents (AWQI) were reported in accordance with Schedule 16 and corrective actions related to each incident were completed in accordance with Schedule 17. A summary of the AWQI's and associated corrective actions that occurred during this reporting period is included in Table 5 of this report.

# Tables

**Table 1 - Schedule 7 Operational Checks  
Summary of Treated and Distribution Samples – Free Chlorine and Raw Samples - Turbidity**

Sampling Location	Sample Count	Free Chlorine (mg/L)		Sample Count	Turbidity (NTU)	
		(min)	(max)		(min)	(max)
<b>Treated Water</b>				<b>Raw Water</b>		
Well #1	8760*	0.00	2.20	12	0.17	0.72
Well #4	8760*	0.00	2.20	12	0.22	0.75
Well #5	8760*	0.00	2.20	11	0.17	0.70
Well #6	8760*	0.00	2.20	12	0.15	0.68
Well #7	8760*	0.80	1.83	12	0.16	0.70
Well #8	8760*	0.76	2.20	12	0.02	0.49
Hillcrest Well	**					
Parsons Road Reservoir	8760*	1.11	1.98	--	--	--
Mowder Boulevard Reservoir	8760*	1.02	1.95	--	--	--
<b>Distribution Water</b>						
McKelvey Reservoir	8760*	1.07	1.90	--	--	--
Springs Reservoir	8760*	0.53	1.22	--	--	--

**Notes:**

- \*8760 represents Continuous Monitoring
- \*\* Hillcrest Well was not in service in 2022 except for regulatory sampling and no water was directed to the distribution system.
- Low Chlorine residuals that are recorded by continuous monitoring equipment during equipment malfunctions / well not running or power outages are not considered to be an adverse event. These incidents are responded to by operations staff for resolution. Also, the value of 0.00 recorded by the continuous chlorine analyzer could be a result of equipment abnormality / SCADA issues / maintenance work or calibration.

**Table 2 - Schedule 10 Microbiological Sampling and Testing**

Source	E.Coli		Total Coliform		HPC		Sample Count
	(min)	(max)	(min)	(max)	(min)	(max)	
<b>Treated Water</b>							
Well #1	0	0	0	0	0	2	52
Well #4	0	0	0	0	0	3	52
Well #5	0	0	0	0	0	1	46
Well #6	0	0	0	0	0	4	52
Well #7	0	0	0	0	0	2	51
Well #8	0	0	0	0	0	1	52
Hillcrest Well	0	0	0	0	0	150	4
Parsons Road Reservoir	0	0	0	0	0	4	52
Mowder Reservoir	0	0	0	0	0	2	52
McKelvey Reservoir	0	0	0	0	0	1	52
Springs Reservoir	0	0	0	0	0	17	52
Meter Chamber #2 (Pipeline)	0	0	0	0	0	8	52
<b>Total Number of Treated Samples</b>							<b>569</b>
<b>Raw Water</b>							
Well #1	0	0	0	0	--	--	52
Well #4	0	0	0	0	--	--	52
Well #5	0	0	0	0	--	--	46
Well #6	0	0	0	0	--	--	52
Well #7	0	0	0	0	--	--	51
Well #8	0	0	0	0	--	--	52
Hillcrest Well	0	0	0	0	--	--	4
<b>Total Number of Raw Samples</b>							<b>309</b>
<b>Distribution System</b>							
Routine Sampling Points	0	1	0	46	0	84	520
Other (main breaks, new construction)	0	0	0	0	0	40	130
<b>Total Number of Distribution Samples</b>							<b>650</b>





**Table 3 - Schedule 13 Chemical Sampling and Testing – Inorganics and Organics**

	Sample Location	Well #1	Well #4	Well #5	Well #6	Well #7	Well #8	Hillcrest Well	Parsons Reservoir	Standard
	Date Sampled	02-23-2021	02-23-2021	02-23-2021	02-23-2021	02-23-2021	06-08-2021	04-15-2022	02-23-2021	
	MDL	Analytical Results								
Picloram	1	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	190
Polychlorinated Biphenyls (PCB)	0.04	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	3.0
Prometryne	0.03	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	1.0
Simazine	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	10.0
Terbufos	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	1.0
Tetrachloroethylene (perchloroethylene)	0.35	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	30.0
2,3,4,6-Tetrachlorophenol	0.20	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	100
Triallate	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	230
Trichloroethylene	0.44	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
2,4,6-Trichlorophenol	0.25	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
Trifluralin	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	45.0
Vinyl Chloride	0.17	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	2.0

**Table 3.2 - Schedule 13 Chemical Sampling and Testing - Trihalomethanes**

Date	THM Results	THM Running Annual Average	Exceedance	Standard
<b>Distribution – Dugdale Avenue Sampling Station</b>				
January 11, 2022	36.0	35.3	No	100
April 12, 2022	31.0			
July 12, 2022	28.0			
October 11, 2022	46.0			

Notes: Results expressed in µg/L

**Table 3.3 - Schedule 13 Chemical Sampling and Testing – Haloacetic Acid**

Date	Location	HAA Results	HAA Running Annual Average	Exceedance	Standard
March 1, 2022	Beattie Avenue SS	14.3	13.9	No	80
June 7, 2022	Beattie Avenue SS	5.8			
September 13, 2022	Beattie Avenue SS	18.2			
December 20, 2022	Beattie Avenue SS	17.4			

**Table 3.4 - Schedule 13 Chemical Sampling and Testing – Nitrite, Nitrate, Sodium and Fluoride**

Parameter	Sample Date (mm/dd/yr)									
	Sample Location	Well #1	Well #4	Well #5	Well #6	Well #7	Well #8	Hillcrest Well	Parsons Reservoir	Standard
Nitrite	01-11-2022	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	1.0
	04-12-2022	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	
	07-12-2022	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	
	10-11-2022	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	
Nitrate	01-11-2022	0.012	0.012	0.007	0.009	0.006<MDL	0.012	0.012	0.264	10.0
	04-12-2022	0.016	0.013	0.008	0.010	0.006<MDL	0.011	0.006<MDL	0.258	
	07-12-2022	0.012	0.011	0.010	0.010	0.006<MDL	0.009	0.008	0.198	
	10-11-2022	0.017	0.007	0.008	0.007	0.006<MDL	0.011	0.006	0.191	
Sodium	10-12-2022	31.9	33.5	21.9	35.5	7.89	26.9	25.5	4.95	200
Fluoride	10-12-2022	0.22	0.21	0.24	0.18	0.10	0.23	0.26	0.10	1.5

**Notes:**

- Results expressed in mg/L

\* The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/l so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

**Table 4 – Schedule 15.1 Lead  
Summary of Lead Samples**

Parameter	Sample Date (mm/dd/yr)	Number of Samples	Range of Results (min/max)	Exceedance	Standard
Lead (Distribution System)	04/14/2020 10/13/2020	10	0.04 – 14.1	Yes	10 µg/l
Alkalinity (Distribution System)	04/12/2022 10/11/2022	8	75 - 114 mg/l	N/A	30 – 500*

**Notes:** \*Aesthetic Objective under the Ontario Drinking Water Standards, Objectives, and Guidelines

**Table 5 – Details of Adverse Water Quality Incidents (AWQIs) and Corrective Actions  
(Schedule 16 & 17)**

AWQI #	Incident Date (mm/dd/yr)	Location	Parameter	Result	Unit of Measure	Corrective Action Taken	Corrective Action Date (mm/dd/yr)
159330	07/26/2022	Distribution	E.Coli/Total Coliform	1/46	CFU/100ml	Main flushed and water tested for chlorine residual on July 28 <sup>th</sup> . Residual was 1.24 mg/l. Resampled at location and downstream on July 28 <sup>th</sup> with results being negative. No further action required.	08/02/2022
160388	10/12/2022	Hillcrest Well	Sodium	25.5	mg/l	Post results to the Town's website which was done on November 7 <sup>th</sup> . Resampled January 10 <sup>th</sup> with a result of 27.4 mg/l. No further action required.	01/31/2023
160389	10/12/2022	Alliston Well #1	Sodium	31.9	mg/l	Post results to the Town's website which was done on November 7 <sup>th</sup> . Resampled January 10 <sup>th</sup> with a result of 30.7 mg/l. No further action required.	01/31/2023
160390	10/12/2022	Alliston Well #4	Sodium	33.5	mg/l	Post results to the Town's website which was done on November 7 <sup>th</sup> . Resampled January 10 <sup>th</sup> with a result of 37.5 mg/l. No further action required.	01/31/2023
160391	10/12/2022	Alliston Well #5	Sodium	21.9	mg/l	Post results to the Town's website which was done on November 7 <sup>th</sup> . Resampled February 2 <sup>nd</sup> with a result of 26.5 mg/l. No further action required.	02/13/2023
160392	10/12/2022	Alliston Well #6	Sodium	35.5	mg/l	Post results to the Town's website which was done on November 7 <sup>th</sup> . Resampled January 10 <sup>th</sup> with a result of 37.3 mg/l. No further action required.	01/31/2023
160393	10/12/2022	Alliston Well #8	Sodium	26.9	mg/l	Post results to the Town's website which was done on November 7 <sup>th</sup> . Resampled January 10 <sup>th</sup> with a result of 30.0 mg/l. No further action required.	01/31/2023

\* The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/l so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.