Town of New Tecumseth
2023 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, 2023

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

Tables

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 28th of every year. This report covers the period of January 1st to December 31st, 2023, 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** 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^3 and one elevated storage tank with a capacity of approximately 4,500 m^3.

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 2023. 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 (2023)
Flow Meter Calibration	$7,000
Alliston Well #5 & #8 – Pump Control Upgrades	$51,000
Collingwood Pipeline Controls Upgraded	$47,000

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 were completed in 2023. Alkalinity samples are required to be sampled between December 15th and April 15th and June 15th and October 15th 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)
Treated Water				**Raw Water**		
Well #1	8760*	0.00	1.90	12	0.19	0.54
Well #4	8760*	0.00	2.20	12	0.05	0.67
Well #5	8760*	0.00	1.91	11	0.25	0.70
Well #6	8760*	0.00	1.69	12	0.23	0.82
Well #7	8760*	1.02	2.20	12	0.17	0.59
Well #8	8760*	0.65	2.12	12	0.20	0.58
Hillcrest Well	**					
Parsons Road Reservoir	8760*	1.14	2.12	--	--	--
Mowder Boulevard Reservoir	8760*	1.02	1.27	--	--	--
Distribution Water						
McKelvey Reservoir	8760*	1.07	1.47	--	--	--
Springs Reservoir	8760*	0.95	1.44	--	--	--

Notes:

- *8760 represents Continuous Monitoring
- ** Hillcrest Well was not in service in 2023 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 valve 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)	
Treated Water							
Well #1	0	0	0	0	0	2	52
Well #4	0	0	0	0	0	6	52
Well #5	0	0	0	0	0	6	47
Well #6	0	0	0	0	0	1	52
Well #7	0	0	0	0	0	2	46
Well #8	0	0	0	0	0	3	47
Hillcrest Well	0	0	0	0	0	1	4
Parsons Road Reservoir	0	0	0	0	0	2	52
Mowder Reservoir	0	0	0	0	0	1	52
McKelvey Reservoir	0	0	0	0	0	2	52
Springs Reservoir	0	0	0	0	0	4	52
Meter Chamber #2 (Pipeline)	0	0	0	0	0	218	52
						Total Number of Treated Samples	**560**
Raw Water							
Well #1	0	0	0	0	--	--	52
Well #4	0	0	0	0	--	--	52
Well #5	0	0	0	0	--	--	47
Well #6	0	0	0	0	--	--	52
Well #7	0	0	0	0	--	--	46
Well #8	0	0	0	0	--	--	47
Hillcrest Well	0	0	0	0	--	--	4
						Total Number of Raw Samples	**300**
Distribution System							
Routine Sampling Points	0	0	0	2	0	110	529
Other (main breaks, new construction)	0	0	0	0	0	520	80
						Total Number of Distribution Samples	**609**

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

	Sample Location Date Sampled	Well #1 02-23-2021	Well #4 02-23-2021	Well #5 02-23-2021	Well #6 02-23-2021	Well #7 02-23-2021	Well #8 07-11-2023	Hillcrest Well 04-12-2022	Parsons Reservoir 02-23-2021	Standard
	Maximum Detectable Level (MDL)	Analytical Results								
Treated Water – Inorganic Parameters										
Antimony	0.9	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	6.0
Arsenic	0.2	<MDL	0.3	0.3	<MDL	<MDL	2.5	<MDL	0.4	10
Barium		119	124	77.6	118	110	49.6	106	14.7	1000
Boron		146	94	72	72	16	94	120	16	5000
Cadnium	0.003	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	.009	0.004	5.0
Chromium		0.28	0.28	0.35	0.36	0.27	0.29	0.91	0.42	50
Mercury	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	1.0
Selenium	0.04	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.10	50
Uranium		0.019	0.006	0.003	<MDL	0.009	0.002	0.038	0.175	20
Treated Water – Organics Parameters										
Alachlor	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
Atrazine+N-dealkylated metabolites	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
Azinphos-methyl	0.05	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	20.0
Benzene	0.32	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
Benzo(a)pyrene	0.004	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.01
Bromoxynil	0.33	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
Carbaryl	0.05	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	90.0
Carbofuran	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	90.0
Carbon Tetrachloride	0.17	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
Chlorpyrifos	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	90.0
Diazinon	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	20.0
Dicamba	0.20	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	120
1,2-Dichlorobenzene	0.41	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	200
1,4-Dichlorobenzene	0.36	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
1,2-dichloroethane	0.35	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	5.0
1,1-Dichloroethylene (vinylidene chloride)	0.33	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	14.0
Dichloromethane	0.35	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	50.0
2,4-Dichlorophenol	0.15	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	900
2,4-Dichlorophenoxy acetic acid (2,4-D)	0.19	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	100
Diclofop-methyl	0.40	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	9.0
Dimethoate	0.06	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	20.0
Diquat	1	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	70.0
Diuron	0.03	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	150
Glyphosate	1	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	280
Malathion	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	190
MCPA	0.12	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	100
Metolachlor	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	50.0
Metribuzin	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	80.0
Monochlorobenzene	0.3	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	80.0
Paraquat	1	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	10.0
Pentachlorophenol	0.15	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	60.0
Phorate	0.01	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	2.0

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

	Sample Location Date Sampled	Well #1 02-23-2021	Well #4 02-23-2021	Well #5 02-23-2021	Well #6 02-23-2021	Well #7 02-23-2021	Well #8 07-11-2023	Hillcrest Well 04-15-2022	Parsons Reservoir 02-23-2021	Standard
	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
Distribution – Dugdale Avenue Sampling Station				
January 17, 2023	37.0	41.0	No	100
April 12, 2023	37.0			
July 11, 2023	36.0			
October 17, 2023	54.0			

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 14, 2023	Beattie Avenue SS	13.0	12.3	No	80
June 27, 2023	Beattie Avenue SS	7.9			
September 12, 2023	Beattie Avenue SS	14.3			
December 12, 2023	Beattie Avenue SS	13.8			

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	01/17/2023	0.003 <MDL	0.003 <MDL		0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	1.0
	02/02/2023			0.003 <MDL						
	04/12/2023	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	
	07/11/2023	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	
	07/19/2023							0.003 <MDL		
	07/31/2023					0.003 <MDL				
	10/17/2023	0.003 <MDL	0.003 <MDL		0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	0.003 <MDL	
	01/19/2023			0.003 <MDL						
Nitrate	01/17/2023	0.060	0.008		0.008	0.006	0.010	0.006 <MDL	0.254	10.0
	02/02/2023			0.008						
	04/12/2023	0.008	0.007	0.012	0.008	0.006	0.008	0.007	0.178	
	07/11/2023	0.010	0.010	0.009	0.007		0.011		0.099	
	07/19/2023							0.017		
	07/31/2023					0.020				
	10/17/2023	0.013	0.009		0.008	0.006 <MDL	0.010	0.020	0.175	
	10/19/2023			0.008						
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)	04/12/2023 10/13/2023	8	0.06 – 0.29	No	10 µg/l
Alkalinity (Distribution System)	04/12/2023 10/13/2023	8	97 - 118 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)
162259	06/21/2023	Distribution	Chlorine	0.00	mg/l	During watermain flushing a Chlorine residual of 0.00 mg/l was observed. Staff continued to flush the main until chlorine was restored. Chlorine reading was 0.97 mg/l. Sampled the location and upstream and downstream with results being negative. No further action required.	06/26/2023
162450	07/04/2023	Distribution	Total Coliform	2	cfu/100 ml	Watermains were flushed and checked chlorine residual at adverse location. Reading was 1.27 mg/l. Re-sampled at location and upstream and downstream July 6th. Results all negative. No further action required.	07/10/2023