

## Optional Annual Report Template

<b>Drinking-Water System Number:</b>	<b>210000684</b>
<b>Drinking-Water System Name:</b>	Bradford / Bondhead Drinking Water System
<b>Drinking-Water System Owner:</b>	The Corporation of the Town of Bradford West Gwillimbury
<b>Drinking-Water System Category:</b>	Water Distribution and Supply Subsystem Class 3, Large Municipal Residential System
<b>Period being reported:</b>	<b>January 1 to December 31, 2022</b>

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes [ X ] No [ ]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [ X ] No [ ]</b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <div style="border: 1px solid black; padding: 5px;">                 Town of Bradford West Gwillimbury                  Community Services Department                  3541 Line 11 Bradford, ON                  P.O. Box 160                  L3Z 2A8             </div>	<p><u>Complete for all other Categories.</u></p> <p><b>Number of Designated Facilities served:</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">N/A</div> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</b></p> <p><b>Number of Interested Authorities you report to:</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">N/A</div> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</b></p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None	N/A

**Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? Yes [ ] No [ ]**

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web**
- Public access/notice via Government Office**
- Public access/notice via a newspaper**
- Public access/notice via Public Request**
- Public access/notice via a Public Library**
- Public access/notice via other method**

**Describe your Drinking-Water System**

The Bradford/Bondhead drinking water system is categorized as a large municipal residential system. The system is classified as a Water Distribution and Supply Subsystem Class 3 and is operated under Drinking Water Works Permit No. 116-201 issued June 13, 2021, Municipal Drinking Water License No. 116-101 issued June 13, 2021 and a Permit to Take Water No. 2672-9G3PFY issued April 1, 2014. Additionally, the Drinking Water System conforms to and is accredited by the Drinking Water Quality Management Standard (DWQMS).

The Town’s drinking water supply is provided by two (2) municipal wells, Church Well No.1 and Church Well No.2, and treated surface water provided by the Innisfil Lake Simcoe Water Filtration Plant (ILS WFP) located in the Town of Innisfil.

The distribution system is approximately 186.2 Kilometers (km) in length. This number is slightly lower than that reported in 2021 due to data consolidation of the GIS layer. There are two (2) Standpipes positioned within the footprint of the Town. Each Standpipe has a booster pumping station and re-chlorination system. In addition to the standpipes, there is one (1) monitoring station located at the furthest point within the distribution system, one (1) Water Tower also equipped with a re-chlorination system and one (1) grade level reservoir that receives treated surface water from the ILS WFP. The Town is split up into four (4) different pressure zones which are supplied by either well water or surface water. Zone No.1a and 1b are comprised of groundwater, Zone No. 2a and 2b are surface water supplied by the ILS WFP

The Town’s Supervisor Control and Data Acquisition (SCADA) system allows for remote access to the water facilities located across the Town. This provides operations personnel with the opportunity to monitor, control, historically trend, report, log totals and archive all available field parameters within the system.

The 2022 annual water consumption totaled 3,772,772 m<sup>3</sup>. The groundwater supply provided 1,459,632 m<sup>3</sup>, 38.6% of the total water usage; and the surface water supply

accounted for the remaining 61.4%, totaling 2,313,140 m<sup>3</sup>. There were zero (0) reported water interference complaints registered with the Town during the reporting period.

The reported year-end serviced population for the drinking water system totaled approximately 35,562 which includes both residential, industrial, commercial, and institutional consumers.

**List all water treatment chemicals used over this reporting period**

*Sodium Hypochlorite (as total litres)*

**WELLS:**

Church Well No. 1 used a total of 16,282 litres (L).

Church Well No. 2 used a total of 69,577 litres (L).

**DISTRIBUTION:**

Standpipe No.1 Roy Storey Booster Station used a total of 1,953 litres (L).

Standpipe No. 2 Appi Sikkema Booster Station used a total of 2,658 kilograms (kg).

Bondhead Water Tower used a total of 771.4 litres (L)

John Fennell Reservoir & Re-chlorination Facility used a total of 241.2 kilograms (kg) of chlorine gas.

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Please provide a brief description and a breakdown of monetary expenses incurred.**

Cathodic Protection on ductile iron watermain	\$64,694
Smartball pipeline inspection (leak detection)	\$369,735
Watermain Replacement program:	
Centre Street	\$ 620,302.92
Bingham Street	\$ 305,380.37
Back Street	\$ 141,841.75
William Street	\$ 184,992.16
Edward Street	\$ 52,510
3 <sup>rd</sup> Line Booster Station Upgrades design	\$ 94,217

## Drinking-Water Systems Regulation O. Reg. 170/03

**Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre**

Incident Date	AWQI No.	Location	Adverse Indicator	Corrective Action	Corrective Action Date	Cause of Adverse
May 18, 2022	158410	20 Bingham St	Microbiological Total Coliform 22mg/L	-flushed, resampled upstream and downstream two sets of samples taken 48-72hrs apart. -Notified SAC and MOH.	May 19, 2022	Microbiological
May 25, 2022	158474	20 Bingham St	Microbiological Total Coliform 12mg/L	-flushed, resampled upstream and downstream two sets of samples taken 48-72hrs apart. -Notified SAC and MOH.	May 26, 2022	Microbiological
December 12, 2022	160953	Hwy 11 & Line 12	Operational, loss of pressure	-Repair valve, restore pressure. Flush and sample upstream and downstream -Notified SAC and MOH.	December 13, 2022	Operational

## Drinking-Water Systems Regulation O. Reg. 170/03

**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.**

Water Type	Number of Samples	Range of E.Coli or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #) as cfu/100 ml	Number of HPC Samples (Background) as cfu/ml	Range of HPC Results (Background) (min #)-(max #)
<b>Raw</b>	104	0 to 1	0 to 0	Not applicable.	Not applicable.
<b>Treated</b>	104	0 to 0	0 to 0	104	0 to 10
<b>Distribution</b>	663	0 to 0	0 to 22	313	0 to 80

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity (NTU) Church Well 1 and Church Well 2	24	0.19 – 0.82
Chlorine residual in the Distribution System (mg/L)	8760	0.05 – 4.00
Fluoride (If the DWS provides fluoridation)	n/a	n/a

*NOTE: Record the unit of measure if it is not milligrams per litre.  
NOTE: For continuous monitors use 8760 as the number of samples.*

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

Date of legal instrument issued	Parameter	Date last Sampled	Result	Unit of Measure	Exceedance
Regulation 170/03 Schedule 15.1-5 reduced lead sampling program. Lead sampling to be completed every 36 months over two consecutive semi-annual periods. The system is exempt from lead sampling in plumbing. DISTRIBUTION (8 samples)  COMMERCIAL (12 samples)  RESIDENTIAL (64 samples)  Distribution Alkalinity and pH every "winter" and "summer" period (December 15 to April 15 and June 15 to October 15).	<b>Lead</b> Standard: MAC 0.010	2021	0 to 0.00072	mg/L	NONE
	2009	<0.0006 to 0.0019	mg/L	NONE	
	2009	<0.0005 to 0.0079	mg/L	NONE	
	<b>Alkalinity</b> aesthetic objective:	Feb 16, 2022	110 to 140	mg/L	NONE
	30 – 500	Aug 16, 2022	120 to 150	mg/L	NONE
	<b>pH</b> aesthetic objective:	Feb 16, 2022	7.12 to 8.16	mg/L	NONE
	6.5 – 8.5	Aug 16, 2022	7.40 to 7.92	mg/L	NONE

**Summary of inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<i>ND=Not Detectable</i>				
<b>Antimony</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.006</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Arsenic</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.01</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Barium</b> WELLS:	<b>Standard -</b>	<b>MAC 1</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	0.11	mg/L	NONE
Church 2	Nov 4, 21	0.13	mg/L	
<b>Boron</b> WELLS:	<b>Standard -</b>	<b>IMAC 5</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	0.15	mg/L	NONE
Church 2	Nov 4, 21	0.17	mg/L	
<b>Cadmium</b> WELLS:	<b>Standard -</b>	<b>MAC 0.005</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Chromium</b> WELLS:	<b>Standard -</b>	<b>MAC 0.05</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Lead</b> WELLS:	<b>Standard -</b>	<b>MAC 0.010</b>	<b>mg/L</b>	
Church 1	Feb 27, 13	ND	mg/L	NONE
Church 2	Feb 27, 13	ND	mg/L	

<b>Mercury</b> WELLS:	<b>Standard -</b>	<b>MAC 0.001</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Selenium</b> WELLS:	<b>Standard -</b>	<b>MAC 0.01</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Sodium</b> WELLS:	<b>Standard -</b>	<b>20</b> <b>AO 200</b>	<b>mg/L</b> <b>mg/L</b>	
Church 1	Nov 4, 21	45	mg/L	NONE*
Church 2	Nov 4, 21	46	mg/L	
<b>Uranium</b> WELLS:	<b>Standard</b>	<b>MAC 0.02</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Fluoride</b> WELLS:	<b>Standard</b>	<b>MAC 1.5</b>	<b>mg/L</b>	
Church 1	May 23,18	0.24	mg/L	NONE
Church 2	May 23,18	0.24	mg/L	
<b>Nitrite</b> WELLS:	<b>Standard</b>	<b>MAC 1.0</b>	<b>mg/L</b>	
Church 1	Nov 17, 22	ND	mg/L	NONE
Church 2	Nov 17, 22	ND	mg/L	
<b>Nitrate</b> WELLS:	<b>Standard</b>	<b>MAC 10.0</b>	<b>mg/L</b>	
Church 1	Nov 17, 22	ND	mg/L	NONE
Church 2	Nov 17, 22	ND	mg/L	

\*Sodium results that exceed the standard are reportable every sixty (60) months.  
Sodium was reported in 2020 for this reporting period.



**Summary of Organic parameters sampled during this reporting period or the most recent sample results.**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>Benzene</b> WELLS:	<b>Standard -</b>	<b>MAC 0.001</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Benzo(a)pyrene</b> WELLS:	<b>Standard -</b>	<b>MAC 0.00001</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Bromoxynil</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.005</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Carbaryl</b> WELLS:	<b>Standard -</b>	<b>MAC 0.090</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Carbofuran</b> WELLS:	<b>Standard -</b>	<b>MAC 0.090</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Carbon Tetrachloride</b> WELLS:	<b>Standard -</b>	<b>MAC 0.002</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Chlorpyrifos</b> WELLS:	<b>Standard -</b>	<b>MAC 0.09</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Diazinon</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.020</b>	<b>mg/L</b>	

Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Dicamba</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.0120</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>1,2-Dichlorobenzene</b> WELLS:	<b>Standard -</b>	<b>MAC 0.200</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>1,4-Dichlorobenzene</b> WELLS:	<b>Standard -</b>	<b>MAC 0.005</b>	<b>mg/L</b>	
Church 1	Nov 4, 2021	ND	mg/L	NONE
Church 2	Nov 4, 2021	ND	mg/L	
<b>1,2-Dichloroethane</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.005</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>1,1-Dichloroethylene (vinylidene chloride)</b> WELLS:	<b>Standard-</b>	<b>MAC 0.014</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Dichloromethane</b> WELLS:	<b>Standard -</b>	<b>MAC 0.050</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>2,4 Dichlorophenol</b> WELLS:	<b>Standard -</b>	<b>MAC 0.900</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.100</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE

Church 2	Nov 4, 21	ND	mg/L	
<b>Diclofop-methyl</b> WELLS:	<b>Standard -</b>	<b>MAC 0.009</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Dimethoate</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.020</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	<0.003	mg/L	NONE
Church 2	Nov 4, 21	<0.003	mg/L	
<b>Diquat</b> WELLS:	<b>Standard -</b>	<b>MAC 0.070</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Diuron</b> WELLS:	<b>Standard -</b>	<b>MAC 0.150</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Glyphosate</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.280</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Malathion</b> WELLS:	<b>Standard -</b>	<b>MAC 0.190</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Metolachlor</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.050</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Metribuzin</b> WELLS:	<b>Standard -</b>	<b>MAC 0.080</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	

<b>Monochlorobenzene</b> WELLS:	<b>Standard -</b>	<b>MAC 0.080</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Paraquat</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.010</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Pentachlorophenol</b> WELLS:	<b>Standard -</b>	<b>MAC 0.060</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Phorate</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.002</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Picloram</b> WELLS:	<b>Standard-</b>	<b>IMAC 0.190</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Polychlorinated Biphenyls (PCB)</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.003</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Prometryne</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.001</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Simazine</b> WELLS:	<b>Standard -</b>	<b>IMAC 0.010</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	

<b>THM</b> (NOTE: show latest annual average)  DISTRIBUTION	<b>Standard -</b>  Nov 17, 2022	<b>MAC 0.100</b>  0.0725	<b>mg/L</b>  mg/L	NONE
<b>Terbufos</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 21 Nov 4, 21	<b>IMAC 0.001</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE
<b>Tetrachloroethylene</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 21 Nov 4, 21	<b>MAC 0.005</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE
<b>2,3,4,6-Tetrachlorophenol</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 2021 Nov 4, 2021	<b>MAC 0.100</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE
<b>Triallate</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 21 Nov 4, 21	<b>MAC 0.230</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE
<b>Trichloroethylene</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 21 Nov 4, 21	<b>MAC 0.050</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE
<b>2,4,6-Trichlorophenol</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 21 Nov 4, 21	<b>MAC 0.005</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE
<b>Trifluralin</b> WELLS:  Church 1 Church 2	<b>Standard -</b>  Nov 4, 21 Nov 4, 21	<b>IMAC 0.045</b>  ND ND	<b>mg/L</b>  mg/L mg/L	NONE

## Drinking-Water Systems Regulation O. Reg. 170/03

<b>Vinyl Chloride</b> WELLS:	<b>Standard -</b>	<b>MAC 0.001</b>	<b>mg/L</b>	
Church 1	Nov 4, 21	ND	mg/L	NONE
Church 2	Nov 4, 21	ND	mg/L	
<b>Haloacetic Acids (HAA's)</b> (NOTE: show latest annual average)		<b>MAC 0.080</b>	<b>mg/L</b>	NONE
DISTRIBUTION	Nov 17, 22	0.041	mg/L	

**List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>THM</b> (NOTE: show latest annual average)	<b>Standard -</b>	<b>MAC 0.100</b>	<b>mg/L</b>	
DISTRIBUTION	Nov 17, 22	0.073	mg/L	NONE
<b>HAA</b> (NOTE: show latest annual average)	<b>Standard -</b>	<b>MAC 0.080</b>	<b>mg/L</b>	
DISTRIBUTION	Nov 17, 22	0.041	mg/L	NONE