

Corporation of the City of Quinte West

Quinte West Drinking Water System (Frankford/Batawa Service Area)

2023 Annual & Summary Drinking Water System Report



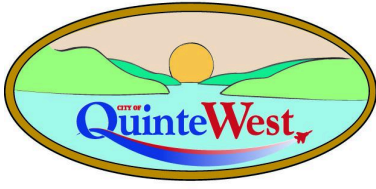
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The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Drinking Water System Report
(Frankford/Batawa Service Area)

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2023 Annual Drinking Water System Report

Drinking Water System Information

Drinking Water System Number:	210001889
Drinking Water System Name:	Frankford/Batawa Drinking Water System
Drinking Water System Owner:	The Corporation of the City of Quinte West
Drinking Water System Category:	Large Municipal-Residential System
Period being Reported:	January 1, 2023 through December 31, 2023

Does your Drinking Water System service more than 10,000 people?

Yes.

Is your Annual Report available to the public at no charge on a website

Yes, please visit www.quintewest.ca.

Location where Summary Report required under O.Reg.170/03 Schedule 22 will be available for inspection

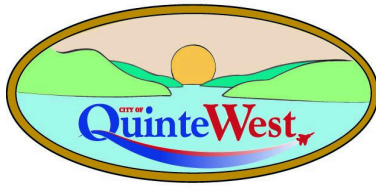
Water/Wastewater Services Administration Office

25 Couch Crescent

Trenton, ON, K8V 1G8

List all Drinking Water Systems (if any), that receive all of their Drinking Water from your System:

None.



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

- Public access/notice via City website
- Public access/notice via Government Office
- Public access/notice via newspaper
- Public access/notice via City social media platform(s)
- Public access/notice via a Public Library
- Public access/notice via other method:

Description of the Drinking Water System

The Frankford Water Treatment Plant pulls water from the Trent River through a 240.5 m long, 450 mm diameter raw water intake pipe, extending 50 m into the Trent River approximately 240 m east of the Water Treatment plant. This conventional chemically assisted filtration plant has a rated capacity of 3,353 cu.m/day. The facility houses four (4) Ecodyne package plants. Processes used at the filtration plant include solids recirculating re-activator type flocculator/clarifier units with tube settlers and automated sludge withdrawal system, six (6) dual media high rate gravity filters, and two (2) Granular Activated Carbon (GAC) adsorption filters. Chlorine gas is applied as a disinfectant before filtered water enters two interconnected un-baffled clearwells with a combined capacity of 850 cu.m. The potable (drinkable) water is then pumped into the distribution system through a set of three high lift pumps that supply water to the distribution system, as well as the elevated water storage tower which has an operating capacity of 1,890 cu.m. A pressure reducing station located at 65 Parry Drive, provides system pressure protection within the service area of the Batawa community.

The Frankford/Batawa Drinking Water System (DWS) supplies water to approximately 3,800 people in the communities of Frankford and Batawa. In May of 2022 the City commissioned the Frankford Booster Station and a watermain along Glen Miller Road connecting the



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Trenton Water Distribution System (WDS) and Frankford/ Batawa WDS. The Frankford/ Batawa DWS previously governed by its own Drinking Water Works Permit (DWWP) and Municipal Drinking Water Licence (MDWL), was consolidated with the Trenton/ Bayside DWS, issued one DWWP, # 163-202, and one MDWL, # 163-102, the Quinte West DWS. Each system is still assigned a separate DWS number by the Ministry of the Environment, Conservation and Parks (MECP).

List all water treatment chemical used over this Reporting Period:

- ✓ Polyaluminum Chloride (Trade Name: SternPac)
- ✓ Chlorine Gas

Were any significant expenses incurred to:

- ✓ Install Required Equipment?
- ✓ Repair required Equipment?
- ✓ Replace required Equipment?

Provide a brief description, and a breakdown of monetary expenses incurred to facilitate Equipment upgrades:

Preventative Maintenance (PM) activities for lubrication, inspections, testing and cleaning of equipment is scheduled and completed routinely, along with other lifecycle replacement needs. In addition to the PM activity, the following Capital expenditures were incurred this Reporting Period:

Water Meter Automation and Replacement	~ \$480,000 (combined with all Drinking Water Systems)
Compressor	~ \$7,000



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Parts and Labour to replace temperature control valve on Diesel generator	~ \$4,500
Replace solenoid on the pressure control valve at Parry Drive Pressure Reducing Station	~ \$3,500

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 during this Reporting Period:

Incident Date (DD-MMM-YY)	Parameter	Result	Corrective Action	Corrective Action Date (DD-MMM-YY)
There were no notices submitted in accordance with subsection 18(1) of the SDWA or section 16-4 of Schedule 16 of O. Reg. 170/03 during this Reporting Period.				

Microbiological Testing completed in accordance with Schedule 10, 11, or 12 of Regulation 170/03 during this Reporting Period:

	Number of Samples	Range of E.Coli (min - max)	Range of Total Coliform (min - max)	Number of Heterotrophic Plate (HPC) Count Samples	Range of HPC results (min - max)
Raw	52	0 - NDOGT ¹	0 - NDOGT	NA	NA
Treated	52	0 - 0	0 - 0	52	0 - 1
Distribution	181	0 - 0	0 - 0	73	0 - 2

¹ NDOGT stands for No Data: Overgrown with Target Bacteria. Prior, and subsequent datasets within normal range.



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Operational Testing completed in accordance with Schedule 7, 8, or 9 of O.Reg.170/03 during this Reporting Period:

Parameter	Number of Grab Samples	Range of Results (min-max)
Turbidity, (NTU)	8760	0.000 ² - 1.264 ³
Primary Disinfection FAC ⁴ , (mg/L)	8760	1.60 - 2.89
Secondary Disinfection FAC, (mg/L)	8760	0.46 - 3.44 ⁵

Summary of additional testing and sampling carried out in accordance with the requirement of an Approval, Order, or other Legal Instrument:

Not applicable.

Summary of Inorganic parameters tested during this Reporting Period or the most recent Sample Results:

Inorganic Compound Results				
Parameter	Sample Date (dd/mmm/yy)	Result Value	Unit of Measure	Exceedance?
Antimony	04-JAN-23	< 0.6	ug/L	No
Arsenic	04-JAN-23	0.2	ug/L	No

² Value obtained when the lamp failed on the analyzer. The filter effluent valve closed in less than 30 seconds. This incident occurred on February 26, 2023.

³ Isolated incident occurring for less than 10 seconds before filter effluent valve closed. Incident occurred on January 27, 2023.

⁴ Free Available Chlorine. Defined as the free amount of chlorine available in water.

⁵ Isolated value, occurred as a result of Operator testing functionality of new check valve kit in chlorine pump, on June 26, 2023.



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Barium	04-JAN-23	28.2	ug/L	No
Boron	04-JAN-23	9	ug/L	No
Cadmium	04-JAN-23	0.010	ug/L	No
Chromium	04-JAN-23	0.09	ug/L	No
Mercury	04-JAN-23	0.01	ug/L	No
Selenium	04-JAN-23	0.11	ug/L	No
Sodium	04-JAN-23	8.54	mg/L	No
Fluoride	04-JAN-23	< 0.06	mg/L	No
Uranium	04-JAN-23	0.007	ug/L	No
Nitrate	04-JAN-23 04-APR-23 05-JUL-23 04-OCT-23	0.385 0.529 0.157 0.052	mg/L	No
Nitrite	04-JAN-23 04-APR-23 05-JUL-23 04-OCT-23	< 0.003 < 0.003 < 0.003 < 0.003	mg/L	No

Summary of Lead Testing under Schedule 15.1 during this Reporting Period:

Lead Sampling Results				
Sampling Period	Location Type	Number of Samples	Range of Lead Results (ug/L), 'min-max'	Number of Exceedances
Winter Sampling Period ⁶	Drinking Water System exempt from sampling in accordance with Section 15.1-5(9) under Schedule 15 of O.Reg.170/03. Sampling and testing for Lead are not required until the 2024 winter sampling			

⁶ Winter Sampling Period runs from December 15 - April 15. The last sample collected in accordance with the Regulation was sampled on April 15, 2021.



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	period.
Summer Sampling Period ⁷	Drinking Water System exempt from sampling in accordance with Section 15.1-5(9) under Schedule 15 of O.Reg.170/03. Sampling and testing for Lead are not required until the 2024 summer sampling period.

Summary of Organic parameters sampled during this Reporting Period:

Organic Compound Results				
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	04-JAN-23	< 0.02	ug/L	No
Atrazine + N-dealkylated metabolites	04-JAN-23	< 0.01	ug/L	No
Azinphos-methyl	04-JAN-23	< 0.05	ug/L	No
Benzene	04-JAN-23	< 0.32	ug/L	No
Benzo(a)pyrene	04-JAN-23	< 0.004	ug/L	No
Bromoxynil	04-JAN-23	< 0.33	ug/L	No
Carbaryl	04-JAN-23	< 0.05	ug/L	No
Carbofuran	04-JAN-23	< 0.01	ug/L	No

⁷ The Summer Sampling Period runs from June 15 - October 15. The last sample collected in accordance with the Regulation was sampled on October 13, 2021.



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Carbon Tetrachloride	04-JAN-23	< 0.17	ug/L	No
Chlorpyrifos	04-JAN-23	< 0.02	ug/L	No
Diazinon	04-JAN-23	< 0.02	ug/L	No
Dicamba	04-JAN-23	< 0.20	ug/L	No
1,2-Dichlorobenzene	04-JAN-23	< 0.41	ug/L	No
1,4-Dichlorobenzene	04-JAN-23	< 0.36	ug/L	No
1,2-Dichloroethane	04-JAN-23	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	04-JAN-23	< 0.33	ug/L	No
Dichloromethane	04-JAN-23	< 0.35	ug/L	No
2-4 Dichlorophenol	04-JAN-23	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	04-JAN-23	< 0.19	ug/L	No
Diclofop-methyl	04-JAN-23	< 0.40	ug/L	No
Dimethoate	04-JAN-23	< 0.06	ug/L	No
Diquat	10-JAN-23	< 1	ug/L	No
Diuron	04-JAN-23	< 0.03	ug/L	No



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Glyphosate	10-JAN-23	< 1	ug/L	No
Malathion	04-JAN-23	< 0.02	ug/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	04-JAN-23	< 0.00012	mg/L	No
Metolachlor	04-JAN-23	< 0.01	ug/L	No
Metribuzin	04-JAN-23	< 0.02	ug/L	No
Monochlorobenzene	04-JAN-23	< 0.3	ug/L	No
Paraquat	10-JAN-23	< 1	ug/L	No
Pentachlorophenol	04-JAN-23	< 0.15	ug/L	No
Phorate	04-JAN-23	< 0.01	ug/L	No
Picloram	04-JAN-23	< 1	ug/L	No
Polychlorinated Biphenyls (PCB)	04-JAN-23	< 0.04	ug/L	No
Prometryne	04-JAN-23	< 0.03	ug/L	No
Simazine	04-JAN-23	< 0.01	ug/L	No
Trihalomethanes (THMs) (Running annual average)	04-OCT-23	57.75	ug/L	No



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Haloacetic acids (HAAs) (Running annual average)	04-OCT-23	50.83	ug/L	No
Terbufos	04-JAN-23	< 0.01	ug/L	No
Tetrachloroethylene	04-JAN-23	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	04-JAN-23	< 0.20	ug/L	No
Triallate	04-JAN-23	< 0.01	ug/L	No
Trichloroethylene	04-JAN-23	< 0.44	ug/L	No
2,4,6-Trichlorophenol	04-JAN-23	< 0.25	ug/L	No
Trifluralin	04-JAN-23	< 0.02	ug/L	No
Vinyl Chloride	04-JAN-23	< 0.17	ug/L	No

Inorganic or Organic parameter(s) that have exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards:

None.



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2023 Summary Report to Council

In accordance with Schedule 22 requirements outlined in Ontario Regulation 170/03, a Summary Report shall be prepared no later than March 31 for the preceding year, and supplied to members of municipal council.

The Report shall list the requirements of the Act, Regulations, Drinking Water Works Permit, Municipal Drinking Water Licence, and any Orders applicable to the system that were not met at any time during the period covered by the Report.

The Report must also include a summary of the quantities and flow rates of potable water (water intended for human consumption), supplied during the Reporting Period, including monthly average and maximum daily flows. A comparison of these flows to the rated capacity and flow rates approved in the system Drinking Water Works Permit, and Municipal Drinking Water Licence, must also be provided.

Prescribed Instruments applicable to the Frankford/Batawa DWS

The Frankford/Batawa DWS is governed by, and must operate their DWS primarily in accordance with, the following Acts and Regulations at minimum:

- Safe Drinking Water Act, 2002;
- O. Reg. 128/04 – Certification of Drinking Water System Operators and WQA
- O. Reg. 170/03 – Drinking Water Systems
- O. Reg. 169/03 – Ontario Drinking Water Quality Standards
- Environmental Protection Act, where applicable;
- Clean Water Act, where applicable;
- Municipal Drinking Water Licence 163-201;
- Drinking Water Works Permit 163-101;
- Permit to Take Water 3447-9RFR5D, expires December 4, 2024



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Councillors wishing to obtain a copy of any Act or Regulation are free to contact the Compliance Coordinator at collette.kingdon@quintewest.ca to obtain a current consolidated copy and interpretation of the legislation.

Compliance with Prescribed Instruments, Acts and Regulations

Safe Drinking Water Act

Adverse Water Quality Incidents as defined by the Safe Drinking Water Act have been listed in section [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 during this Reporting Period](#). The following noteworthy activities occurred throughout the reporting period.

NSF International conducted a Surveillance Audit from October 12-13, 2023. The intent of the audit is to confirm continued conformance to the Drinking Water Quality Management Standard. The City received its Re-Accreditation, with no Non-Conformances identified in the Audit Report. Four (4) Opportunities for Improvement (OFI) were identified.

The City achieved a 100% Inspection Rating on its 2023 MECP Compliance Inspection conducted on August 14, 2023.

Clean Water Act

The Source Protection Plan was approved by the Minister of Environment, Conservation and Parks, and came into effect on January 1, 2015. The City has put the necessary internal processes in place with the Planning, Building, and Public Works Departments to screen applications and ensure compliance with the Source Protection Plan. In 2023, five (5) screening applications were submitted to the Risk Management Official for review and approval for the area surrounding the Frankford Intake Protection Zone. In general the



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screening, application, and approval processes implemented by staff seem to be working reasonably well. Throughout the screening and verification process it has been determined that there are five (5) Risk Management Plans (RMPs) required for affected properties in the Intake Protection Zone surrounding the Frankford Intake. In 2023, one (1) RMP was completed, finalizing the RMP requirements.

Permit to Take Water

The City operates its Frankford Water Treatment Plant in accordance with Permit to Take Water (PTTW) number 3447-9RFR5D which expires on December 4, 2024. This Permit allows the City to take 3,045.8 cu.m/day from the Trent River watershed at a maximum flow rate of 62.5 L/s. The maximum recorded daily taking was 2,140 cu.m/day on May 15, 2023. The maximum recorded flow rate was 34.14 L/s on August 15, 2023.

For a detailed summary of water quantities and flow rates, see [2023 Water Quantities and Flow Rates - Raw Water Assessment](#).

Drinking Water Works Permit/Municipal Drinking Water Licence

The Frankford/Batawa DWS is now governed by Issue Number: 06 of Municipal Drinking Water Licence # 163-102, and Issue Number: 09 of Drinking Water Works Permit # 163-202. The Municipal Drinking Water Licence will expire September 28, 2025.

In accordance with Condition 1.1 of the MDWL, the Frankford Water Treatment Plant has a rated capacity to treat and distribute 3,353 cu.m/day. Over the Reporting Period the maximum daily volume of treated water distributed to the distribution system was 1,714 cu.m/day on May 15, 2023. The Annual Average Daily Flow pumped to the Distribution System was 1,281 cu.m/day. For a detailed summary of treated water quantities and flow rates, see [2023 Water Quantities and Flow Rates - Treated Water Assessment](#).



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2023 Water Quantity and Flow Rates (Raw Water Assessment):

Raw Water Flow: PTTW Limit = 3,045.8 cu.m/d			
Month	Average Daily Flow (cu.m/d)	Maximum Daily Flow (cu.m/d)	Total Monthly Flow (cu.m/month)
January	1745	1846	54102
February	1816	1870	50847
March	1810	1846	56118
April	1924	2112	57733
May	1943	2140	60221
June	1840	2044	55192
July	1686	1873	52277
August	1722	2015	53385
September	1646	1887	49389
October	1700	1925	52690
November	1585	1746	47563
December	1510	1807	46797
Total Raw Water Flow =			636,312



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2023 Water Quantity and Flow Rates (Treated Water Assessment):

Treated Water Flow: Facility Rated Capacity = 3,353 cu.m/day			
Month	Average Daily Flow (cu.m/d)	Maximum Daily Flow (cu.m/d)	Total Monthly Flow (cu.m/month)
January	1292	1444	40065
February	1364	1462	38190
March	1356	1475	42032
April	1329	1451	39864
May	1439	1714	44616
June	1255	1467	37662
July	1218	1488	37750
August	1328	1608	41166
September	1261	1500	37819
October	1309	1477	40584
November	1182	1397	35461
December	1113	1344	34500
Total Treated Water Flow =			469,708

- Annual Average Daily (Treated Water) Flow = 1,281 cu.m/day. This accounts for 38% of the facility Rated Capacity.
- Maximum Daily (Treated Water) Flow = 1,714 cu.m/day. This accounts for 51% of the facility Rated Capacity during recorded peak daily flow conditions.



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Historical Flow Comparison

The 5-year ADF of Treated Water is calculated to be 1,513 cu.m/day, accounting for 45% of the facility rated capacity.

The decrease in ADF can be attributed to the installation of the Frankford Booster Station. The Trenton DWS provided 131,396 cu.m of treated water to the Frankford/ Batawa DWS in 2023.

