

Corporation of the City of Quinte West

Quinte West Drinking Water System (Bayside Service Area)

2023 Annual & Summary Drinking Water System Report



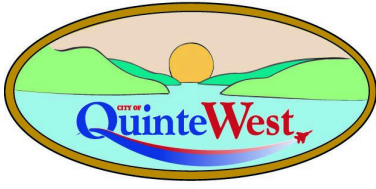
A Natural Attraction



A Natural Attraction

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

2023 Annual Drinking Water System Report	4
Drinking Water System Information	4
Does your Drinking Water System service more than 10,000 people?	4
Is your Annual Report available to the public at no charge on a website	4
Location where Summary Report required under O.Reg.170/03 Schedule 22 will be available for inspection	4
List all Drinking Water Systems (if any), that receive all of their Drinking Water from your System:	4
Indicate how you notified system users that your annual report is available, and is free of charge.	5
Description of the Drinking Water System	5
List all water treatment chemical used over this Reporting Period:	6
Were any significant expenses incurred to:	6
Provide a brief description, and a breakdown of monetary expenses incurred to facilitate Equipment upgrades:	6
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:	7
Microbiological Testing completed in accordance with Schedule 10, 11, or 12 of Regulation 170/03 during this Reporting Period:	7
Operational Testing completed in accordance with Schedule 7, 8, or 9 of O.Reg.170/03 during this Reporting Period:	8
Summary of additional testing and sampling carried out in accordance with the requirement of an Approval, Order, or other Legal Instrument:	8
Summary of Inorganic parameters tested during this Reporting Period or the most recent Sample Results:	9
Summary of Lead Testing under Schedule 15.1 during this Reporting Period:	10
Summary of Organic parameters sampled during this Reporting Period:	11
Inorganic or Organic parameter(s) that have exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards:	14
2023 Summary Report to Council	15
Prescribed Instruments applicable to the Trenton/ Bayside DWS	15
Compliance with Prescribed Instruments, Acts and Regulations	16
Safe Drinking Water Act	16
Clean Water Act	16
Permit to Take Water	17



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

A Natural Attraction

Drinking Water Works Permit/Municipal Drinking Water Licence	17
2023 Water Quantity and Flow Rates (Raw Water Assessment):	18
2023 Water Quantity and Flow Rates (Treated Water Assessment):	19
Historical Flow Comparison	20



A Natural Attraction

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

2023 Annual Drinking Water System Report

Drinking Water System Information

Drinking Water System Number:	220008079
Drinking Water System Name:	Bayside 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

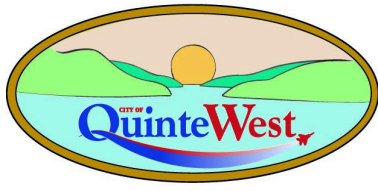
Water/Wastewater Services Administration Office

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.



A Natural Attraction

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

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 Bayside Water Treatment Plant pulls water from the Bay of Quinte through a 404 m long intake pipe that extends approximately 370 m into the Bay. This conventional, chemically-assisted filtration plant has a rated capacity of 11,360 cu.m/day. The facility uses rapid-mix coagulation, flocculation, sedimentation, dual-media filtration, and granular activated adsorber cells. The facility uses sodium hypochlorite for disinfection, and fluoridates its drinking water supply. Drinking Water is pumped to the Water Distribution System (WDS) via two (2) vertical turbine highlift pumps that draw water from the onsite 980 cu.m. clearwell. The elevated water storage tower located at 10 Richards Way, has an effective usable volume of 6,050 cu.m. A dual-celled holding pond is used to provide natural filtration for process wastewater prior to final discharge into an adjacent wetland through ex-filtration.

The Bayside Water Treatment Plant services approximately 4,900 customers in the community of Bayside, in addition to a portion of CFB Trenton. In 2015, the City constructed a watermain that effectively connected the Bayside WDS to the Trenton WDS. On June 20, 2023, the Trenton/Bayside Drinking Water Systems (DWS) and Frankford/Batawa DWS, previously governed by their own Drinking Water Works Permit (DWWP) and Municipal Drinking Water Licence (MDWL), were consolidated under one



A Natural Attraction

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

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 Environment, Conservation and Parks (MECP).

List all water treatment chemical used over this Reporting Period:

- ✓ Polyaluminum Chloride (Tradename: SternPac)
- ✓ Sodium Hypochlorite
- ✓ Hydrofluosilicic Acid (Fluoride solution)

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)
Rebuild motor and replace shaft in Recirculation Pump 2	~\$18,000



A Natural Attraction

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

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 <small>(DD-MMM-YY)</small>	Parameter	Result	Corrective Action	Corrective Action Date <small>(DD-MMM-YY)</small>
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 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 - 20
Distribution	192	0 - 0	0 - 0	86	0 - 14

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



A Natural Attraction

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

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	0.027 - 0.577
Primary Disinfection FAC ² , (mg/L)	8760	1.61 - 4.03 ³
Secondary Disinfection FAC, (mg/L)	8760	0.61 - 2.99
Fluoride ⁴ , (mg/L)	8760	0.20 - 1.00

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

In accordance with Condition 5.4 of MDWL #163-102, issue number 6, monthly samples were collected from the 'Filter to Waste' environmental Discharge and tested for Total Suspended Solids.

Condition 1.5 of the MDWL outlines the maximum annual average concentration for each of these parameters. Results of this sampling and testing are outlined in the table below.

Residue Management, TSS Results, (mg/L)	
Date	Filter to Waste Discharge
January 4, 2023	2
February 7, 2023	< 2

² Free Available Chlorine. Defined as the free amount of chlorine available in water.

³ Isolated incident, value occurred while the chlorine pumps were off.

⁴ Fluoride System offline once throughout the reporting period for tower maintenance (8 days).



A Natural Attraction

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

March 7, 2023	< 2
April 4, 2023	3
May 2, 2023	< 2
June 6, 2023	< 2
July 5, 2023	< 2
August 1, 2023	< 2
September 6, 2023	< 2
October 4, 2023	2
November 7, 2023	2
December 5, 2023	2
Annual Average Concentration (mg/L)	2

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	0.3	ug/L	No
Barium	04-JAN-23	35.7	ug/L	No
Boron	04-JAN-23	14	ug/L	No
Cadmium	04-JAN-23	0.014	ug/L	No
Chromium	04-JAN-23	0.15	ug/L	No



A Natural Attraction

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

Mercury	04-JAN-23	< 0.01	ug/L	No
Selenium	04-JAN-23	0.11	ug/L	No
Sodium	04-JAN-23	14.1	mg/L	No
Fluoride	04-JAN-23	0.35	mg/L	No
Uranium	04-JAN-23	0.057	ug/L	No
Nitrate	10-JAN-23 04-APR-23 05-JUL-23 04-OCT-23	0.493 0.575 0.282 0.072	mg/L	No
Nitrite	10-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 ⁵	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 period.			
Summer 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 summer sampling period.			

⁵ Winter Sampling Period runs from December 15 - April 15. The last sample collected in accordance with the Regulation was sampled on February 22, 2022.

⁶ Summer Sampling Period runs from June 15 - October 15. The last sample collected in accordance with the Regulation was sampled on October 13, 2021.

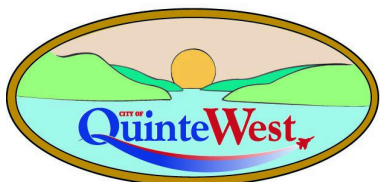


A Natural Attraction

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

Summary of Organic parameters sampled during this Reporting Period:

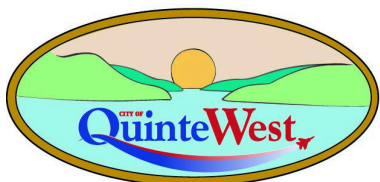
Organic Compound Results				
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	04-JAN-23	< 0.02	ug/L	No
Atrazine + N-dealkylated metabolites	04-JAN-23	< 0.01	ug/L	No
Azinphos-methyl	04-JAN-23	< 0.05	ug/L	No
Benzene	04-JAN-23	< 0.32	ug/L	No
Benzo(a)pyrene	04-JAN-23	< 0.004	ug/L	No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



A Natural Attraction

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

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	04-JAN-23	< 1	ug/L	No
Diuron	04-JAN-23	< 0.03	ug/L	No
Glyphosate	04-JAN-23	< 1	ug/L	No
Malathion	04-JAN-23	< 0.02	ug/L	No



A Natural Attraction

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

2 methyl-4-chlorophenoxyacetic acid (MCPA)	04-JAN-23	< 0.00012	ug/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	04-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	83.50	ug/L	No
Haloacetic acids (HAAs) (Running annual average)	04-OCT-23	78.70	ug/L	No



A Natural Attraction

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

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:

During the reporting period the Running Annual Average for HAA's was exceeded during two quarters, Quarter 1 and Quarter 3.



A Natural Attraction

The Corporation of the City of Quinte West
Public Works and Environmental Services
Water/Wastewater Division
2023 Summary Report to Council
(Bayside Service Area)

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 Trenton/ Bayside DWS

The Bayside 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 163-102;
- Drinking Water Works Permit 163-202;
- Permit to Take Water 1000-9RFK23, expires December 4, 2024.



A Natural Attraction

The Corporation of the City of Quinte West
Public Works and Environmental Services
Water/Wastewater Division
2023 Summary Report to Council
(Bayside Service Area)

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 October 4, 2023. No regulatory non-compliances were cited.

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, two (2) applications were submitted to the Risk Management Official for review and approval



A Natural Attraction

The Corporation of the City of Quinte West
Public Works and Environmental Services
Water/Wastewater Division
2023 Summary Report to Council
(Bayside Service Area)

surrounding the Bayside Intake Protection Zone. In general the 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 currently there are no Risk Management Plans required for the properties identified surrounding the Bayside Intake.

Permit to Take Water

The City operates its Bayside Water Treatment Plant in accordance with Permit to Take Water (PTTW) number 1000-9RFK23 which expires on December 4, 2024. This Permit allows the City to take 11,365 cu.m/day from the Bay of Quinte at a maximum flow rate of 262.8 L/s. The maximum recorded daily taking was 5996 cu.m/day on October 24, 2023. The maximum recorded flow rate was 135.7 L/s on January 27, 2023.

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

Drinking Water Works Permit/Municipal Drinking Water Licence

The Bayside Drinking Water System 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 Schedule C, Condition 1.1 of the MDWL, the Bayside Water Treatment Plant has a rated capacity to treat and distribute 11,360 cu.m/day. Over the Reporting Period the maximum daily volume of treated water distributed to the distribution system was 5,586 cu.m/day on July 16, 2023. The Annual Average Daily Flow pumped to the Distribution System was 3,586 cu.m/day. For a detailed summary of treated water quantities and flow rates, see section [2023 Water Quantity and Flow Rates \(Treated Water Assessment\)](#).



A Natural Attraction

The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Summary Report to Council
(Bayside Service Area)

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

Raw Water Flow: PTTW Limit = 11,365 cu.m/d			
Month	Average Daily Flow (cu.m/d)	Maximum Daily Flow (cu.m/d)	Total Monthly Flow (cu.m/month)
January	3471	4719	107589
February	3679	4310	103017
March	3385	3971	104933
April	3402	3911	102047
May	3707	4684	114624
June	4110	4666	123285
July	4342	5815	134605
August	3929	4348	121798
September	3988	4838	119651
October	3444	5996	106762
November	3710	4153	111360
December	3798	4395	117743
Total Raw Water Flow =			1,367,413



A Natural Attraction

The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Summary Report to Council
(Bayside Service Area)

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

Treated Water Flow: Facility Rated Capacity = 11,360 cu.m/day			
Month	Average Daily Flow (cu.m/d)	Maximum Daily Flow (cu.m/d)	Total Monthly Flow (cu.m/month)
January	3286	4577	101859
February	3527	4022	98756
March	3228	3707	100082
April	3245	3750	97348
May	3543	4364	109738
June	3926	4704	117776
July	4143	5586	128443
August	3756	4181	116427
September	3843	4459	115281
October	3264	5436	101177
November	3593	4233	107801
December	3681	4257	114119
Total Treated Water Flow =			1,308,807

- Annual Average Daily (Treated Water) Flow = 3,586 cu.m/day. This accounts for 32% of the facility Rated Capacity.
- Maximum Daily (Treated Water) Flow = 5,586 cu.m/day. This accounts for 49% of the facility Rated Capacity during recorded peak daily flow condition



A Natural Attraction

Historical Flow Comparison

The 5-year ADF is calculated to be 3,489 cu.m/day, accounting for 31% of the facility rated capacity. This facility should still be able to distribute, on average, approximately 5,000 cu.m/day more water to meet average daily flow requirements. During the 2023 calendar year the Bayside DWS supplied 424,089 cu.m of treated water to the Trenton DWS.

